PHILOSOPHY OF SCIENCE, SOCIAL SCIENCE AND SCIENTIFIC REALISM

by

Gordon B. Linney

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INTRODUCTION

If one were to go into any library in North America and look at the journals which publish articles in the philosophy of the social sciences they would discover a perhaps unexpected phenomenon. Interdispersed between the articles which question the ethics of a particular type of research and those which extol the cognitive and social virtues of the latest brand of Marxism, Structuralism, or System's Theory, one would find a relatively high percentage of articles which call into question the very nature of the scientific and philosophical enterprises.

The fact that much of contemporary philosophy of the social sciences (especially as concerns normative political and sociological thought) is a number of attempts to 'put philosophy and science in their proper places' is the result, in no small measure, of the fact that almost all the various streams of social scientific thought are rooted in philosophical[1] attempts to explicate the nature of the human animal. Philosophy, although it may begin in wonder, is quick to conjecture and research, as midwife, given facilitating institutional arrangements, is just as quick to help deliver into the 'world of commonplaces' those very conjectures. So it is with our conjectures on the nature of the human animal - some are 'smoothly delivered', some are 'ill-conceived',

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[1] There is no implicit distinction between science and philosophy being drawn here. Recalling the stronger continuity that used to exist between the natural sciences and philosophy, we could just as well say that most of the 'sciences' (as 'commonly' understood) can trace their roots back to philosophy as we could say the inverse.

some are 'still born', and yet others are 'born post-humously'.

It would, in short, be a near truism to state that the history of social thought is replete with examples of social prescriptions and social analyses which are bound to specific ontic and epistemic commitments. From Plato's Philosopher Kings with their understanding of Universal Forms, to the motivational psychology of Hobbe's, to Marx's proletariat whom, as the embodiment of universal suffering, possesses the ability to escape from false consciousness - nowhere can one find social analyses bereft of ontic and epistemic commitments. From the amorphousness of Camus' passionate Rebel and Sartre's 'man condemned to freedom', via the apparent consistency of Althusserian structuralism and Eastonian systems theory to the mathematical precision and conceptual clarity of rational choice theory's depiction of political entrepreneurs - nowhere can one find models that avoid assumptions about the cognitive or functional limits of the human animal.

That much of political thought concerns itself with the relation between science and philosophy is also, no doubt, due to Aristotle's misleading dictum that 'man is a political animal'. The legacy that political philosophers were left with was one that simply assumed, along with Plato, that there was some happy medium between 'God-hood' and 'animal-hood'. And so the tradition, for nearly two thousand years, struggled to explicate the fundamental nature of this medium. Apart from the odd contributions by those inspired by the psychologizing of Aristotle and Hobbes, a radical change of pace was not noticeable until the inspiring, but brazen, thought of Sade and Nietzsche and the 'enlightening' positivism of Francis Bacon and John Stuart Mill threatened to dispel much

of what the tradition held dearly. However, the possibility that the Enlightenment offered - the scientific study of the human animal _in toto_ - was not, and is still not, championed by political theorists _en masse_. Perhaps, as Nietzsche alleges, 'held back by their moral narrowness', or perhaps guided by what they perceive as insurmountable difficulties or dangers implicit in the scientific study of the human animal, several philosophers of the social sciences still attempt to expound on the nature of Plato's happy medium and the way in which the being who reigns supreme therein should be studied. And more often than not, the 'tools' of traditional philosophy are lauded as holding the key to an understanding of ourselves that science, in all its zoological democracy, is unable to provide. Science, as the complaint goes, will always leave something out. Philosophy, or reflective apprehension, or Thinking, as the solution goes, will reveal that something.

In the twentieth century, however, the attempts by philosophers of the social sciences to drive a wedge between philosophy and other 'modes of understanding' and science is largely due to the fact that many of the debates in their discipline have been generated by conceptual distinctions drawn from what is perceived as the 'received' philosophy of science. This latter phenomenon is, correlatively, often due to the aspirations of many social scientists to legitimize their respective disciplines by 'naturalizing' them and thereby opening the door to research with 'cash value'. If, in turn, this meant opening the doors to orthodox mandates from the philosophy of science then the doors were opened.

The interaction, for example, between political theory and the philosophy of science in the twentieth century is best illustrated by two examples. The first is the debates that were precipitated by the posi-

tivists' desire for a unified science. The inner-departmental feuding over the ethics and viability of a behavioristic approach to the study of political behavior in mid-century, as well as the disagreements over the applicabilty of formal deductive theory would not have become as intense as they did had it not been for the likes of A.J. Ayer and Otto Neurath and, later, Carl Hempel and Ernest Nagel.

The second predominant example is illustrated by the discussions that erupted after the publication of Thomas Kuhn's The Structure of Scientific Revolutions in 1962 and which were rekindled when Paul Feyerabend's Against Method came off the press in book form in 1975. Any glance at the relevant literature reveals that these latter discussions, induced by a philosophy of science that has arisen in reaction to positivism, are still very much alive and that much research is being stimulated by opinions on the salient issues. Indeed, one could say that the intensity of the dialogue between the social sciences and the philosophy of science in the twentieth century has been just as great as the dialogue that used to predominant in past centuries between social thought and moral (ethical) philosophy.[2]

Given the number of instances where work in the philosophy of science has precipitated dramatic changes in the research goals and 'self-understanding' of the social sciences, it is a central contention of this thesis that social scientists must continue to keep abreast of both developments in the philosophy of science and the corresponding changes in

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[2] This change in dialogue could also be representative of the possibility that moral relativism has triumphed and that now philosophers of the social sciences are, rightly so, having to come to terms with the possible consequences of epistemological relativism.

the latter's epistemological presuppositions.[3] Granting the above, this thesis attempts to substantiate both implicitly and explicitly, the following:

1. Those people who have something negative to say about science, what they perceive as the reigning scientism of the twentieth century, and the proposed scientific study of the human animal, largely presuppose a positivist image of science. Their arguments are also perhaps largely constitutive of 'theoretical culture shock'. Much of contemporary philosophy of the social sciences is also still an indictment of positivism.

2. Those theorists who, in an effort to defy the mandates of positivism, have embarked upon attempts to outline what an 'interpretational' social science might look like, can be seen as receiving conceptual support from 'post-empiricism' - that philosophy of science which has largely emerged in reaction to the positvist construal of things.

3. The post-empiricist philosophy of science is not the final word. Indeed, it can be seen, in many ways, to have largely exhausted itself in the views of some of its most recent proponents.

4. If several of the claims of post-empiricism can be shown to be either invalid or largely incoherent, then those developments in the philosophy of the social sciences and social and political thought which have relied on the validity of said claims also become, by proxy, grist for the critic's mill.

5. Although much of 'post-empiricism' has been 'good medicine' (a la Feyerabend), its continued uncritical use by philosophers of the social sciences will prevent them from rebuilding an enterprise that in many areas has been reduced to the despair brought about by too much 'self-reflection'.

6. The central claim of this thesis is that if the philosophy of the social sciences (especially in its 'interpretational' guises) is to exterpate itself from the confines of post-empiricism it must seek conceptual support from a philosphy of science that recognizes the importance of wedding the Appolonian to the Dionysian - that recognizes the danger in advocating 'anything goes'. It is my belief that the philosophy of science that can most adequately avoid both the conceptual confines of positivism and the

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[3] One could say, therefore, that I believe there is a danger in too prematurely asserting that "the epistemological detour is indeed an escape from political theory" - as Robert Booth Fowler does in "Does Political Theory Have a Future?", in What Should Political Theory Be Now?, ed. John S. Nelson (Albany: State University of New York Press, 1983), p.558.

relativism of post-empiricism is Scientific Realism. Scientific realism, conjoined with an evolutionary naturalistic epistemology can also countenance most of the arguments for which post-empiricism is renowed. These include: Popper's 'critical rationalism'; Quines's 'indeterminacy'; Polanyi's 'indwelling'; Feyerabend's 'against method pluralism'; Rorty's 'edifying discourse'; and Goodman's 'metaphors as world-makers'.

In our first chapter we will present a variety of anti-scientism arguments in a reflective, yet demonstrative fashion. Our major purpose here will be to provide a glimpse of some of the multitude of reasons that lead people to conclude that science in general is a bad thing and that the scientific study of the human animal is either dangerous or beset with innummerable difficulties. Since for many of these critics science is necessarily isomorphic with technology and 'modernity' we will also, at times, lapse into a consideration of some of the anti-technological literature. Some of this literature will be seen as what it really is - broad and largely didactic - while the rest will be seen as the crystallization of very systematic thought. Although the presentation of the anti-scientism literature will be done in an indicting sort of way, a critical analysis of its import will be saved for the conclusion wherein, armed with analytical resources gained throughout the thesis, we will attempt a more general portrayal of why many of the depicted criticisms of science, technology, and the scientific study of the human animal are ill-conceived.

It is a central contention of this thesis that many of the anti-scientistic positions advanced by writers have been motivated by responses to a positivistic interpretation of the natural sciences. In the nineteenth and the early part of the twentieth century this was largely a response to the positivism of Francis Bacon, John Stuart Mill, and August Comte, and in the remainder of the twentieth century it has largely

been a response to those 'positivistically minded' intellectuals both formally and informally associated with the renowned Vienna Circle.

Twentieth century positivism, simply construed, is representative of a body of thought which eschews religious, metaphysical, and moral statements and which argues that the totality of cognitively meaningful discourse is encapsulated in the language of the most advanced sciences. It is an interpretation that explains ethical imperatives and values naturalistically, and that conceives of science as an essentially value-free enterprise, governed by a single method, that examines an 'objective' subject domain. The language and methods of science are considered to be universal and applicable to any area, including the social sciences and 'humanities', wherein explantion (understanding) is sought. The search for meaning is largely equated with the search for truth and the success of such a search is alleged to be made possible largely by the fact that propositions can be 'operationalized' and, correspondingly, their meanings identified with their method of verification, confirmability, or testability.

Our presentation of twentieth century positivism in our second chapter is designed to demonstrate the intricacies of the philosophical debates that fueled the development of its philosophy of sciences. It is written with the belief that those 'post-behaviouralist' social scientists who wish to generically invoke the 'demise of positivism' to substantiate their own views should closely consult those specific debates. Such consultation is necessary in order to dispel any belief that positivism, as a monolithic fortress, has been destroyed from without by the

forces of an equally monolithic historicism.[4]

In the third chapter, a brief review of the substance of some of the negative reactions that social scientists have had to positivism will be presented, with a look at how some of them can be over-ridden by positivist rejoinders. Most of the substantive content of this chapter, however, will be an attempt to reveal the kind of dialogue that philosophers of the social sciences enter into as a result of their various efforts to expound how the study of social phenomena should proceed once the positivistic (scientistic) advocacy of explanation is rejected in favour of understanding and the search for meaning.

As a rational reconstruction of some of the main developments in social thought, especially as concerns the notion of Verstehen, this chapter is susceptible to the interpretation that I am proposing that there is some sort of necessary continuity running from Wilhelm Dilthey's writings on this notion to the thought of contemporary deconstructionalists. However, this continuity should be seen as only there for heuristic and structural purposes. My presentation of several positions (for example, the transcendental phenomenology that stems from the work of the early Husserl) that are 'logically self-contained' is a clear indication that I do not believe that once one embarks on the search for 'social meanings' one is destined to become an ethnomethodologist or deconstructionalist.

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[4] As is alleged by many writers in the social sciences. See, for example, Eugene F. Miller, "Positivism, Historicism, and Political Inquiry", American Political Science Review 66 (1972):796-817.

Some of the thinkers mentioned in the third chapter believe that the methods of the natural sciences are adequately worked out and applicable to the study of 'natural' phenomena but argue, in turn, that their application cannot be extended to the study of social phenomena. Others, however, argue that there is not even a determinate explanatory method employed in natural scientific research and that, therefore, the latter can be viewed as essentially governed by the same processes of indeterminate interpretation which they allege is constitutive of the investigation of social phenomena. Max Weber is largely representative of the first group and Hans-Georg Gadamer, as exemplified by his pronouncement of the 'universality of hermeneutics', is largely representative of the latter. Our presentation of the kind of debates that 'interpretational' philosophy of the social sciences is engaged in does not, however, have as one of its goals an examination of these schisms. I rather seek only to provide an understanding of that genre of thought which reacts against a positivist construal of the social sciences and which, to a very large degree (and usually for this very reason) is often seen by many to receive conceptual support from the kind of philosophy of <u>science</u> that has emerged over the last thirty years in reaction to positivism.

Although, following the lead of several others, I designate this latter philosophy of science 'Post-Empiricism', by no means should it be assumed that I consider it a monolithic and generally accepted alternative to positivism (which, as I have already noted, should also not be generically construed). Indeed, it is such a construal that has led many social scientists to erroneously conclude that their relativistic, historicist, and anti-scientistic views receive conceptual support from

this 'new' philosophy of science. My emphasis on the work of Popper, Quine, and Sellars in this, the forth chapter, is actually intended to reveal, once again, the intricacies of any debates in epistemology and the philosophy of science and the danger in assuming that any philosophy of science comes neatly prepared for conceptual consumption in the social sciences.

The chapter on post-empiricism, like that on positivism, will again be largely demonstrative, leaving a critical analysis of it for a later chapter on Scientific Realism. Also reminiscent of the presentation of positivism will be the fact that at times the emphasis is on specific arguments - almost getting 'bogged down' in detail - and at others the presentation proceeds by what might be interpreted as crass generalizations. In the language of the deconstructionalists, this is the result of attempting to pay credence to what 'constitutes' the tradition whilst at the same time being forced to 'get on with the story'. In addition, only certain aspects of the thought of various authors are touched upon. This, of course, can only be expected in such a thesis. However, at the same time it <u>should</u> be seen as a result of both what I consider their important contributions to be <u>and</u> the image of post-empiricism that numerous rational reconstructions have converged towards. Quine's views, for example, on analyticity and meaning are considered whilst his shift from instrumentalism to realism is not, and Feyerabend comes to be recognized for his views on incommensurability, rather than for his earlier inspiring articles on scientific realism. What <u>is</u> important to include in this chapter are those aspects which have been invoked in the philosophy of social science literature by those who seek conceptual support in developing sustained attacks against the proposed scientific study of

the human being. In reading the chapter on post-empiricism, however, one must be careful to distinguish between those critics of positivism (for example, Popper, Quine, and Sellars) who still herald the primacy of scientific knowledge and those (for example, Feyerabend and Rorty) who see the accounts of science as simply another way of describing ourselves as human beings.

Nevertheless, what many commentators, especially in the philosophy of the social sciences, consider to be the major ingredients of post-empiricism _is_ the image which this chapter will leave on the reader. Post-empiricism, on such accounts, is seen as a philosophy that emphasizes the relativistic and pragmatic nature of all scientific knowledge. It is considered to be an interpretation that largely emphasizes the social preconditions of science and refuses to accept the knowledge so generated as autonomous or radically distinct from other kinds of belief. Science emerges, under such an interpretation, as a _necessarily_ value-laden enterprise, governed by no rationally discernible single method, that to a large extent _constructs_ its subject domain. Its language and methods are viewed as far from universal and their application to several areas, especially the social sciences, is seen as largely constrained by the _various_ forms of linguistic determination of otherwise vacuous and indiscernible phenomena. The search for meaning, considered relative to 'conceptual scheme', is completely separated from the search for truth, and the success of the latter, if construed apart from one's own 'scheme', is proved impossible by the fact that the operationalization of propositions is historically, culturally, and linguistically relative.

As was implied earlier, in speaking of post-empiricism we could just as well refer, more generally, to the 'reaction to positivism'. However, one major reason why I have chosen to employ the former terminology is because I wish to emphasize the reaction to the epistemological component of positivism. What will be readily apparent from the portrayal of post-empiricism is that much of it is inextricably wedded to a non-foundational epistemology. This, of course, is in contradistinction to those proponents of positivism who sought justificational foundations in observation and experience.

Due to the support that such an epistemology provides to post-empiricism and the ramifications that it can be seen as having on the social sciences, I feel that it is also deserving of critical reflection. It is especially so deserving in light of the fact that one of the leading critics of foundational epistemologies - Richard Rorty - is a philosopher who, via his advocation of hermeneutical studies and his attempt to destroy the lines of demarcation between science, literature, and philosophy, has received, and will no doubt continue to receive, a very judicious degree of attention from philosophers of the social sciences.

It is via the views of philosophers like Richard Rorty and Nelson Goodman that the Anglo-American philosophical community is being compelled to seriously investigate the claim that the 'scientific picture' is simply one amongst <u>many</u> ways of describing ourselves as beings-in-the-world. That these investigations will lead to the closing of the gap between 'continental' and 'Anglo-American' thought has already been well attested to - that it will have a similar result in the philosophy of

the social sciences can only be expected.[5]

Since their thought is very representative of this development, I have chosen to present the contemporary philosophical perspectives of Rorty and Goodman. What might initially appear strange is my decision to mediate the presentation of Rorty's views on traditional epistemology and hermeneutics and Goodman's pluralism with a section depicting some of the philosophical literature on metaphor. I have done this for three major reasons. The first is that I believe metaphor can be seen as playing a critical role in developing what Rorty has called 'edifying' philosophy - thought which breaks out of the confines of normal discourse and provides us with new, perhaps liberating, ways of describing ourselves and approaching the world. The second reason is that it is invoked by Goodman, in a similar respect, as constitutive of one of the plethora of 'ways of worldmaking' upon which his philosophical views hinge. The final reason for considering such literature, and most important for our purposes, is that metaphor is just beginning to be seen as an important subject matter by philosophers of the social sciences in general, and by political theorists in particular.

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[5] What is being designated as Continental thought here is, of course, a very diffuse entity. Included herein is the philosophical tradition of Kant as it is reflected by German Idealism and crystallized in much of phenomenology, existentialism, and contemporary hermeneutics. Systematic attempts (which also often have their roots in Kantian distinctions) to justify various mandates of empiricism, rationalism, and pragmatism, often via the establishment of truth-conditions, I have referred to in places as 'analytic' philosophy. For our purposes here, however, the designation 'Anglo-American' is also appropriate. There can be no doubt that within a decade or so these dichotomies, as well as the reasons for establishing them, will become a very important subject of cultural studies.

After our presentation of Post-Empiricism and non-foundationalist epistemology we will move on in chapter five to consider the kind of support that those social and political thinkers in general, who hold anti-scientific views and those who advocate an 'interpretational' social science believe they have forthcoming from what they tend to generically construe as this 'alternative' philosophy of science. In this chapter we will assess the validity of their various claims and attempt to show how such support, if it is indeed valid, can be further enhancing and/or dangerous for the social sciences. Departing from custom somewhat I will not consider only what the proponents of post-empiricism have to say specifically about the social sciences. This is solely due to the fact that I believe the relevant literature reveals that the influence that post-empiricism has acheived in the social sciences is not the result of what it has to say directly about the social science, but rather is due to its attack on the positivist construal of science.

This latter approach on my part will also prove structurally relevant to the rest of the thesis, for in chapter six a critique of what much of post-empiricism says about <u>science</u> and <u>epistemology</u> will be presented. These criticisms will be largely constitutive of that philosophy of science prominently known as Scientific Realism, which, quite unbenounced to many philosophers of the social sciences, is beginning to enjoy an increasingly larger philosophical audience. Since those philosophers of science who call themselves scientific realists are a varied lot indeed the criticism of post-empiricism that will be presented will often be of an equally varied nature. Nevertheless, the image of science that this chapter will leave on the reader is that which I consider the result of a thoroughgoing realist construal of things. The major import of scien-

tific realism for this particular thesis will be its attack on the sentential epistemologies of both positivism and post-empiricism; i.e., epistemologies that consider our knowledge of the world to be propositional in nature. This sixth chapter, therefore, in calling into question the importance that post-empiricism assigns to language in our understanding of the world also calls into question those philosophies of the social sciences that rely on developments within post-empiricism for their theoretical sustenance, and which, in turn, assign a corresponding importance to language.

In our seventh and final chapter I will also attempt, with the resources gained from our presentation of scientific realism, to assess the anti-scientistic arguments from our first chapter and the role that interpretational philosophy of the social sciences might assume if social scientists began to perceive scientific realism as the 'received' philosophy of science. I will also speculate on the kind of social and political theory that a thorough-going scientific realism (evolutionary naturalistic realism) can be seen as sponsoring, as well as the benefits that can accrue to the former as a result of heeding the mandates of the latter.

CONTENTS

Chapter I

INDICTING SCIENTISM

The claim that the philosophical enterprise has become distorted is certainly not historically unique. Early Christian theologians indicted Aristotelianism, Nietzsche indicted Platonism, and Kierkegaard indicted Hegelianism for alleged distortions. Marx indicted philosophy generally for remaining interpretational, and thereby serving the interests of the ruling socio-economic class, and Comte indicted much of it for encroaching on the more progressive stages of history. The twentieth century itself has seen philosophy indicted for being emotivist and Romantic (by positivism); for perpetuating Descartes', Locke's, and Kant's 'Myth of the Mind Apart as Mirror' (by Rorty); and for continuing to make ill-fated attempts to move beyond Marxism (by Sartre). Why is it, one might ask, that the indictment of much of contemporary philosophy launched by hermeneutics and scores of other intellectual streams, for paving the way for the invasion of scientism in all spheres of politics, society, and culture, should be given extra consideration than the aforementioned indictments?

This indictment is deserving of critical examination for at least three readily apparent reasons. The first reason is that several anti-scientism arguments are motivated by a general attack on the whole notion of 'modernity' - or rather, the entire scientific-technological world as it is presently understood. Such arguments, especially as ad-

vanced by citizens of the 'Western' world, are, therefore, necessarily possessed of a political component - for they call into question a very predominant element of our everyday life. I would even go so far as to say that anti-scientism arguments represent a (not so subtle) form of political dissent. In their various efforts to criticize a particular 'world-view', they are the twentieth century's equivalent of the arguments that were directed at the Church during the Reformation.[1]

A second, and correlative, reason for considering a variety of anti-scientism arguments is that many of them are akin in 'spirit' to the multitude of 'BEWARE SCIENCE' and 'BEWARE TECHNOLOGY' books that grace the racks in our supermarkets and selves in our bookstores. Via their crude distillation by those desirous of a 'mass' market, such argumentation is capable of receiving a not so insubstanial amount of 'wide-appeal'. Here again, philosophical-cum-sociological anti-scientisms are necessarily political, and hence, worthy of examination. A final reason, and perhaps most important for our purposes, is that these arguments attempt to question, beyond that attempted by the 'critics of positivism', the motivating factors and feasibility of predicting and explaining the behaviour (and thoughts) of the human animal. By criticizing the validity and applicability of the resources relied upon by both government and industry, such criticisms attempt to expose what is seen as the unjustified value-hegemony operative in educational policy and the education process.

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[1] Whether they are as powerful or as valid will be one of the issues we will consider in the final chapter.

I would be very ill at ease to draw a distinction between those people who, after giving careful (or not so careful) consideration to a phenomenon, are pessimists, optimists, or simply ambivalent. However, as a preliminary sketch of the matters at hand, I would feel safe in hypothesizing that several of the people who indict contemporary philosophy for being scientistic or, more generally speaking, who are opposed to the scientific study of the human being and their socio-political and cultural worlds, are people who have something negative and pessimistic to say about science.

1.1 GENERAL ANTI-SCIENCE AND ROMANTICISM

For obvious historical reasons, negative reactions towards science have been very prevalent in society at large over the last three hundred years. There has always been that group of people, whose arguments are wedded to fundamentalist religious convictions, who believe that science is the craftiest and most malevolent Mephistopheles - it has, in their view, brought the Faust out in all of us. Why have we not, they ask, listened to the Book of Timothy and realized the grave error in 'always learning and never knowing the truth'. For them, science is evil incarnate and a time and place is longed for where only the Bible is read.

For many of those who offer religious indictments of science, the relationship between science and religion is purely negative. To some extent this is easily understood, given the fact that the explanations of contemporary science clearly run counter to Western religious accounts of the world. Much of modern science rejects the Christian notion of a static physical universe as well as the notions of creation, Design, and

teleology. Even the Aristotelian 'great chain of being' with man at the apex finds no place in modern science; wherein the human being is included within nature and, correspondingly, denied any special attributes akin to soul. Even man qua man is dispensable in the light of contemporary evolutionary theory - at some point in time, so that theory goes, the species as we now understand it will be replaced by a more adaptable creature. On this interpretation, our moral and ethical principles are no more than elaborate instincts to survive. There are no miracles and no transcendental purpose and definitely no place of grace - we have no particular place to go. On this score, the various religious reactions to science can be well understood. Yet, contrary to the arguments of some, such understanding need not involve or imply sympathy.

It might be appropriate to note at this point that there has been, especially within the last couple of decades, numerous attempts to integrate, or at least establish conceptual parallels between, twentieth century science and various Eastern religions.[2] Those religions, for example Zen Buddhism, which place a greater emphasis on the facticity of the world, as opposed to the entities of creation, are alleged to be quite susceptible to such attempts.

It is often unclear, however, exactly what these people intend by their accounts. A variety of possible interpretations is indeed possible. One is that they are simply playing the role of psychotherapists - helping people with religious inclinations feel comfortable with the theoretical innovations of modern science. Another interpretation is

[2] See for example, Fritjof Capra, The Tao of Physics (London: Fontana, 1976) and Gary Zukav, The Dancing Wu Li Masters (New York: Bantam Books, 1979).

that they are implying that the history of science, in light of what science now provides us with, has been essentially unnecessary - the nature of the universe could just as easily have been learned at the feet of a guru, today or 5,000 years ago. On this interpretation, science would be viewed as only now catching up with that 'ancient wisdom'. Or alternatively, their accounts could be conceived as suggesting that ancient religion somehow required twentieth century science in order that it be made intellectually respectable. Whatever their intentions are, it is obvious that their prescriptions for education policy, whether we in the West could just as well be taught modern science or the Tao Te Ching, are equally unclear.

It must be remembered of course that the history of science reveals numerous instances where religious doctrines were invoked to substantiate scientific discoveries and, vice versa, where science was considered to be providing proof to a faith-laden exercise. Descartes' willingly suggested notion that God designed the evolutionary process itself, is perhaps the most renowned and sincere attempt to integrate the two 'world-views'. In fact, if the influence of Christianity on the species and the inability of the latter to escape the confines of the former has been as great as Nietzsche insists, then most of the history of Western science, indeed, Western civilization, has been an attempt at such a reconciliation.

Apart from the negative reaction to science precipitated on a large social scale by those with religious pretensions, there are negative reactions fueled by a general resistance to change. Some people simply want out. Be they 'noble savages' or Solzhenitsyns of the mass, and

whether they long for a peak in the Himalayas or some mythical golden age of the past, their views on the twentieth century are equally clear. For them, science is more or less isomorphic with technology, and the less technology the better.

In fact, the identification of science with technology fuels much of this century's negative reaction to the former - consult the audiences of Jacques Ellul, Lewis Mumford, Rene Dubos, Charles Reich, and Theodore Roszak. Technology, for them, has made us a cog in a wheel that rolls nowhere, it has destroyed our 'freedom', and reduced us to automata without independent thoughts. It has overgrown its usefulness (which was apparently providing us with bows and arrows or metal pots or paper or bicycles or ...) and has taken us away from our original 'nature' (which, for some, is lying beside a stream or building log cabins). For people of this ilk, technology is a force unto itself, often equipped with intentions and other personified capacities. It has killed millions of us in wars, maimed thousands in industrial accidents, and tragically terminated any further desire to 'Fly United'. It has made our food taste like petroleum products, our bodies smell like French whores, and lakes and streams look like....well, technology simply ruins our lives. And so the story goes. But remain it does.

In addition to the back-to-the-past movement which has been sympathetic to the ecological appeal of the anti-technologists, there are several people in our society moved by a variety of corresponding existential themes. These criticisms emphasize what are considered to be the negative psychological and spiritual effects of technology. Loneliness, alienation, paranoia, emptiness, lack of purpose, containment, et cet-

era; all have been attributed to life in the modern-technological world. Feeling a lack of power? The hegemony of technocracy is to blame. Unable to establish a meaningful relationship with your co-worker and grocery store clerk? The bureaucratic rationalization of intimacy is responsible. Feel like a number? Walk aimlessly through large retail complexes buying products from companies only known by their acronyms? The one-dimensionality of public life in the technological world is the cause. Serious and sad problems no doubt; but the answers? - mere platitudes from the anti-technologists.

In arguments of this sort, the parallels to the Romantic Movement and the Rousseaunian equation of vice with science and technology is readably discernible. And just as several Romantics argued that the rejection (or mere questioning) of classical morals and virtue necessarily leads to the barbarism of Sade and the nihilism of Nietzsche,[3] so too, the argument goes, will the twentieth century's infatuation with science and technology, unless reversed, lead to the destruction of the human species in global warfare.[4]

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[3] For a recent interpretation of the options that a 'failed' Enlightment project provides us with, see: Alasdair MacIntyre, After Virtue: A Study in Moral Theory (Notre Dame, Indiana: University of Notre Dame Press, 1981). It appears, however, that MacIntrye also considers the options to be either a return to classical virtues or Nietzschean nihilism.

[4] That the so-called barbarism of Sade and the nihilism of Nietzsche are often equated with the nature of scientific thought and its rejection of non-instinctual morals can be seen very prominently in the writings of many twentieth century authors. Max Horkheimer and Theodore Adorno, in a book wherein Sade and Nietzsche are considered to be 'true to the heart' positivists, provide sustenance to the Apocalyptic visions that science and technology conjure up in some people's minds with their claim that "science in general relates to nature and man only as the insurance company relates to life and death. Whoever dies is unimportant: it is a question of ratio between accidents and the company's liabilities". For a look at a unique, perhaps obscure, form of

Also akin to the Romantic's distrust of the ability of the 'rational intellect' to reveal profound truths and their corresponding faith in the imagination, this brand of twentieth century anti-technologists often advocate what Marcuse has called the 'Great Refusal' - the escape into the 'aesthetic dimension'. Herein, it is argued, one experiences the "rebirth of the rebellious subjectivity"[5] and discovers the "power to break the monopoly of established reality".[6] Marcuse's words, it must be recalled, have been received by many of the so-called counter-culture as the insights of profound wisdom. Via his use of religious phraseology it became clear that a sanctuary was sought; for "in reality it is evil which triumphs, and there are only islands of good where one can find refuge for a brief time.[7] That the past was to provide the resources for this sanctuary was clearly reflected in his view that "the authentic utopia is grounded in recollection".[8]

So although it is always dangerous to try and establish precise parallels between one historical period and another, it is quite apparent that many of the anti-technologists today resort to the same variety of criticisms that the Romantics launched against the Enlightment.[9] What is

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twentieth century Romanticism see their co-authored, Dialectic of Enlightment (New York: The Continuum Publishing Company, 1972). The above quote is taken from page 84.

[5] Herbert Marcuse, The Aesthetic Dimension: Toward a Critique of Marxist Aesthetics (Boston: Beacon Press, 1978), p.7.

[6] Ibid., p.9.

[7] Ibid., p.47.

[8] Ibid., p.73.

[9] That this reveals that history repeats itself and substantiates that the Nietzschean attempt to move 'beyond Good and Evil' was ill-conceived from the outset, I will leave to more sympathetic and patient

odd amongst many anti-technologists is their integration of Romantic humanism with twentieth century Existentialism. For we do learn from much of twentieth century existentialism that the human being has no unalterable essence or that, if it does, it is simply the ability, that Camus' Sisyphus recognizes, to go on living in the face of life's central absurdity. Yet if we do accept that it is living itself in the face of the absurd that connotes our central humanity then we are forced to project the perverse optimism embedded in the Panglossian retort that 'this is the best of all possible worlds'. And recognizing that we will never achieve the Good, the True, or the Free, it is clear that it is a mere idiosyncrasy to argue that the 'islands of refuge' which science and technology provide us with are any less valuable than the islands which art and the imagination provide us with.

The Romantic reaction, however, does not want this kind of understanding. We are informed by one of its leading proponents, Theodore Roszak,[10] that the 'mode of objective consciousness' that science both produces and thrives on does not expand our original sense of wonder and, further, that "scientific culture makes no allowance for 'joy', since that is an experience of intensive personal involvement".[11] We

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folk to explore (ponder). What might be interesting to investigate, if a distinction can be drawn between 'imagination' and 'recollection', is the early Romantic emphasis of the former and twentieth century Romanticism's concern with the latter. Perhaps some twentieth century authors might argue that these bifurcations are due to the fact that scientism has so penetrated (destroyed) the productive imagination that our sense of possibility no longer extends into the future - that it can only find sustenance in the past.

[10] See Theodore Roszak, The Making of a Counter Culture (Garden City, N.Y.: Doubleday & Co., 1969).

[11] Ibid., p.229.

here him rhetorically ask, when contrasting the values of science with visionary powers, "what is the value of all the minor exactitudes of all the experts on earth".[12] For him there is obviously no value, for according to his interpretation science is no more than a series of 'depersonalized' experiments that "should work for anyone".[13] Yet when we probe who is the legitimate heir to the visionary experience that our culture subordinates and degrades and thereby "commits the sin of diminishing our existence"[14] we discover that it is someone akin to the ancient shaman. Indeed it is Roszak's view that "when we look more closely at the shaman, we discover that the contribution this exotic character has made to human culture is nearly inestimable"; he might, in fact, be the "culture hero par excellance".[15] And so it is with much of the 'counter-culture's' reaction to modern science and technology. We are initially told that "what is of supreme importance is that each of us become a person, a whole and integrated person"[16] and then we are told that there is a 'prototype' person who we can emulate in our attempts to become 'whole and integrated' - namely, someone akin to the Don Juan whom we hear about via Carlos Castaneda,[17] someone who will teach us the art of 'seeing', apprehending the world 'without interpretation' - 'pure wondering perception'.[18]

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[12] Ibid., p.237.

[13] Ibid., p.246.

[14] Ibid., p.234.

[15] Ibid., p.243.

[16] Ibid., p.235.

[17] See especially, Carlos Castaneda, The Teachings of Don Juan: A Yaqui Way of Knowledge (New York: Ballantine Books, 1968).

And so it is clear that twentieth century Romanticism enforces the same dichotomies that earlier Romanticism enforced - that between the figurative and the literal; the rational and the emotive; the demonstrative and the intuitive; et cetera. And the solution offered is more than often a 'journey to the east and beyond' - a journey to mysticism and the Perennial Philosophy,[19] a journey beyond the very dichotomies that engendered the Romantic reaction in the first place. Indeed, one could argue that mysticism emerges as the epistemology of Romanticism.

1.2 ANTI-SCIENCE AND ACADEME

The Romantic reaction to science and technology in the twentieth century has been manifest in a variety of sociological and philosophical treatises. Jacques Ellul's The Technological Society, although arguably not the work of a Romantic, certainly presents and further develops a majority of perceptions employed by twentieth century Romantics in attempting to substantiate their views. In an apparent moment of self-con-

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[18] For an introduction to the thought and perceptions of a variety of 'gurus' who helped shape the 'consciousness' of the sixties' counter culture see, Sam Keen, Voices and Visions (New York: Harper & Row Publishers, 1970). This book is a series of 'conversations' that Keen conducts with, amongst others, Norman Brown, Carlos Castaneda, Herbert Marcuse, Joseph Campbell, and John Lilly.

[19] Although the mystical thought that often accompanied the Romantic reaction in the fifties and sixties was certainly not of a uniform nature, there was, shall we say, an underlying 'spirit'. For a book which pays credence to the historical tradition of mysticism see, Aldous Huxley, The Perennial Philosophy (Cleveland and New York: The World Publishing Company, 1944). For a fusing of mysticism with Eastern religion (often encapsulated in the phraseology of 'cosmic consciousness'), one might consult the writings of Alan Watts and Richard Alpert (now 'prominently' known as Baba Ram Dass). See especially, Alan W. Watts, This Is It (New York: Collier Books, 1958) and Baba Ram Dass, Be Here Now (San Cristobal, New Mexico: Lama Foundation, 1971).

sciousness, Ellul insists that he is "neither by nature, nor doctrinally, a pessimist".[20] We are further informed that he has no "pessimistic prejudices". He also categorically states, in what may also be interpreted as an attempt to escape the wrath of opponents of Romanticism, that he makes "no reference to a past period of history in which men were allegedly free, happy and independent".[21] All that Ellul claims to do is describe the ills and misfortune of a civilization that is increasingly dominated by what he calls 'technique'.[22]

Ellul, in attempting to distinguish technique in the modern world from that of technique in the past, argues that in the former "technique is the totality of methods rationally arrived at and having absolute efficiency (for a given stage of development) in every field of human activity".[23] Throughout most of the book 'technique' could be substituted for 'rationalization' (in the sense in which Max Weber spoke of the increasing rationalization of Western society). Developing out of mechanics, indeed, beginning with the machine, technique, now autonomous, reigns supreme, governing everything including the machine. It has, insists Ellul, become the 'substance' of man.

Confident in rejecting the commonplace view that technique is an application of science, Ellul argues that, historically speaking, "technique preceded science; even primitive man was acquainted with certain

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[20] Jacques Ellul, The Technological Society (New York: Vintage Books, 1964), p.xxvii.

[21] Ibid., p.xxix.

[22] He does, however, argue that he is describing a 'development' (p.xxx) and indicating its 'probable evolution'.

[23] Ibid., p.xxv.

techniques",[24] and further, that "the first techniques of Hellenistic civilization were Oriental; they were not derived from Greek science. Thus, historically speaking, the relationship between science and technique ought to be reversed".[25] However, Ellul argues, technique needed science in order to reach full maturity - it had to 'wait' before it could 'develop', 'progress', and extend itself. Now in the twentieth century we can "no longer conceive of science without its technical outcome....science has become an instrument of technique".[26] In fact, Ellul's claim is that almost everything practiced and thought in the technological world is an instrument of technique.

Indeed, his book is a plethora of examples of the areas of life that technique rules. We are introduced to the accounting technique, the judicial technique, the music technique, the political doctrine technique, the advertising technique, the educational technique, the human relations technique, the public opinion technique, and the vocational guidance technique. We hear of the psychological technique and the amusement technique, and are especially warned of the economic and financial technique. We also learn that time is modified by technique and that morality is not observed by it. And at each stage of his argument one ponders how radically different his notion of technique is from that of rationalization per se.

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[24] Ibid., p.7.

[25] Ibid., p.7.

[26] Ibid., pp.9-10.

Such is Ellul's view of the modern world as governed by technique. Efficiency is the end of technique; total integration of every facet of existence its 'object'. And yet Ellul informs us that there is no pessimism or fatalism involved in his thesis. Commenting on his work, he notes: "Fatalism is not involved; it is rather a question of probability, and I have indicated what I think to be its most likely development".[27] This is clearly not the case. Ellul comes close to epitomizing the standard pessimistic outlook on science, technology, and the twentieth century. His conclusion is both implicit and explicit throughout the entire book - disclaimers in the preface should not convince the reader otherwise. For less than one third of the way into the book Ellul definitively states that "every component of civilization is subject to the law that technique is itself civilization. Civilization no longer exists of itself. Every activity - intellectual, artistic, moral - is only part of technique.... The victory of technique has already been secured. It is too late to set limits to it or to put it in doubt".[28]

Contradictions of this sort abound in the work of Ellul. Consider the following paragraph:

> A further mistake of Nazism was to dress its techniques in a demonic mask designed to inspire terror. Because the use of terror is also technique, the Nazis made it an invariable accompaniment of all their other techniques, shocking the rest of the world by useless excess. We do better. We dress technique in the aseptic mask of the surgeon. Impassivity is an attribute of the new god, as it was an attribute of the old. The true face of modern technique is far more like the Deist's triangle than the grimacing mask of Siva.[29]

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[27] Ibid., p.xxx.

[28] Ibid., p.130.

[29] Ibid., pp.388-389.

And yet five pages later he remains confident in claiming that "in discussing the human effects of technique, I have made every effort to avoid passing favourable or unfavourable judgments and to shun journalistic commonplaces".[30]

Ellul's book, in fact, like the work of several other 'anti-technology sociologists' pivots upon such journalistic commonplaces. We are told by him that "men now live in conditions that are less than human"[31] and are asked to "consider our public transportation, in which man is less important than a parcel".[32] It is argued that "modern man can think only in terms of figures....he is reduced, in the process, to a near nullity"[33] and that "man has lost all contact with his natural framework... enclosed within his artificial creation, man finds that there is 'no exit'".[34] And what would come as a bit of a shock to most of us is Ellul's claim that "in our cities there is no more day or night or heat or cold".[35]

Like several other anti-scientism sociologists, Ellul lauds the virtues allegedly constitutive of Greek culture. He argues that "the Greeks could have deduced the technical consequences of their scientific activity. But they did not wish to."[36] On his account our civilization

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[30] Ibid., p.393.

[31] Ibid., p.4.

[32] Ibid., p.5.

[33] Ibid., p.302.

[34] Ibid., p.428.

[35] Ibid., p.429.

[36] Ibid., p.29.

is the victim of 'technique' because we lack the Greek virtue of 'self-control' and have allowed our needs to get the 'upper hand'. The Greek world, as the well-worn and presumptuous pronouncement goes, was a world of balance, harmony, and moderation. And in such a world "no one sought to apply scientific thought technically, because scientific thought corresponded to a conception of life, wisdom".[37]

Ellul's and Marcuse's thesis that technique has shaped the modern world is also reflected quite strongly in the work of Karl Jaspers.[38] In his Man in the Modern Age, Jaspers argues that technique has facilitated the creation of the 'masses' in all areas of life.[39] For him, as for Ortega y Gasset,[40] it is 'mass-life' which tends to destroy all that is valuable and honorable in life; it is epitomized in the positivism of the twentieth century. It is the latter which is "the attitude of mind characteristic of this world of advanced technique" wherein "the indi-

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[37] Ibid., p.28. Of course not all psychologizing sociologists writing in the twentieth century feel that we need to return to a Greek Way of Life in order to overcome the self-alienation which they argue is implicit in modern scientific knowledge and endeavors. David Riesmann, for example, in The Lonely Crowd: A Study of the Changing American Character (Garden City, N.Y.: Doubleday Anchor Books, 1953), p.232., argues that even the early readers of Scientific American were 'inner directed' - something, he implies, they are no longer. Such speculations, however, seem to indicate that Riesmann was cut from the same journalistic mold as Ellul. More optimistic authors, writing from a different, but perhaps equally obscure angle, argue that, via relativity and quantum theory, the twentieth century has seen the "cosmic web come alive". See Fritjof Capra, The Turning Point: Science, Society, and the Rising Culture (New York: Bantam Books, 1983), p.92.

[38] It is, as alluded to earlier, also similar in tone to the work of Lewis Mumford. For a brief introduction to Mumford's thought see his article, "Techniques and the Nature of Man", in Philosophy and Technology: Readings in the Philosophical Problems of Technology, ed. Carl Mitcham and Robert Mackey (New York: The Free Press, 1972), pp.77-85.

[39] Karl Jaspers, Man in the Modern Age, trans. Eden and Cedar Paul (Gar-

vidual is merged in the function. Being is objectified....[and] the individual consciousness is absorbed into the social".[41]

It is Jaspers' thesis that the so-called 'crisis of the sciences' is actually a crisis of the individual scientific workers who represent the 'scientific plebianism' engendered by the rise of 'mass-life'. No longer, he argues, are these workers inspired or motivated by a "genuine and absolute will to know";[42] for them, knowledge is valued only given its technical utility. And it is this emphasis on technical utility that is alleged to somehow make the science of the twentieth century different from the science of the past - for today "the natural sciences lack a comprehensive view...they lack the sentiment of a humanist culture".[43] Jasper's view is representative of the well-known thesis that contemporary science is in a state of crisis because it is no longer connected to a comprehensive and all-embracing philosophy. It is a thesis that is also reflected in the work of Charles Taylor, who argues that the important and ancient connection between understanding and 'attunement' has been broken by modern science. A fatalistic tone is also apparent in Taylor's view. For him, "science could only be carried on by a kind of ascesis, where we discipline ourselves to register the way things are without regard to the meanings they might have for us".[44]

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den City, N.Y.: Doubleday & Company, 1957).

[40] Jose Ortega y Gasset, The Revolt of the Masses (New York and London: W.W. Norton & Company, 1957).

[41] Karl Jaspers, Man in the Modern Age, p.47

[42] Ibid., p.149.

[43] Ibid., p.145.

[44] Charles Taylor, "Rationality", in Rationality and Relativism, ed.

The fatalistic tone is there in the work of Jaspers, just as it was there in the work of Ellul. Jaspers seems convinced that "technicisation is a path along which we have no choice but to advance".[45] He does, however, apparently feel that we can go some distance in restoring to the knowledge of the day the 'attunement' or 'agape' or 'wonder' ('thaumazein') that is alleged to have been a vital component in the science of the Greeks. This will come, he argues, if we take a Socratic turn and recognize that "selfhood is the supreme instrument of knowledge, an instrument which indeed supplies vision only according to the degree in which it takes cognizance of the world, but also insofar as it itself remains active".[46] 'Self-hood in knowledge' emerges, in the work of Jaspers, as the foundation par excellence of 'genuine knowledge' - a knowledge wherein utility is not accepted as the 'ultimate standard', where selfhood is reflected in the 'primary will to know' and knowledge is pursued for its own sake. Such is the essence of Jaspers' 'existenz philosophy' - self-awareness as the outcome of knowledge pursued for its own sake, as the outcome of 'genuine knowledge' which is the foundation for all utilitarian knowledge. And it is via Jaspers' claim that "if rationally cogent knowledge be rendered absolute, all being is contemplated as lying within the realm of technique"[47] that one can see that rationality per se is being equated with utilitarian knowledge which, in turn, is being equated with technique.

Martin Hollis and Steven Lukes (Oxford: Basil Blackwell, 1982), p.97.

[45] Karl Jaspers, Man in the Modern Age, p.200.

[46] Ibid., p.201.

[47] Ibid.

These views on 'technique', as well as the claim that the Greek notions of wisdom and self-knowledge must be re-emphasized in the modern world if we are to escape the dangers implicit in science, take a more sophisticated turn in the work of Hans-Georg Gadamer. The sophistication, however, does not preclude one from dechipering strong parallels to the thought of those writers we have already discussed.

Like Jaspers, Gadamer would like to see both a return to the Socratic conception of philosophy as self-knowledge and a re-emphasis of the wonder and admiration allegedly constitutive of all Greek theoretical endeavors. For Gadamer, the 'new empirical science' which offers no comprehensive knowledge but instead, "a never-ending process of inquiry into nature",[48] is unable to provide a 'unified image of the world'. What we receive from it is a 'partial-mastery' over nature that, because it provides us with a false sense of achievement, leads to an increase in domination and dependence and threatens our freedom. In Gadamer's opinion, this loss of freedom is not primarily political (although it can become so) but rather the result of "everything that has taken us in unquestionably".[49]

In light of his belief that only 'self-knowledge' can preserve this freedom, Gadamer suggests that we must "join together science and man's knowledge of himself in order to achieve a new self-understanding of humanity".[50] Hermeneutics, he argues, will serve this purpose of self-un-

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[48] Hans-Georg Gadamer, Reason in the Age of Science, trans. Frederick G. Lawrence (Cambridge, Mass.: MIT Press, 1981), p.145.

[49] Ibid., p.149.

[50] Ibid.

derstanding by bringing together the knowledge that 'streams toward us' out of the historical tradition and all that which is strange and 'alien'. What he is inevitably saying then is that only hermeneutics, by 'de-mythologizing' the feigned omnipotence of science, can provide us with the resources necessary for achieving self-mastery vis a vis the knowledge and technique indicative of a reigning scientism.

Although Gadamer believes that not even a hermeneutic philosophy can provide us with a totally unified image of the world, he does argue that it is a 'natural inclination' that we must not forgo. For Gadamer, since hermeneutics is nourished from other sources than those of the methods of the natural sciences it provides us with an 'orientation to the world' that is necessary in restoring the subjective and personal component to decision-making; i.e., in restoring that component required to preclude all possibility of decisions being made 'objectively by science'.[51] Indeed, it is Gadamer's belief that only with hermeneutics' dialectical employment in the service and creation of self-understanding can we counter the fact that "the authority of science and of experts adds up to relieving the responsibility that should be borne by the one acting".[52]

The belief that the rise of scientific knowledge dissolves the responsible actor from the stage of history was also held by Hannah Arendt - a writer whose work has received some prominence recently in political

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[51] Even in the work of Gadamer, therefore, we encounter the implicit view that science is somehow an autonomous creature that can become severed from the activity of that entity from which it receives its initial sustenance.

[52] Ibid., p.147.

theory circles. One is also able to discern in the thought of Arendt some major similarities to the anti-scientism prevalent in the critique of technique that is found in the work of Ellul, Mumford, Marcuse, and Jaspers. Representative of an anti-scientism that is engendered by more orthodox phenomenological concerns, Arendt's thesis is that the development of science is governed by cognition and knowledge's search for truth and progressively undermines thinking's quest for meaning.

Much of her thesis is determined by responses to an obvious positivistic interpretation of the sciences. This is indicated by her view that "what science and the quest for knowledge are after is irrefutable truth, that is, propositions human beings are not free to reject - they are compelling. They are of two kinds, as we have known since Leibniz: truths of reasoning and truths of fact".[53] Nevertheless, regardless of the particular image of science she is responding to, her indictment of science for ignoring the 'intangibles' which thinking provides us with is also due to the fact that she considers such an avoidance to have some very clear and negative political consequences.

For Arendt, much of the contemporary scientism in the social sciences and philosophy can be traced back to the Hegelian ontological identification of matter and idea. It was with Hegel that the goal of the philosopher was interpreted to be "to eliminate the contingent, and all particulars, everything that exists, are contingent by definition".[54] Obviously siding with Heraclitus against Parmenides, Arendt argues that

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[53] Hannah Arendt, Thinking: The Life of the Mind, Volume One (New York and London: Harcourt Brace Jovanovich, 1978), p.59.

[54] Ibid., p.91.

this 'escape into the whole' is like a cancer, initially "meanings are degraded into ends" and finally even all ends "are degraded into means"[55] It is the process, the movement as a whole that thereby gains significance. She contends that "what the concept of process implies is that the concrete and the general, the single thing or event and the universal meaning have parted company".[56]

The political ramifications of this, argues Arendt, is that distinctiveness, a prerequisite for the human condition of plurality is compromised for the sake of continuity, consistency, and homogeneity. Great words and deeds - the subject matter of history for Arendt - therefore lose their specificity. Most damaging of all, however, is that in process construction, natality, the most important condition of humanity, is denied. And, as Arendt's argument goes, it is action that is "the human answer to the condition of natality".[57] To act is to begin something new, "to interrupt what would otherwise have proceeded automatically".[58] For Arendt, the very capacity for beginning is rooted in natality; "men are equipped for the logically paradoxical task of making a new beginning because they themselves are new beginnings and hence beginners".[59]

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[55] Hannah Arendt, Between Past and Future (New York: Penguin Books, 1980), p.79.

[56] Ibid., p.64.

[57] Hannah Arendt, On Revolution (New York: Penguin Books, 1981), p.179.

[58] Hannah Arendt, Crisis of the Republic (New York and London: Harcourt Brace Jovanovich, 1972), p.133.

[59] Hannah Arendt, On Revolution p.211.

Arendt argues that in attempting to discern a process in all that is the case, we forget that the rectilinear course of an individual's life cuts through the circular movement of biological life. In fact, it is her view that "only because we are capable of acting, of starting processes of our own, can we conceive of both nature and history as starting systems of processes".[60] This very capacity to start new processes has, however, receded from the public realm and has become potentially dangerous since it is no longer controlled by the common world of appearances. The capacity for action, Arendt argues, is now used to replicate natural processes and it is our success in such ventures that leads us to believe that history and/or society are subject to the same logical laws.

The ills of this century, in Arendt's analysis, can largely be attributed to our susceptibility to the consistency and continuity implicit in processes. The increase in the bureaucratic rationalization of society and its homogenization of subjectivity; the prevalence of the labour activity, its denial of individuality and inherent repetitiveness and futility, "a futility bound up in the transiency and ephemerality inherent in the very biological processes of life itself",[61] the loneliness of self-alienation; and our belief that the realm of freedom can arise out of the realm of necessity - all of this Arendt in one way or another attributes to our tendency to reconstruct the world in terms of processes.

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[60] Hannah Arendt, The Human Condition (Chicago: The University of Chicago Press, 1958), p.232.

[61] Martin Levin, "On Animal Laborans and Homo Politicus in Hannah Arendt", Political Theory 7 (1979):526.

It is why Arendt argues that 'strict logicality' - what she considers to be the hallmark of modern political theory - is always "liable to be torn apart by events".[62] Within this method, "everything distinct disappears and everything that is new and shocking is (not explained but) explained away through drawing some analogies or reducing it to a previously known chain of causes and influences".[63] But since, for Arendt, freedom is the 'raison d'etre of politics' and acting, the meaning of all actions and events will transcend whatever in the eyes of process reconstruction necessitated its occurrence.

Arendt actually traces the inclination to bring certainty into the political sphere back to the Platonic rejection of Socratic persuasion and its substitution by the 'compulsion of self-evident truth'. Indicative of this, she argues, is Plato's allegory of the philosopher who returns to the cave of human affairs and the resulting division between 'knowing' and 'doing', 'master' and 'slave' that is created when he is frustrated in his attempts to realize his ideals. The ideals of the philosopher became measures and the notion of an 'expert' entered the public realm; justification was required and therefore the philosopher's love of beauty was transformed by Plato into a love of the good (in Arendt's interpretation into a love of 'fitness', or applicability).

Although the knowing/doing dichotomy with its implicit means/ends implication is prevalent in the fabrication process, Arendt alleges it is in direct contradiction to the contingency that arises in the human ac-

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[62] Margaret Canovan, "The Contradictions of Hannah Arendt's Political Thought", Political Theory 6 (1978):12.

[63] Hannah Arendt, "Rejoiner to Eric Voegelin's Review of the Origins of Totalitarianism The Review of Politics 15 (1953):83.

tivity of action. The ensuing utilitarian mentality inherently rejects the 'who' in any individual actor by denying "that who somebody is transcends in greatness and importance anything he can do".[64]

'Materialistic' and positive political theory, Arendt argues, in its denial of mens' 'disclosures' through speech and action, simply continues the long tradition of slowly eradicating the human condition of plurality indicative of the fabrication mentality. In trying to identify and gain control of the 'invisible hand' that enables individuals to act in unison (which is simply the mutuality and reciprocity that is indicative of the power thereby generated) modern man has transformed the equality of recognition into the equality of conformism and action in the realm of freedom into behaviour in the realm of necessity. Explaining what is necessitated within the process has replaced understanding the contingency born of the act of natality; predicting what will happen in the processes that have been reduced to automata has replaced realizing the various meanings (born of the human condition of plurality) of what has happened; and, most damaging of all in Arendt's view, administration, by denying the 'he' who is forced to struggle 'between past and future', has gone far indeed in removing from the realm of history and human affairs its lifeblood - the actor.

Arendt's concern is quite clear: just as natural science has been since the seventeenth century, the social sciences have now become preoccuppied with processes and how to control them. A greater fear of hers is also prevalent; namely, that just as technology now tries and succeeds in replicating natural processes, men have it in their power to

[64] Hannah Arendt, The Human Condition, p.211.

demonstrate an 'historical process' (regardless of its fictional content) by proceeding to replicate it as well. Total explanation and prediction via general laws, which Arendt believes to be the aim of 'positive' social sciences, can only be realized, however, within a framework of complete conditioning. The dream of the social technologists will be fulfilled with the eradication of action and its 'threefold frustration': "the unpredictability of its outcome, the irreversibility of the process, and the anonymity of its authors".[65]

It is Arendt's conviction "that the modern theories of behaviorism.....could become true"[66] that leads her to place such great emphasis on the capacity of thinking and the imagination to help 'save the past' and provide the faculty of speech with the possibility of restoring lost meaning. This must not be underemphasized, for to "forget the meaning of the past means no less than to forget what we are" and "without a sense of ourselves, we fall easy prey to the efforts of behavioural scientists and systems analysts to remake us in the image of their truly abstract and meaningless theories".[67] Process fabrication, argues Arendt, must be avoided at all costs, lest its implicit denial of contingency and the human fact of natality leads to a politics where the denial of freedom has destroyed the public space of appearances where all meaning inevitably has its roots.

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[65] Ibid., p.220.

[66] Ibid., p.322.

[67] Stan Spyros Draenos, "Thinking Without a Ground: Hannah Arendt and the Contemporary Situation of Understanding", in Hannah Arendt: The Recovery of the Public World, ed. M. Hill (New York: St. Martin's Press, 1979), p.215.

Indeed, a thesis that permeates Arendt's work throughout is that "the notion of history as an inevitable process contributed materially to the mentality of the totalitarian leaders".[68] In light of the fact that Arendt's equation of process fabrication, 'strict logicality', and deductive theory is veritably unconditional, it is argued herein, as it is elsewhere, that "she all but explicitly assimilates the totalitarian mentality and the scientific mentality".[69] At one point, in a passing note to Eric Voegelin's article, "The Origins of Scienticisms", Arendt actually fulfills the criterion of explicitness: "totalitarianism appears to be only the last stage in a process during which science (has become) an idol that will magically cure the evils of existence and transform the nature of man".[70]

It is at this point that Arendt's entire thesis begins to come together. It is the intellect's 'quest for truth' that is inevitably taking the brunt of the argument that Arendt is launching. Due to the fact that deduction is an instrument of cognition, it is easy to see why Arendt considers it able to coexist alongside totalitarian practices. For her, it is a non-reflexive act of the mind and therefore can survive alongside (nay, is one of the conditions for) loneliness and the terror that thrives therein. Since its premises preclude discussion because they are 'self-evident', the world itself is no longer needed as a mediator between men. And with the decline of the public space that exists

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[68] Judith N. Shklar, "Rethinking the Past", Social Research 44 (1977):87.

[69] George Kateb, "Freedom and Worldliness in the Thought of Hannah Arendt", Political Theory 5 (1977):165.

[70] Hannah Arendt, The Origins of Totalitarianism (New York and London: Harcourt Brace Jovanovich, 1973), p.346.

between free men, also destroyed is the activity of speech and its 'gift' to the world - the metaphor - that is so important in "bridging the abyss between inward and invisible mental activities and the world of appearances".[71] The banishment of the actor from the public realm and of the 'self' from each individual's inner dialogue is the inevitable result. This entire development, hypothesizes Arendt, can result from the mind's submission to a process that begins with the 'compulsion of truth' and is fueled by the 'tyranny of logic'.

Only the faculty of reason, with its concern for the 'unknowable' and trust in the imagination can, by revealing its activity of thought in its search for meaning, help the man who has succumbed to the process mentality. Thinking saves men from the isolation of process mentality because it "does not ask what something is or whether or not it exists at all - its existence is always taken for granted - but what it means for it to be".[72]

Arendt's invocation of 'thinking' as an activity which can overcome the sterility and homogenizing effect of the intellect's quest for truth is very reminescent of the thought of Martin Heidegger. In Heidegger's view, "thinking and speaking are not exhausted by theoretical and natural-scientific representation and statement".[73] There is, Heidegger argues, thinking that is 'non-objectifying' - thinking that is relied upon in our everyday experience of things; thinking which is revealed in the

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[71] Hannah Arendt, Thinking, p.105.

[72] Ibid., p.57.

[73] Martin Heidegger, The Piety of Thinking, trans. James G. Hart and John C. Maraldo (Bloomington and London: Indiana University Press, 1976), p.27.

consideration (or 'enthrallment') of the eidetic elements of 'ideal objects'[74] which, due to their lack of spatial-temporal properties cannot be 'placed-over-against' a representational field susceptible to causal explication.

For Heidegger, humans are an entity "whose being is founded upon thinking".[75] Based upon our non-prejudiced confrontation with the world, thinking does not alter that which is revealed and can therefore bring to bear the 'original presence' of such revealing. Through thinking we are able to dwell-in-the-gathering of that which is brought forth by Being.[76] To countenance only the 'objectifying' role that thinking can be put to is actually, therefore, to countenance that which Thinking in its totality is not. The reduction of Thinking to objectifying thought is inevitably a reduction of what we are, it is, in Heidegger's view, a diminishing of our very existence - our very Being.

It is such a philosophical perspective that leads Heidegger to warn us that "today there is a growing danger that the scientific-technological manner of thinking will spread to all realms of life[77] and that language will become "deformed into an instrument of reportage and calculable information".[78] In short, it is Heidegger's claim that the rise

[74] Broadly construed, these constitute, for Heidegger, a very diverse field: from the 'categorical imperative', to the quality of 'redness', to the beauty of the Greek gods which 'show forth' through statues and paintings.

[75] Ibid., p.53.

[76] In Heidegger's philosophy, it is at this point that his views on Thinking can be seen as merging with his views on 'poetic dwelling'.

[77] Ibid., pp.28-29.

[78] Ibid., p.29.

of 'scientific thinking' will necessarily lead to the obviation of the 'hiddeness' of Being that provides the 'gathering' for all that is revealed. Language in its scientific manifestation will, therefore, be precluded from expressing that founding matrix of the world which eludes calculable representation and within which we can only poetically dwell. The omnipresence of scientific thought will indicate the diminishment of total Being. Within a world entirely represented by technique and defined by calculating language one would not find the human being per se.

It might also be noted at this point that Heidegger construes science as 'theoretical technology' and, like the Romantics, draws a distinction between traditional and modern technology. It is his argument that the meaning of technology (technikon) is rooted in the Greek techne, "the name not only for the activities and skills of the craftsman, but also for the arts of the mind and the fine arts".[79] For Heidegger, therefore, technology is akin to something poetic, it is a mode of 'bringing-forth'; and it 'brings forth' not via manufacturing, but via 'revealing'. It is in this sense, argues Heidegger, that technology is no means. It comes to presence where 'unconcealment' - truth - comes to pass. Heidegger suggests that technology, as techne, "reveals whatever does not bring itself forth and does not yet lie here before us, whatever can look and turn out now one way and now another".[80] Although Heidegger argues that this central component of technology is constitutive of both Greek thought and the technique of the handcraftsman, he

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[79] Martin Heidegger, The Question Concerning Technology and Other Essays, trans. William Lovitt (New York: Garland Publishing, 1977), p.13.

[80] Ibid.

does believe that it is a most inappropriate characterization of modern technology, wherein processes are neither dependent upon the earth, nor in harmony with it.

We have seen that the extent to which Arendt's indictment of science for having dangerous political consequences inevitably rests on her broader philosophical views on the nature of Thinking can be made that much clearer by examining the influence that Heidegger's brand of phenomenology had on the development of her thought. Several other politically inspired indictments of science and the proposed scientific study of the human animal also rest upon broader philosophical perspectives. Most predominent among these is those reactions which are part and parcel of an explicit Marxist interpretation of history and society. Many of these latter critics advocate making "a historical-materialist critique of the natural sciences and their methods, i.e., revealing them as products of capitalist development".[81] This is the tradition, exemplified by Georg Lukacs and others, which views the development of technique and science as both rooted in and <u>part of</u> the social relations between men in the process of production. There is, of course, another prominent tradition, exemplified by Engels and prevalent in the work of Bukharin and Louis Althusser,[82] that argues that 'in the last instance' the development of science and technique determines the social relations of production. This difference in interpretation has clearly fueled much

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[81] See Georg Lukacs, "Technology and Social Relations", in <u>Marxism and Human Liberation</u>, ed. E. San Juan, Jr. (New York: Delta Books, 1973), pp.59-60.

[82] For a look at how Althusser construes the 'epistemological break' that separates the Hegelianism of the 'early Marx' from the scientific attitude of the 'mature Marx' see, Louis Althusser, <u>For Marx</u>, trans. Ben Brewster (London: Verso Press, 1979).

of the debate in twentieth century Marxism; debates over whether or not technique should be identified with the forces of production; whether the economic base determines the superstructural components or whether there is a dialectical relationship between them; et cetera.

Any look at the literature will reveal that the latter interpretation (the one that stems from Engels) tends not to be as critical of the enterprise of science as the latter. This can largely be seen as a result of Engel's desire to conjoin his thesis that "the origin and development of the sciences have been determined by production",[83] with a positive portrayal of the development of tools and evolutionary theory in general. In fact, what was shocking to several Marxists at the time was Engel's claim that one day both man and the solar system would cease to exist, and his belief that apart from dialectic thought, which evolution had ordained only on humans (for it 'presupposes the investigation of the nature of concepts'), "all activity of the understanding we have in common with animals".[84]

However, in attempting to seriously countenance the views of modern science replete with its rejection of a teleological component operative in history, Engel's ability was largely restricted by his broader philosophical perspective. His writings are full of unfounded hypotheses on 'prehistoric times'[85] as well as the standard, yet didactic, claim that

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[83] Frederick Engels, Dialectics of Nature, trans. C. Dutt (New York: International Publishers, 1979), p.214.

[84] Ibid., p.203. Herein he categorically included induction, deduction, synthese, and analysis.

[85] See especially, Frederick Engels, The Origin of the Family, Private Property and the State, Fifth Impression (Moscow: Foreign Languages Publishing House, 1971).

"the revolution must come".[86] Bizarre conjectures, in fact, could be the only result of his attempt to remain true to Marxism whilst at the same time trying to pay heed to the views of modern science. At one point, for example, one can find in his writings the claim that nature does not move in a "perpetually recurring circle"[87] and at another the declaration that, due to the 'conservation of the attributes of matter', it is an 'iron necessity' that after the death of man the human mind, "somewhere else and at another time, will again be 'produced'.[88]

In short, one could say that the 'Scientific Marxism' which finds sustenance in Engels' writings is both a disgrace to science and to Marxism. Its ideological refinement at the hands of Stalin or its philosophical refinement at the hands of Althusser does not alter this, its basic fate.

The Marxist tradition, however, that stems from Lukacs' investigations into the Hegelian influence on the 'early Marx' tends to be more critical of science. Representative of this tradition is the 'New Left' brand of Marxism. The position of these critics of science is often crystallized in the allegation that the "'value-freedom' claimed by science is nothing but a churchy dogma whose function is to disquise the difference between the special interests of a dominant class and the

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[86] Frederick Engels, The Conditions of the Working Class in England, trans. W.O. Henderson and W.H. Chaloner (Oxford: Basil Blackwell, 1971), p.335.

[87] Frederick Engels, "Socialism: Utopian and Scientific", in Essential Works of Marxism, ed. Arthur P. Mendel (New York: Bantam Books, 1977), p.59.

[88] Frederick Engels, Dialectics of Nature, p.24.

general interests of mankind".[89] Although their efforts to spell out the 'general interests of mankind' are, as could have been predicted, largely unsuccessful - usually boiling down to the claim that control is a bad thing since the human being should be free - their views have received, and continue to receive, a relatively substantial acceptance.

Their attacks, often directed at the 'pretensions' of university academics, quite frequently are attempts to expose the social sciences as a dangerous kind of sorcery employed by the powers that be against a vulnerable, gullible, and otherwise unsuspecting population. In their co-authored book, Obsolete Communism: The Left-Wing Alternative, Gabriel and Daniel Cohn-Bendit, quoting sympathetically from a leaflet distributed during the general uprisings in Nanterre, France in March, 1968, argue the following:

> The transformation of academic sociology, a branch of philosophy, into an independent study with scientific pretensions, corresponds to the transformation of competitive capitalism into a state-controlled economy. From that point, the new social psychology has increasingly been used by the bourgeoisie to help rationalize society without jeopardizing either profits or stability.[90]

This view, that the scientific study of the human being (or attempts thereof) facilitates the rationalization of society and the rise of bureacracy, is very predominant in the views of those opposed to such studies. We have already seen that it is prevalent in the arguments of Arendt, Ellul, and Jaspers. Often, as is shown in the work of Ellul, the critique of scientific reason, via a critique of technique, leads to a

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[89] As announced in Carl Oglesby, "The Idea of the New Left", in The New Left Reader, ed Carl Oglesby (New York: Grove Press, 1969), p.9.

[90] Gabriel and Daniel Cohn-Bendit, Obsolete Communism: The Left-Wing Alternative, trans. Arnold Pomerans (London: Penquin Books, 1969), p.36.

general indictment of Keynesianism and the whole notion of administration as epitomized in the 'managerial revolution'.

Indeed, in the work of Herbert Marcuse, a prominent representative of the thought of the New Left, a critique of scientific rationality is conjoined with a critique of modern industrial society in general. In such a society, Marcuse argues, science has achieved the redefinition of values in terms of technical tasks, the population is controlled by the creation of false needs, and "the absorbent power of society depletes the artistic dimension by assimilating its antagonistic contents".[91] In short, "domination is transfigured into manipulation".[92]

We have already seen that Marcuse inevitably, in his advocation of the 'Great Refusal', opts for the Romantic alternative. What is also of major import in Marcuse's view, however, is his thesis that in a technological society founded on the epistemic mandates of science the power of negative thinking - the critical component of Reason - is diminished.

Now Marcuse has argued, in several of his writings, that "the rationality of pure science is value-free....it is 'neutral' to any extraneous values that may be imposed upon it".[93] For Marcuse, this constitutes the 'positive' character of Reason. However, he believes that it is dangerous to give free reign to this aspect precisely because scientific rationality "projects mere form....which can be bent to practically all

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[91] Herbert Marcuse, One Dimensional Man (London: Sphere Books, 1968), p.61.

[92] Ibid., p.41.

[93] Ibid., p.129.

ends".[94] The omnipresence of scientific rationality at all levels of social intercourse would thereby preclude one from being aware of the content of domination of which that rationality is put in service.

Employing Freudian terminology, Marcuse argues that what science and technology do to the libido is a microcosm of what they do to the relationship between the individual and society at large. By limiting the scope of sublimation, the technological reality provides a state of affairs in which, within the individual's 'mental apparatus', "the tension between that which is desired and that which is permitted seems considerably lowered, and the Reality Principle no longer seems to require a sweeping and painful transformation of instinctual needs".[95] It is Marcuse's belief that in such a society the world does not appear hostile and, as an inextricable result, the citizens do not even feel the need for critical thinking. This is precisely why, as we have earlier seen, Marcuse suggests that (since all 'normal' methods and routes of criticism actually assist in homogenizing the desires of citizens in a technocratic society) only the aesthetic dimension, with its critical representation of the world, can provide people with the necessary resources for critical thinking.

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[94] Ibid.

[95] Ibid., p.70. For an extended discussion of these and related themes one should consult, Herbert Marcuse, Eros and Civilization: A Philosophical Inquiry into Freud (Boston: Beacon Press, 1966). In this work, prefaced on the rallying cry that 'the fight for Eros is the political fight', we also see further developed the claim that "when logic then reduces the units of thought to signs and symbols, the laws of thought have finally become techniques of calculation and manipulation" (p.112).

Another representative of the school of Critical Theory from which Marcuse heralds, one who also indicts the role which scientific thinking comes to play in social organization, is Jurgen Habermas. A major component of Habermas' thought is his belief that psychoanalysis can provide several resources for the critical self-reflection which is so necessary in countering the logic of domination. He is, however, also renowed for his thesis that the reduction of epistemology to the philosophy of science which the twentieth century has witnessed[96] was epitomized by positivism's transference of the philosophical emphasis on the knowing subject to the object of study itself. Such a transference, argues Habermas, facilitated the equation of the methods of science with epistemology and the epistemic products of scientific investigation with knowledge per se. For Habermas, this manouever on the part of positivism has proved most unfortunate, since:

> Transcendental-logical investigations into the conditions of possible knowledge aimed as well at explicating the meaning of knowledge as such. Positivism cuts off this inquiry, which it conceives as having become meaningless in virtue of the fact of modern science.[97]

Habermas indicts positivism with having created a framework within which philosophy could avoid any inquiry into the process of self-relection of the knowing subject, thereby assisting in the reduction of the 'real world' to those facts and observations which can become objects of scientific investigation. It is Habermas' view that there are three 'modes of knowledge' that are founded on, and governed by, three very

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[96] For Habermas, the philosophy of history (in the Comtean sense) actually mediated the replacement of epistemology by the philosophy of science.

[97] Jurgen Habermas, Knowledge and Human Interests, trans. Jeremy J. Shapiro (Boston: Beacon Press, 1972), p.67.

different human interests. In his opinion, the "empirical-analytic sciences incorporate a technical interest"[98] that prevents it from responding to problems (like suffering and alienation) which can't be answered via its technological application.[99] Rather than being governed by the mandates of control and manipulation implicit in the technical interest, Habermas suggests that the social sciences should proceed with 'historical-hermeneutic' studies founded on the human interest of understanding and, in order to combat the logic of domination implicit in empirical-analytic studies, supplant such investigations with 'self-reflective critical' studies founded on the fundamental human interest of freedom.

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To end our discussion of various anti-scientism arguments with a look at the views of Habermas is, at this point, the result of a mere idiosyncracy on my part. For anyone familar with the relevant literature it would be quite clear that this presentation of some of the more generic assaults directed at the virtues of science and technology by political theorists, philosophers, sociologists, and 'writers with an audience' has only, in fact, revealed - to invoke the old saying - 'the tip of the iceberg'. To treat all of the assaults and indictments we have considered as a monolithic attack would not, however, be appropriate; for most critics subscribe to a few, are sympathetic to others, and reject others as outlandish. Nevertheless, it would not be difficult to describe the image of science that is conjured up when such literature is digested.

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[98] Ibid., p.308.

[99] See Jurgen Habermas, Theory and Practice (Boston: Beacon Press, 1973), p.264.

The underlying assumptions of these self proclaimed 'humanists' who wish to defend the species from the dangers of science, its manner of 'thinking', and its application, of course varies from critic to critic. The common denominator might be said to be that they consider as naive C.P. Snow's advocacy of attempts to integrate the 'two cultures'.[100] They see the inevitable outcome of Jacques Monod's desire to reshape culture in conformity to science as a social stability achieved at the cost of edifying cultural products.[101] For them, the real danger lies in the fact that the values, interests, and methods of the sciences will become so integrated into everyday life that even the possibility of self-reflective criticism will be precluded. And this, they argue, is the result of the fact that science only allows us to select from experienece those elements that we can control - the repetitive, the uniform, and the predictable.

The image one receives from a reading of the anti-scientistic literature is multifaceted indeed. Science is indicted for not giving enough prominence to the human being in its world-view; it attempts to analyze nature sub specie aeternitatis. For some critics, this attempt to reach an Archimedian point is doomed to failure, for others, it is only possible after all values have been eliminated and the human being - for all 'intents' and 'purposes' - has been annihilated. We are told that what will be left after science, in all its epistemic-cum-technical capacities, has become omnipresent will be a being that has been irreversibly

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[100] See C.P. Snow, The Two Cultures and the Scientific Revolution (New York: Cambridge University Press, 1959).

[101] For a look at Monod's position on these matters see Jacques Monod, Chance and Necessity (New York: Knppf Publishing, 1971).

'Procrusteanized'.

What we also hear from these critics is that scientific thinking necessarily brings about the annihiliation of the public sphere and paves the way for the incipience of a totalitarian order complete with all its 'Brave New World' horrors. And this is so, we are told, because the equation of knowledge with scientific explanation necessarily plays into the hands of those forces or people which seek to control.

The proponents of science , the echo resounds louder, have forgotten that science is dependent not only upon a Kantian categorical synthesis "but also upon an engaged understanding of the world, i.e., upon a cognitive interest that constitutes meaning".[102] Science, therefore, especially when it is extended to the study of social phenomena, does not provide a 'liveable' world-view - it leaves something out: God, Spirit, mind, subjectivity, values, 'Experience', intentionality, et cetera. It displaces Aristotle's four causes. It is dry, boring, number-oriented, and creates specialists who are unaware of the 'total context' of human experience. And these specialists, whether they work in the 'natural' or the 'social' sciences are naive - unaware of the relation between science and the state, unaware that science is a two-edged sword that can be used against the species.[103] If they are not naive then they are self-conscious sorcerers who wish to see the 'ivory towers' transformed into 'bureaucratic treadmills'.[104]

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[102] Karl-Otto Apel, Towards a Transformation of Philosophy, trans. Glyn Adey and David Frisby (London: Routledge & Kegan Paul, 1980), p.51.

[103] So argued, especially by Romantics, this claim does not pay credence to Nietzche's fundamental maxim: 'What does not kill one makes one stronger.'.

1.3 PITTING SCIENCE AGAINST SCIENCE

Up to this point we have conducted a general examination of the twentieth century Romantic reaction to science and technology and the views of those whose anti-scientism employs indepth political concerns. In chapter three we will consider a variety of positions in the philosophy of the social sciences which argue that the 'scientific study' of the human being and its cultural entities will inevitably 'leave something out'. Before we close this opening chapter, however, it might be appropriate to mention that there are a number of people who are opposed to the scientific study of the human being but who, ironically enough, prefer to go 'straight to science' for the evidence which they feel will support their varied theses. It is often the case that these people respect the utility of science as a human enterprise and consider it to be a largely autonomous enterprise with a respectable rational kernel. Indeed, the mere fact that they consider it as a source of conceptual support seems to (perhaps unwittingly) presuppose this outlook. These critics argue that science has internal limits, albeit, limits which have been revealed by scientific research. The most prominent examples that have been used in the twentieth century to substantiate this claim are ones drawn from what have been traditionally considered the most prestigious and precise cognitive endeavors; namely, theoretical physics and mathematics.

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[104] For this and related claims see, Stanislav Andreski, Social Sciences as Sorcery (New York: St. Martin's Press, 1972).

One of the arguments is that Werner Heisenberg's 'Indeterminacy Principle', and other developments in quantum mechanics, denies that pure objectivity and precise measurement are theoretically possible. In the same vein that the General Relativity Theory is often invoked to substantiate the argument that the Archimedian point, which the Laplacean scientist strives to reach, is a dangerous myth, indeterminacy is invoked to give credence to the argument that theoretical laws cannot specify deterministic or causal relations allegedly holding within its subject domain.

The indeterminacy relation (which holds that the position and momentum of sub-atomic particles cannot be simultaneously determined) is heralded as a result that will forever supplant both the world and hopes of the classical mechanistic (Cartesian, Galileon, Newtonian) tradition. The interpretation abided by is of the so-called 'Copenhagen School' wherein quantum theoretical laws are viewed as dependent on chance and, moreover, describe a knowable reality which is non-causal and indeterminate in nature. Now some commentators have extended this interpretation and argue that Heisenberg's 'Principle', _ipso facto_, precludes the possiblity of total explanation and prediction in the social sciences. Therefore, its proponents conclude, the scientific study of human beings and social relations is ill-conceived from the outset. Some even extend the argument slightly further and conclude that human beings are possessed of free will.[105]

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[105] For a look at the twists and turns that such argumentation takes see the several appropriate articles in Sidney Hook, ed., _Determinism and Freedom in the Age of Modern Science_ (New York: Collier Books, 1961).

Philosophers of the social sciences should be wary of this sort of argumentation. First of all, as noted, this position takes for granted the Copenhagen interpretation. It therefore overlooks, or fails to adequately consider, alternative perspectives, such as David Bohm's, which suggest that the indeterminacy principle only highlights temporary theoretical and instrumental limitations and that its results do not preclude the discovery of 'hidden variables' on a subquantum level which are governed by invariant laws.[106]

It is also the case that advocates of the Copenhagen interpretation, when they speak of indeterminacy, are referring to the behaviour of subatomic particles and seldom argue that the results necessarily have ramifications for macro-phenomena. In fact, those philosophers who do believe there are such ramifications presuppose a hard-core reductionism; i.e., that the laws of human behaviour can be reduced, via transformation laws, to the laws of the most advanced physics. It is quite ironic indeed, that, in arguing against scientistic tendencies in the social sciences, they employ both scientific findings and a hard-core positivistic interpretation of these findings.[107]

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[106] For a discussion of Bohm, see the introduction to Frederick Suppe, ed., The Structure of Scientific Theories, Second Edition (Urbana, Ill.: University of Illinois Press, 1977), pp.180-191. Herein one will find both a review of Bohm's interpretation and an illustration of the various counter-responses which the Copenhagen School can employ. Suppe's discussion also depicts Bohm's larger philosophical perspective; i.e., his belief that physical laws are applicable only within limited contexts and his assumption that there is a qualitative and quantitative infinity of nature. Also see Bohm's own article in Suppe's anthology, "Science as Perception-Communication", pp.374-391. For another interpretation of indeterminacy that runs counter to the Copenhagen's see, Louis De Broglie, "Philosophical Studies on Quantum Physics", in Matter and Light: The New Physics, trans. W. H. Johnston (New York: Dover Publications, 1939), pp.215-272.

What should also be noted at this point is that even if the indeterminacy laws are fundamentally correct and reductionism ultimately dictates scientific research, then there will be substantial chaos in most natural sciences (biochemistry, electro-thermodynamics, et cetera - sciences whose laws are not based on indeterminacy) long before scientifically-minded social scientists need to worry about anything.[108]

The second development often referred to by those opposed to the scientific study of human beings is used primarily in arguing against the use of mathematical models and formal deductive theory in the social sciences. This development, which has come to be widely known as Godel's Proof, was published by Kurt Godel in 1931 and was directed against Russell's and Whitehead's attempt, in their co-authored Principia Mathematica, to prove that all the axioms of arithmetic could be deduced from a small set of logical propositions. The gist of Godel's proof was that the axiomatic method is unable to encompass in a proof all true state-

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[107] For a different argument against those social scientists who believe that Heisenberg's Principle has something to say about humans see Mary Hesse, Revolutions and Reconstructions in the Philosophy of Science (Bloomington and London: Indiana University Press, 1980), pp.183-184.

[108] A remark of Heisenberg's is also appropriate here: "It is not surprising that our language should be incapable of describing the processes occuring within the atoms, for....it was invented to describe the experiences of daily life, and these consist only of processes involving exceedingly large numbers of atoms. Furthermore, it is very difficult to modify our language so that it will be able to describe these atomic processes, for words can only describe things of which we can form mental pictures, and this ability, too, is a result of daily experience"; see Werner Heisenberg, The Physical Principles of the Quantum Theory, trans. Carl Eckart and Frank C. Hoyt (New York: Dover Publications, 1930), p.11. Although his views on these matters are, of course, appropriate to consider, I personally do not countenance the ideational theory of language implicit in the second statement. Apropos the first statement, we should always be aware of the evolutionary fluidity of language.

ments of its subject domain. Godel argued that only a contradictory set of axioms was able to account for all the theorems that could be derived via transformation rules from the axiomatic base; if the axioms were consistent they would be unable to account for the whole domain of true propositions.

This proof has been hailed by many philosophers and social scientists as evidence against both the possibility of the successful use of the hypothetico-deductive method and all attempts in artificial intellegence research to replicate human intelligence using mechanical means. Since computers, it is argued, can only be given a finite set of directives (allegedly corresponding to an axiomatic base) they will always be faced with problems for which they could not generate proofs (i.e., 'solve'). However, it is clear that those who argue in this fashion against cybernetics and the study of the human animal as an information processing machine seem to presuppose that humans can solve all problems they are confronted with. The view they invoke is one of the omnipotence of human intelligence and a history of science that is essentially static (i.e., that problem domains do not change over time). Akin to those who invoke the indeterminacy relation in quantum physics to 'prove' the existence of 'free will', the proponents of this position seem peculiarly wedded to a much dated brand of positivism. Indeed their view is even counter to what much of contemporary science and philosophy of science now suggests. It runs counter to much research in cognitive neuro-biology and evolutionary theory which suggests that the human brain may be more complex than it is smart, and that all knowledge is survival rather than truth oriented (i.e., that it is conjectural and fallible). It also runs counter to the view of the history of science provided by Thomas Kuhn

and others, which suggests that science is the history of changing and incommensurable problem domains.

In fact, although Godel's proof can be interpreted as diminishing the prospects of discovering an absolute proof of consistency for any given deductive theory, it certainly does not demonstrate to any degree that the incomplete set of logically proven propositions are in any way invalidated. It simply precludes the possibility of formally demonstrating the logical truth of all propositions within a given deductive system - it says nothing about the validity of invoking external axioms to provide a meta-proof.[109] In short, rather than crippling the deductive method and the explanations, predictions, and retrodictions that may ensue from its use, Godel's Proof has little to say about its more general success or failure. It is indeed strange that the positive side of the proof's possible implications has not been more adamantly announced by social scientists and philosophers; namely, that simply because the resources of the human intellect can not be fully formalized, "new principles of demonstration forever await invention and discovery.

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[109] Of course, there is much debate on whether the employment of 'meta-proofs' can help resolve the paradoxes that Godel's proof isolates. Intuitionists, for example, argue that the 'sense' of correct mathematical statements can never be given any proof in formal terms and that the infinetely extendable class of proofs is indicative of the fact that 'proof' is necessarily a vague and intuitive concept. For a look at the impact and support that Godel's Proof can be seen as providing to a variety of intuitionist theses, see Michael Dummett, "The Philosophical Significance of Godel's Theorem", in Truth and Other Enigmas (Cambridge, Mass.: Harvard University Press, 1978), pp.186-201.

It will be recalled at this point that in the introduction it was implied that many anti-scientism arguments are both presupposing and responding to, a positivistic interpretation of science. In order to carry our conversation to greater depths we will now turn to an examination of that very interpretation of science. It is, in fact, a very compelling, and provingly influential, interpretation. Hopefully a greater appreciation of how several philosophers and social scientists have construed the relationship between science, society, and explanation will emerge.[110]

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[110] See, Ernest Nagel and James R. Newman, Godel's Proof (London: Routledge & Kegan Paul, 1959), p.101.

Chapter II

INVESTIGATING THE ARCH-DEMON: A LOOK AT LOGICAL POSITIVISM

> Between our view and any such traditional view there cannot be identity - but at most agreement with the logical components. For we pursue logical analysis, but no philosophy.
>
> Rudolph Carnap
> (1934)

It is often argued in philosophical circles today that it was Immanuel Kant's armchair search, guided by his faith in the Cartesian notion of privileged access, for the 'a priori contributions brought to bear in experience' that legitimized the normative discipline of epistemology as an adjudicator of knowledge claims in all other disciplines.[1] Privileged access, Kant assumed, would guarantee our knowledge of these 'constituting activities' and transcendental psychology would thereby become the weapon to be used against the sceptic's dictum that only belief and not certainty was possible in matters epistemological. Although epistemically banished from the noumenal world, the human being could, Kant argued, have knowledge of the phenomenal - the only 'world' they need be concerned with. That the manifold of sense-perception had a necessary order simply because humans were in-the-world would forever constrain the efforts of speculative metaphysics to explicate the nature of that world 'in-itself'.[2]

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[1] See, for example, Richard Rorty, Philosophy and the Mirror of Nature (Princeton, N.J.: Princeton University Press, 1979), p.137.

[2] Kant developed these now famous themes in Critique of Pure Reason,

Kant's thesis that antiniomies of reason were the inevitable result of metaphysic's failure to recognize that 'all knowledge begins with and remains within experience' was substantiation that his work remained within the anti-metaphysical tradition of Hume which had woken him from his 'dogmatic slumbers'. There can also be no doubt that Kant's philosophy greatly contributed to what was perhaps the most unconstrained attack on metaphysics in the twentieth century - that of the logical positivists. The only historical clarification that is perhaps in order is that:

> the originality of the logical positivists lay in their making the impossibility of metaphysics depend not upon the nature of what could be known but upon the nature of what could be said. Their charge against the metaphysician was that he breaks the rules which any utterance must satisfy if it is to be literally significant.[3]

Although Kant's philosophy is an important contribution, one would indeed be safe in assuming that any comprehensive history of Western thought would reveal innumerable examples of developments that could be seen as contributing to the rise of positivism in the early part of the twentieth century. However, for the sake of brevity, and given the purposes at hand, it is only appropriate here to pay credence to one accepted historical reconstruction.

This particular body of thought, logical positivism, or logical empiricism, as it has come to be commonly designated, clearly owes substantial debt to the thought of Hume, especially as it is reflected in his epistemological empiricism and distaste for metaphysics. In its concern

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trans. F. Max Muller (Garden City, N.Y.: Doubleday & Company, 1966).

[3] A.J. Ayer, ed. Logical Positivism (Glencoe, Ill.: The Free Press, 1959), p.11.

for mathematics and logic it is also indebted to much of continental rationalism as it stems from the work of Leibniz. It could also be argued, by those so disposed, that logical positivism owes much of its 'self-consciousness' to Comte's philosophy of history, wherein the thesis is developed that all thought passes progressively through three 'stages' - the theological, the metaphysical, and the positive. As we will soon see, however, it is all too apparent that the logical positivists would have considered this latter thesis quite meaningless, and proclaimed with Durkheim that it owed its origins to mere 'fiat'.[4]

Logical positivism, as an exclusive twentieth century phenomenon, is perhaps most renowned for its advancement (at least in its early days) of the following theses:

1. The meaning of a proposition is dependent upon its method of verification.

2. The expressions of metaphysics and much of ordinary discourse are unverifiable and hence meaningless. They must, therefore, be eliminated from cognitively meaningful discourse.

3. Philosophy, as the logical analysis of the concepts and statements of science, is unable to reveal any extra-scientific truths. Attempts to employ philosophy as a tool of introspection or as a method whereby the nature of a 'pre-scientific' awareness is revealed are ill-conceived.

4. There is a linguistic, nomological, and methodological unity of all the sciences - sociology and psychology included. There is no methodological distinction between the natural and social (cultural) sciences representative of a distinction between explanation and understanding (Verstehen).

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[4] For a discussion of Comte's positivism and Durkheim's response to it see, Anthony Giddens, Studies in Social and Political Theory (London: Hutchinson & Co., 1977), pp.29-44.

As will be seen in our discussion, in the next chapter, of the search for meaning representative of the interpretational stream in the philosophy of the social sciences, it is clear that the positivist program runs counter to those approaches. The anti-positivist streams in the philosophy of the social sciences react particularly negatively to the positivists' conflation of testability and meaning, their belief that science is the only valid form of knowledge, the thesis that philosophy is identical to the logic of science, and the claim that there is a 'unity' to the sciences indicative of natural science methodology. Positivism, as scientism, is also indicted by some for championing a relativism with respect to ethical norms and values and for giving primacy to causal explanation over the consideration of reasons and the teleological function alleged to be constitutive of human action.

The belief of the logical positivists that the nature of cognitively significant discourse could be explicated can, in fact, be seen as the rudimentary base for the advocation of the unity of science project.[5] This project, it was argued, is based on the possiblity of an intersensual and intersubjective unified language "common to the blind and the seeing, the deaf and the hearing",[6] that reveals that "the dualism of 'natural sciences' and 'moral sciences', and the dualism of 'philosophy of nature' and 'philosophy of culture' are, in the last analysis, resi-

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[5] Some commentators, however, arguing conversely, suggest that it was the positivists' belief in the unity of science that provided the impetus for the attempts to explicate the nature of meaningful discourse. See, for example, the introduction to Frederick Suppe, ed., The Structure of Scientific Theories, Second Edition (Urbana, Ill.: University of Illinois Press, 1977), especially pp.11-15.

[6] Otto Neurath, "Sociology and Physicalism", in Logical Positivism, ed. A.J. Ayer, p.286.

dues of theology".[7] Given that it is the denial of these bifurcations that is argued to be the sine qua non of contemporary scientism, it is very important to examine the positivists' theses that lay behind the unity of science mandate. A portrayal of these theses is necessary in contemporary debates in the philosophy of the social sciences for a variety of reasons. Primary amongst these reasons are the following:

1. Several schools in the philosophy of the social sciences (for example, that which finds theoretical sustenance in the hermeneutics of Dilthey) which claim that there is a methodological and substantive distinction between the natural and social sciences advance their opposition to the unity of science program from entirely different presuppositions ('traditions') than those employed by positivists in defending that program. Revealing some of the presupositions of the latter will assist in understanding the kind of conceptual gulf that separates the two approaches.
2. Within the social sciences there are several disciplines (especially political theory) whose practitioners seem to excel at the unsystematic borrowing of concepts from other fields. To a large degree this kind of unsystematic borrowing gave rise to the didactic certitudes that fixed the parameters of interchange in the debates between 'behaviouristic' and 'normative' social science. Investigating some of the epistemological presuppositions of that body of philosophical thought from which many of those certitudes were drawn can only help reveal the error that social scientists commit when they assume that any philosophy of science comes

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[7] Ibid., p.295.

'ready made' for conceptual consumption.

3. The post-empiricist philosophy of science that is being increasingly referred to by those either opposed to the scientific study of the human animal or desirous of sponsoring a methodological pluralism in the social sciences, has drawn much of its momentum from a critique of the positivist depiction of science. By taking a look at that depiction we can assess whether or not post-empiricism is perhaps overstating its case [MAXIM: Although no philosophy grows out of a conceptual vacuum, one should always be wary of theses whose momentum comes from critique].
4. Clarification of some of the specificities of the positivist program is necessary to prevent the identification of scientific realism (developed, in part, in response to the dilemmas and excesses encountered in post-empiricism) with a positivistic brand of scientism.
5. Positivism is a major source of the variety of 'epistemological turns' that political theory and other disciplines in the social sciences have taken in the latter part of the twentieth century. Indeed, one could say that the cards are turning somewhat and that social scientists now react <u>more strongly</u> to the epistemological views of positivism than to their moral views (which had earlier caused so much negative reaction).

Logical positivism owes much of its development to the truth-functional propositional logic developed by Russell and Whitehead in their co-authored <u>Principia Mathematica</u>. It was argued therein that all of the propositions of pure mathematics are deducible from a small number

of fundamental logical principles. This thesis, mediated by the views of the early Wittgenstein, was to provide the optimism that motivated the logical positivist quest to define the concepts of scientific theories in terms of mathematical logic.

The tradition of logical analysis that stems from the Principia draws a logical distinction between elementary (or atomic) propositions and molecular propositions. It is argued that the truth-value of the latter, which are constructed out of the elementary propositions by logical operators[8] (conjunction, disjunction, implication, material equivalence, negation), is determined by the truth-value of its constituent propositions.

It is in Wittgenstein's Tractatus Logico Philosophicus that explication is given to the positivistic thesis that the meaning of a proposition[9] is dependent upon its having a truth-function. Meaningful propositions are either true or false. For Wittgenstein, some propositions are 'true in all possible worlds'; these are the so-called tautologies - constitutive of all logical (and, therefore, mathematical) truths.[10] Since tautologies say nothing about our world, but rather our use of

[8] Also refered to in the literature as 'propositional operators' and 'truth-functional' connectives.

[9] This is, of course, in contradistinction to the Humean and Lockean tradition which considered the meaningfulness of a proposition or language to be determined by the relation between a word and its corresponding idea. For changing views of meaning in this regard see Ian Hacking, Why Does Language Matter to Philosophy? (Cambridge: Cambridge University Press, 1975).

[10] Ludwig Wittgenstein, Tractatus Logico-Philosophicus, trans. D.F. Pears & B.F. McGuinness (London: Routledge & Kegan Paul, 1963), proposition 6.1. Our references to the Tractatus will not be to the page number, but rather, the number of the proposition. This method pays credence to the structure of the book.

logical symbols, it is appropriate to assign them an a priori status.[11] Indeed, Wittgenstein argued that it is non-sensical to say that a tautology has a truth- condition, "for it admits all possible situations".[12] The import for philosophical analysis that is prevalent in the Tractatus is easily seen; since logical truths are tautological they can be employed to transform empirical propositions into other empirical propositions without changing their truth-value. This thesis would prove instrumental in the development of positivist work on the explicit definition of the concepts of science as well as in the thesis of nomological reduction presupposed by the unity of science mandate. Further conceptual clarification, however, is necessary at this point.

Meaningful propositions are of two kinds: atomic (often referred to as 'simple' or 'elementary') or molecular (also known as 'compound' propositions). Atomic propositions are singular; i.e., they are not possessed of the quantifiers 'all' or 'some'; as atomic, these singular propositions do not permit of constituent propositions. Molecular propositions are also singular but are constructed by a least two or more atomic propositions. Their form is determined by the use of the logical operators referred to earlier.

In the logic of the Tractatus, an atomic proposition is a truth-function of itself;[13] all atomic propositions are logically distinct - "one

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[11] For Wittgenstein, logical (mathematical) truths are a priori due to their analyticity. This is in contradistinction to Kant who painstakingly argued that they are the result of synthetic a priori judgements.

[12] Ludwig Wittgenstein, Tractatus, proposition 4.461.

[13] Ibid., proposition 5.

elementary proposition cannot be deduced from another".[14] The truth-conditions of atomic propositions are 'given directly'. On the other hand, molecular propositions are truth-functions of atomic propositions; i.e., their truth-value is dependent upon the truth-values of the constituent atomic propositions and is arrived at by the meaning of the logical operators and the use of simple logical truth-tables. A third class of propositions, universal propositions, are those which employ the quantifier 'all'. For Wittgenstein, universal propositions must also be formulated as the conjunction of constituent singular propositions. Their truth-value is, therefore, also a function of atomic propositions. Due to the universal quantifier, however, this value cannot be conclusively verified. We will soon see how this consideration of universal propositions affected the positivists' analysis of the laws of nature and scientific theory formulation.

It was mentioned above that according to the Tractatus the truth-conditions of atomic propositions are 'given directly'. How this was interpreted by the logical positivists was obviously very important, especially in light of the empiricist component in their corresponding views on truth and verification. One standard interpretation in philosophical circles is that this means that an atomic proposition is true if the objects refered to by its predicates possess the property or relation so designated. In the Tractatus, Wittgenstein comes very close to representing this view in his argument that "a proposition can be true or false in virtue of being a picture of reality".[15] For him, "the simplest

[14] Ibid., proposition 5.134.

[15] Ibid., proposition 4.06. See also proposition 4.26: "If all true propositions are given, the result is a complete description of the

kind of proposition, an elementary proposition, asserts the existence of a state of affairs"[16] namely, a 'logically possible' fact. Those propositions so assertive are, in addition to being meaningful, also true if they correspond to a fact; i.e., a state of affairs which is the case.[17] In a standard attempt to eschew metaphysical pronouncements whilst at the same time remaing profound, Wittgenstein retorts that "The totality of existing states of affairs is the world".[18] His 'picture-theory' of knowledge, which is both implicit and explicit in these statements merges with the scientism so deplored by many in the claim that "the totality of true propositions is the whole of natural science".[19]

There was no mention in the Tractatus of 'phenomena', as that term is understood by the empiricist component in logical positivism, and it is often argued that the elementary propositions of the Tractatus "were defined by their logical properties and not by any connection with verification".[20] However, it is easy to see the influence of the Tractatus in the early positivist claim that "when ever we ask about a sentence, 'What does it mean?', what we expect is instruction as to the circumstances in which the sentence is to be used; we want a description of the conditions under which the sentence will form a true proposition,

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world".

[16] Ibid., proposition 4.21.

[17] See proposition 4.25: "If an elementary proposition is true, then the state of affairs exist.".

[18] Ibid., proposition 2.04.

[19] Ibid., proposition 4.11.

[20] See, for example, Oswald Hanfling, ed., Essential Readings in Logical Positivism (Oxford: Basil Blackwell, 1981), p.11.

and of those which will make it false";[21] in short, that "the meaning of a proposition is the method of its verification".[22] In fact, there is some evidence that this influence was more explicit than many commentators have acknowledged. This evidence is reflected in a variety of claims that Wittgenstein makes in the Tractatus and which can be seen as serving as a conceptual springboard for the development of the empiricist conception of meaning and verification. Two of these claims are the following:

> Empirical reality is limited by the totality of objects. The limit also makes itself manifest in the totality of elementary propositions.[23]

[and]

> To understand a proposition means to know what is the case if it is true.[24]

In addition to contributing to the logical positivists' views on meaning and verification, the Tractatus was also fundamental in providing the optimism that guided the positivists' attempt to construct an 'artificial' language void of the pseudo-propositions of metaphysics, ethics, and everyday discourse that violated the syntactical rules of cognitively meaningful language. It was, in fact, the belief of logical positivists that such a language could be constructed which lay at the root of their unity of science mandate.

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[21] Moritz Schlick, "Meaning and Verification", in Readings in Philosophical Analysis, ed. Herbert Feigl and Wilfred Sellars (New York: Appleton-Century-Crofts, Inc., 1949), p.147.

[22] Ibid., p.148.

[23] Ludwig Wittgenstein, Tractatus, proposition 5.5561.

[24] Ibid., proposition 4.024.

In order to prevent further misunderstanding, it is appropriate at this point to clarify the distinction between the Verification Principle and the criterion of verifiablilty - a distinction that is usually conflated in critical analyses of logical positivism. As normally construed, the Verification Principle is concerned with what constitutes, or determines, the meaning of a proposition whereas the criterion of verifiability is used to separate meaningless propositions from meaningful ones. That this distinction is usually conflated is perhaps, in part, due to the influence of A.J. Ayer's philosophy,[25] wherein the criterion of verifiability is presented as 'the principle of verification'. Therein, propositions are considered meaningful if they are analytic - true by virtue of meaning - or empirically verifiable, where verifiability in the 'strong sense' (i.e., a proposition's truth conclusively established in experience) is discarded in favour of verifiability in the 'weak sense' (i.e., if some possible sense-experience is relevant in establishing a proposition's truth). What, therefore, is absent in accounts of meaningfulness is an analysis of what constitutes the verification or meaning of a proposition. Nevertheless, to draw a sharp distinction between verification as a principle and verifiability as a criterion is often both difficult, given that many positivists implicitly deduce the latter from the former, and much beyond the scope of this chapter. Our discussion, therefore, will itself often tend to conflate the two for reason of expediency.

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[25] As expounded in Language, Truth and Logic (New York: Dover Publications, 1952).

The logical positivists, true to the empiricist spirit, initially argued that all meaningful non-analytic propositions must be reduced to propositions that could be directly compared with experience. For them, these latter propositions made up the class of atomic propositions referred to by Wittgenstein in the Tractatus. If atomic propositions were not so constituted then language, be it logically purified or 'natural', would not be connected with reality. Empiricism would be thereby invalidated.

So the positivists took it upon themselves to explicate knowledge and language as logical structures rooted in the certainties of sense-experience. In such ventures the empiricist theories of meaning, concepts, and propositions were all inter-connected. Primary amongst these initial efforts was Rudolph Carnap's The Logical Structure of the World, first published in 1928. Therein, Carnap attempted to explicate how scientific concepts and language could be introduced by explicit definitions on a phenomenalistic base; i.e., on the basis of one's own experience. Such an exercise was clearly guided by Carnap's (perhaps overly optimistic) reading of the Principia and Tractatus. Indeed, he claims at the outset of the book that his study is "an attempt to apply the theory of relations to the task of analysing reality"[26] which will bring into 'clearer focus' the basis of a constructional system of concepts that will facilitate the reduction of reality to the given.

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[26] Rudolf Carnap, The Logical Structure of the World & Pseudoproblems in Philosophy, trans. Rolf A. George (Berkeley and Los Angeles: University of California Press, 1967), p.7.

For Carnap, the definition of a concept is revealed by its 'construction' out of concepts at a more 'basic level'.[27] The system of concepts that results via the transitivity of reducibility is a 'constructional system' whose basis is formed by the fundamental concepts. It was Carnap's belief that this systematic construction of concepts was the most decisive philosophical endeavor. He was convinced that only "if we succeed in producing such a unified system of all concepts will it be possible to overcome the separation of unified science into unrelated special sciences".[28]

The so-called 'basis' of this constructional system was characterized as the 'autopsychological domain'; the basic elements were, therefore, elementary experiences - 'experiences of the self as units'. In Carnap's view any logical construction of the world must "proceed from that which is epistemologically primary, that is to say, from the 'given', i.e., from experiences themselves in their totality and undivided unity".[29] The philosophy of science that emerged was, therefore, one wherein the statements of a scientific theory were considered reducible to an observational vocabulary possessed of a phenomenalistic sense-data base; i.e., reducible to a sense-datum 'protocol' language. Since phenomenal descriptions of sense-data, it was argued, are incorrigible, the problem of verifying protocol statements so constituted was, ipso facto, solved.

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[27] See, for example, Ibid., p.6: "An object (or concept) is said to be reducible to one or more other objects if all statements about it can be transformed into statements about these other objects".

[28] Ibid., p.7.

[29] Ibid., p. 108.

Under such a constructionalist approach our knowledge of physical objects was considered secondary and derivative. This thesis, as many commentators have noted, is strikingly similar methodologically to Russell's view that "whenever possible, logical constructions are to be substituted for inferred entities".[30] Of course, the claim that knowledge of physical entities like desks and human bodies is only inferred from sensations has become quite common due to the writings of Hume and Berkeley. And just as metaphysical pronouncements were discarded as meaningless by Hume since no sense-experience could possibly affirm or deny them, so too in Carnap's system they found no place because, lacking this base, they were not expressable in protocol statements and therefore were not susceptible to logical construction.

Although a 'methodological solipsism' was advocated by Carnap as the orientating point of the construction system, he also argued that any such completed system must contain "the domain of the physical, of the psychological (i.e., of the auto and heteropsychological), and of the cultural".[31] It was the confusion of these very 'categories' that, he argued, had generated many of the pseudo-problems in attempts to specify the unity of science.[32] In a variety of places throughout his book, however, Carnap did suggest that a logical construction of the world could be achieved via a definition of scientific concepts in terms of a physi-

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[30] Bertrand Russell, Mysticism and Logic (Garden City, N.Y.: Doubleday, 1957), p.150. Variations of this claim, of course, become pivotal in debates between neo-positivists and scientific realists.

[31] Rudolf Carnap, The Logical Structure of the World, p.104.

[32] For a discussion of how similar 'category mistakes' have led to pseudo-problems in traditional folk-psychology, see Gilbert Ryle, The Concept of Mind (New York: Peregrine Books, 1963).

calistic base.[33] His position was simply that "since all cultural objects are reducible to psychological, and all psychological to physical objects, the basis of the system can be placed within the domain of physical objects".[34] He did maintain, however, that the implicit metaphysical aspect of such an approach was, for obvious reasons, less desirable than the 'logico-constructional' (epistemological) aspect of the phenomenalistic approach and was unable, in fact, to be 'maintained or denied' by construction theory.

It is quite clear that Carnap's methodological solipsism can be seen as collapsing into an epistemological relativism (since the stream of experience is different for each person) that runs counter to the intersubjectivity alleged to be operative in the achievement of scientific knowledge and the use of scientific language. Carnap attempted to overcome this common criticism by drawing a distinction between the content (or material) and the structure of experience. For Carnap, the solution to the problem of intersubjectivity generated by methodological solipsism "lies in the fact that, even though the material of the individual streams of experience is completely different, or rather altogether incomparable,....certain structural properties are analogous for all streams of experience".[35]

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[33] Rudolf Carnap, Logical Structure of the World, see especially sections 59 and 62.

[34] Ibid., p.95. Carnap would later maintain that methodological positivism (phenomenalism) and methodological materialism (physicalism) were not contradictory. See, especially Rudolf Carnap, "The Old and the New Logic", in Logical Positivism, ed. A.J. Ayer, p.144.

[35] Rudolf Carnap, The Logical Structure of the World, p.107.

Arguing that all objects of knowledge are not content, but form, Carnap insists that it is structural descriptions that are able to be 'objectified' and expressed via language; "for science, it is possible and at the same time necessary to restrict itself to structure statements".[36] In addition, such statements should not be interpreted as 'relational descriptions', i.e., as descriptions of the interrelations between objects. For Carnap, in a structural description "only the structure of the relation is indicated, i.e., the totality of its formal properties".[37] By formal properties of a relation, he meant "those that can be formulated without reference to the meaning of the relation and the type of objects which it holds".[38] These properties, argued Carnap, are precisely those studied in relational logic, and include transitivity, symmetry, and reflexivity.

The distinction that Carnap draws between content and structure was also drawn by other positivists who argued that qualitative content cannot be linguistically communicated but that structures, relations between contents in the manifold, could be communicated. Moritz Schlick, in fact, argued that "everything we can possibly say and - which is more - everything we can possibly want to say is always said without mentioning content".[39] Meaning and understanding had, for Schlick, nothing whatsoever to do with the content of experience. Implicit in Schlick's argument is the thesis that there is a kind of isomorphism between the

[36] Ibid., p.30.

[37] Ibid., p.21.

[38] Ibid.

[39] Moritz Schlick, "Structure and Content", in Essential Readings in Logical Positivism, ed. Oswald Hanfling, p.141.

structure of a language and the structure of the world to which it refers; i.e., that "the structure of 'green' shows itself in the various possibilities of using the word 'green', it is also revealed by its grammar".[40]

This alleged relation between language and reality is very important to consider when one is examining a constructionist approach akin to Carnap's. For even if one accepts that structural descriptions suffice to over-ride the problem of intersubjectivity, it remains the case that the system is purported to be 'meaningful' because it is built upon a foundation that is immediately verifiable. In Carnap's constructional system those concepts and terms of science whose truth-functions could be derived from immediately verifiable 'basic propositions' by means of relational logic were considered to be meaningful. That there could, in fact, be an entire scientific language so constituted led Carnap to champion the unity of science project.

In regards to foundations many positivists subscribed to what is commonly known as the correspondence theory of truth. For them, if science was to be meaningful it must be rooted in experience - it must be empirical. Therefore, it was argued, its statements must <u>correspond</u> to empirical reality - if they did not science would be in the same boat as metaphysics, and experience would have nothing to say, either way, about its propositions. For these positivists the empirical foundation of scientific (meaningful) discourse were those statements that were absolutely certain in their assertions about reality. They constituted what is referred to in the literature as protocol statements.

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[40] Ibid., p.136.

Carnap was one of the positivists who insisted that verification is based upon 'protocol statements', arguing that such statements belonged to the 'direct record' of a person's experience.[41] In order for words to assume a meaning for Carnap the syntax of the simplest sentence in which they occur must be fixed. Then the method of verification for that sentence, i.e., the conditions under which it is true or false, must be made explicit. In Carnap, therefore, the themes of logical reducibility (deduction), verification, and meaning form a logical triad. It is via the logical deducibility of truth-conditions that "every word of the language is reduced to other words and finally to the words which occur in the so-called 'observation sentences' or 'protocol sentences'. It is through this reduction that the word acquires its meaning".[42] Carnap's view is that for any word 'a' and the elementary sentence 'S(a)' in which it occurs, the necessary and sufficient conditions for 'a' being meaningful are the following:

1. The <u>empirical criteria</u> for 'a' are known.
2. It has been stipulated from what protocol sentences 'S(a)' is <u>deducible</u>.
3. The <u>truth-conditions</u> for 'S(a)' are fixed.
4. The method of <u>verification</u> of 'S(a)' is known.[43]

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[41] Rudolf Carnap, "The Physical Language as the Universal Language of Science", in <u>Readings in Twentieth-Century Philosophy</u>, ed. William P. Alston and George Nakhnikian (London: The Free Press of Glenoce, 1963), p.401.

[42] Rudolp Carnap, "The Elimination of Metaphysics Through Logical Analysis of Language", in <u>Logical Positivism</u>, ed. A.J. Ayer, p.63.

[43] Ibid., pp.64-65.

It is easy to see, therefore, how Carnap's views on meaningful discourse, word-meaning, reducibility, and verification are inextricably connected; indeed, Carnap argues that each of the above formulations 'ultimately say the same thing'. That metaphysics is essentially meaningless - that it consists of no more than 'pseudo-statements' - is attested to by the fact that no protocol statements (statements whose truth-conditions can be explicitly defined) can be found therein. Philosophy as logical analysis, as the inquiry into logical foundations, therefore "pronounces the verdict of meaninglessness on any alleged knowledge that pretends to reach above or behind experience".[44] In fact, this verdict is also passed on all statements of value theory, ethics, aesthetics and those 'metaphysical movements' which operate under an epistemological guise; namely, realism, subjective idealism, solipsism, phenomenalism, and positivism.[45]

In this line of reasoning Carnap received much support from Moritz Schlick, another member of the Vienna Circle. For Schlick, the meaning of every proposition is ultimately determined by the 'given', the only domain wherein a verifiable difference is possible. In Schlick's words, "a proposition has a statable meaning only if it makes a verifiable difference whether it is true or false".[46] True propositions correspond to the facts and "it is the first step of any philosophizing, and the foundation of all reflection, to see that it is simply impossible to give the meaning of any statement except by describing the fact which must

[44] Ibid., p.76.

[45] Ibid., p.77.

[46] Moritz Schlick, "Positivism and Realism", in Logical Positivism, ed. A.J. Ayer, p.88.

exist if the statement is to be true".[47]

The Carnap-Schlick view on meaning and protocol statements did not, however, receive unanimous support in logical positivist circles. Otto Neurath was perhaps the most outspoken in claiming that there were no incorrigible basic statements in the construction of science. Although Neurath was a leading advocate of the unity of science project, he insisted that "the fiction of an ideal language constructed out of pure atomic sentences is no less metaphysical than the fiction of Laplace's demon"[48] for him, the terms of protocol sentences are necessaily vague. Although remaining convinced that every word of ordinary physicalist language is replaceable by terms of the physicalist language of advanced science, Neurath's position on these matters is best summed up in the following famous analogy:

> There is no way of taking conclusively established pure protocol sentences as the starting point of the sciences. No tabula rasa exists. We are like sailors who must rebuild their ship on the open sea, never able to dismantle it in dry-dock and to reconstruct it there out of the best materials. Only the metaphysical elements can be allowed to vanish without a trace. Vague linguistic conglomerations always remain in one way or another as components of the ship. If vagueness is diminished at one point, it may well be increased at another.[49]

Neurath was willing to admit that, for all practical purposes, there are protocol sentences in science. But he remained clear in asserting that there was no primitive (i.e., permanently fixed) protocol language of which Carnap spoke. For Neurath, the defining characteristic of pro-

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[47] Ibid., pp.86-87.

[48] Otto Neurath, "Protocol Sentences", in Logical Positivism, ed. A.J. Ayer, p.199.

[49] Ibid., p.201.

tocol sentences is that they must contain a recurring personal pronoun. An example of a complete protocol sentence provided by him is the one that reads: "'Otto's protocol at 3:17 o'clock: [At 3:16 o'clock Otto said to himself: (at 3:15 o'clock there was a table in the room perceived by Otto)]'".[50] In rejecting such statements as primitive protocols, Neurath is not necessarily jeoprodizing or abandoning the positivist's emphasis on empiricism and verification. In fact, he maintains that it is Carnap who, in suggesting that protocol sentences speak of the 'immediately given', is the one who is diminishing the importance of verification. For in arguing that they are certain and primitive he is inevitably claiming that there are empirical propositions that do not require verification. For Neurath, however, "a defining condition of a sentence is that it be subject to verification, that is to say, that it may be discarded".[51] Hence, "every law and every physicalist sentence of unified-science or of one of its sub-sciences is subject to such change".[52]

In rejecting Carnap's notion of primitive protocols rooted in the 'given', Neurath is giving credence to the diversity and temporality of experience; i.e., because of the fact that personal nouns must occur in protocols, since they are necessarily about someone's experience, "interpretation must always already have taken place".[53] The experience of the person is about something. And that something is, in Kantian terms,

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[50] Ibid., p.202.

[51] Ibid., p.204.

[52] Ibid., p.203.

[53] Ibid., p.205.

selected out of the manifold. In addition, in the mere formulation of the protocol the experience must necessarily lie in the past; no protocol is atemporal.

Neurath's argument is simply that if we consider protocols to constitute a stage or part of unified science they must be fit into that system. Unified science is best conceived as "a sorting-machine into which protocol sentences are thrown".[54] If contradictions arise one must either rebuild the machine or replace the protocol responsible for the contradiction. What Neurath is rejecting here is the fundamental assumption of the correspondence theory of truth; namely, that a statement must be compared with experience in order that its truth-value can be determined. In the following passage, we can see that Neurath is advocating what is known as the coherence theory of truth, or what is often called 'truth by convention':

> In unified science we try to construct a non-contradictory system of protocol sentences and non-protocol sentences (including laws). When a new sentence is presented to us we compare it with the system at our disposal, and determine whether or not it conflicts with that system. If the sentence does conflict with the system, we may discard it as useless (or false)....One may, on the other hand, accept the sentence and so change the system that it remains consistent even after the adjunction of the new sentence. The sentence would then be called 'true'.[55]

In Neurath's account, even though protocol statements are perceptual statements, they are considered to be just as hypothetical and corrigible as other empirical statements. Although Carnap, as we will soon see, began to accept the logic of Neurath's view, Schlick remained convinced

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[54] Ibid., p.207.

[55] Ibid., p.203.

that although our knowledge of mathematical truths may be governed solely by the mandates of consistency, our knowledge of 'facts' must be represented by incorrigible and definitive protocol statements. For him, understanding the meaning of a sentence and knowing its method of verification were isomorphic; and in the case of protocol statements about our present experience, the meaning is given immediately.

In Schlick's account protocol statement's ('observation statements') are akin to analytic statements in that "the occasion of understanding them is at the same time that of verifying them: I grasp their meaning at the same time as I grasp their truth".[56] In Schlick's analysis, to the extent that the meaning of empirical statements is 'simultaneously' grasped with their truth, those statements can be said to serve as 'confirmations' - 'Konstatierungen'.

Although appearing to remain steadfastly convicted to orthodox mandates, Schlick did, however, introduce an interesting twist into the discussion of protocols. Schlick conceded that due to the 'here and now' nature of protocol statements (he did not follow Neurath in demanding that a personal noun be present in protocol statements) they are not fundamental in the sense of being temporally and spatially invariant. Construed accordingly, they are useless as an enduring foundation. However, their 'closeness' to experience enables them to possess the value of absolute certainty and ordains them as those statements upon which all other synthetic, hypothetical statements are dependent. Schlick therefore argued that protocols would be conceived as those statements

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[56] Moritz Schlick, "The Foundation of Knowledge", in Logical Positivism, ed. A.J. Ayer, p.225.

which come, not at the beginning of knowledge, but at the end of knowledge.[57]

In trying to explicate his position, however, Schlick reverted to the Humean concern with the meaning of the individual words and ostensive definitions entered his thesis as the component that ordained protocols incorrigible. Definitions and consistency were fine for determining most of the meaningful concepts and propositions in our language but they were not able to provide our knowledge with the requisite empirical and foundational component. Only ostension, 'pointing to the fact in question', was able to accomplish this. As his colleage, Friedrich Waismann (who was sympathetic to the views of Schlick on this matter) stated: "A definition remains within language. Ostension steps outside language and connects signs with reality".[58]

By insisting on this aspect of protocols, Schlick felt that he was serving the interest of science rather than 'sitting in the seat of the metaphysicians'.[59] By insisting on 'correspondence to the facts' as a necessary component of scientific knowledge, Schlick was attempting to prevent, at the hands of Neurath, the collapse of positivism into an epistemological relativism. That these positions constituted the only alternatives for him was explicit in his belief that "if one is to take coherence seriously as a general criterion of truth, then one must consider arbitrary fairy stories to be as true as historical report, or as

[57] Ibid., pp.226-227.

[58] Friedrich Waismann, "Verification and Definition", in Essential Readings in Logical Postivism, ed. Oswald Hanfling, p.29.

[59] Moritz Schlick, Facts and Propositions", in Essential Readings in Logical Positivism, ed. Oswald Hanfling, p.197.

statements in a textbook of chemistry, provided the story is constructed in such a way that no contradiction ever arises".[60]

Schlick's position on these matters and his insistence that there are protocol statements rooted in the given actually is the position that is attributed to the logical positivists en masse, especially by commentators in the social sciences, but also by many in the philosophy of science. In their attempt to convince Schlick that his project was misconstrued, his positivistic colleagues resorted to a variety of arguments, two of which have emerged most prominently in the respective literature. Some positivists argued, in line with Carl Hempel's much quoted article "On the Logical Positivists' Theory of Truth",[61] that what distinguished the statements of science from fairytales was an 'historical fact'. Science, for Hempel, was simply conceived as "the system which is actually adopted by mankind, and especially by the scientists of our culture".[62] This reply, however, is very much a non sequitur, and the difficulties with it are readily apparent. By designating science as 'the system' this argument clearly presupposed a unity to the sciences and thereby circumvented many of the prominent debates in positivist circles. This is clear especially in light of the fact that many positivists were driven to champion the unity of science because they believed

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[60] Moritz Schlick, "The Foundation of Knowledge", p.215.

[61] In Analysis 2 (1935):49-59.

[62] Ibid., p.57. Hempel is, therefore, arguing, in line with the later Carnap and Neurath, that there is an empirical rather than a formal distinction between the protocol system of science and a 'fairytale'. This thesis of Hempel's and the various responses it generated actually foreshadows many of the debates in post-empiricism philosophy of science on incommensurability and the nature of 'conceptual schemes' and their historical supplantation.

that all of its concepts could be reduced to statements whose verification was determined by correspondence to facts. In addition, whether it is appropriate to say that a single understanding of science is accepted by all scientists (let alone all mankind) clearly runs counter to the obvious lack of consensus exhibited by debates in any scientific field. Even so, without clarifying why this particular system has come to be accepted, the argument does not really respond to the position of Schlick, given that the latter could simply argue that the reason it has come to be accepted is because its basic statements have been proven to correspond to the 'facts'. Given the magnitude of his claim, it appears that Hempel's argument must be supported by an elaborate portrayal of an evolutionary epistemology which explains why, in the process of epistemic adaption, other candidates for the 'accepted system' have been unable to survive.

The most common positivist response to Schlick, however, was that which drew its sustenance from Carnap's distinction between the formal and material modes of speech. This distinction, in fact, could be seen as being foreshadowed by Carnap's and Schlick's earlier distinction between the structure and content of experience.[63] It is also representative of the 'linguistic turn' that Carnap's philosophy took shortly after his Logical Structure of the World, and can be seen as providing support to his revised view on the nature of protocol statements - i.e.,

[63] As far as a rational reconstruction of logical positivism goes, it might be argued that the distinction between the material and formal modes of speech became prevalent in debates on methodology and that the distinction between the context and structure of experience manifested itself in debates on epistemology. However, seeing as how these debates were largely conflated by the positivists, one would run into a variety of difficulties in trying to expound further on this thesis.

his acceptance of Neurath's thesis (i.e., his rejection of primitive protocols) indicated by his view that existing protocol sentences "are always being re-examined with the help of the ever-emerging new protocol sentences".[64]

In Philosophy and Logical Syntax,[65] Carnap presupposed that the language of science can discover its own syntax, and argued that philosophy as logical analysis of the language of science would play an indispensable role in this discovery. Although greatly influenced by the Principia in these matters, Carnap nevertheless did not pay heed to Russell's argument that any given language cannot describe its own structure (syntax); for such a description, a metalanguage was required. Perhaps guided by his belief that the unity of science project presupposed (demanded) its possibility, Carnap attempted to demonstrate what such an 'ideal language' would look like. For Carnap, philosophy as logical syntax was governed by formation and transformation rules; the former elaborated conditions for the forming of any sentence in a language and the latter established how particular sentences are derived from other sentences[66]

In his view, therefore, philosophers should confine themselves to speaking of words and statements rather than objects or experiences.[67]

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[64] Rudolf Carnap, The Logical Syntax of Language, trans. Amethe Smeaton (London: Routledge & Kegan Paul, 1937), p.18.

[65] Reprinted in part as "Philosophy and Logical Syntax", in Readings in Twentieth-Century Philosophy, ed. William P. Alston and George Nakhnikian, pp.424-460.

[66] Rudolf Carnap, "The Physical Language as the Universal Language of Science", p.399.

[67] This, of course, is in contradistinction to many of the theses devel-

From this followed Carnap's famous distinction between the material and formal modes of speech; "the first speaks of 'objects', 'states of affairs', of the 'sense', 'content', or 'meaning' of words, while the second refers only to linguistic forms".[68] What the distinction was actually characterized to do was to eradicate the 'pseudo-problems' that arise when philosophers are "diverted by the material mode of speech into considering pseudo-questions concerning the essence or reality of the objects mentioned in the definition of a language".[69] For Carnap, the debate over the nature of protocol sentences all too often revolved around the issue of whether or not such statements describe directly given experience. In Carnap's view, the thesis that certain statements must refer to the given in order for a language to be verified is cast in the material mode of speech, and the pseudo-questions this generated can only be eliminated by speaking in the formal mode, where all reference to experience or phenomena is suspended. Carnap believed that reference only to linguistic forms would escape the problem of solipsism (that statements about experience and therefore meanings pertain to only one person). For him, in the formal mode protocol statements are construed simply as those statements needing no further justification: "If, instead of speaking of the 'content of experience', 'sensations of colour' and the like, we refer to 'protocol statements' or 'protocol statements involving names of colours' no contradiction arises in connection with the inferential relation between protocol language and physical lan-

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oped in The Logical Structure of the World, where talk of concepts and objects was largely conflated.

[68] Rudolf Carnap, "The Physical Language as the Universal Language of Science", p.399.

[69] Ibid., p.400.

guage".[70] Therefore, if someone spoke of protocols as describing directly given experience they would be speaking outside of the formal mode - in the material mode. The problem of verification becomes, therefore, concerned not with the relation of protocol statements to experience (the 'real', the 'given') but rather with the logical inferential relations between statements and the logical relation of said statements to protocol statements.

The formal/material mode of speech distinction does enable one to bypass the question of the relation between reality and protocol statements. In fact, it actually fueled the research program wherein it was considered that "all statements of philosophy which are not nonsense are syntactical statements and therefore deal with linguistic forms".[71]

Under such an account the view of logical atomism (that elementary propositions represent the 'atomic' facts of the world) is rejected and it is argued that the positions of methodological positivism (phenomenalism) and methodological materialism (physicalism), since they are formulated in the material mode, are not contradictory as far as philosophy as logical analysis is concerned.[72] Indeed, as a result of his distinction, Carnap was led to argue that phenomenalism and physicalism are 'in harmony'[73] and are just alternate ways of talking about the same thing.

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[70] Ibid., p.416.

[71] Ibid., p.399.

[72] Rudolf Carnap, "The Old and the New Logic", p.144.

[73] Rudolf Carnap, "The Physical Language as the Universal Language of Science", p.421.

Regardless of the virtues of the material/formal speech distinction in discarding a vestige of metaphysics from debates within logical positivism, and assisting in excluding certain statements from cognitively meaningful discourse, it did not substantially assist in determining why certain statements were included in such discourse or why protocol statements should be viewed as self-justified or foundational. In short, it did not contribute substantially to the positive aspect of the 'turning point in philosophy' which logical positivism was allegedly indicative.[74] In fact, Carnap soon recognized that if verification was construed solely in terms of syntactic concepts, there was no way of distinguishing between valid or invalid empirical propositions.[75] That Carnap was soon inspired by the arguments of Alfred Tarski to seriously consider semantics and the role of meta-languages, clearly indicated the demise of the purely syntactical approach to verification and meaning.[76]

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It was from within the parameters of the debates outlined so far that the positivist construal of the social sciences slowly began to emerge. This fact of the matter, shall we say, must always be kept in mind when one reads the critics of scientism endicting the positivist's image of man. Specifying exactly which products of 'science' could be spoken of in a cognitively meaningful way constituted no small problem for the

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[74] See Moritz Schlick, "The Turning Point in Philosophy", in Logical Positivism, ed. A.J. Ayer, pp.53-59.

[75] It is surprising that he did not accept Schlick's formulation (cf. "The Turning Point in Philosophy) and leave validity to science.

[76] See Rudolf Carnap, "Empiricism, Semantics, and Ontology", in Meaning and Necessity (Chicago: University of Chicago Press, 1947), pp.205-221.

positivists. Given the nature and time of their varied debates, the status of theoretical entities and the question of how to verify universal propositions and and general laws consituted genuine problems for the positivists. The magnitude of these problems was no less than those encountered in attempting to define psychological states as behavioural dispositions or propositional attitudes as merely theoretical terms.

In a similarly sympathetic fashion one must attempt to understand the latter day positivist advocacy of the deductive-nomological ('covering-law') model of explanation. Regardless of how much such a model of explanation helped to solve the problems encountered by the inductivists, its applicability to the social sciences was questioned as much, and often as deeply, by positivist philosophers of science[77] as by critics of 'scientism'.

It is, nevertheless, from within the confines of such epistemological debates that what both critics and proponents of the 'positivist turn' would see as the positivist outlook for the social sciences emerged. And it is the general import of that outlook that still haunts much of the philosophy of the social sciences to this very day. It is an image as intense in its ramifications as it is simple in its describability: Operationalism,[78] Verstehen as hypotheses generator, value judgements as expressions of feelings, 'ethical' norms deduced from natural laws of

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[77] See, for example, Carl G. Hempel "The Function of General Laws in History", in Aspects of Scientific Explanation and Other Essays in the Philosophy Science (New York: The Free Press, 1965), pp.231-243.

[78] For a discussion of operationalism and its import for the social sciences, see Otto Neurath, "Foundations of the Social Sciences", in Foundations of the Unity of Science: Toward an International Encyclopeadia of United Science: Volume 2, ed. Otto Neurath, et al (Chicago: University of Chicago Press, 1970), pp.1-51.

human behaviour,[79] and 'value-free' behaviourism.

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[79] For a succinct look at the questions of ethics from a positivist stance see Moritz Schlick, "What is the Aim of Ethics?", in Logical Positivism, ed. A.J. Ayer, pp.247-263.

Chapter III

THE ALTERNATIVE TO POSITIVISM: INTERPRETATIONAL SOCIAL SCIENCE

There can be no doubt that the positivist philosophy of science precipitated the most significant state of crisis that the social sciences have ever faced. In both its positive and negative reception, it has permenantly altered both the shape and self-understanding of the various disciplines contained therein. Like any significant development, however, it has been received with an equal amount of both fervor and distaste. amount of both fervor and distaste.

The primary negative reaction from within the social sciences was directed, at least in the initial stages, at the positivists' naturalistic and subjectivist portrayal of moral attitudes and evaluational norms. Correlatively, there was a strong negative reaction to the positivists' thesis that because value judgements are cognitively meaningless, they should not enter into empirical research. In political science, it was undoubtedly Leo Strauss who stood at the front of the attack, arguing that such a research platform sanctioned 'moral nihilism' and underestimated the power of 'evil demons'.[1] Behind Strauss' demagogy was the argument that value-judgements are presupposed in the social sciences in a manner that does not have a parallel in the natural sciences. For example, Strauss argued that if someone is to study the social implications

[1] Leo Strauss, "Natural Right and the Distinction Between Facts and Values", in Philosophy of the Social Sciences: A Reader, ed. Maurice Natanson (New York: Random House, 1963), p.428.

of art they must first decide what 'art' is and this decision implies the use of a good/bad dichotomy. Likewise, argued Strauss, the study of prostitution or crime is conducted because such phenomena are considered as facts of social evil or injustice; any observer, regardless of how idiosyncratic their value system was, could not alter these social facts indicative of immoral qualities.

Strauss and the positivists, however, were simply talking at cross-purposes; for viewing the matter from a utilitarian-naturalistic position, for example, clearly solves the problem that Strauss saw. Whether something is good art or bad art or not art at all, is simply a judgement that has become socially entrenched - it needs no implicit value in order to be isolated or investigated. Likewise, with prostitution and crime - certain behavior has come to be defined as criminal and socially reprehensible and a certain society will therefore commission researchers to study such phenomena in order that through a better understanding something might be done to eradicate it. There is no distinction herein between the natural and social sciences - something becomes a problem and 'we' turn our investigative resources towards that problem.[2] Strauss' argument, and others akin, emerged, in short, as a criticism that any amateur behaviorist could put to rest.

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[2] For an examination of science and its history as a series of answers to important empirical and conceptual problems see, Larry Laudan, Progress and Its Problems: Towards a Theory of Scientific Growth (Berkeley and Los Angeles: University of California Press, 1977). Of course, as Laudan notes, science does much more than simply solve problems.

Another prominent critic of the value-freedom championed by the positivists in the social sciences has been Charles Taylor. For Taylor, social scientific theory cannot pay credence to positivistic guidelines in these matters since the 'framework' it provides is required to give meaning to the data collected. Taylor believes that the methods of social scientific investigation are necessarily value-laden from the outset and argues that "the framework gives us as it were the geography of the range of phenomena in question, it tells us how they can vary, what are the major dimensions of valuation". "But since", he continues, "we are dealing with matters which are of great importance to human beings, a given map will have, as it were, its own built-in value-slope".[3] Although somewhat more sophisticated than Strauss' argument, this criticism is, if construed along positivist lines, quite susceptible to being over-ridden - the 'naturalistic' explanation for such a 'value-slope' would only run that much 'deeper'. And of course the standard positivist response was simply to argue that if the subject field was so narrowed by values then it would become manifest in a lack of predictive capacity - a phenomenon to be watched for equally as closely in the natural sciences.

Taylor's criticism, however, can partially be seen to reflect another concern which many social scientists felt when confronted by positivist mandates; namely, the diminishment of their praised notion of Verstehen to a mere heuristic device that could, at most, broaden existing explanatory parameters. And it was in their attempt to rescue this precious

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[3] Charles Taylor, "Neutrality in Political Science", in Philosophy, Politics, and Society, Third Series, ed. Peter Laslett and W.G. Runciman (Oxford: Basil Blackwell, 1967), p.40.

resource that social scientists refused to countenance the unity of science mandate of the positivists and, hence, the supremacy of scientific knowledge.

We will recall that in our first chapter we looked at how the question concerning scientific knowledge has been approached by Romantics, who place faith in 'non-rational' ways of apprehending profound truths or the ultimate meaning of self-hood and existence, and by those critics concerned with what are perceived to be the dangerous political ramifications of the epistemic imperialism indicative of a prevailing scientism. It is, as we had initially noted, also a very important question in the philosophy of the social sciences. Indeed, the role of scientific knowledge in understanding ourselves and the nature of the species is perhaps the most important question in this academic discipline. Many of the major problems explored therein are the results of attempts to expose the alleged inappropriateness of transferring the methods of the natural sciences to the study of social scientific phenomena.

The rejection of methodological monism[4] was, of course, constitutive of the work of Wilhelm Dilthey and Max Weber, two of the most prominent precursors of social scientific thought in this century. For Dilthey, the natural sciences were, and should be, concerned with the explanation of the entities and forces operative in the world of nature. However, the study of cultural entities, he argued, must involve the application of another form of knowing; namely, understanding. The methods of the natural sciences, he argued, were appropriate for the study of the world

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[4] Most commentators equate the advocation of such monism with scientism *per se*.

of nature, and their epistemological justification had been adequately worked out by Immanuel Kant. These methods were, however, unable to explicate the realm of value and meaning as constituted by the human beings' institutions, cultures, and social relationships. Dilthey took it upon himself to explore the prerequisites of knowledge in the social sciences, albeit without employing the ahistorical Kantian self. This was motivated by his belief that "an objective handling of cultural phenomena must respect their relational, 'for us' character and hence must accept the cultural object as existing in a special system which contains as part the historical self for whom the object exists".[5]

Dilthey argued that there is no transcendental point from which to understand human phenomena and that this understanding is only a 'constant approximation' - there was for him, therefore, only finite and limited meanings. Nonetheless, Dilthey contended that the process involved in the understanding indicative of social studies was Erlebnis, 'immediate lived experience'. Most apt to reveal the 'connectedness of psychic life', Dilthey argued that Erlebnis involved an empathetic process of re-enactment - albeit a process that was operative in everyday life. In Dilthey's own words;

> The position which higher understanding assumes towards its object is determined by its task of discovering a life-context [Lebenszusammenhang] in that which is given. This is possible only when the context, which exists in one's own lived experience and which is experienced in innumerable instances, is always present and standing ready with all ther possibilities inherent within it. This attitude, which is given in the task of understanding, we call the projection of oneself

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[5] This appears, at any rate, to be the most widely received interpretation of Dilthey's position. See, for example, Roy J. Howard, Three Faces of Hermeneutics: An Introduction to Current Theories of Understanding (Berkeley and Los Angeles: University of California Press, 1982), p.15.

[Sichhineinversetzen], be it into a person or a work.[6]

Psychologisms are indeed prevalent throughout the work of Dilthey, as they are also prevalent in the work of Friedrich Schleiermacher, who conceptualized understanding as a 'divinatory act' through which one placed oneself in the mind of another.[7] Dilthey's use of terminology such as 're-creation', 're-experiencing', and 'fully sympathetic reliving' is indicative of what Gadamer denotes as the 'psychological turn' which hermeneutics and the theory of understanding took in the work of Schleiermacher and Dilthey. In fact, for Dilthey 'lived experience', "an inner awareness of the entire psychic reality within a given situation",[8] is the validating point for all developments in the human studies. Shedding all attempts at conceptual concealment, he succinctly stated his belief that "there is something irrational in all understanding".[9]

It is quite clear that in the work of Dilthey, Erlebnis emerges as the operative principle of the more general notion of Verstehen (understanding) that is alleged to distinguish cultural studies (Geisteswissenschaften) from the natural sciences. The notion of Verstehen also received critical attention in the work of Max Weber who, although

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[6] Wilhelm Dilthey, Descriptive Psychology and Historical Understanding, trans. Richard M. Zaner and Kenneth L. Heiges (The Hague: Martinus Nijhoff, 1977), p.132.

[7] For a brief portrayal of Schleiermacher's position by Wilhelm Dilthey, see the excerpt from the latter, "The Rise of Hermeneutics", in Critical Sociology, ed. Paul Connerton (New York: Penguin Books, 1976), pp.104-116.

[8] Op. Cit., p.137.

[9] Ibid.

stressing the importance of an interpretative social science, did not consider understanding in the social sciences to be parasitic upon, nor incompatible with, causal explanations in the natural sciences. Weber did, however, argue that Verstehen was more than an empathetic re-enactment or, for that matter, any psychological process.

For Weber, Verstehen was a question of knowing that, by helping to reveal the subjective and unobservable meanings that agents attach to their actions, assisted social scientists in their act of 'direct observational understanding'. Presupposing the commitment of actions to the future, Verstehen enabled one to contrast an observed action with an ideal-typical 'context of motivation'. In Weber's view, the construction of ideal types (i.e., rational economic man) are important since they enable a social scientist "to understand the real action, influenced as it is by all sorts of irrational facts (emotional impulses, errors), as a deviation from what might be expected if those performing it had behaved in a fully rational way".[10] In short, Verstehen was decisive in enabling a social scientist achieve complete explanatory understanding. It was not incompatible with a causal explanation, it simply made the latter 'adequate on the level of meaning'.

Although in Weber's analysis Verstehen can still be interpreted as a strange departure of the ego from itself to a union with other egos, his stress on the importance of 'objectivity' in social scientific research led him to argue that Verstehen must be supplemented by sociological laws possessed of a statistical basis. This was a result of his more

[10] Max Weber, "The Nature of Social Action", in Max Weber: Selections in Translation, ed. W.G. Runciman, trans. E. Matthews (Cambridge: Cambridge University Press, 1978), p.9.

general rule that with all hypotheses "it is vital to have some check on our interpretation of meaning by reference to what ensues from the action - to what the outcome actually is".[11] One can see, therefore, that there is operative in Weber's thesis a strong conviction that inductive inferences play an essential part in social science, for although his 'motive-explanations' must be attained via a grasp of the agent's subjective meanings, their causal adequacy is validated by established generalizations from experience.

In a nutshell, Weber's view is that Verstehen helps to reveal the subjective meanings that a particular agent imputes to their action and which distinguishes the latter from the behavior which positivistic social science attempts to explain. However, in addition to his insistence that the social sciences understand the subjective meanings of social action was his claim that they can only achieve necessary objectivity if they are governed by the rational construction of ideal types. The latter, allegedly, reveal essences operative in history and highlight the social organization and historical conditioning of the human being.

A common response from Weber's critics has been to laud his efforts to argue that Verstehen cannot be reduced to an empathetic act but also to criticize his recommendation that the social sciences be the 'objective study of subjective meaning'. The criticisms are therefore, quite predictably, directed against his views on understanding and/or meaning. Concerning the former, one major criticism is of Weber's implicit view that an interpreter can initially understand an action in the actor's

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[11] Ibid., p.13.

terms and then proceed to explain it in their own terms.[12] As far as criticisms of Weber's view of meaning are concerned, most prominent is that which condemns his thesis that meanings emerge only through the subjective consciousness of actors.[13] In a more sweeping way, Weber might also be indicted by some for assuming a position that in the final analysis is not so different from the positivist thesis that Verstehen is simply an hypotheses generator, for he does quite clearly suggest that Verstehen is 'not enough by itself'.

The criticism of Weber's advocacy of the objective study of subjective meaning is based on the perceived implausibility of a thesis that argues that the use of ideal-types can illuminate the subjective meanings brought to bear in social action. Prominent amongst critics of this position has been Peter Winch. Winch argues that Weber's thesis does not take adequate note of the difference between the notion of meaning and that of function. Winch suggests that Weber "adopts the external point of view and forgets to take account of the 'subjectively intended sense' of the behavior he is talking about".[14] For Winch this is the natural result of Weber's attempt to divorce the social relations linking agents from the ideas which their actions embody. It is Winch's thesis that since "social relations really exist only in and through

[12] See, for example, David Thomas, Naturalism and Social Science: A Post-Empiricist Philosophy of Social Science (Cambridge: Cambridge University Press, 1979). The third chapter of this book is especially appropriate to our discussion at this point. Thomas notes that the view implicit in Weber goes against the holistic nature of scientific theory and explanation.

[13] See, for example, Anthony Giddons, Studies in Social and Political Theory (London: Hutchinson & Co., 1977), pp.179-182.

[14] Peter Winch, The Idea of a Social Science and its Realation to Philosophy (London: Routledge & Kegan Paul, 1958), p.117.

the ideas which are current in society....it follows that social relations must be an equally unsuitable subject for generalizations".[15]

For Winch, all meaningful behavior is rule-governed, where rule-governed refers not to the ability of an actor to consciously formulate it, "but whether it makes sense to distinguish between a right and a wrong way of doing things in connection with what he does".[16]

In Wittgensteinian fashion, Winch argues that these rules are rooted in forms of life. Understanding is therefore best illuminated by a participatory analogy - it simply involves 'being able to go on'.[17] In fact, Winch has given much credence to Wittgenstein's claim that human actions are intersubjectively identifiable because they are conceptualized in terms of a common language. And it is Winch's thesis that;

> Reality is not what gives language sense. What is real and what is unreal shows itself in the sense that language has.[18]

His perspective on understanding in the social sciences can, therefore, be interpreted, as it often is, as coming near to collapsing into a full-blown relativism where there are as many realities as there are meaning frames. This is perhaps best revealed in his claim that "the

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[15] Ibid., p.133.

[16] Ibid., p.58.

[17] An outstanding critic of Wittgenstein's and Winch's position on these matters has been Ernest Gellner. In Gellner's view, "The terrible thing about Wittgenstein was the supposition that the fact a concept was part of a 'form of life' (or even the perception of just what part it plays) settles or solves anything....A social order, a 'culture', a 'form of life', is a problem - never a solution". See Ernest Gellner, Thought and Change (London: Weidenfeld & Nicholson, 1964), p.184.

[18] Peter Winch, Ethics and Action (London: Routledge 7 Kegan Paul, 1972), pp.12-13.

concepts used by primitive peoples can only be interpreted in the context of the way of life of those peoples".[19]

Winch's more general thesis, however, that because of the omnipresence of language, action is necessarily social from the beginning, inevitably leads to the conclusion that understanding is much closer to discourse per se than either Dilthey or Weber recognized. His work has, therefore, been decisive in wedding the Wittgensteinian notion of language-games to the claim launched by contemporary hermeneutics that all social analysis cannot at any point free itself from the confines of intersubjective standards and achieve the 'objectivity' desired by Weber and more positivistically-minded social scientists. We will consider this very important hermeneutical thesis on the nature of understanding shortly. However, we will first take a brief look at the notion of meaning as it is reflected in social scientific discourse. In fact, our considerations of hermeneutic thought will necessarily follow from a consideration of meaning just as it has followed from our brief portrayal of Winch's critique of Weber's notion of understanding.

Weber's instructions to social scientists to attempt to understand the meanings implicit in a subject's actions has been conjoined with a variety of philosophical positions on the nature of meaning to produce a plethora of efforts in the philosophy of the social sciences to explicate such understanding. For example, the Hegelian thesis that the mere possibility of understanding presupposes the original unity of all things in Spirit, tempered by Kant's speculations on the transcendental apperception, has resulted in the attempt, by the Husserlian tradition

[19] Ibid., p.28.

in phenomenology, to refer social phenomena to their intentional meanings constitutive of the transcendental ego.

This perspective, often referred to as 'descriptive' phenomenology, stems from the early writings of Edmund Husserl.[20] Therein, the search for the source of meaning leads, via the phenomenological epoche, to the reduction of 'psychological self-experience' to the transcendental phenomenological ego. The basis for all objectivity is thereby sought in a radical subjectivity - a venture that inevitably threatens to collapse into a full-blown solipsism. In phenomenology so construed, intentional acts are conceived as directed towards some object of consciousness and the description of ensuing meanings is performed by the transcendent ego. The meaning, therefore, is considered to be prior to description (as it largely is in Weber's thesis of motivational acts) and, in the final analysis, it is this description which comes to be considered isomorphic with interpretation.

We can see, therefore, that in this brand of Husserlian phenomenology the object of understanding is the 'ideal' of pure intentional meaning (noemata) which is 'brought to bear' by text or action. Understanding of meanings merges with the understanding of essences, and language itself is seen as possessed of a priori foundations that are constituted by consciousness itself.

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[20] See, for example, Edmund Husserl, Ideas: General Introduction to Pure Phenomenology, trans. W.R. Boyce Gibson (New York: Collier Books, 1962) and Cartesian Meditations: An Introduction to Phenomenology, trans. Dorion Cairns (The Hague: Martinus Nijhoff, 1977).

In traditional social science, a variant of this perspective has received wide-spread recognition through the work, in political theory, of Leo Strauss. Strauss has extolled Husserl on many counts; perhaps primary was his conviction that Husserl:

> had realized more profoundly than anybody else that the scientific understanding of the world, far from being the perfection of our natural understanding, is derivative from the latter in such a way as to make us oblivious of the very foundations of the scientific understanding.[21]

It is also the case that Strauss's "preference for time-less patterns (synchrony) over historical events (diachrony), and the rejection of a superficial empiricism in favour of 'depth explication and hidden criteria"[22] was largely rooted in his acceptance of the Husserlian descriptive phenomenology and his reaction against the 'existential' turn that phenomenology took at the hands of Heidegger. For Strauss, the writings of all political theorists are possessed of intrinsic and invariant meanings - the interpretation of the meaning of these texts is not subjected to the vacillations of social and historical contexts as historicism alleges.

We have seen that the descriptive phenomenological tradition that stems from the work of the early Husserl seeks to illuminate the invariant meanings constitutive of intentional acts of consciousness. Alfred

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[21] Leo Strauss, Studies in Platonic Political Philosophy (Chicago and London: Unversity of Chicago Press, 1983), p.31. Husserl's primary initial goal, was, of course, to discover a science of 'essential being' - a science of the a priori. It is hard not to notice the connection here to our early portrayal of critics of scientism, wherein twentieth century science is largely seen as having become severed from our 'natural understanding'.

[22] Fred Dallmayr, Language and Politics: Why Does Language Matter to Political Philosophy (Notre Dame, Indiana: University of Notre Dame Press, 1984), p.79.

Schutz, however, represents a strain in phenomenological thought that refers meanings to human action constitutive of the life-world (Lebenswelt) and argues, in wording reminiscent of Weber, that "all social sciences are objective meaning-contexts of subjective meaning-contexts".[23] Schutz is also in agreement with Weber that ideal types are fundamental in the social sciences. He conditions his agreement, however, by arguing that their use is based on a scale of increasing anonymity; from the world of consociates to that of contemporaries and from there to the world of predecessors and then to successors, the use of ideal types becomes more and more important.[24] Ideal types, for Schutz, become more and more decisive as we distance ourselves from direct interaction and the actual subjective-meaning complexes;

> in the process of ideal-typical constructions, subjective meaning-contexts that can be directly experienced are successively replaced by a series of objective meaning-contexts".[25]

It is Schutz's thesis that meanings originate when the Ego engages in an Act of 'turning toward' and an experience is thereby 'lifted out' of the stream of consciousness and becomes an entity unto itself. Schutz is opposed to both the notion of Verstehen as empathy[26] and the thesis that subjective meanings are motivational in content. His thesis is that "meaning is merely an operation of intentionality, which, only becomes visible to the reflective glance".[27] Therefore, the agent's motives,

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[23] Alfred Schutz, The Phenomenology of the Social World, trans. George Walsh and Frederick Lehnert (Evanston, Ill.: Northwestern University Press, 1967), p.241.

[24] Ibid., p.242.

[25] Ibid., p.241.

[26] Ibid., pp. 114-115.

which seldom appear as articulated states of consciousness, are not decisive for subjective meaning;

> to know the subjective meaning of the product means that we are able to run over in our minds in simultaneity or quasi-simultaneity the polythetic Acts which constituted the experience of the producer".[28]

However, even Schutz, like many others who advocate an interpretative social science rather than a purely nomothetic one, argues that the subjective meanings can never be determinately grasped. Schutz's thesis is that even in direct communication with consociates - the 'We-relationship' -

> The subjective meaning that the interpreter does grasp is at best an approximation to the sign-user's intended meaning, but never that meaning itself, for one's knowledge of another person's perspective is always necessarily limited. For exactly the same reason, the person who expresses himself in signs is never quite sure of how he is being understood."[29]

It is at this point in Schutz's analysis that we see the view emerge that meanings are a result of the interpretative enterprise and that the necessity of understanding is a condition of the life-world's existence. Indeed, many phenomenologists, so inspired, seek to explore the universal, or as some would have it, a la Husserl, the transcendental principles of the life-world (i.e., those conditions which must always be met for meaning-production to be possible at all) once they acknowledge that "many an aspect which we uncritically attribute to 'social realities' are in fact organizing principles of our being-in-the-world".[30]

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[27] Ibid., p.52.

[28] Ibid., p.133.

[29] Ibid., p.129.

[30] Zygmunt Bauman, Hermeneutics and Social Sciences (New York: Columbia

Many phenomenological studies in the social sciences have, in fact, lauded the later Husserl's

> discovery of the descriptive ontology of the life-world as an ultimate horizon of meaning in which all persons, all natural things, and all cultural artifacts are understood in the perceptual and common-sensical attitude of mundane every-day life, if we mean by attitude (Einstellung) 'a habitually fixed style' of orienting the human will and interests to achieve certain goals both theoretical and nontheoretical".[31]

What phenomenology so construed attempts to elucidate is, therefore, the life-world constitutive of a pre-scientific awareness, the world which serves as the funding and the founding matrix for all the sciences. Scientism is herein indicted for commiting an 'empiricide', a conceptual reification, "in which conceptual thought forgets its rootedness in the direct immediacy of everyday experiences".[32]

This phenomenological thesis, that all theoretical knowledge and activity presuppose the 'all-encompassing system of meanings' constitutive of the pre-conceptual life-world, has been decisive in providing a framework for many developments in the sociology of knowledge. Most renowned amongst such studies has been the work of Peter Berger and Thomas Luckmann wherein it is considered that common-sense knowledge "constitutes the fabric of meanings without which no society could exist".[33] Abiding by Husserlian dictates they argue that their efforts to reveal

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University Press, 1978), p.183.

[31] Hwa Yol Jung, The Crisis of Political Understanding: A Phenomenological Perspective in the Conduct of Political Inquiry (Pittsburgh: Duquesne Unversity Press, 1979), p.60.

[32] Ibid., p.62.

[33] Peter L. Berger and Thomas Luckmann, The Social Construction of Reality: A Treatise in the Sociology of Knowledge (Garden City, N.Y.: Anchor Books, 1967), p.15.

this 'natural attitude' are purely descriptive and, in light of the employment of the phenomenological epoche, makes no "assertions about the ontological status of the phenomena analysed".[34] It is their belief that "despite the objectivity that marks the social world in human experience, it does not thereby acquire an ontological status apart from the human activity that produced it".[35] And it is language for them that, due to its roots in the commonsense reality of everyday life, possesses the ability to both make 'more real' an individual's subjectivity and actualize an entire world at any moment. It is language which imbues an individual's experience with an order of meaning and which is indispensable in the 'reciprocal typification of habitualized actions'. The study of all social meanings and institutions cannot, therefore, avoid a study of the language of everyday life.[36]

We have seen, therefore, that in the search for the subjective meanings which are brought to bear in action, notions such as forms of life (as in Wittgenstein and Winch) and Lebenswelt, or life-world (as in the later Husserl and Schutz) have played a decisive role in preventing such ventures from collapsing into the conceptual incoherencies of solipsistic communication. And we have seen that attempts to elucidate the so-

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[34] Ibid., p.20.

[35] Ibid., pp.60-61.

[36] The thesis that the 'common-sense' language of everyday life is revelatory in this sort of way motivates a variety of approaches in contemporary sociological theory. The methodological common denominator which they all seem to share, however, is perhaps best summed up in the view that "the scientific rationalities can be seen only as ineffective ideals in the actions governed by the presuppositions of everyday life" (as expressed by Harold Garfinkel in Studies in Ethnomethodology (Englewood Cliffs, N.J.: Prentice-Hall Inc., 1967), p.283.

cial a priori (as in the early Husserl) have been constrained by the thesis that the limits of understanding are the limits of social experience and the limits of language in general.

It is contemporary hermeneutics that has most intensely abided by the recognition that intersubjectivity is the 'original datum' of the life-world and which from the very beginning prevents its views on understanding from collapsing into solipsistic confines. It is much of contemporary hermeneutics, in fact, which most appropriately pays heed to the view, which we earlier argued is implicit in Schutz's thesis on understanding, that meanings are a result of the interpretative act itself. Understanding is, therein, not considered a philosopher's fate, as in Husserl, but a human fate, as in Heidegger.[37] 'Psychological self-experience' is not seen as rooted in the transcendental phenomenological Ego nor in atemporal essences operative in history, nor in invariant meaning-contexts indicative of the pretheoretical life-world; rather, it is seen, as it is in Heidegger, as rooted in the hermenuetic of human existence as Being-in-the-world. Verstehen is not seen as a method to be used in the study of social scientific phenomena, as it was in Dilthey and Weber, but as a constituting and, therefore, ontological condition of social life.

It is in the work of Hans-Georg Gadamer that the thesis that Verstehen is not a special method but is rather constituted by language as the medium of the meaningful organization of social life and, therefore, omnipresent, is most radically developed. Gadamer best represents the

[37] This change in the perceived dynamic of understanding is also discussed in Zygmunt Baumann, Hermenuetics and Social Science. Cf., especially, pp.111-193.

move, by hermeneutics, away from the study of subjective meanings while at the same time reminding us that the claim that we are a historical species must be reconciled with the fact that we are also partly tied to tradition.

In applying the notion of the hermenuetic circle (i.e., that the whole must be understood via an understanding of its parts and the parts can only be understood via a grasping of the whole) to the study of historical texts, Gadamer argues that there is a dialectical relationship between the changing expectations of meaning of a text and the unity of meaning which the text acquires. His brand of hermeneutics is in direct contrast to the Romantic tradition which supposed that one could locate invariant meanings within a text or action (and which equated understanding with the reproduction of an original product). It is also radically opposed to the 'psychological turn' that hermeneutics underwent at the hands of both Schleiermacher and Dilthey. Such a perspective was epitomized by Dilthey's view that "the final aim of the hermeneutic procedure is to understand the author better than he has understood himself: a proposition which is the necessary consequence of the doctrine of unconscious creation".[38] We have already seen of, course, that both of these traditions can play into the hands of a descriptive phenomenology. Leo Strauss's search for meanings purged of historical limitations is a most representative example of this alliance.

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[38] Wilhelm Dilthey, "The Rise of Hermeneutics", in Critical Sociology, ed. Paul Connerton, p.116.

For Gadamer, the 'anticipatory movement of fore-understanding' is determinate in the understanding of a text. His thesis, however, is not initially formulated from a radical subjective relativistic bias, since he argues that this anticipation of meaning is rooted in the communality constitutive of tradition. Yet at the same time Gadamer is not conceptually constrained by the orthodoxy of a generic historicism. This is indicated by his argument that "tradition is not simply a pre-condition into which we come, but we produce it ourselves, inasmuch as we understand, participate in the evolution of tradition and hence further determine it ourselves".[39] Indeed, this argument is the substantive content behind his claim that the hermeneutical circle is not indicative of a method that needs further explication but rather "describes an ontological structural element in understanding".[40]

The fact that human beings are both part of a tradition <u>and</u> unique historical objects dictates that hermeneutics is an indispensable <u>condition</u> of our being-in-the-world; it is, for Gadamer, <u>necessarily</u> the case that hermeneutics is based on a 'polarity of familiarity and strangeness'. Stemming from these very conditions, it is the paradoxical task of hermeneutics to give clarification to them.

The view, which we argued was implicit in Schutz, that meanings are in part determined by the interpretative act, is given full recognition by Gadamer. It is his belief that the meaning of a text or action is always in surplus vis-a-vis the 'intended' meaning of the agent or author.

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[39] Hans-Georg Gadamer, <u>Truth and Method</u> (New York: The Seabury Press, 1975), p.261.

[40] Ibid.

Yet this surplus is not the result of a reading, as it is in Strauss, to discern unconscious or implicit intentions. Due to the mere existence of the interpreter, the discovery of the 'true' meaning is an infinite process; it is why "understanding is not merely a reproductive, but always a productive attitude as well".[41]

For Gadamer, the historical objects that 'address' us are, in fact, mere 'phantoms' due to the involvement, in all historical thinking, of a consciousness itself possessed of historicality. Hermeneutics must therefore recognize that this consciousness constitutive of the knowledge of oneself is also never complete - "the horizon of the present is being continually formed".[42] Although the projection of an historical horizon, like that of the anticipation of meaning in 'fore-understanding', is necessarily a component of the process of understanding, upon its very projection it is 'simultaneously removed'. In Gadamer, therefore, understanding at all levels is possessed of a tentativeness and dialectic not unlike that of dialogue itself, wherein agreement concerning an object is often secondary to getting to know the 'horizon' of another person. In fact, for Gadamer, understanding is the 'fusing' of these horizons.

This view is somewhat akin to Winch's view that the understanding of meaning, if it is possible at all, is the mediation of various forms of life. However, in Gadamer, these forms of life (as 'traditions'), although constituted by a language community, are not possessed of the

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[41] Ibid., p.264. So construed, hermeneutics is, as the story goes, an attempt to move behind Plato and return to Socratic times.

[42] Ibid., p.273.

same internal coherency that they assume in the writings of Winch. In the work of Gadamer, truth and knowledge are stripped of any transcendental foundations[43]- indeed, the former is considered, as it is in the recent work of Richard Rorty, to be no more than the achievement of dialogue between projected horizons. This is the reason why Gadamer feels content in positing the universality of hermeneutics as a necessary consequence of our being-in-the-world.[44]

It is this thesis that is indeed the crystallization of the claim of much of contemporary hermeneutics that the study of social phenomena is akin to the study of texts and that the alleged 'progress' in social scientific research is simply constitutive of a series of choices between various plausible interpretations. Scientism so deplored is the claim that there is one true picture (read representation) of the way the social world is and that that picture is revealed by the explanatory

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[43] Given that one of the major purposes of this chapteris to reveal the kind of discourse that interpretational philosophy of the social sciences engages in through an attempt to defy the confines of positivist thought and to get a look at some of their 'research' suggestions, it is not necessary to elaborate on all suggestions. However, it should be made clear that in chosing to mention the work of Gadamer, I am not supposing that he epitomizes contemporary hermeneutic thought. Now I personally believe that hermeneutics will become increasingly 'Gadamerian' and that his thought will also become a resource base for much work indicative of the deconstructionalist genre. This, however, apropos what constitutes contemporary hermeneutic thought, is quite beside the point. In light of this, one should note that the work of Karl-Otto Apel represents an element of hermeneutic thought that is premised upon, and attempts to elucidate, the transcendent principles of a priori communication. See especially, Karl-Otto Apel, Towards a Transformation of Philosophy, trans. Glyn Adey and David Frisby (London: Routledge & Kegan Paul, 1980).

[44] In light of what was said in our previous footnote, it should be noted here that there is also much resistance to Gadamer's construal of hermeneutics as'universal'. One leading spokesman of this resistance is Jurgen Habermas. It is Habermas' opinion that Gadamer's conflation of Truth with the 'understanding' that arises from the interaction within and between traditions overlooks the fact that ideologi-

methods of the natural sciences. Scientism is the rejection of the claim that ther are many ways of describing ourselves as beings in the world.

The scenario we have described is therefore one wherein the earlier Husserlian attempt to find meanings purified of historical limitation, mediated by Schutz's efforts to isolate the principles of the life-world, can be seen as exhausting itself in the claim of Gadamer and others that understanding can never be anything but an endless projection and reprojection of horizons of anticipated meanings. This latter claim is implicit in the attempt by ethnomethodology to establish workable research programs. Therein, the problem of truth becomes entirely divorced from the problem of understanding and attention is diverted from attempting to discover true and false meanings; "the policy is recommended that any social setting be viewed as self-organizing with respect to the intelligible character of its own appearances as representations of or as evidences-of-a-social- order".[45]

Such a position also motivates the work of many deconstructionalists wherein reference to the subjective consciousness and ego are all but completely suspended. Under deconstructionalist parameters the very no-

cal domination both brings about and thrives upon 'distorted' communication. Habermas claims that only 'critical theory' guided by our emancipatory interest (as opposed to the interest to understand that guides hermeneutics) can reveal these distortions and pave the way for the overcoming of them. In addition, there is both explicit and implicit in Habermas' philosophy the view that 'empirical-analytical' studies in the natural sciences (which are guided by the interest to predict and control) are largely free of the indefinitness of the interpretational process. To this extent, he remains within that tradition which argues that there is a methodological distinction between the natural and social sciences. See Jurgen Habermas, Knowledge and Human Interests, trans. Jeremy J. Shapiro (Boston: Beacon Press, 1971).

[45] See Harold Garfinkel, Studies in Ethnomethodology, p.33.

tion of understanding is radically displaced - to understand an action or text is considered to necessarily misunderstand it. At this point the philosophy of the social sciences has come a long way from the belief that meanings are the result of intentional acts of consciousness, which need to be phenomenologically apprehended and then 'described'. Indeed in contemporary deconstructionalism we witness the emergence of the view that "consciousness has never really been 'present' to the world".[46] Understanding founded on meanings becomes dialogue lost in dialogue.

On one rational reconstruction of the tradition of interpretational social science, therefore, it can be seen that the contention of the Diltheys and Webers, that social action should be interpreted and 'understood' rather than incorporated into law-like generalizations, crystallizes into the view of much of contemporary hermeneutics that social phenomena are akin to texts and that our understanding of them is no more than the result of a choice between various plausible interpretations. In short, what we witness within a tradition initially fueled by a reaction to positivism is a questioning of the very problematic within the philosophy of the social sciences which generates positivist/anti-positivist debates. As we will see in a later chapter that questioning is also characteristic of much of post-empiricist social and political theory. It will, therefore, now be appropriate to provide an extensive look at the developments within post-empiricist philosophy of science which those theorists believe are conceptually fueling their cause. In fact, in the next couple of chapters it will become increasingly apparant why, given the nature of this thesis, it is so important to explore

[46] As J.M. Edie construes Derrida's early position in, "Phenomenology in America, 1984", Research in Phenomenology 14 (1984):243.

the possibility that there is a merging of developments within the philosophy of science with developments within the Verstehen tradition.

Chapter IV

POST-EMPIRICISM

We have seen how the positivists approached the philosophy of science, how some of their predominant theses developed, and we have briefly considered the negative reaction that many social scientists had to their philosophy and conception of the growth of Knowledge. The impact, both constraining and inspiring, that Positivism has had on academic thought in the twentieth century can not go under-estimated. Indeed, one might justifiably employ Whiteheadian phraseology at this point and claim that almost all of Anglo-American philosophy of science and social science in the last forty years has pivoted upon some footnote to positivism.

Perhaps the most general criticism of the positivist approach has been that its proponents relied much too heavily on formal logical analysis and 'ideal' languages and were thereby prevented from seeing that the history of science, the growth of Knowledge generally, and the structure of actual scientific theories could not be understood by their methods. To some degree this criticism misses the mark, especially when it is recalled that the positivists largely took it for granted that their philosophy, as logical analysis, was concerned precisely with a logical reconstruction, "it was never intended to be an account of the origin and development of scientific theories".[1] Indeed, as one sympa-

[1] Herbert Feigl, "The Origin and Spirit of Logical Positivism", in The Legacy of Logical Positivism, ed. Peter Achinstein and Stephen F.

thetic commentator has noted in a review of Logical Positivism, "the value of the seemingly very artificial logical reconstruction consists in the distinction that it allows us to make between logicomathematical and empirical questions that may be asked regarding scientific theories".[2]

This counter on behalf of the cognitive virtues of formal logical analysis is quite in order; however, to the extent that it is used to defend Logical Positivism per se it does overlook the fact that most positivists felt so entirely comfortable in their use of logical tools that they did apply them to a great number of questions not susceptible to logicomathematical formulation. Excluding a class of propositions from cognitively meaningful discourse because they are empirically unverifiable is, for example, not the province of logical analysis, it is, more appropriately, the domain of semantics and natural science. Therefore, to the extent that positivists made declarative utterances on the nature of metaphysics and world-views, to the extent that they ventured into questions epistemological in attempts to 'construct' phenomenalist or physicalist 'systems', even to the extent that they commented upon extensionality and theory-change, in all these and other ventures, they cannot be excused from criticism by the claim that 'all their analysis ever was a logical reconstruction of ideal languages'. And, in fact, the critics of positivism never have been prevented by the argument from logical analysis from launching criticisms at most of what the positivists had to say.

Barker (Baltimore: The John Hopkins Press, 1969), p.17.

[2] Ibid.

Although, as our portrayal of positivism in the last chapter has indicated, there was constant disagreement between its proponents and a plethora of changing opinions, the positivists by and large remained relatively confident that their general position had accomplished much more than any hitherto existing approach to philosophical problems. Indeed, their reliance on the tools of formal logic, the analytic/synthetic distinction, the stability of the phenomenal world and observation language, and the resources of probability analysis and deductive logic to escape the problems associated with inductive inferences led many philosophers to claim that they had arrived at an integration of "a theory of meaning, of truth, of explanation, and of equivalence".[3]

The positivists' general goal of the unification of the sciences and the elimination of metaphysical (meaningless) discourse was, however, plagued with difficulties right from the beginning. The precise criterion of meaningfulness, for example, was never decisively decided upon; from strict verifiability, to verifiability in principle, then to confirmability and then to testability, and finally to inclusion in an empiricist deductive theory, was the rapid journey it travelled. And at all points of change or reformulation, it became increasingly unclear how the criterion could be prevented from swallowing up scientific hypotheses, general laws, theoretical terms, and subjunctive conditional and counterfactual statements. Carnap's work on trying to isolate the ultimate unit of meaning was also indicative of indecisiveness; initially linking it to phenomenal or protocol statements, he later moved to consider its role in the logical syntax of the language of science,

[3] As Lawrence Sklar notes in, "Saving the Noumena", Philosophical Topics 13 (1982):90.

and later, influenced by Tarski, he began to seriously investigate the import of the semantic theory of truth and the use of metalanguages in its determination.

In considering the following depiction of the 'post-empiricist' philosophy of science that has emerged in reaction to positivism, therefore, one must not assume that all positivist mandates were suddenly renounced de facto when post-empiricist thought began to receive a large philosophical audience. In fact, the indecisiveness that permeated positivist circles is the best indicator that its proponents were quite willing to reformulate theses which many outside observers would feel comfortable in claiming were decisive to the positivist program. It should also be noted that there were countless criticisms directed at certain aspects of the positivist program which its proponents came to terms with, without, however, abandoning all of their philosophical goals.

Representative of such criticisms, for example, would be Carl Hempel's critical probing of the positivist claim that it was possible to draw a distinction between those statements possessed of purely logical or empirical significance and those statements possessed of no cognitive significance at all.[4] Also representative would be Nelson Goodman's claim that it is largely the entrenchment of certain predicates in our language that facilitates or precludes our inductive projection of certain properties from a sample to a larger population. This claim was

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[4] See, for example, Carl Hempel, "Empiricist Criteria of Cognitive Significance: Problems and Changes", in Aspects of Scientific Explanation And Others Essays in the Philosophy of Science (New York: The Free Press, 1965), pp.101-119.

reflected in his more general thesis that "the line between valid and invalid predictions (or inductions or projections) is drawn upon the basis of how the world is and has been described and anticipated in words".[5]

It should also, therefore, be kept in mind when reading this chapter that a presentation of the philosophical attack on positivism could have various points of emphasis quite distinct from the ones which I have decided to pay credence. The views of the latter Wittgenstein and the 'ordinary language' school of philosophy could, for instance, have been given a predominant role in such a presentation, as could have the more specific criticisms of a multitude of philosophers writing in the analytic (Anglo-American) tradition. The authors I have chosen to discuss in this chapter have been primarily chosen for the magnitude of their criticisms, the influence that they have had in stimulating debate along radically non-positivistic lines, as well as for the impact which their views have had, and no doubt will continue to have, on the philosophy of the social sciences.

4.1 KARL POPPER AS PRODIGAL SON

Although his writings did not receive general prominence until positivism was well on its way to demise, it is Karl Popper who is important to consider in initially revealing some of the basic deficiencies of the positivist program. Even though Popper wrote quite extensively in the thirties, communicated with those intellectuals affiliated with the Vi-

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[5] See Nelson Goodman, Fact, Fiction, and Forecast, Fourth Edition (Cambridge, Mass.: Harvard University Press, 1983), p.121.

enna Circle and shared several approaches to philosophical problems with them, it is quite inappropriate to consider him a positivist, as many commentators, especially in the social sciences, tend to do (more than often, simply because Popper writes 'seriously' about science).[6]

Arguing the importance of recognizing that most of our scientific theories originate in myths, Popper concludes that "it would be inadequate to draw the line of demarcation between science and metaphysics so as to exclude metaphysics as nonsensical from a meaningful language".[7] At one and the same time, therefore, Popper objects to two very important positivist theses; namely, the criterion of cognitive meaningfulness that purports to exclude metaphysics and the thesis, which primarily stems from the work of Carnap, that claims it is possible to construct one universal language of science - a language which is both able to provide the formation rules for its own syntax and exclude all metaphysical statements.

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[6] It is interesting to note that although he is often branded as a positivist by those in the philosophy of the social sciences, he is equally as often renounced as an irrationalist by those in the philosophy of science. For a presentation of Popper as an 'irrationalist rationalist', see W.H. Newton-Smith, The Rationality of Science (London: Routledge and Keagan Paul, 1981). For a look at the kind of issues raised in the debate between Popper and Theodore Adorno (as a representative of the Frankfurt School's 'Critical Theorists') that took place in the early 1960's, see David Frisby, "The Popper-Adorno Controversy: The Methodological Dispute in German Sociology", Philosophy of the Social Sciences 2 (1972):105-119. By including Popper in our consideration of post-empiricism, I am implicitly taking sides with Popper vis a vis Adorno and not regarding him as a positivist.

[7] Karl Popper, Conjectures and Refutations: The Growth of Scientific Knowledge (New York: Harper Torchbooks, 1968),p.257.

Although Popper does not wish to pronounce all metaphysical statements as meaningless he does, however, wish to establish a 'criterion of demarcation' between science and metaphysics. For him, this criterion would be based on the degrees of testability of various theories; "there will be well-testable theories, hardly testable theories, and non-testable theories".[8] Metaphysical theories, constituting the latter type of theories, will therefore be of 'no interest' to empirical scientists.[9] Popper's notion of testability , however, should not be confused with the notion of testability employed by Carnap in some of his latter writings. For Carnap, the notion of testability is largely connected with the notion of 'confirming', in a probabilistic manner, the truth of a statement by inductive methods. In contradistinction, the major import of Popper's philosophy of science is his complete opposition to both the notion of conclusively verifying a proposition (what he calls the 'Principle of Naive Verification') and the thesis that holds that a proposition is confirmable because it can be proven probable. And Popper's opposition to these notions is a direct result of his belief that the growth of scientific Knowledge is non-inductive. Hypotheses, for Popper, may be the result of generalizations from experiences but their justification never proceeds by enumerating confirming instances - hypotheses and theories in general only enter the storehouse of Knowledge by emerging safe from attempts to falsify them. A hypothesis that 'stands up well' to the severest attempts to falsify it is said by Popper to be

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[8] Ibid.

[9] Notice Popper's rather loose use of the term 'theory' at this point; metaphysical theories was certainly not something the positivists spoke of - 'utterances' for them was always considered a more appropriate designator.

well-corroborated, but such corroboration, he argues, does not increase its degree of probability.

Popper's thesis of the impossibility of an inductive probability is to a large degree dependent upon his analysis of the nature of universal propositions. In Popper's view the prior probability of any universal proposition is necessarily zero.[10] This simply means "that in an infinite universe (it may be infinite with respect to the number of distinguishable things, or of spatio-temporal regions), the probability of any (non-tautological) universal law will be zero",[11] before we have gathered any evidence. Given that we are confronted with an infinite domain (the infinity of spatio-temporal regions best supports Popper's thesis) the probability that we assign to the hypothesis upon receiving supporting evidence, regardless of the number of such instances, will never approach beyond zero.

Popper concludes that this very nature of universal statements precludes them from ever being verified or confirmed probabilistically; and argues that only their falsity can be inferred from empirical evidence.[12] He also believes that support for his argument is forthcoming from the mere fact that if scientists aimed at a high degree of probability they would always 'play safe' and advance hypotheses with a very small content, since such hypotheses would stand a far greater chance of being confirmed. However, as Popper argues , "a statement with a high

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[10] For a look at Popper's perspective on these matters see Karl Popper, The Logic of Scientific Discovery (New York: Harper Torchbooks, 1968), pp.254-273.

[11] Ibid., p.363.

[12] Cf. especially, Karl Popper, Conjectures and Refutations, pp.33-65.

probability will be scientifically uninteresting, because it says little and has no explanatory power".[13] His advice to scientists, therefore, is that they be bold and advance theories with a high information content - conjectures which, although more susceptible to falsification, allow the creative and global component of science to come into focus.

Upon considering Popper's expose of the notion of falsifiability one might initially object that he has premissed it upon his analysis of universal statements - statements whose verification is impossible (as most positivists recognized) but whose falsity can be demonstrated by a single conflicting observation. Are not the singular propositions, whose verifiability the positivists built their analysis of the growth of scientific knowledge upon, propositions whose truth can be established, if not in a conclusive way, at least in a probabilistic way? Popper's response to such a query is that even statements of the form 'Here is a glass of water' are constitutive of universal propositions and are therefore susceptible to the same analysis. The reason for their universal nature is that all of the observational predicates invoked by scientists are dispositional; "by the word 'glass', for example, we denote physical bodies which exhibit a certain <u>law-like behaviour</u>".[14] Popper argues that the attempt by Carnap and other positivists to reduce dispositional terms by reduction sentences to specific operational tests cannot avoid an infinite regress. For example, in attempting to reduce the statement 'x is soluble in water' to the operational test 'if x is put into water then x is soluble in water if and only if it dissolves', one

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[13] Ibid., p.58.

[14] Karl Popper, <u>The Logic of Scientific Discovery</u>, p.95.

does not escape the problem of the dispositional nature of all terms. This is due to the fact that "we still have to reduce 'water' and 'dissolves'....but in addition, we are forced into circularity; for we introduce 'soluble' with the help of a term ('water') which in its self cannot be operationally introduced without 'soluble'; and so on, ad infinitum".[15] In Popper's opinion, this vicious circle can never be broken by any technique of reduction or explicit definition; indeed, he suggests that there is no reason to think it should be broken. The mere inescapableness of it simply gives credence to the central postulate of the doctrine of the growth of scientific Knowledge by conjectures and refutations: "our actual tests are never conclusive and always tentative".[16]

Popper is opposed to the whole notion, which he sees as rampant in much of positivist philosophy, that some statements can be justified by perceptual experience. This notion, the doctrine of psychologism as he calls it, which is invoked to prevent the infinite regress believed to ensue from the propositional coherency theory of justification, errs, however, in its failure to recognize that every statement has a universal character implicit within it - that every statement is at once theoretical and hypothetical. In Popper's view, "we can utter no scientific statement that does not go far beyond what can known with certainty 'on the basis of immediate experience'".[17] He therefore considers Neurath's argument that protocol statements are not inviolable and can only be

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[15] Karl Popper, Conjectures and Refutations, p.278.

[16] Ibid.

[17] Karl Popper, The Logic of Scientific Discovery, p.94.

justified vis-a-vis other statements in a scientific theory to be a 'notable advance' over the standard positivist interpretation of the early Carnap. At the same time, however, he rebukes Neurath's failure to provide rules for delimiting the arbitrariness of accepting or rejecting any given protocol statement; a failure that Popper contends inevitably "paves the way for any arbitrary system to set itself up as 'empirical science'".[18]

In Popper's view, the method of deducing and testing conclusions by the employment of other statements must be used in testing basic statements. The methods of deductive logic employed in establishing certain inferences in matters mathematical must be transferred to the analysis of empirical sciences, supplanting the emphasis on induction characteristic of early positivism. Popper himself states succinctly this change of perspective:

> I do not believe...that the question which epistemology must ask is, '...on what does our Knowledge rest?...or more exactly, how can I, having had the experience S. justify my description of it, and defend it against doubt?' This will not do, even if we change the term 'experience' into 'protocol sentence'. In my view, what epistemology has to ask is, rather: how do we test scientific statements by their deductive consequences? And what kind of consequences can we select for this purpose if they in their turn are to be inter-subjectively testable?[19]

What Popper is suggesting here is that we should make every effort to criticize our scientific theories rather than diverting our energies toward defending them against epistemic doubt. In order to do this we must discern the consequences that any given hypothesis entails. Herein the importance of deduction merges with the notion of falsification to

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[18] Ibid., p.97.

[19] Ibid., p.98.

provide the central component of Popper's philosophy of science; namely, the thesis that "only the falsity of the theory can be inferred from empirical inference, and this influence is a purely deductive one".[20]

Basic statements, therefore, provide no epistemological ground-floor. As singular existential assertions, which "state (truly or falsely) the existence of observable facts (occurrences) within some sufficiently narrow spatio-temporal region",[21] they are decisive in determining whether or not a given theory is falsifiable (empirical); indeed, "the empirical content of a theory is determined by (and equal to) the class of those observational statements, or basic statements, which contradict the theory".[22] Scientists are therefore asked by Popper to acknowledge a theory falsified if they have accepted basic statements which contradict it, provided, in addition, that those contradictions constitute a reproducible effect. This latter qualification is important for Popper who realistically acknowledges that "non-reproducible single occurrences are of no significance to science....a few stray basic statements contradicting a theory will hardly induce us to reject it as falsified".[23]

Another prominent positivist notion that was ruled unsound by Popper was that which championed a universal scientific language, wherein no claim of metaphysics would be found. The argument that Popper advances is relatively straight forward and has been put forward by numerous other scholars, both opposed to, and supportive of, the use of explanations

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[20] Karl Popper, Conjectures and Refutations, p.55.

[21] Ibid., p.386.

[22] Ibid., p.385.

[23] Karl Popper, The Logic of Scientific Discovery, p.86.

generated by a physicalist language. In order to prove the attempt to construct a universal scientific language as ill-conceived, Popper cites Kurt Godel's reknowned incompleteness theorems which proved that even for elementary number theory no formalized language can be constructed which is able to generate proofs for all true theorems contained therein.[24] He also cites the work of Alfred Tarski who, in developing a semantical concept of truth, had proved that the logic of any given language must lie outside of that language in a meta-language. For Popper, who rhetorically asked "why should not its metaphysics be outside it too?", these developments completely destroyed the hopes of those who believed that a universal language complete with its own rules of syntax could be constructed.[25]

Recognizing the power of these arguments, Popper is, however, ready to defend his position from a common rebuttal by positivist sympathizers. The gist of this rebuttal is that Popper, in his criticism of the attempts to construct a universal scientific language, is unjustifiably equating such a language with a fully formalized scientific language. In setting out his defense, Popper immediately acknowledges that he has made this equation and further concedes that in later positivist writings the explicitly formalized aspect had pretty well been dropped.[26] Nevertheless, Popper argues, this very weakening of the positivist position contributes added proof to his previously discussed thesis; namely,

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[24] Cf. our earlier discussion of Godel's Proof.

[25] For Popper's argument on these points see, Conjectures and Refutations, pp.168-170.

[26] He cites Neurath's invocation of the designator 'universal slang' as an example of this change.

the total inadequacy of the doctrine of the meaninglessness of metaphysics. Dropping the formalized condition from the universal language thesis permanently damages this doctrine because (once again allowing Popper to speak for himself) "if there are no strict rules of formation for the universal slang, then the assertion that we cannot express metaphysical statements in it is gratuitous; and it can only lead back to the naive naturalistic view of meaninglessness".[27]

From this brief consideration of the major criticisms that Popper directed at the positivists, we can see that it would be quite unjustifiable to uncritically designate his philosophy as positivist. Undoubtedly, the tendency on the part of philosophers of the social sciences to employ such a designation is a result of the influence that anti-scientism doctrines have had on that discipline - doctrines wherein anyone who speaks of the empirical basis of knowledge is set up as a positivist strawman and wherein the indictment of their philosophy proceeds accordingly. Granted that Popper's falsifiability criterion can be seen as a disguised ('inverted') positivist attempt to exclude consideration of metaphysical statements, the criterion, nevertheless, is intended to exclude such statements from empirical science (an exclusion founded on a near truism), not to deny them the status of meaningfulness. And as we saw in our initial chapter it is the intention of several anti-scientism authors to pave the way for a variety of meaningful discourses. On this point. therefore, if they are after Popper they are after the wrong man. In addition, Popper's criticism of a universal physicalist language has more recently mushroomed into a full-scale defence of dualism in the

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[27] Ibid., p.270.

brain-mind identity debate.[28]

For our final assessment of how Popper's philosophy stands as a more general criticism of positivism let us back-track just a bit at this point. From our presentation of positivism, it is clear that if one were to present a simplified, yet synoptic view of the early positivists' philosophy of science, one would have to include the following essential ingredients:

1. The Basic Methodological Doctrine: All scientific hypotheses must be verified by experience and their acceptance into the gradually growing store-house of scientific knowledge is dependent upon constructing an adequate logic of inductive inference.

2. The Doctrine of Meaning: The class of all cognitively meaningful propositions is exhausted by analytic propositions and those synthetic propositions which are empirically verifiable (verifiable in principle, probabilistically confirmable, testable, et cetera.)

3. Reductionism: All non-basic empirically meaningful statements are logical constructions out of basic (singular, atomic, particular, et cetera) statements.

4. The Doctrine of Foundations: Basic statements are able to provide reports of experiences in a form entirely free of theoretical projection because their predicates refer to the immediately given.

One could, of course, further enumerate a variety of positivist theses, but for our present purposes these serve as the lynch-pins for their philosophy of science. Popper, we have seen, was instrumental in criticizing the first doctrine. Now, although we are largely presenting Popper's views in a demonstrative manner in order to help highlight the de-

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[28] See, for example, Karl Popper, Objective Knowledge: An Evolutionary Approach (Oxford: The Clarendon Press, 1972). This dualism, as construed by Popper, is, however, premised on a 'pluralistic realism' that "is compatible with the view of the evolution of life as a process of trial and error". (p.255).

cline of positivism, and by and large avoiding a critical assessment thereof, it might briefly be noted that his doctrine of falsification is certainly not full-proof. This is especially so in that it depicts scientists as an overly self-critical and irresolute group of people who, in advancing any hypothesis , are willing (and able) to explicitly define a spatio-temporal event that would conflict with that hypothesis and who will, when experimentally confronted by that event, ipso facto, completely withdraw that hypothesis as well as any part (or whole) of the theoretical matrix within which it finds sustenance. In addition, his tendency to concentrate on theories between which an entailment relation can be discerned prevents Popper form seriously considering what happens (and has happened historically) when a particular theory is falsified but no alternative theory is 'around', or conjectured, in order to replace it. Correlatively, although he is constantly insisting that scientists avoid employing ad hoc hypotheses to account for a theory being falsified, such insistence is akin to that exhibited by a fundamentalist moralizer trying to outlaw a well-entrenched social practice. Both the history of science and its contemporary development reveal that theories of both a specific and global nature exhibit an amazing tenacity in the face of contradicting 'evidence' and also reveal that scientists can be quite strategically conservative in their efforts to preserve those very theories.

Popper's criticism of induction is also largely dependent upon his thesis that Bayesian probability values must be projected over an infinite domain, thereby precluding the probability of any hypothesis advancing beyond zero. However, that they must be projected over an infinite domain is indeed a question open to debate.

And finally, what has come under increasing attack from several quarters is Popper's claim that although theories can only be 'corroborated' by continual attempts to falsify them, the history of science is a process of increasing versimilitude; that although no criterion can be established for claiming that a given hypothesis or theory is true, science in general moves toward truth.[29] In fact, it is this ambiguity in Popper's philosophy of science that has led many commentators to call him an irrationalist, since, as construed by them, "a rationalist must forge a link between his articulated goal and the principles of comparison".[30]

Given the above, we can see that it is quite possible to subject Popper's philosophy to some pretty resounding criticisms.[31] His contribution, rather, lies in the fact that he helped to reveal that scientific theories are more creative and all-encompassing devices than the positi-

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[29] Popper, could, at this point, have taken recourse to a full-blown pragmatism in his philosophy of science, but, for a variety of reasons not to be enumerated here, he constantly resists this option.

[30] W.H. Newton-Smith, The Rationality of Science, p.65. In Newton-Smith's view, there is no way of establishing a link between corroboration and versimilitude from within the deductive framework. He advances two major claims in support of this view. Arguing that the 'deductive closure of postulates' is infinite for any given theory (i.e., if a theory asserts that a free-falling object accelerates at 9.8m/sec , given the infinite number of spatial points, that theory will make an infinite number of true assertions; namely, at point 1.0 object X is accelerating at 9.8m/sec , et cetera, ad infinitum), he concludes that any interesting scientific theory has the same amount of content (p.55). He also argues that given an infinite number of scientific theories the falsification of any particular one (or, for that matter, any finite number of them) does not raise the probability that any specific unfalsified one is any nearer to the truth (p.60).

[31] For some entirely unrestrained criticisms one must take a look at the work of one of Popper's own students, Paul Feyerabend. See, for example, Paul Feyerabend, "Popper's Objective Knowledge", Inquiry 17 (1974):475-507, and Against Method: Outline of an Anarchistic Theory

vists had believed, and that they are able to go on organizing data, nomologically subsuming diverse subject fields, and establishing operative research programs without waiting for inductive logicians to assign them a scientifically valid probability function. Popper's critical probing, as we have seen, was also instrumental in revealing the error in the positivists' tendency to resort to variations of psychologism when seeking the justification of basic statements and in their construal of the scientific enterprise as achieving an epistemological rock-bottom in those basic (protocol) statements.

Although constantly arguing for the tentativeness of basic statements and remaining steadfast in his belief that propositions can only be justified vis-a-vis other propositions, Popper nevertheless assigned basic statements an indispensable role to play in the falsification of a scientific theory and hence a corresponding role in that theory's degree of corroboration. In addition, although he basically recognized the theoretical nature of all predicates (construing the attempt to distinguish between theoretical terms and non-theoretical or observational ones as ill-conceived as the attempt to distinguish between dispositional and non-dispositional predicates,[32] he often acknowledged that he would "readily admit that only observation can give us 'knowledge concerning

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of Knowledge (London: Verso, 1975). The latter is a no-holds barred attack on Popper's 'critical rationalism', "the most liberal positivistic methodology in existence today". (p.171) We will shortly consider Feyerabend's philosophy of science and what he has to say about the whole notion of a philosophy of science.

[32] In a passing comment he notes, "What people have learnt before reaching a certain critical age, they are inclined to regard as factual, or 'ordinary', and what they hear later, as theoretical or perhaps 'merely instrumental'", Karl Popper, The Logic of Scientific Discovery, p.425.

facts', and that we can....'become aware of facts only by observation'.[33] The implication that he gave his readers was that he had not entirely accepted the thesis that purports to demonstrate the theory-ladenness of experience, i.e, that he had not followed through all of the ramifications of rejecting the positivist doctrine of foundations.

In Conjectures and Refutations, Popper notes, in an obviously hindsighted sort of way, that he had been aware for some time (since 1934) that the analytic/synthetic distinction, "although extremely valuable for a rough survey, turns out to be for many purposes too simple".[34] Here again, however, his writings do not substantiate that he has entirely suspended the employment of this distinction; one can find numerous references to analytic statements (as apparently distinct from other kinds of statements) as constitutive of those statements whose truth has been 'determined by convention'. Such claims are often conjoined with his reference to explicit definitions, "whereby the concepts of an axiom system are given a meaning in terms of a system of lower level universality".[35]

It is, therefore, relatively clear that Popper has not entirely escaped the subtle confines of the positivists' doctrines which are premised on the analytic/synthetic distinction and the reducibility of the meaning of scientific terms. It might also be noted, in anticipation of our discussion of those philosophers who emphasize the historicist character and social determinism of scientific knowledge, that although one

[33] Ibid., p.98.

[34] Karl Popper, Conjectures and Refutations, p.74.

[35] Karl Popper, The Logic of Scientific Discovery, p.83.

of Popper's most renowed books is entitled The Logic of Scientific Discovery, he really does not believe that there is any such logic and thereby further entrenches the positivist distinction between the context of discovery and the context of justification.[36]

4.2 TROUBLE-MAKERS FROM WITHIN THE ANALYTIC TRADITION: QUINE AND SELLARS

It can be argued, therefore, that regardless of Popper's very important contribution to the critique of positivism, one must seek elsewhere for a resounding criticism of the analytic/synthetic distinction, the doctrine of reducibility, and the doctrine of foundations. Within analytical philosophy one finds such criticism in the work of Willard Van Ormand Quine and Wilfred Sellars. Now once again someone might query, 'why turn to the writings of Quine and Sellars in a chapter allegedly devoted to a presentation of post-empiricism; i.e., why discuss authors who are product of, and largely remain part of, the analytic and empiricist tradition?'. The response, on my part, to this query is simply that Quine and Sellars subject the tradition, especially as manifest in logical positivism, to some very shocking criticisms that can be, and have been, employed by those who wish to defend the more radical component of post-empiricism as represented by Kuhn and Feyerabend. It is also my contention that these criticisms will be increasingly so employed, especially by those in the philosophy of the social sciences, in light of the narrowing of the gap between the 'analytic' and 'continental' 'modes of philosophizing' which appears to loom large on the horizon.[37]

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[36] See, for example, Ibid., p.31.

[37] Of course, philosophers of the social sciences have already been sub-

We will begin our discussion of these criticisms with a consideration of Quine, leaving until later a depiction of how Sellars' attack on the Myth of the Given can be seen as providing fuel to the arguments for which post-empiricism is most renowned. A perusal of the relevant literature in the philosophy of the social sciences would reveal that Quine is most often recognized by the practitioners of that discipline as a philosopher who subscribes to a holistic theory of belief and who argues that 'there is no such things as meanings'. His thesis of the indeterminacy of translation and the underdetermination of theory by data are perhaps also running candidates for the constitution of the criterion of recognition. Quine's views on these matters are, of course, part and parcel of his attack on the employment, especially as represented by the Logical Positivists, of the analytic/synthetic distinction.

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jected to the 'Princeton Interpretation' of Quine and Sellars via the wide-spread circulation, in their discipline, of Richard Rorty's Philosophy and the Mirror of Nature (Princeton, N.J.: Princeton University Press, 1979). The truth or falsity of this claim would, of course, be largely determined by whether or not Rorty's readers in the social sciences have only seriously considered the last part of the book (on hermeneutics) and largely skipped over the earlier sections on epistemology. That they have done this, and that the two traditions might continue to so avoid confrontation with each other is a very real possibility. Nevertheless, other books which represent, or make possible, to varying degrees, the closing of the gap between the analytic and continental traditions are Nelson Goodman, Ways of World Making (Indianapolis: Hackett Publishing, 1978) and Of Minds and Other Matters (Cambridge, Ma.: Harvard University Press, 1984); Hilary Putnam, Meaning and the Moral Sciences (London: Routledge & Kegan Paul, 1978) and Reason, Truth and History (Cambridge: Cambridge University Press, 1981). This possibility of closure is also discernible in Karl-Otto Appel, Towards a Transformation of Philosophy, trans. Glyn Adey and David Frisby (London: Routledge & Kegan Paul, 1980).

We have seen, in our discussion of Logical Positivism, that this distinction plays a very important role in their philosophy of science; allowing a wedge to be driven between those statements of mathematics and logic, which are 'true in all possible worlds', and those statements whose truth-value is determined by the court of experience. This 'dogma', as Quine construes it, although playing a very important role in Western philosophy at least since the time of Leibniz, does, however, rest upon some very powerful misconceptions. In his famous article, "Two Dogmas of Empiricism",[38] Quine sets out to reveal the inadequacies of this distinction as well as the inadequacies of another dogma employed constantly by the positivists; namely, reductionism: "the belief that each meaningful statement is equivalent to some logical construct upon terms which refer to immediate experience".[39] Actually, on Quine's account, the two dogmas, mediated by the verification theory of meaning, are identical; for, "as long as it is taken to be significant in general to speak of the confirmation and infirmation of a statement, it seems significant to speak also of a limiting kind of statement which is vacuously confirmed, ipso facto, come what may; and such a statement is analytic".[40] It is Quine's belief that the abandonment of these two dogmas secures the fate of the positivist program, leading to both a radical reconsidering of the gap between speculative metaphysics and natural science and a move, in the philosophy of science, towards pragmatism.

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[38] The article was first published in 1951 in the Philosophical Review, but it can also be found, in whole or in part, in a variety of places in the literature. I will be quoting from it as it is found in W.V.O. Quine, From a Logical Point of View (New York: Harper Torchbooks, 1961), pp.20-46.

[39] Ibid., p.20.

[40] Ibid., p.41.

The philosophical literature reveals two slightly different kinds of analytic statements, those which are logically true (for example, 'No unmarried man is married') and those which can be turned into logical truths by employing synonyms (for example, 'No bachelor is married').[41] In Quine's view all attempts to define the notion of analyticity, as constitutive of those statements which no recalcitrant experience would compel us to re-assess their truth-value, are quite easily shown to be most inadequate. Defining the first class of analytic statements as those statements whose denials are self-contradictory will do us no good, seeing as how this latter notion requires the exact kind of explication that we seek in the notion of analyticity. Likewise, attempts to define the second class of analytic statements via the notion of synonyms run into the exact same kinds of problems since we lack any valid criterion for the notion of synonymity.

Attempts to furnish this latter criterion, Quine argues, have proved less than adequate. Those who argue that the second kind of analytic statements reduce to those of the first variety by definition are forced to accept a lexicographer's presentation of such definitions and therefore presuppose a notion of synonymity rooted in the observation of linguistic behaviour - certainly not something to provide the ground of necessary truths. Quine also debunks a 'variant type of definitional activity' - explication - in which the purpose is "not merely to paraphrase the definiendum into an outright synonym, but actually to improve upon the definiendum by refining or supplementing its meaning".[42] The

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[41] Ibid., p.22-23.

[42] Ibid., p.25.

critical error commited by this approach, however, is that it clearly presupposes pre-existing synonymies which are then 'supplemented'. It, therefore, is also ruled out of court by Quine for engaging in circular reasoning.

After his discussion of the definitional strategy Quine considers another approach which some allege holds the key to synonymy and analyticity and which allows vagueness of meaning. This approach is founded on the notion of interchangeability and simply holds that two terms or statements are synonymous if they are interchangeable in all contexts without their truth-value undergoing alterations. The value of this approach is that "synonyms so conceived need not even be free from vagueness, as long as the vaguenesses match".[43] Quine, quite simply, but ingeniously, rebukes this conception as well with the following argument. If the terms 'bachelor' and 'unmarried man' are synonymous, then, according to this approach they must always be interchangeable. However in the statement ''Bachelor' has less than ten letters', the substitution of 'unmarried man' for 'bachelor' would result in a blatant falsehood. The attempt by the advocates of the interchangeability approach to appeal to an intuitive nature of 'wordhood' founded on identity of psychological associations in order to escape from Quine's challenge overlooks the fact that what they had initially set out to do was provide a criterion for cognitive synonymy - and clearly they have failed to do so. Quine's conclusion is that "interchangeability salva veritate is meaningless until relativized to a language whose extent is specified in relevant respects".[44] Such a language, however, if construed extension-

[43] Ibid., p.27.

ally, provides no assurance that agreement exhibited towards word pairs like 'bachelor' and 'unmarried man' is founded on meanings as opposed to 'accidental matters of fact'. And if the language is construed intensionally then the employment of modal adverbs like 'necessarily' appears unavoidable, in which case the language presupposes an understanding of the notion of analyticity.

Quine retraces his argument up to this point accordingly:

> Analyticity at first seemed most naturally definable by appeal to the realm of meanings. On refinement, the appeal to meanings gave way to an appeal to synonymy or definition. But definition turned out to be a will-'o-the-wisp, and synonym turned out to be best understood only by dint of a priori appeal to analyticity itself.[45]

Finally, Quine considers the argument of those who are opposed to the whole notion of establishing a criterion of analyticity for natural languages and who suggest that only in the construction of an ideal artificial language that is free from ambiguity and vagueness can the notion of analyticity find precision. Such precision of course, would be established by the semantical rules of that language. Once again, however, for Quine this tactic is a 'feu follet par excellence' since clearly, such semantical rules "are of interest only in so far as we already understand the notion of analyticity; they are of no help in gaining this understanding".[46]

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[44] Ibid., p.30.

[45] Ibid., p.32.

[46] Ibid., p.36.

It is also Quine's view that the verificationist approach to meaning (and hence synonymy), wherein synonymy is likened to sameness of method of empirical confirmation or infirmation, presupposes the dogma of reductionism, which, in turn, presupposes that the truth of a statement is analysable into both a factual and a linguistic component. As an approach to meaning, therefore, its success is dependent upon the validity of drawing a distinction between these two components. The latter component is, of course, where reductionists have long allowed 'truth in all possible worlds' to reign. It is at this very point that the Verification Theory of Meaning conflates with reductionism - it is where the 'two dogmas of empiricism' meet.

In Quine's opinion, "it is nonsense, and the root of much nonsense, to speak of a linguistic component and a factual component in the truth of any individual statement....science has its double dependence upon language and experience; but this duality is not significantly traceable into the statements of science taken one by one".[47] From a Quinean perspective, therefore, it can be seen that a major driving force behind the positivists' acceptance of the analytic/synthetic distinction was their acceptance of the view, implicit in reductionism, that synthetic statements confront experience individually and have their 'meanings' determined accordingly and that those statements apparently possessed of only a linguistic component must somehow have their meaning imparted to them 'before experience', 'meanings' which were, therefore, immune from revision. Thereafter ensued the standard distinctions between the form and 'content' of experience, between philosophy as the study of the for-

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[47] Ibid., p.42.

mer and science as the study of the latter, between ontological statements and empirical statements and between questions external to the framework and those internal to it.

For Quine, however, "the unit of empirical significance is the whole of science"; therefore, "reevaluation of some statements entails reevaluation of others, because of their logical inter-connections - the logical laws being in turn simply certain further statements of the system, certain further elements of the field."[48] Here the well-known Quinean thesis of science as a field or force which only touches experience at the periphery emerges. At the periphery are those statements whose meanings are directly determined by their connection with non-verbal stimulation,[49] and further in are those statements showing varying degrees of sharing of sensory supports whose meanings are, accordingly, established entirely by their 'intersentential connections'. And at the very center can be found those statements (the 'truths' of mathematics and logic) which appear immune from revision. On Quine's interpretation, however, no statement is immune from revision. Even the logical and causal connectives between sentences "must finally be due to the conditioning of sentences as responses to sentences as stimuli. If some of the connections count more particularly as logical or as causal, they do so only by reference to so-called logical or causal laws which in turn are sentences within the theory".[50]

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[48] Ibid., p.42.

[49] For a discussion of this point, see W.V. Quine, Word and Object (Cambridge, Ma.: MIT Press, 1960), pp.40-46.

[50] Ibid., p.11. In order to drive his point further home, Quine notes that even the revision of the law of the excluded middle has been proposed in order to account for the ambiguities of quantum mechan-

It can be seen therefore, that the holistic theory of meaning, wherein all scientific terms are considered meaningless and non-refutable except relative to one's theory, which Quine is often lauded by relativists for subscribing to, is actually rooted in Quine's belief that all meaning is inevitably rooted in a person's confrontation with the temporal impermanence of sensory stimulation. One of Quine's foremost guiding principles is, in fact, that "intersentential connections can be constitutive of meaning only insofar as they produce indirect connections to stimulation".[51] This is also the conjuncture where Quine's brand of behaviourism finds conceptual sustenance; where all talk of meaning is 'reduced' to talk of linguistic behaviour - to talk of 'stimulus meaning' as "a full cross-section of the subject's evolving dispositions to assent to or dissent from a sentence".[52] In summation, one could say that, for Quine, "there are no meanings, nor likenesses nor distinctions of meaning, beyond what are implicit in people's dispositions to overt behaviour".[53] And this thesis is what lies behind Quine's attempt, in Word and Object, to argue that a purely extensional language can be constructed for science, where the intensional component omnipresent in our commonsense language of belief and desire "can be replaced

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ics; see "Two Dogmas of Empiricism", p.43.

[51] As is noted in Christopher Boorse, "The Origins of the Indeterminacy Thesis", Journal of Philosophy 72 (1975):371.

[52] W.V. Quine, Word and Object, p.36. Actually, in Quine's earlier writings one will find more reference to 'stimulus meaning' and in his later writings one will find more reference to 'linguistic behaviour'. This could be due to the fact that in the former he was waging an all-out war on phenomenalism and tended to lapse into the terminology of phenomenalism when developing his own position.

[53] W.V. Quine, "Ontological Relativity", in Ontological Relativity and Other Essays (New York: Columbia University Press, 1969), p.29.

by extensional talk about the natural determinants of the behaviour which we take to be manifestations of belief and desire",[54] a task accomplished therefore by ultimately reducing dispositional talk to talk of underlying structure.

It is Quine's view, however, that "the totality of dispositions to speech behaviour is compatible with alternative systems of sentence-to-sentence translation so unlike one another that translations of a standing sentence under two such systems can even differ in truth value".[55] This, of course, is the root of Quine's famous thesis of the indeterminacy of translation wherein all attempts to derive the meanings of words and sentences are considered to lack a 'fact of the matter'. And for Quine, the indeterminacy that is the inevitable result of attempts to discern what a foreigner really 'means' when he speaks applies equally to homophonic translation and the attempt to understand the meanings of our own utterances.

Quine also argues, however, that the indeterminacy of translation "cuts across extension and intension alike".[56] In his famous 'Gavagai' example the translator is unable to discern not only the meaning of a foreigner's utterances but (again due to the fact that he possesses no 'given translation manual' and can only work from behavioural disposi-

[54] J.J.C. Smart, "Quine's Philosophy of Science", in Words and Objections: Essays on the Work of W.V. Quine, ed. Donald Davidson and Jaako Hintikka (Dordrecht, Holland: D. Reidel Publishing Co., 1969), p.12. In this article Smart critically contrasts what he interprets to be Quine's instrumentalism in From a Logical Point of View with the latter's realism in Word and Object. See also Quine's reply to Smart in the same volume, pp.292-294.

[55] W.V. Quine, Word and Object, p.207.

[56] W.V. Quine, "Ontological Relativity", p.35.

tions to assent to or dissent from certain linguistic expressions), even assisted by the use of ostension, is unable to discern exactly what the foreigner is referring to.[57] Even by pointing to the 'intersubjectively observable' rabbit and at the same time uttering 'gavagai', the translator does not know for certain whether the foreigner is making reference to 'rabbithood', 'undetached rabbit part', or 'rabbit stage'. Once again, for Quine, this 'inscrutability of reference' also applies to homophonic translations. In short, the belief that there is some permenantly fixed relation between words and the world is argued to be simply another 'museum myth'.

As far as his philosophy of science is concerned, such argumentation has led Quine to champion the 'underdetermination of theory by data' thesis; wherein it is held that "physical theories can be at odds with each other and yet compatible with all possible data even in the broadest sense....they can be logically incompatible and empirically equivalent".[58] The same logic also fuels, via the 'double indeterminacy of translation', the renowned doctrine of ontological relativity. And it is the latter which makes the relativistic claim that we can only clinch the ontology of an object theory "relative to the background theory and to the interpretation or translation imposed on the object theory from within the background theory".[59]

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[57] See W.V. Quine, Word and Object, Chapter Two.

[58] W.V. Quine, "On the Reasons for the Indeterminacy of Translation, Journal of Philosophy 67 (1979):179.

[59] W.V. Quine, "Ontological Relativity", p.65.

For Quine, "the scientific system, ontology and all, is a conceptual bridge of our own making, linking sensory stimulation to sensory stimulation".[60] Although we are 'ontologically commited' to entities through discourse,[61] it is the language of science, although an extension of common-sense, that epistemologically 'gets ahead' of the latter by the systematic positing of entities, thereby proving "more efficacious than other myths as a device for working a manageable structure into the flux of experience".[62] It is Quine's conviction that we decide what entities there are, apropos the real world, by considerations of simplicity conjoined with a 'pragmatic guess'. As for the justification for invoking the epistemic virtue of simplicity, Quine alleges that it can be found in our perceptual mechanisms where "there is a subjective selectivity that makes us tend to see the simple and miss the complex".[63] It is only in 'degrees of antiquity' that our posits of memory, macroscopic physical objects, and sub-atomic particles differ epistemologically. No constructionist systems as construed by the phenomenalist strain in logical positivism can achieve epistemic certainty and similar physicalist attempt must be conditioned by the fact that it is only because our notion

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[60] W.V. Quine, "Things and Their Place in Theories", in Theories and Things (Cambridge, Ma.: Harvard University Press, 1981), p.20.

[61] See W.V. Quine, "On Carnap's View of Ontology", in The Ways of Paradox and Other Essays, Revised and Enlarged Edition (Cambridge, Ma.: Harvard University Press, 1976), p.205: "The entities to which a discourse commits us are the entities over which our variables of quantification have to range in order that the statements affirmed in that discourse be true".

[62] W.V. Quine, "Two Dogmas of Empiricism", p.44. Of course, for Quine, there are evolutionary constraints on what can be successfully and operatively posited.

[63] W.V. Quine, "Theories of a Complex World", in The Ways of Paradox, p.256.

of macroscopic objects has been "fundamental both to the origins of language and to the continued learning of language, [that] - we may be pretty sure that it is here to stay".[64]

It can be seen, therefore, that Quine, by decimating the positivists' hopes of providing a logical construction of the world founded on incorrigible principles restores ontological questions to philosophy, but this only after also destroying the positivists' distinction between philosophy and science by completely naturalizing the former.[65] His advice to scientists is, once again, purely pragmatic, a variation on Occam's Razor: "Pad the universe with classes or other supplements if that will get you a smoother, simpler overall theory; otherwise don't".[66]

Now although Quine forces us to radically reconsider the positivists' distinctions between the analytic and the synthetic and between language and fact, we can see that his doctrines of the indeterminacy of translation and ontological relativity do not lead him to consider the framework of natural science as simply a framework among many. Indeed, that he does not conclude this is largely due to the fact that he assumes a conservative stance vis-a-vis the notion of observation. This is most prominently brought out in his claim that the "indeterminacy of translation has little bearing on observation sentences",[67] sentences where "all verdicts on it depend on present sensory stimulation and on no

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[64] W.V. Quine, "On Mental Entities", in The Ways of Paradox, p.221.

[65] See W.V. Quine, "Epistemology Naturalized", in Ontological Relativity, pp.69-90.

[66] W.V. Quine, "Multiplying Entities", in The Ways of Paradox, p.264.

[67] W.V. Quine, "Epistemology Naturalized", p.89.

stored information beyond what goes into understanding the sentence"[68] - a sentence "on which all speakers of the language give the same verdict when given the same concurrent stimulation".[69]

Judging from these remarks, one could conclude with Richard Rorty that although Quine has largely triumphed over the constraining categorizations that ensue from the conceptual/empirical distinction, in his reference to 'posits' versus 'stimulations' and in his talk of different people being confronted with the 'same concurrent stimulation', he has not completely renounced the distinction between the given and the postulated.[70]

For our purposes, nevertheless, the contribution of Quine to post-empiricism consists of his decimating, beyond Popper, the positivist notion of 'strict logicality', and in his re-emphasizing that when we are on Neurath's boat at sea <u>we really are at sea</u> - there is no gangplank running to the mainland, to solid epistemic ground, to truths-in-themselves.

The work of Quine has, therefore, been indispensable in over-coming the positivist doctrine of meaning and their reductionism (to the extent that that reductionism describes scientific knowledge as based on individual statements whose truth value is determined by a 'confrontation with' experience). As far as its positive aspect goes, its contribution to post-empiricism lies in the conjoining of holism with the indetermi-

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[68] Ibid., p.86.

[69] Ibid., pp.86-87.

[70] Cf. Richard Rorty, <u>Philosophy and the Mirror of Nature</u>, p.171.

nacy of translation - a conjunction which can be seen as providing a lot of fuel to the proponents of incommensurability whom we will soon consider. For our exegetical purposes at this point it does not really matter if Quine arrives at these conclusions by using a behaviouristic criterion of meaning; i.e., if engages in 'naturalistic philosophy'. Granted, the critics of scientism will not excuse us on this - but perhaps they should exercise more understanding at this point, especially considering that the result of their pluralism and patience may very well, in the long run, serve their favour.

In order to reveal the positivist doctrine of foundations as based upon a fundamental misconception, however, it is necessary to move beyond Quine and give some consideration to Wilfred Sellars' celebrated attack on the 'Myth of the Given'. It is Sellars' opinion that if one does not completely reject the empiricist's misunderstanding of the ostensive element of language learning one cannot avoid a "reification of the methodological distinction between theoretical and non-theoretical discourse into a substantive distinction between theoretical and non-theoretical existence".[71]

For Sellars, classical empiricism and positivism are well on their way to conflating these distinctions due to the fact that they tend to conflate raw feels, stimuli, sense datum, et cetera with the act of discriminating such raw feels. The 'sense-datum' tradition in empiricism, W. Sellars argues, must contend with the following inconsistent triad of propositions:

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[71] Wilfred Sellars, "Empiricism and the Philosophy of Mind", in Science, Perception and Reality (New York: The Humanities Press, 1963), p.174.

> A. X senses red sense content S entails X non-inferentially knows that S is red. B. The ability to sense sense contents is unacquired. C. The ability to know facts of the form X is O is acquired.[72]

As Sellars points out, "A and B together entail not-C; B and C entail not-A; A and C entail not-B".[73] In short, Sellars' argument is that the contradictions are a result of the thesis that it is somehow possible to justify knowledge ('epistemic facts') via language by appeal to 'something' that lies outside of language. This thesis is largely rooted in the view that in the initial stages of acquiring a language we refer directly to extra-linguistic entities by acts of ostension. Such a view places a counter-evolutionary faith in the linguistic categories of common-sense, since these categories are considered to be based on acts that from the very beginning 'sliced the world at its joints'. It is a view of linguistic development that plays right into the hands of the positivists' treatment of the theoretical terms of modern science - a treatment that consisted of considering them as secondary and derivative; a treatment that could not avoid attempting to 'reduce' them to terms epistemically more secure, secure because 'less inferential', 'foundational'.

On Sellars' account, we must "give up the idea that we begin our sojourn in this world with any - even a vague, fragmentary, and undiscriminating - awareness of the logical space of particulars, kinds, facts, and resemblances, and recognize that even such 'simple' concepts as those of colors are the fruit of a long process of publicly reinforced responses to public objects (including verbal performance) in public

[72] Ibid., p.132.

[73] Ibid.

situation".[74] It is this Wittgensteinian construal which can establish that epistemic facts find their place only in the logical space of justification and thereby avoid characterizing such facts as empirical descriptions of some non-epistemic facts. It is a construal that avoids supposing that perception must somehow 'ground' knowledge - a supposition that leads to the inconsistent triad with which classical empiricists and sense-datum theorists are inevitably confronted. As Richard Rorty notes, it is a position that allows us "to view our practices of justifying assertions as not needing empirical or 'ontological' ground".[75]

For Sellars, the concepts to which our community subscribes play the determining role in our understanding of ourselves and constitute the 'essence' of our theoretical projection of the 'inner episodes' (impressions, sense datum, et cetera) which the positivists in one way or another incorrectly took as grounding all such projections. On a Sellarian account, those projections, although "the end results of the impingement of physical objects and processes on various parts of the body, and, in

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[74] Ibid., p.176.

[75] Richard Rorty, Philosophy and the Mirror of Nature, p.188. In response to the 'unfair to babies' rebuttal to Sellars' attack on the notion of a pre-linguistic awareness Rorty notes (in keeping with his equation of matters epistemological with matters moral): "We may balk at the claim that knowledge, awareness, concepts, language, inference, justification, and the logical space of reasons all descend on the shoulders of the bright child somewhere around the age of four, without having existed in even the most primitive form hitherto. But we do not balk at the thought that a cluster of rights and responsiblities will descend on him on his eighteenth birthday, without having been present in even the most primitive form hitherto....in both cases what has happened is a shift in a person's relations with others, not a shift inside the person which now suits him to enter into such new relationships", (p.187).

particular,....the eye",[76] are in no way reducible to self-authenticating non-verbal episodes.[77]

4.3 PERSPECTIVISM AND THE RISE OF CAPTAIN KUHN'S EMPIRE

The positivist account which had, by assigning sensory experience epistemological and semantical priority, sought security in a phenomenalist account of perception and in the supposed stability of the observational, has, of course, been subjected to a plethora of criticism from the post-empiricists, many of whom take recourse, in their arguments, to developments in the natural sciences. It is in the work, for example, of Norwood Hanson that one finds further developed the thesis that our perceptual apparatus selects and fastens onto only certain features of experience.

For Hanson, seeing as an experience must be distinguished from the photo-chemical excitation constitutive of a retinal reaction. The latter, Hanson argues, does not involve seeing at all, and the former is best construed as 'seeing as'. This distinction is indicative of Hanson's claim that even "ordinary seeing is corrigible",[78] is a 'theory-

[76] W. Sellars, "Empiricism and the Philosophy of Mind", p.191.

[77] For a critique of Sellars' view on the 'Myth of the Given' which attempts to show how one might argue for a non-epistemic construal of a 'primordial awareness' that enables one to explicate a foundational view, see; William S. Robinson, "The Legend of the Given", in Action, Knowledge, and Reality: Critical Studies in Honour of Wilfred Sellars, ed. Hector-Neri Castaneda (Indianapolis: The Bobbs-Merill Company, Inc., 1975), pp.83-108. Robinson's thesis hinges on his being able to prove the truth of the claim: "Something is given to X does not entail X has non-inferential knowledge".

[78] Norwood Hanson, Patterns of Discovery: An Enquiry into the Conceptual Foundations of Science (Cambridge: Cambridge University Press, 1961), p.22.

laden' understaking.[79]

Hanson, although insisting that the importance of "incoming signals from 'the subject matter'",[80] should not be minimized, nevertheless reversed the goal of the traditional empiricist project in his suggestion that we should "examine not how observation, facts, and data are built up into general systems of physical explanation, but how these systems are built into our observations, and our appreciation of facts and data".[81]

It is Hanson's thesis that the language of science is many-levelled and that we should resist trying to explicitly reduce, by any method, one level to that of another. The contribution to post-empiricism that he is most recognized for, however, is his attempt to examine the 'spontaneous conjectures of instinctive reason' via analogies from gestalt theory and perception. What emerges from such attempts is a loosening of the distinction between psychological processes and reasoning, resulting in the removal of the wedge that the positivists had driven between the contexts of discovery and justification. In fact, Hanson claimed that there is indeed a 'logic' operative in the former context; namely, that of retroduction - the logic that poses the question: "From what premises can this anomaly be shown to follow?"[82]

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[79] Ibid., p.19.

[80] Norwood R. Hanson, Observation and Explanation: A Guide to Philosophy of Science (New York: Harper Torchbooks, 1971), p.6. As Hanson concludes his section on observation in this book, "Science does not make the facts, however much it may shape, colour, and sort them". (p.8).

[81] Norwood Hanson, Patterns of Discovery: An Enquiry into the Conceptual Foundations of Science, p.3.

Hanson's reflections on what an investigation of the context of discovery might look like is a perfect example of the turn that much of philosophy of science took in the 1950's and 1960's. In a short period of time several philosophers began to seriously consider the ramifications of the Gestaltists' attack on the 'constancy hypothesis'[83] in the literature on perception theory. The result was the devotion of increasing amounts of attention to the investigation of the role that prior knowledge, beliefs, and theories played in determining what the species perceived. In what can be seen, in hindsight, as a conjoining of Quine's emphasis on the network of belief and meaning and Sellars' claims about the theoretical nature of the 'Given', philosophy of science became very concerned with the view that the possibility of an observation becoming relevant to our knowledge is dependent upon its already being related to some body of information[84]

Such concerns are visible in Michael Polanyi's analysis of the 'active' component in perception[85] and in his thesis of the tacit component that he alleges constitutes a large component of several cognitive activities. For Polanyi the understanding of the world that these activi-

[82] See Norwood R. Hanson, Observation and Explanation, p.66.

[83] For a discussion of these matters see: R.L. Gregory, Eye and Brain: The Psychology of Seeing, Third Edition (New York: McGraw Hill Book Company, 1977), pp.152-160. For a more general look at the relation between perception and knowledge and how our views on this relation have changed throughout history, see: R.L. Gregory, Mind in Science: A History of Explanations in Psychology and Physics (New York: Peregrine Books, 1984).

[84] See Harold I. Brown, Perception, Theory, and Commitment: The New Philosophy of Science (Chicago: The University of Chicago Press, 1977), Chapter Six, especially p.87.

[85] Michael Polanyi, Personal Knowledge: Towards a Post-Critical Philosophy (Chicago: The University of Chicago Press, 1962), pp.66-100.

ties provide us with is an understanding that, in contradistinction to the positivists' conception and hopes, resists explicit formulation.

Of course, positivistically inclined philosophers might respond 'yes, our inability to arrive at an adequate conception of logical inference proves that all knowledge can never be made explicit due to its probabilistic and tentative nature'. This kind of concession, however, is not what Polanyi is after in the least. What Polanyi claims is that our reliance on the 'facts' and 'observations' of science is based on no strict criteria - including probabilistic ones. For Polanyi, the indeterminacies that are introduced via the personal participation constitutive of all knowledge even precludes the possiblity of formulating a strict criteria for coherency; "our judgement of it must always remain a qualitative, nonformal, tacit, personal judgement".[86]

Part and parcel of his thesis on the personal involvement of scientists in the knowing process is Polanyi's insistence that even in the intersubjective assessment of experimental results and the feasibility of research programmes, intuitive projections of plausibility precede, and largely determine, probability accounts. And it is the notion of plausibility that plays a vital role in the compulsion that most post-empiricist philosophers feel to re-examine the positivists' distinction between the context of discovery and the context of justification. Such examinations have, in fact, led to the conclusion of many that in the former context as well as the latter, "plausibility is prior to acceptability".[87] Polanyi's claim that plausibility is also operative in the

[86] Michael Polanyi and Harry Porsch, Meaning (Chicago: The University of Chicago Press, 1975), p.100.

imagination, resulting in the production of "ideas which contain aspects of the solution from the start"[88] would have, of course, if widely accepted, some pretty radical consequences for a discipline like the philosophy of science so prone, for a variety of reasons, to attempt to establish formal and explicit rules for explaining our logical inferences.[89]

The post-empiricist philosophy of science is largely saved form collapsing into a psychologistic enterprise, however, by those who argue that although the processes by which sensory experience is organized is context dependent, that context is supplied by a language-community. For example, we recall that it was Wittgenstein's reliance on the epistemic primacy of language communities, as 'forms of life', that gave him confidence in claiming (in his post- Tractatus days) that:

> All testing, all confirmation and disconfirmation of a hypothesis takes place already within a system. And this system is not a more or less arbitrary and doubtful point of departure for all our arguments: no, it belongs to the essence of what we call an argument. The system is not so much the point of departure, as the element in which arguments have their life.[90]

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[87] See, for example, Carl R. Kordig, "Discovery and Justification", Philosophy of Science 45 (1978):110-117.

[88] Michael Polanyi and Harry Prosch, Meaning, p.97. Contrast this quote with the claim of the young Wittgenstein: "When the answer cannot be put into words, neither can the question be put into words. The riddle does not exist. If a question can be framed at all, it is also possible to answer it."; Tractatus, proposition 6.5.

[89] One might be reminded at this point that much of Polanyi's view on plausibility stems from his conception of the 'indwelling' that allegedly all our knowledge of comprehensive entities is founded upon; i.e., the 'knower' participates in such entities as if their subsidiaries were part of the knower's body. Also note the extent to which this conception begins to merge with the psychologistic conceptions of Verstehen we discussed earlier in the thesis.

[90] As quoted in R.L. Gregory, Mind in Science, p.551.

In addition, when re-considering the emphasis that Sellars placed on language in freeing philosophy of science from the 'Myth of the Given', some might argue that we are one small step away from seriously investigating the social element of linguistic communities, as that element is manifest in shared education, more generally construed, and in the scientific training[91] that scientists in different socio-historical matrices undergo. In fact, it is undoubtly Thomas Kuhn who, although claiming that "people do not see stimulii; our knowledge of them is highly theoretical and abstract",[92] best conjoins such claims with socio-historical analyses of this very nature.

The recognized views of Thomas Kuhn, although not developed in direct response to the work of Quine and Sellars, can be seen as an acceptance and integration of the gist of Sellars' critique of the 'Myth of the Given' (supplemented by Hanson's thesis of theory-laden seeing) and Quine's notions of meaning variance and the indeterminacy of translation. Kuhn's contribution to the philosophy of science, stemming from his own efforts to account for the lack of awareness exhibited by working scientists to their own historical tradition, has proved decisive in making common knowledge several inadequacies of the positivist approach. Even though his work does not proceed via a systematic analysis and criticism of various positivist platforms[93] it is clear that almost all

[91] Once again, the investigations of Michael Polanyi are important here.

[92] Thomas Kuhn, The Structure of Scientific Revolutions, Second Edition (Chicago: The University of Chicago Press, 1970), p.192.

[93] A methodological procedure (or lack thereof) that, some would argue, is indicative of the historical transition that the philosophy of science itself has undergone, replete with an incommensurable change in guiding presuppositions. See, for example, Harold I. Brown, Perception, Theory, and Commitment: The New Philosophy of Science. Also

of these platforms are either implicitly or explicitly subjected to a resounding criticism.

Perhaps somewhat unjustified at this point in our discussion, we will, nevertheless, not conduct a full-scale examination of the views of Kuhn; presenting instead a brief, in-a-nutshell depiction. Three reasons motivate this decision. The first of these is that Kuhn's philosophy of science is so well known (it is clearly the most widely read philosophy of science book in the social sciences) that a full-scale demonstrative presentation of it would not really serve any purpose. Secondly, given our purposes herein, what interests us about Kuhn's perspective can be captured in-a-nutshell. Trying to discern whether Kuhn succeeds in trying to draw a distinction between his notions of exemplars and disciplinary matrices or whether or not Kuhn's depiction of a paradigm really did have twenty-one distinct 'senses',[94] et cetera, will not prove anything nor will it reveal anything about Kuhn's approach to the philosophy of science, as a more specific analysis of a variety of positivist theses will reveal something about their approach. The final reason for presenting Kuhn in this way is that some of the deficiencies of his perspective, especially concerning meaning-variance and incommensurability, will be revealed and commented upon in the section on Scientific Real-

see Brown's article, "Problem Changes in Science and Philosophy", Metaphilosophy 6 (1975):177-192.

[94] As Margret Masterman argues in, "The Nature of a Paradigm" in Criticisms and the Growth of Knowledge, ed. Imre Lakatos and Alan Musgrave (Cambridge: Cambridge University Press, 1970). That we do not wish to examine this issue, and rule it out of court in an abrupt fashion, does not in any way presuppose that we consider that her exercise was either fruitless or ludicrous. Her article, in fact, sheds much understanding on both the approach and thought of Kuhn and warns us against the problems of engaging in the philosophy of science, or any philosophy for that matter, in too generic and sweeping a way.

ism.

Let us say, with Kuhn and his commentators, that Kuhn starts with science - specifically, the history of science. Individual scientists and groups of scientists, Kuhn observes, seem particularly unaware of, and unconcerned with, the history of their respective disciplines. This central ambivalence to matters historical, does not prevent them from advancing hypotheses in order to help them account for certain problems, nor from offering solutions to such problems, nor from advancing general inferences from observed data, nor does it restrict their ability to construct viable experiments.

Kuhn concludes from this that 'working' science gives us no evidence that science as an historical enterprise can in any sense be said to progress; if progress is construed, as it usually is in matters epistemological, as the gradual, piece-meal accumulation of knowledge over time. And, accordingly, if science cannot be said to progress in this fashion, then we must radically re-examine the entrenched notion that science provides us with incorrigible <u>and</u> ahistorical truths. Correlatively, therefore, we must also reject any Piercian limit notion of the 'ideal theory' and any positivist dream of a unified and universal scientific language.

For Kuhn, the history of science has shown that so-called 'progress' is actually no more than the result of 'gestalt switches' which lay the parameters for new and invigorating scientific research. These parameters, or 'paradigms', are constitutive of an entire way of approaching and looking at the world - not unlike the <u>Lebenswelt</u> of the phenomenologists. The values indicative of any paradigm largely determine the kinds

of problems that scientists perceive as worthy of investigation and how the solution given to those problems fit into a coherent world-picture. The disciplinary 'matrices' of such paradigms determine the kind of scientific training any individual scientist will receive, the methods of communication between scientists, the kind of instruments they will rely on in any given experiment, as well as the epistemic virtues which they value.[95]

It is Kuhn's thesis that most of scientific theorizing and experimentation takes place within these paradigms; we might therefore designate such paradigms as the domain of 'normal science'. Normal science does the 'mop-up work' created by a change in paradigm - created by a 'gestalt switch' that defies formalized rational explanation. Sooner or later, however, certain anomalies begin to accumulate that normal science does not have the resources to solve. When such an accumulation reaches a critical, near stagnating, point, normal science can be said to be in a state of 'crisis'

Over time, however, perhaps the result of young scientists not entrenched in the old ways of 'looking at things', or perhaps the result of a new insight on the part of someone already working within the tradition, an entirely different, revolutionary way of approaching the anomalies will be put forward. For reasons which again defy explicit formalization, that gestalt switch may become accepted by the entire scientific community resulting in a switch of allegiances therein. The

[95] For a look at how Kuhn has reformulated his original, and often misleading, distinction between paradigms and disciplinary matrixes see, Thomas Kuhn, "Second Thoughts on Paradigms", in The Essential Tension: Selected Studies in Scientific Tradition and Change (Chicago and London: The University of Chicago Press, 1977), pp.293-319.

period of 'revolutionary science' will then be over, a new paradigm will have been created, and normal science will once again resume.

It is Kuhn's opinion that the meaning of concepts employed in a particular paradigm are largely determined by their place in that paradigm's governing theories, that there is no fundamental observation/theory distinction, and that the various paradigms respond to different problems. Two different paradigms, therefore, will not be able to assess the validity of their respective solutions to problems since there is no neutral arbitrator - no background theory whose postulates they share. The proponents of the respective paradigms will forever talk at cross-purposes; their dialogue, and hence their theories, will remain incommensurable. And, Kuhn concludes, if the paradigms are essentially incommensurable, then one cannot claim that the growth of scientific knowledge is cumulative.

4.4 THE VANDALS EMBARK: FROM ANARCHY TO HERMENEUTICS TO RELATIVISM

4.4.1 Paul Feyerabend on Methodological Pluralism and Philosophical Democracy

The 'irrationalist' element that can be discerned in Kuhn's philosophy of science is claimed by many commentators to take the last breath away from a dying positivism and, along with the latter, any attempt to describe, in a formalistic way, both the enterprise of science and the evolution of its concepts and methods. However, it is clearly the work of Paul Feyerabend, especially as exemplified by his provocative Against Method, that is indicative of an attempt at the 'transvaluation of all value'. Indeed, for Feyerabend, "madness turns into sanity provided it

is sufficiently rich and sufficiently regular to function as the basis of a new world view".[96]

Much of Feyerabend's contemporary perspective on the philosophy of science stems from his early rejection of the positivist and Popperian notion of a neutral observation language. It is his belief that "the interpretation of an observation language is determined by the theories which we use to explain what we observe, and it changes as soon as those theories change".[97] This rejection of a neutral observation language is part and parcel of Feyerabend's refusal to countenance the observational/theoretical distinction.

Although his positive construal of the 'pragmatic theory of observation'[98] can be seen as a variation of Quine's account of observation sentences (as occasion sentences 'of a special sort'),[99] replete with reference to a behavioural response mechanism, Feyerabend wishes that that response is of a theory-embedded interpretational nature.

Feyerabend initially thought that the rejection of such a fundamental distinction as that between observational and theoretical languages was, nevertheless, compatible with a falsification methodology, albeit a

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[96] Paul K. Feyerabend, Against Method (London: Verso Press, 1975), p.270.

[97] Paul Feyerabend, "An Attempt At a Realistic Interpretation of Experience", in Realism, Rationalism and Scientific Method: Philosophical Papers: Volume 1 Philosophical Papers Volume 1 (Cambridge: Cambridge University Press, 1981), p.31.

[98] See, for example, Paul Feyerabend, "Explanation, Reduction, and Empiricism", in Realism, Rationalism and Scientific Method, esp. pp.50-54.

[99] W.V. Quine, "Empirical Content", in Theories and Things, p.25.

methodology that recognized that the meaning of 'observation' reports were necessarily theory-dependent.[100] Feyerabend recognized, however, that the rejection of this distinction substantiated the inadequacies of two central assumptions of logical empiricism. The first assumption, the relation of deducibility, he presented (quoting Nagel) as the following:

> The objective of the reduction is to show that the laws, or the general principles of the secondary science, are simply logical consequences of the assumptions of the primary science.[101]

The second assumption, which Feyerabend inevitably argues is a derivative of the first, "concerns the relation between the meanings of the primitive descriptive terms of the secondary science and the meanings of the primitive descriptive terms of the primary science."[102] Formally presented it reads:

> Meanings are invariant with respect to the process of reduction.[103]

It is Feyerabend's opinion that these assumptions, taking for granted as they do the validity of the covering-law model of explanation, presuppose that the terms of a scientific theory (T) that is being replaced by a second theory (T') or reduced to another (T'') are possessive of stable meanings that allows the transition of T to T' or from T to T''

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[100] In his later writings, Feyerabend no longer attributes such capacities to falsification.

[101] Paul Feyerabend, "Explanation, Reduction, and Empiricism", p.48.

[102] Ibid.

[103] Ibid., These two assumptions are now commonly referred to in the literature as the consistency condition and the condition of meaning invariance. For a critical assessment of Feyerabend's rejection of these conditions see, Dudley Shapere, "Meaning and Scientific Change", in Scientific Revolutions, ed. Ian Hacking (Oxford: Oxford University Press, 1981), pp.28-59.

to proceed smoothly. In short, the assumptions can only be satisfied if the meanings of scientific terms remain invariant in cross-theoretical comparison and inter-theoretic reduction.

As was foreshadowed by his rejection of the notion of neutral observation language, however, Feyerabend does not think that there is such a preservation of meaning across theories. For him "the meaning of every term we use depends upon the theoretical context in which it occurs. Words do not 'mean' something in isolation; they obtain their meanings by being part of a theoretical system".[104]

Feyerabend argues that the theory-ladenness of facts and the impossibility of employing a neutral observation language prevents us from assessing the locus of positive content that a successor theory provides us with vis-a-vis the theory it has replaced. Correlatively, we cannot determine, using the explanatory resources of the successor theory, the shortcomings of the replaced theory. The relation of deducibility, and the consistency condition of reducibility that it invokes, that is championed by those empiricists subscribing to the covering-law model of explanation is most inadequate for arriving at an understanding of science. In addition, Feyerabend argues the exclusion of the simultaneous employment of contradictory hypotheses from the scientific enterprise by the consistency condition is not only based upon a fundamental misconception, it contradicts the history of science. If seriously enforced it would, in fact, cripple one of the central ingredients of the creative component of science and scientific theorizing. To insist that it

[104] Paul Feyerabend, "Problems of Empiricism", in Beyond the Edge of Certainty, ed. Robert G. Colodny (Englewood Cliffs, N.J.: Prentice-Hall, 1965), p.180.

must be shown, upon the presentation of new theories and hypotheses, how those new theories and hypotheses are consistent with well-confirmed theories (and to discard them if they are not) is, Feyerabend claims, to invoke a conservative methodological principle that will not assist us in the construction of more efficient nomological explanations, but will, rather, lead to the stagnation of the scientific enterprise. In light of this, Feyerabend advocates the use of the 'counter-rule', a principle "that urges us to introduce hypotheses which are inconsistent with well-established theories".[105]

One can see, therefore, that in his criticism of the standard empiricist approach to the study of scientific theories, Feyerabend argues from a position that countenances the ideational character of facts, meaning invariance, and the theory-ladenness of observation. He also radically departs from the standard account in his very generic use of the term theory, himself admitting that in his writings it "will be used in a wide sense, including ordinary beliefs....myths....religious beliefs, etc. In short, any sufficiently general point of view concerning matter of fact will be termed a 'theory'".[106] From this, many people might be led to believe that his brand of post-empiricism is very much akin to that of Thomas Kuhn's. This interpretation can, in fact, be seen as receiving further support from Feyerabend's view that in order for science to avoid stagnation and overcome conforming anomalies it "needs people who are adaptable and inventive, not rigid imitators of 'estab-

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[105] Paul Feyerabend, Against Method, p.35. As far as 'bucking the established trend' goes, notice the affinity here to Popper's initial presentation of the falsification principle.

[106] Paul Feyerabend, "Problems of Empiricism", p.219.

lished' behavioral patterns".[107]

There are, indeed, many parallels between the philosophy of science of Kuhn and the approach of Feyerabend. Feyerabend, however, especially in his most recent work, is being much more radical than Kuhn in his rejection of the positivist inspired approach to the philosophy of science. For Feyerabend, actual scientific practice is much less susceptible to methodological 'rules of thumb' and much more chaotic than the interpretation of it we receive through Kuhn's notions of paradigms and normal science. Although acknowledging the occasional act of revolutionary genius, Kuhn's portrayal of actual scientists does not depart in essence from the positivist portrayal - he treats them as a basically conservative lot. They are pictured as all operating more or less within the confines of a specific world-view, abiding by the dictates of the governing disciplinary matrix. Their values and epistemic virtues are pretty well ordained for them and the didactic presentation of them is built into the educational and training process. Like workers on a production line they carry out the overlord's mandates, maximizing on theoretical cost-efficiencies until insurmountable contradictions arise - contradictions which reveal the oppressive nature of institutional obedience. Their liberation is soon made possible, however, by young rebels or creative eccentrics whose daring individuality has never quite been suppressed. This liberation, nevertheless, like all liberation, is short lived. The crash course in the 'new way' soon ends and when the historical curtain rises again it reveals them back on a new production line, perhaps exchanging the odd smile indicative of invigoration, but smiles

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[107] Paul Feyerabend, Against Method, p.215.

which one can be assured will soon vanish as the redundancy of 'normal' work sets in.[108]

In Feyerabend's view, however, the overlords are not as successful in keeping the rebels and eccentrics at bay; at no point in time does something as monolithic as 'normal science' exist. At any conjuncture, "science needs both the narrow mindedness that puts obstacles in the path of an unchained curiosity and the ignorance that either disregards the obstacles, or is incapable of perceiving them. Science needs both the expert and the dilettantes".[109]

It is Feyerabend's opinion that the individual scientist is initially confronted with a 'bulk of chaotic and diverse material' which they cannot make conform to the established 'simple' criteria of order and consistency. A practical logic is therefore developed which enables results to be achieved. Since "most of the rules and standards of this practical logic are conceived ad hoc, they serve to remove a particular difficulty and it is not possible to turn them into an organ of research".[110]

A corollary of this is Feyerabend's argument that all the methodologies advanced by 'critical rationalism', "even the most obvious ones,

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[108] One could say that it is in Kuhn's work that scientific time parallels what we know of political time; it "moves faster in periods of crisis, and stagnates in times of regression: we learn more in a week of revolution than in ten years of status quo". For a discussion of political time so construed see Regis Debray, Prison Writings, ed. Rosemary Sheed (Middlesex, England: Penguin Books, 1973), p.90.

[109] Paul Feyerabend, Science in a Free Society (London: NLB, 1978), p.89.

[110] Ibid., p.199.

have their limits";[111] they are akin to measuring tools that are determined by the process of investigation itself. Just as we would not use any given measuring device under all conditions, Feyerabend suggests that it would be naive for the sciences to pledge their allegiances to any rule or standard in all research. Science is, in short, an "essentially anarchistic enterprise".[112] The scientist, henceforth, must not pay credence to any mandate from the 'philosophy of science' that does not, in its conditional clause, advocate proliferation - that does not preclude him from realizing that at heart, anything goes.

Any concerted look at the history of science, Feyerabend informs us, will reveal that anarchism is a medicine that epistemology and the philosophy of science badly needs. Although in the same breathe he cautions against the over-indulgence in any medicine[113] and claims that he does "not show that proliferation should be used,.... [but only that] the rationalist cannot exclude it",[114] his recent efforts consist of a enumerating a plethora of examples of methodological rules that have severe shortcomings. Inductivism, verifiability, and falsification go by the wayside almost immediately. The Popper-Hempel brand of deductivism falters as a universal principle in light of the fact that "forms of life may be deductively disjoint".[115] The history of science is also invoked

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[111] Paul Feyerabend, Against Method, p.32.

[112] Ibid., p.17.

[113] See Science in a Free Society, p.127: "Epistemology is sick, it must be cured, and the medicine is anarchy. Now medicine is not something one takes all the time. One takes it for a certain period of time, and then one stops."

[114] Paul Feyerabend, Science in a Free Society, p.145.

[115] Ibid., p.208.

to demonstrate that the principles of non-contradiction and consistency are easily compromised in scientific research. Content-increase is shown to to be something that must not be demanded of successor theories and ad hoc hypotheses are lauded as devices which "give new theories a breathing space, and indicate the direction of future research".[116] In short, Feyerabend's methodological prescription is pure and simple: "Without 'chaos', no knowledge".[117]

In addition, consistent with his earlier acceptance of radical meaning variance, Feyerabend, in arguing that "linguists remind us that a perfect translation is never possible, even if we use complex contextual definitions",[118] rejects the notion of commensurability - what is considered by most philosophers of science to be the prerequisite par excellence for a portrayal of scientific knowledge as progressive and convergent. The rejection of epistemic convergence in science is not, however, something that troubles Feyerabend in the least; for him, "the debate between science and myth has ceased without having been won by either side".[119] Indeed, it is his questioning whether 'truth might be unimportant' and 'undesirable' that leads Feyerabend to reconsider its social relevance, which, in turn, brings his discussion of the philosophy of science into line with a more general and unrestrained critique of scientism.

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[116] Paul Feyerabend, Against Method, p.93.

[117] Ibid., p.179.

[118] Ibid., pp.281-282.

[119] Ibid., p.171.

In fact, it is at this point that Feyerabend sets himself up as a savior of sorts. He says he wishes to defend society against all ideologies - science included. For Feyerabend there is no criterion of rationality or meaningfulness that can separate science from myth, folklore, religion and all their various manifestations. Science is simply one cultural tradition amongst many and has no special right to claim to be able to act as some kind of neutral arbitrator between other traditions. Science has no right to become hegemonic. Therefore, argues Feyerabend, in a democratic society, , a major question is how to separate science and state.[120]

Given his conclusion that the 'scientific way' is just one amongst many, Feyerabend subjects his own career as a Professor of Philosophy at the University of California in Berkeley to a critical examination. It is in such hindsight that he decides that his function "was to carry out the educational policies of the State of California"; which means, he concludes, that he "had to teach people what a small group of white intellectuals had decided was knowledge".[121]

For Feyerabend, such demagogy is most unacceptable, especially at a university financed by the state. The citizens of a state have a right to live as they choose and if this means teaching them voodoo or acupuncture at the universities then this is exactly what educators should be doing. And this, in turn, means going against "the tradition of the White Man"[122] and the elitism of scientific rationality. It means advo-

[120] A question which he explores most forthrightly in "Democracy, Elitism, and Scientific Method", Inquiry 23 (1980):3-18.

[121] Paul Feyerabend, Science in a Free Society, p.118.

cating 'democratic relativism' and defending the rights of citizens 'to use the standards of the tradition to which they belong'.[123] Indeed;

> Science or rationalism, in this view, are instruments put at the disposal of the people to be used by them as they see fit, they are not necessary conditions of rationality, or citizenship, or life. Scientists are salesmen of ideas and gadgets, they are not judges of Truth and Falsehood. Nor are they High Priests of Right Living.[124]

Now although Feyerabend has stated, at one point, that he wished "to know what it is that makes people who have a rich and complex culture fall for dry abstractions and mutilate their traditions, their thought, their language so that they can accommodate the abstractions",[125] he does not provide us with any substantial answer. He does not, that is, explain why scientists are such successful salesmen and what enables the corporation to grow at the rate it does. He simply and didactically states that its continued growth, and support by the state, is deomcratically unjustified.

It is interesting, by way of an overview, to see how Feyerabend arrives at his position. Like Kuhn, he too starts with looking at the history of science as well as its contemporary development. He notes that if the scientific enterprise is not to be static it must employ a methodological pluralism. In fact, he observes, science does employ such a pluralism. Yet this pluralism is not a result of attempts to provide evaluative standards before experimentation; it is, rather, the result

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[122] Paul Feyerabend, "Democracy, Elitism, and Scientific Method", p.14.

[123] Ibid., p.11.

[124] Ibid., p.15.

[125] Paul Feyerabend, Science in a Free Society, p.119.

of the ability of scientists to devise ad hoc pragmatic principles during and shortly after experimentation. Science, Feyerabend concludes, can get on just fine by itself. Philosophy of science as a special subject, which employs the resources of formal logic in attempts to establish universal methodological principles which science must abide by, has, therefore, been proven to be completely unnecessary.

Conjoined with his advocation of a pluralism in matters methodological, however, is also Feyerabend's claim (which he once thought was completely compatible with a realist construal of science) that science must also be willing to countenance a variety of incompatible theories and hypotheses simultaneously. Only such countenancing could enable the enterprise to remain creative. And it was this kind of argument that soon led to his view, still advanced in the service of science, that "a science interested in finding truth must....retain all the ideas of mankind for possible use".[126]

As Feyerabend construes the principle of theoretical pluralism, however, it means that the wide-spread acceptance of a theory is inversely related to the growth of understanding and rationality. The elitism inherent in 'philosophical cliques' must therefore be prevented from establishing itself. Democracy must reign in matters intellectual.

However, Feyerabend continues, if all scientific standards are themselves research imminent, how is it possible to judge science per se as constitutive of all knowledge claims. The answer, he alleges, is that it is not possible, and the result of this is both "the end of the philoso-

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[126] Paul Feyerabend, "Democracy, Elitism, and Scientific Method", p.5.

phy of science (and of a very popular idea of reason) as an aid to scientific progress"[127] and the end of science as an adjudicator in matters epistemological. But if science has no justification for assuming this latter role, then it also has no justification for assessing the variety of cultural norms and traditions from which diverse knowledge claims arise. Feyerabend then argues that, ipso facto, in a democratic society, the enterprise of science has no justification for assuming any institutional primacy.

It is also Feyerabend's opinion (an opinion which he thinks receives 'general agreement') "that a free society must not be left at the mercy of the institutions it contains - it must be able to supervise and control them".[128] He therefore argues, in response to those who ask where the standards of institutional assessment will come from, that the answer is 'obvious'; "A citizen will use the standards of the tradition to which he belongs".[129]

It is in fact at this point that Feyerabend's attack on 'elitism' in the philosophy of science has transformed itself into an attack on all traces of 'intellectual elitism' in society. It is intellectuals who, in asking how the 'correct' standards will be found, presuppose that they are responding to questions that are a problem for everyone. Their elitist answers are a result of the fact that "they simply take it for granted that their own traditions of standard-construction and standard-

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[127] Ibid., p.9.

[128] Ibid.

[129] Ibid.

rejection are the only traditions that count".[130]

In Feyerabend's opinion the debates between traditions are inevitably debates between 'layman'; the solution to these debates will therefore be generated, via the authority of laymen, by democratic councils. Such councils form the ultimate political unit of his 'democratic relativism' - the only alternative a democracy has if it is to avoid the imposition of standards by a 'gang of radical intellectuals'. In fact, Feyerabend even has a slogan for his political alternative: "Citizen's initiatives instead of philosophy!"[131]

This most interesting, perhaps bizarre, and certainly unexpected, change of pace that Feyerabend's philosophy has taken over the years is a clear representation of how much of post-empiricism's willingness to talk in terms of 'myths', 'world-views', and 'visions' can lead to extreme conclusions. In fact, Feyerabend is interesting to consider primarily because of the fact that his attack on positivism becomes an attack on the whole notion of 'critical rationalism' in general. For in much of the social sciences, we must recall, an attack on positivism necessarily means an attack on 'critical rationalism'; indeed, this fact is very implicit in the rallying cry of many 'interpretationalists' : 'we must stop explaining and analyzing social phenomena, and try to understand them'.

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[130] Ibid., p.12.

[131] Ibid., p.17.

Now I can only emphasize once again at this point that throughout this chapter I have not been assuming that the attacks on positivism necessarily culminate in the radical epistemic and communal relativism of Feyerabend. One need only consult the writings of the authors mentioned in this chapter to substantiate that they have not fallen victim to Feyerabendianism. In fact, the analytic philosophical literature is proof positive that several criticisms of positivist presuppositions were carried out, and continue to be carried out, along largely 'positivist' lines. It would, therefore, given this, even be inappropriate to generically assert that 'positivism has died'.

It must also be pointed out, however, that in looking at the history of any ideas which have some common denominator, it is very important to take note of who becomes influential vis a vis other disciplines. For often, over time, it is that individual who comes to be seen as representative of that 'body of thought' under which a multitude of ideas have been rudimentally coalesced (often after that individual has gained some prominence). For example, although I consider that it would be a most fortunate occurence for all academic thought if generic reference to 'this' or 'that' 'body of thought' was suspended, it remains the case that, for a variety of reasons, people continue to employ those very kinds of generic references, and it is an almost inevitable consequence of this that some individual emerges as epitomizing that 'body of thought'. People then make reference to that individual (or individuals) when referring to that thought; one could say that there is a dialectical relationship between the emergence of a 'representative' and the emergence of a 'body of thought'.

Therefore, those who desire to investigate the relationship between the philosophy of science and the philosophy of the social sciences must always consider what the social sciences take to be the 'received' view; for example, most philosophers of the social sciences seem to consider that a correspondence theory of truth was an undisputed component of logical positivism. Now we have seen that this was certainly not the case - nevertheless, it is very important to note that they consider it accordingly. It is at this point that the rational reconstruction of ideas gain a certain autonomy *vis a vis* their subject domain.

There can be no doubt that for some time, Thomas Kuhn has been representative of post-empiricism for several social sciences. It is my contention (a contention that almost anyone could make after considering the relevant literature) that both Feyerabend and Rorty will increasingly come to assume that role over the next few years. In such an examination, therefore, one must approach their thought accordingly.

4.4.2 Richard Rorty on Foundationalist Epistemology and Hermeneutics

As we have noted in our conclusion to the last section, it would be outlandishly ludicrous to suppose that there is some sort of logical continuity between Popper's falsificationism, Quine's theses of meaning variance and the indeterminacy of translation, Sellars' attack on the 'Myth of the Given', Kunh's views on paradigms and incommensurability, and Feyerabend's advocacy of methodological, theoretical, and political pluralism. It does, nevertheless, remain the case that most traditions develop[132] certain people who, whether recognized or not by others as

[132] 'Bringforth', as Heideggarians might choose to say.

legitimate spokesmen, attempt to speak for the 'recent developments' and derive profound conclusions therefrom. Given this, one might say that in matters political B.F. Skinner was to positivism what Paul Feyerabend is to what I have designated post-empiricism. His influence on the social sciences, as we will see in our next chapter, can be interpreted, as it often is, in a variety of significant ways. Such an influence definitely comes at the cost of, or, perhaps more appropriately, will not be conjoined with, an equal recognition of his more critical essays. This, however, given his contemporary position, may actually be very much to his liking. All we can say here is that one often gains recognition when one attempts to be profound, regardless of what constitutes those profundities.

Feyerabend's attempt to derive large-scale social consequences from his attacks on the esoteric element in the philosophy of science and other academic disciplines, is somewhat akin in spirit to a variety of other attempts by philosophers. Most prominent of these other attempts <u>and</u> most susceptible to conceptual consumption on the part of social scientists has been the recent work of Richard Rorty.

As Feyerabend's claims are largely the result of the failure on the part of positivistic philosophers of science to construct an explicitly formal algorithm for theory-choice, Rorty's work can be see as largely the result of the failure on the part of those same philosophers (and their historical cousins) to adequately provide an explication of what it means for a proposition (or 'theory', or 'idea') to be justified <u>by</u> its <u>reference</u> to an extra-linguistic world. Feyerabend uses the failure of the methodological component of verification as a conceptual spring-

board, whereas Rorty uses the failure of its epistemological component accordingly. However, as we have seen in our discussion on positivism, the conjunction of these components is the essence of verification. Therefore, it might be more precisely stated that Feyerabend and Rorty are using the same spring-board. They are only diving to different depths.

The substance of Rorty's widely acclaimed Philosophy and the Mirror of Nature is an unrelenting attack on traditional epistemology. This discipline, in Rorty's view, has been governed by the belief in, and search for, the permanent, 'uncontaminated', neutral framework of the state of things whose 'structure' it is the task of the philosopher to elucidate. Philosophy thus far has also worked on the assumption that there is a 'nature of knowledge' which entails that all contributions to a given discourse are ultimately commensurable. The notion of 'knowledge by confrontation' therefore supports the idea that there exist rules which constrain enquiry and which are common to all discourse.

With such an arsenal of assumptions in store, philosophy, Rorty argues, was (and largely still is) motivated to assess ('ground') epistemic claims from all of culture. The cultural domain has been divided into those areas of discourse which represent reality well, those which do it less well, and those which do not represent it at all. On the former are conferred the honourific titles of 'cognitively meaningful' and 'rationality' and in the latter, the derisory tags of 'cognitively meaningless' and 'subjectivism'. Commensurability is more than often viewed the hallmark of the first variety, incommensurability the fate of the second.

In his criticism of the view that the justification of knowledge claims is a transaction between the 'knowing subject' and 'reality', Rorty wishes to re-draw this hierarchial cultural image. He carries out this latter project by rejecting the assumptions of traditional epistemology[133] and insisting that the 'cultural vacuum' created by the demise of this discipline should never be filled; that our culture should become one where the demand for universal and transhistorical epistemic constraints is no longer made.

Quite indicative of his Jamesian pragmatism, Rorty is indicting the epistemological tradition with having confused "contact with reality with dealing with reality".[134] Inevitably this confusion could be traced back to the misguided attempt on the part of Greek philosophy, especially as exemplified by its Platonic component, to draw a distinction between epistemic and doxa , between knowledge and belief. It was, however, argues Rorty, Descartes' 'invention of the mind' and his notion of 'privileged access' (implicit in his famous 'cogito, ergo sum') which provided a 'field' within which epistemic certainty, as opposed to mere opinion or belief, was possible. And it was Locke's identification of explanation with justification , his conflation of the etiology of our beliefs with our justification of them - that by ordaining this field as a subject of study really got the tradition rolling.

What had emerged by the seventeenth century, therefore, was an interpretation of knowledge as an 'assemblage of representations' that mirrored nature. The duty of philosophy, as a theory of this knowledge,

[133] As some would have it, deconstructing the tradition.

[134] Richard Rorty, Philosophy and the Mirror of Nature, p.375.

came to be seen increasingly as the polishing of man's 'glassy essence'. It was, nevertheless, only with Kant's employment of the Cartesian notion of privileged access in attempting to answer the query 'How is knowledge possible?' that the discipline of epistemology, as the study of our inner representations, received its full legitimization. The placing of philosophy on the 'secure path of science' that Kant heralded was actually premised, given privileged access, on the assumption that the search for the source of apodictic knowledge would prove successful.

It was, of course, also Kant's attempt to forge a 'third way' between the formidable certainties of Cartesianism and the abyss of Humean scepticism that led to the hypostatization of a world both deserving of, and fit for, human habitation - a world partly constituted, yet a world also determinate. This attempt by Kant led to the celebrated division of the world into the noumenal and the phenomenal as well as his claim that we could have certain knowledge regarding our 'constituting activities'. It has also, Rorty argues, entrenched within the philosophical consciousness the distinctions which much of twentieth century analytic philosophy has striven to overcome; that between the analytic and the synthetic (the necessary and contingent) and that between the conceptual and the empirical (scheme and context).

By the time the twentieth century had rolled around the notion of knowledge as a set of representations had become more specifically construed as the relation between propositions and the world. People's beliefs were viewed as made manifest in such propositions and epistemology, as the study of the relation between them and the world, heralded knowledge as 'justified true belief'. Beliefs were true if, as formulat-

ed in propositions, they corresponded to what was really the case - that is, if they referred to an extra-linguistic component.[135]

We have seen that attempts to explicate this alleged relation constituted much of positivist epistemology, attempts which were largely fueled by the belief that if such a relation could not be found then the scientific enterprise would be forced to abdicate its empirical component and would, thereby, be ranked as simply one other myth amongst many. In contradistinction, Quine's claim that a thorough-going naturalism is compelled to countenance the inscrutability of reference can be seen as a strong contribution to much of post-empiricist philosophy of science wherein the alleged word/world correspondence is rejected tout court.

Now Rorty's position is also a rejection of any notion of correspondence between the linguistic and extra-linguistic, and can therefore be seen as contributing to the thought of post-empiricism which we have been considering. It is, in fact, Rorty's view that once we recognize the error introduced by Locke, and dispel the assumption that there is some special non-pragmatic relation between truth and justification, then we are well on our way to admitting that no sense can be made of

[135] For a look at how normative epistemology approaches knowledge as 'justified true belief' or, in light of Gettier's famous paradox, 'indefeasible justified true belief' see Keith Lehrer, Knowledge (Oxford: Clarendon Press, 1974). Lehrer, it might be mentioned, does not subscribe to the correspondence notion of justification which most of Rorty's attack is directed against, opting instead for a hybrid of the coherency theory - 'doxastic system of justification'. Lehrer's thesis not only rejects the correspondence theory but also by-passes the gate at which several coherency theorists stop; namely, the linguistic community. In his claim that "the beliefs a man has make up a self-sufficient epistemic community", it is hard to see how Lehrer can avoid all the pitfalls of a thorough-going solipsism.

the notions of representation and correspondence. In short, we will be compelled to reject the guiding assumptions of much a twentieth-century philosophy; that the 'mind' can provide us with the incorrigible truths, that truth is an accurate representation of 'reality', and that knowledge, as depicted by the ideal scientific theory, is a perfectly polished 'mirror of nature'.

For Rorty, rejecting these guiding assumptions is counterpart to rejecting the distinctions, in all their guises, which the tradition has bequeathed to us - the analytic/synthetic; necessary/contingent; language/fact; scheme/content; conceptual/empirical; given/postulated; et cetera. Although he admits that "analytic philosophy cannot.... be written without one or the other of these distinctions",[136] Rorty employs developments from within that tradition to support his pragmatic claim that philosophy, regardless of how construed, has nothing to do with the quest for certainty. It is the Quine-Sellars-Davidson tradition, argues Rorty, that (although neither Quine, Sellars, nor Davidson have individually rejected all of the aforementioned distinctions) allows us to see that justification has always been holistic and behaviouristic and that the highest epistemic authority is one's community - that justification is a social phenomenon. As the 'Good' is just what the community allows you to get away with doing, so too, on Rorty's construal, is the True just what the community allows you to get away with saying. In short, Truth is what Dewey and other pragmatists have always claimed it was; namely, 'warranted assertability', and language is what the later Wittgenstein claimed it was; namely, a tool for helping us

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[136] Richard Rorty, Philosophy and the Mirror of Nature , p.172.

'cope', but, nevertheless, a tool the 'adequacy' of which cannot be assessed.

With Rorty's rejection of talk of representation and correspondence also comes, of course, a rejection of the notion that scientific theories are slowly converging towards the truth and that this progression can be evaluated, at any stage, by reference to some universal epistemic virtue. On this score his position is again akin to that of Kuhn's and Feyerabend's, the only difference being, once again, a thorough-going application of pragmatism. According to Rorty:

> Instead of looking for piecemeal word-world relationships between small linguistic or mental items and other bits of the world, or relations of 'greater adequacy of picturing' between global schemes and Reality, we just say that, by and large, (and by our own lights) we do better at coping with the irradiations than our ancestors.[137]

Up to this point, our portrayal of the tradition that Rorty is reacting against may lead one to believe that his attacks are primarily directed against only those elements of the tradition which speak of Truth in terms of correspondence and foundations and those which resort to referential semantics in order to give credence to their position. What about, one might ask, those epistemologists who advocate coherency models of truth and justification, foundationalist models in which basic propositions are considered epistemically prior but not certain and where probability accounts are countenanced, or realist accounts where foundation talk is rejected?

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[137] Richard Rorty, "Realism and Reference", Monist 59 (1976):323.

Indeed, Rorty does appear to be responding to a specific epistemological position when he fuels his attack with Sellars' argument against the observationally given and Quine's critique of the analytic/synthetic and fact/language distinctions. His 'mirror of nature' analogy which sets the stage for his critique of the 'logical necessity' of the transcendentalist and the 'physical necessity' of the evolutionary 'naturalizing' epistemologist[138] could, in short, be seen as one of the most masterfully constructed but, nevertheless, equally deceitful, philosophical strawmen this century has ever seen. As one of his reviewers has noted, the import of the central metaphors on which Rorty's book hinges can be seen as "an example of the fallacy logicians call extension: assuming that what is untrue in the maximum degree is untrue in the moderate degrees".[139]

The strongest part of such a rebuttal is, of course, that which indicts Rorty for not giving enough consideration to coherency theories of truth and justification. Now Rorty does acknowledge that the attack on the observational/theoretical distinction, as it stems from the work of Sellars, Kuhn, and Feyerabend, has led to a renewed interest in coherence theories. This interest has especially been prevalent in the work

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[138] Richard Rorty, Philosophy and the Mirror of Nature, p. 376

[139] Harry Ruja, "Review of Philosophy and the Mirror of Nature", Philosophy and Phenomenological Research 42 (1981-2):300. Other reviewers who argue that Rorty's critique is only directed at certain positions and that his thesis is thereby invalidated as a generic attack of all of epistemology include Robert Schwartz, "Review of Philosophy and the Mirror of Nature", Journal of Philosophy 80 (1983):51-67; and Victor Choy, "Mind-Body, Realism and Rorty's Therapy", Synthese 52 (1982):515-541. As Choy sees it, "Rorty's extreme conclusion is unconvincing unless one assumes that the only philosophical interest in epistemology concerns radical skepticism, foundationalism and privileged representation". (p.518).

of those people who wish to argue that if meanings and justification are only possible within a given theoretical matrix, then we must seriously entertain the possibility that a change in that theoretical matrix would induce a change in the way its proponents viewed the world; or, more radically, that different conceptual systems are an indication that people are living in different worlds. To some extent, this construal of things serves as the rudimentary base for Feyerabend's advocation of political pluralism as well as for a plethora of positions in the social sciences which champion the virtues of accepting a thorough-going relativism with respect to alternate cultures and their corresponding 'systems' of rationality. It can also be seen, as Rorty himself notes, as implicit in Thomas Kuhn's notion of paradigms from which disengagement requires a 'gestalt switch'.[140]

We have seen that Rorty does consider justification to be holistic, so there is no problem here between his views and those of coherence theorists. However, the agreement between the two ceases when the thesis is introduced that a change in one's concepts necessitates a change in one's world. For Rorty, all talk of 'alternative conceptual frameworks' is radically mis-conceived. The fundamental misconception, he argues, is a result of presupposing the validity of Kant's distinctions between necessary and contingent truth and between concepts and intuitions.[141]

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[140] Richard Rorty, Philosophy and the Mirror of Nature, p.344.

[141] This argument is best developed in Richard Rorty, "The World Well Lost", Journal of Philosophy 69 (1972):649-665

As far as Rorty is concerned, Quine's attack on analyticity and Sellars' attack on the notion of givenness have not only been a success unto themselves but, in addition, when conjoined they lead to some pretty outstanding results. Primary amongst these results, Rorty argues, is the 'dismantling' of the Kantian notion of a 'conceptual framework' that somehow rides on top of, yet organizes, the world of experience. For Rorty, "the suggestion that our concepts shape neutral material no longer makes sense once there is nothing to serve as this material".[142] Hence, to speak of the 'constitution of experience' or, correlatively, of different ways of constituting experience - of alternative conceptual frameworks - once the notions of 'the given' and 'the a priori' have been discarded is clearly conceptually anachronistic.

The other objection which Rorty directs against the possibility of alternative conceptual frameworks which many coherence theorists often entertain is an objection that stems from the work of Donald Davidson.[143]

It is Davidson's opinion that the dualism of scheme and content, which for him constitutes the 'third dogma' of empiricism, has led several philosophers to champion theses founded on some pretty strong paradoxes. The most paradoxical, of course, is that which lies at the root

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[142] Ibid., p.650.

[143] See especially, Donald Davidson, "On the Very Idea of a Conceptual Scheme", Proceedings of the American Philosophical Association 17 (1973-74):5-20. This very influential article, which is, strangely enough, given only minimal, if any, consideration in discussions of relativism in the social sciences, is also reprinted in full in Donald Davidson, Inquiries into Truth and Interpretation (Oxford: Clarendon Press, 1984), pp.183-198. Of related interest are also Davidson's articles, reprinted in the same book, entitled "Reality without Reference" and "The Inscrutability of Reference".

of the doctrine of incommensurability; namely, that people whose languages are considered radically indeterminate are nevertheless considered to be possessive of alternate conceptual frameworks.[144]

On Davidson's account, however, there is no possibility that we will discover "a criterion of languagehood that did not depend on, or entail, translatability into a familiar idiom".[145] As he points out, the major underlying assumption of relativism is that we can say of an alternative conceptual scheme that it is 'true' but not translatable. And this assumption inevitably boils down to supposing that we can understand the notion of linguistic truth independent of the notion of translation[146]- a supposition that Davidson considers not only misconceived but also one that runs counter to the major driving force of relativist doctrines. The unavoidable conclusion is that "given the underlying methodology of interpretation, we could not be in a position to judge that others had concepts or beliefs radically different from our own".[147] As Rorty him-

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[144] In much of Davidson's work this paradoxical claim, which lies implicit in several recent attempts to expound on the latent relativism of Quine and Feyerabend, is considered to be the result of the belief that the indeterminacy thesis somehow abets the thesis of incommensurability. For Davidson, this is a fundamental misconstrual since, as he argues, the former thesis, as it stems from the work of Quine, implies that there are innumerable translation manuals. In contradistinction, the latter thesis, especially as stemming from the work of Kuhn and Feyerabend, suggests that there is no such manual available.

[145] Donald Davidson, "On the Very Idea of a Conceptual Scheme", p.14.

[146] Ibid., p.16.

[147] Ibid., p.20. As Davidson notes, however, this conclusion also precludes us from saying that all 'schemes' are part of a universal idiom. The relativism countenanced by Kuhn and Co. is really no more than the claim that the truth of sentences is relative to a language. Armed with Davidson's thesis, we must reconsider the doctrines of incommensurability and entertain the possibility that "Instead of living in different worlds, Kuhn's scientists may, like

self notes, (after hypothesizing about the possibility of extending the results of Davidson's thesis to a consideration of 'anything that emits a variety of signals'), "the purported notion of an untranslatable language is as fanciful as that of an invisible color".[148]

In contradistinction to several coherence theorists, therefore, Rorty does not view the world as a founding matrix for one or a multiplicity of 'conceptual schemes', but rather as the totality of our unquestioned beliefs. Coherence theorists, to the extent that they do not speak of the world in this latter fashion, are invoking the age-old incoherent Kantian notion of the noumenal realm - the 'world-in-itself'. The debate between coherence theories and correspondence theories therefore emerge, in Rorty's view, as 'noncompeting trivialities' since;

> It is only when we have some form of the notion that the mind is split between 'simple ideas' or 'passively received intuitions' on the one hand and a range of complex ideas (some signifying real, and some only nominal, essences) on the other, that either the coherency theory of truth or the standard objections to it can begin to look plausible.[149]

We can see, therefore, that any objection to Rorty's indictment of epistemology which is premised on a perceived avoidance on his part to adequately consider non-foundationalist coherence theories has not adequately understood his employment of Davidson's attack on the 'third dogma'. In addition, the objections which allege that Rorty is committing the fallacy of extension also seem to miss their mark in a substantial sort of way. They assume, primarily, that the fallacy can be com-

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those who need Websters's dictionary, be only words apart". (p.11).

[148] Richard Rorty, "The World Well Lost", p.653.

[149] Ibid., p.664.

mitted in an approach such as Rorty's, something which I would argue cannot be the case.

There are, of course, cases where something that is untrue in the maximal degree can be true in moderate or minimal degrees. The employment of diminishing preference scales in social scientific research and the concepts of critical mass in physics and precipitation points in chemistry are premised upon this very phenomenon. However, there are also those cases where something being untrue in the maximal degree precludes tout court the possibility of its being true in either the minimal or moderate degrees. And it is these kinds of cases upon which Rorty's analysis hinges; indeed, they are what enable his analysis to have such sweeping breadth and power.

Harry Ruja, who indicts Rorty for commiting the fallacy of extension, appeals to epistemologists to analogously apply to their discipline, in defence of Rorty, the fact that although "maps are certainly useful and accurate 'mirrors....they do not duplicate in full and identical detail what they represent".[150] The power of this often revealing analogy cannot, however, stand up to Rorty's thesis. Rorty would clearly not deny that maps are useful, to the same extent that he would not deny that scientific theories or language are useful. What he would deny, however, is that they are useful because they reveal the 'essence', 'fundamental nature', 'unalterable structure', of some underlying, neutral, 'in-itself' world which would be 'better represented' the sharper we drew the lines or polished the mirror. The plain and simple response to Ruja and those who argue in a similar fashion is that if we are precluded from

[150] Harry Ruja, "Review of Philosophy and the Mirror of Nature", p.300.

talking about an unrepresented world, then we are also precluded from talking about the 'mind' or any other epistemic intermediary as perfectly reflecting, mirroring, or mapping that world. And if we are precluded from so talking then, ipso facto, we are also precluded from describing such representation as 'nearly accurate' or 'almost or partially full'. In short, to say that a map or drawing is similar, 'in some respects' to that which is mapped or drawn is either to entertain incoherencies or to state trivialities. Considering two spatio-temporal objects and stating that inter-subjective agreement considers them similar in certain respects (weight, colour, shape, et cetera) is to say that and nothing more. And a map can only depict certain features that are already inter-subjectively agreed upon - it does not describe or mirror, partially or fully, a priori, 'unconceptualized' reality.

So Rorty does seem able to extricate himself from those critics who argue that in not devoting ample consideration to probabilistic, 'non-certain' accounts of representation he thereby cripples the major import of his thesis. What, however, of his positive contribution? What major changes does he consider are in store for epistemology, and philosophy in general, once we recognize that "even when we have justified true belief about everything we want to know, we may have no more than conformity to the norms of the day".[151]

For Rorty, one result of no longer having faith in antecedently existing common ground and in a privileged set of descriptions that would facilitate the discovery of such ground is the rejection of a fundamental assumption upon which traditional epistemology proceeds; namely,

[151] Richard Rorty, Philosophy and the Mirror of Nature, p.367.

"that all contributions to a given discourse are commensurable".[152] On his account, however, both incorrigibility and incommensurability should be viewed solely as matters of social practice.

His epistemological behaviourism construes the line between discourse that can be rendered commensurable and those which cannot as merely that between normal and abnormal discourse. In normal discourse everyone agrees upon the conventions of explanation, relevance, evaluational criteria, et cetera. Abnormal discourse, on the other hand, either has different standards of what counts as a good argument and/or criticizes the conventions of normal discourse.

Under this view 'epistemological commensuration' occurs where we have agreed upon the practices of inquiry, not because we have discovered something about the 'nature of human knowledge'. The practices have simply continued long enough to enable us to isolate the conventions which make consensus possible. These conventions, however, are not neutral algorithms which determine choice among discourses; they are not an unalterable disciplinary matrix.

Hermeneutics is the activity Rorty recommends in order to understand an abnormal discourse from the point of view of a normal discourse. Although 'taking a norm for granted', it proceeds non-reductively; its aim is to appreciate a new angle on things via a process of acclimatization to the unusual. As far as Rorty is concerned, philosophy should begin to practice hermeneutics, to engage in "conversation which presupposes no disciplinary matrix".[153]

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[152] Ibid., p.316.

Rorty's presentation of hermeneutics is not, therefore, akin to that of those who suggest that it should constitute our investigations in the social sciences. Quite to the contrary, Rorty's suggestion is that "we will be epistemological where we understand perfectly well what is happening....(but) we must be hermeneutical where we do not understand what is happening but are honest enough to admit it".[154] His advocation of hermeneutics is, in fact, closely tied to his own brand of pragmatism; "only needed in the case of incommensurable discourses",[155] it "is better seen as another way of coping".[156]

One must, however, see Rorty's comments on hermeneutics as mediating his positive appraisal of 'edifying philosophy'. Indeed, it is the existence of edifying ways of describing ourselves that often precipitates hermeneutic ventures. It is a kind of philosophy that has its genesis in the recognition that "producing commensurability by finding material equivalences between sentences drawn from different language-games is only one technique among others for coping with our fellow humans".[157] For Rorty, "edifying discourse is <u>supposed</u> to be abnormal, to take us out of our old selves by the power of strangeness, to aid us in becoming new beings".[158]

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[153] Ibid., p.318.

[154] Ibid., p. 321.

[155] Ibid., p.347.

[156] Ibid., p.356.

[157] Ibid., pp. 355-56.

[158] Ibid., p.360.

Following up on Sartre's argument that the search for 'objective knowledge' is simply one project among many, Rorty suggests that we view the Platonic search for truth as only one form of discourse, as only one way in which human beings strive for edification - for more fruitful and interesting ways of describing themselves. In its attempt to try to understand some part of an exotic or foreign discourse' from the point of view of an entrenched discourse, hermeneutics can be seen as edifying unto itself. But since one of the essential ingredients of acts of edification is offering 'another set of terms'[159] in order to send conversation off in different directions, such acts may be constitutive of "the 'poetic' activity of thinking up such new aims, new words, or new disciplines, followed by, so to speak, the inverse of hermeneutics: the attempt to reinterpret our familiar surroundings in the unfamiliar terms of our new inventions".[160]

What is also important to note is that in Rorty's view edifying philosophy is always parasitic upon the culture of the day, that, in fact, it can only be reactive. Rebellion against the entrenched way of looking at things is, therefore, optimistically encouraged, for only such 'non-constructive' attempts can help create an understanding of culture as a conversation rather than a structural environment erected upon incorrigible moral or epistemic foundations. Yet although its discourse must be reactive, proponents of an edifying philosophy must be able to recognize their own abnormality and, in addition, be able to 'come to terms', at some point, with the world-view of contemporary science. They must, in

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[159] Ibid., p.370.

[160] Ibid., p.360.

short, walk that fine line between potential madness and the fundamental rejection of the norms of the day. They must strive to be revolutionaries while at the same time avoiding being 'kooks'. As Rorty himself notes, "we must first see ourselves as en-soi - as described by those statements which are objectively true in the judgement of our peers - before there is any point in seeing ourselves as pour-soi".[161]

In light of this, we can see that although Rorty suggests that we look at philosophy as simply a, perhaps elaborate, way of telling stories and considers 'philosophical' and 'literary' texts "as grist for the same mill",[162] he is not championing, as many commentators insist, a standard deconstructionalist approach to the classical questions of philosophy. As he himself argues, if we take the position exhibited by the early work of Jacques Derrida and demand that what have always been considered the 'important' questions of philosophy must be 'deconstructed' before we move on to consider the rest of culture, then we are still restrained by an interpretation that considers those questions important. As Rorty sees it, however, we must resist the tendency of both 'realists' and 'idealists' and others who wish to 'reconstruct' such questions and the tendency of those who wish to deconstruct them. We must, in fact, be "content to take them lightly, to 'de-thematize' them, to view them as just a few extra tropes", to see them as once having "had a distinguished career and an important historical function but which now survives largely in the form of self-parody".[163]

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[161] Ibid., p.365.

[162] Richard Rorty, "Pragmatism and Literary Theory", Critical Inquiry 11 (1985):463.

[163] Richard Rorty, "Deconstruction and Circumvention", Critical Inquiry

4.4.3 Metaphor and the War of Words

Although Rorty's remarks on how philosophy can become edifying are somewhat unique apropos Anglo-American philosophy, his suggestion that "we would do well to see philosophy as just one more literary genre"[164] is representative of an emerging outlook within that tradition. Indeed, an attempt to eradicate the barriers which have traditionally been constructed between philosophy, science, social studies, and literature is prevalent in the most recent work of Hilary Putnam[165] and for some time has constituted the work of Nelson Goodman.

Both Goodman and Rorty are concerned with helping the philosophical tradition overcome its unsuccessful search for incorrigible epistemic foundations, and to this extent the work of both of them can be designated as 'therapeutic'. What emerges from the writings of Goodman, however, is a sense of overwhelming optimism. Where Rorty's work is permeated with talk of 'coping' and 'getting by', Goodman's work is saturated with recipes for creating. Where much of Rorty's work leaves off with advocating the proliferation of different ways of describing ourselves, Goodman's work begins with suggestions of how such descriptions are, and will be, carried out. Rorty's is still very much a research program whose laurels are a result of the failure of foundational epistemologies, whereas Goodman's is forward-looking and progressive. Rorty is still correcting the errors of the past whilst Goodman esteems

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11 (1984):19.

[164] Ibid., p.20.

[165] See especially, Hilary Putnam, "Literature, Science, and Reflection", in Meaning and the Moral Sciences (London: Routledge & Kegan Paul, 1978), pp.83-94.

the successes of the present and offers us tools with which to confront the future.

Although the result of many years of effort devoted to trying to overcome the confines of positivism by developing a theory of symbolization that will help close the perceived gap between the arts and sciences, the recent work of Goodman can also be seen as part and parcel of a renewed interest in the powerful resources which tropological uses of language can provide us with.

It would, of course, be stating the obvious to note that the philosophical interest in 'ordinary' uses of language since the decline of logical positivism has been as ubiquitous as the interest, during positivism's heyday, in its literal and cognitive aspects. It does, however, remain the case that there is a dirth of indepth examinations of the role of tropes and other 'deviant' uses of language.

This dirth could very well be attributed to the predominance, in Anglo-American philosophy, of an empiricist tradition which has, by and large, considered tropological uses of language as obstacles on the path towards clarity and Truth.[166] One may even trace this unwillingness or inability of Western philosophy to consider the possibly indispensable

[166] Paul de Man has recently examined the Lockean attempt to draw a fine line between the 'use' and 'abuse' of language and has concluded that the impossiblity of making such a distinction is reflected in inescapable contradictions in Locke's epistemological system. For de Man, since 'rhetoric cannot be isolated from its epistemological function' any philosophical attempt to distinguish between aesthetic and epistemological categories is doomed to failure. His assessment of the inconsistencies of the classical empiricist tradition is perhaps best summed up in his claim that "nothing could be more eloquent than Locke's denunciation of eloquence". See Paul de Man, "The Epistemology of Metaphor", On Metaphor, ed. Sheldon Sacks (Chicago: University of Chicago Press, 1978), pp.11-28.

role of figurative language all the way back to the views of Plato and Aristotle.[167]

In the present century, however, the shortage of investigations into the tropological nature of language and its corresponding philosophical ramifications (especially within the Anglo-American tradition) can be attributed to the profound influence of logical positivism. Armed with a criterion of meaningfulness that considered the truth of a proposition to be its method of verification, the positivists launched an extermination campaign against the 'meaningless' utterances of traditional metaphysics, religion, ethics, and aesthetics. Linguistic tropes were considered to be aesthetic devices, destined to be eliminated from philosophy and science. The wedge, therefore, between cognitive and non-cognitive enterprises and figurative and literal uses of language (with all its semantic cum ontological ramifications) was driven to its base. The Nietzschean perversion of Truth and its 'Continental' sympathizers were to be forever prevented from contributing to a purified scientific language free of ambiguity and vagueness.

However, the decline of positivism and the influence of the 'ordinary language' school of philosophy has led many analytic philosophers to admit that the positivists' distinctions were themselves ambiguous and therefore in need of a lot of further clarification. In fact, it has now reached a point where it is accepted by many that research on the salient issues in analytic philosophy cannot avoid investigating the im-

[167] Although this does constitute a standard indictment, for a more enlightened look at the intricacies of the Aritotlelian tradition, via an analysis largely propelled by etymological arguments, one might consult Hannah Arendt, Thinking: The Life of the Mind: Volume One (New York: Harcourt Brace Jovanovich, 1978).

pact of 'deviant' uses of language. Indeed, to the extent that analytic philosophy is rooted in a conception of a purified language, a sympathetic treatment of linguistic 'deviance' may radically alter both its function and self-understanding. In addition, it might also be safe to speculate that, due to efforts like that of Rorty's and Goodman's, the point may be reached where reference to the 'deviational' use of language is largely avoided; since, as Israel Scheffler aptly notes, "the characterization of such features as deviational is....relative to an ideal conception that can itself not be taken for granted".[168]

One tropological use of language which is recently beginning to receive critical attention in the philosophical literature and which plays an important role in Goodman's advocation and elaboration of 'ways of worldmaking' is that of metaphor. Before we begin an examination of Goodman's views on these matters, however, it will prove necessary to provide a synopsis of various philosophical perspectives on metaphor.

An appropriate place to begin a brief examination of various theories of metaphor is with what has come to be known as the Substitution Theory. For many commentators, most of the central claims of the substitution view can be traced back to the distinction between philosophy (read Truth) and poetry that was generated by Plato's attack on the sophists. Therein 'poetical' language was seen as seductive and misleading, unable to achieve the clarity and precision that Truth demanded - that Truth _was_.

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[168] Israel Scheffler, _Beyond the Letter: A Philosophical Inquiry into Ambiguity, Vagueness and Metaphor in Language_ (London: Routledge & Kegan Paul, 1979), p.1.

It was Aristotle, arguably more sympathetic in his consideration of tropological uses of language, whose remarks on metaphor laid the framework for the substitution theory and its slightly more developed cousin, the comparison theory.[169] Implicit in Aristotle's view was a distinction between figurative and literary uses of language - a distinction largely rooted in a belief that only the latter had fixed meaning. Although he contributed a 'picturing function' to metaphor and argued that it was a means of achieving 'insight' in artistic endeavours, the capacity to generate meaning and truth was attributed only to literal expressions. Hence, metaphor was seen as a 'deviant' use of language which could produce, in addition to 'artistic insight', confusion and error.[170]

It was Aristotle's remarks that metaphor was an elliptical simile that led to the belief that a metaphor could be replaced, without loss of cognitive content, by a literal comparison. The truth-claims of a metaphorical expression, if in fact there are any, is therefore considered by substitution/comparison theorists to be isomorphic with its literal paraphrase. Correlatively, for those who subscribe to this 'literal-truth paradigm', a definitive statement of similarity provides us with the meaning of a metaphorical statement.

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[169] Following the approach of Max Black in "Metaphor", Models and Metaphor (Ithaca, N.Y.: Cornell University Press, 1962), pp.25-47, I will implicityly consider, throughout this presentation, the comparison view as a subsidiary of the Substitution Theory. I also refer to it in places as the 'standard view'.

[170] Paul Ricoeur, in several places throughout The Rule of Metaphor, trans. Robert Czerny with Kathleen Mchaughlin and John Costello (Toronto: University of Toronto Press, 1977), attempts to isolate the inconsistency in a perspective that can, at one and the same time, attribute 'insight' to metaphor and deny that this 'insight' is an insight into something with truth conditions. His arguments lead him to conclude that 'insight into' presupposes a referential component.

Although a metaphor, considered as an ornamental liguistic device - a decoration - may give pleasure to the listener or reader, the latter, in order to understand its meaning, must first attempt a literal translation. In positivist terminology, whose proponents pushed the substitution view to its confining conclusions, if the result of such a translation is a paraphrase with literal truth-conditions then the metaphorical expression is, by proxy, cognitively meaningful. If the paraphrase does not provide truth-conditions then the expression remains meaningless and is 'condemned' to providing only an emotive function.

Donald Davidson has recently regenerated debates on the viability of the substitution view in his article "What Metaphors Mean".[171] Although Davidson believes that understanding a metaphor is 'as little guided by rules' as making a metaphor, he remains convinced that "metaphors mean what the words, in their most literal interpretation, mean, and nothing more".[172] This conviction stems from his belief that what distinguishes a metaphor is exclusively its use and that, therefore, "no theory of metaphorical meaning or metaphorical truth can help explain how metaphors work".[173]

Now Davidson does attempt to distance himself from other theorists who have also denied that metaphors work because they have a special cognitive content by denying that metaphor "is confusing, merely emotive, unsuited to serious, scientific, or philosophical discourse".[174]

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[171] Donald Davidson, "What Metaphors Mean", On Metaphor, ed. Sheldon Sacks, (Chicago: University of Chicago Press, 1979), pp.29-45.

[172] Ibid., p.30.

[173] Ibid., p.41.

Indeed, he claims that "metaphor is a legitimate device not only in literature but in science, philosophy, and the law".[175]

Strangely enough, however, much of Davidson's article is a denial of any legitimacy to metaphor beyond what the standard comparison view allows. Davidson believes that he has solved the tension that is embodied in the view of those who attribute an extra literal meaning to metaphor. According to him these people insist on claiming that metaphor does something more than what 'plain prose' could possibly do. Yet at the same time they attribute this extra something to the cognitive content that metaphors possess. The 'tension' is produced because cognitive content is 'just the sort of thing plain prose is designed to express'. For Davidson, the 'simple way out of the impasse' is to "give up the idea that a metaphor carries a message, that it has a content or meaning (except, of course, its literal meaning)".[176] This is clearly a way out - however, not any more simple than denying that plain prose is designed to express cognitive content. That the former 'way out' was chosen by Davidson reflects his nominalist predispositions and his rejection of the Fregean notion of Sinn. It is the Tarskian streak in Davidson that leads him to argue that if you can find a theory of truth for a language then you can drop all talk of meaning.[177]

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[174] Ibid., p. 30.

[175] Ibid., p.31. Although he considers metaphors to be 'legitimate devices', by denying them any extra-literal meaning or truth, he does not escape from - in fact, he presupposes - the standard dichotomies outlined earlier.

[176] Ibid., p.43.

[177] It must be noted that only in this particular context is this an appropriate reading of Davidson's larger philosophical perspective.

In Davidson's view metaphor cannot be paraphrased for more or less the same reason that any use of language cannot be definitely paraphrased - i.e, there is nothing there to be paraphrased, truth or falsity is given in the literal meaning of the words. The reason that we search for 'hidden meanings' (which cannot be found) is that we have already taken the sentence to be false. However, what really propels us to deny that metaphors are either a 'patent falsehood or an absurd truth' is the effect which they have on us. Therefore, Davidson argues that "the theorist who tries to explain a metaphor by appealing to a hidden message....is fundamentally confused".[178]

It seems quite apparent that Max Black is correct in assessing Davidson as a proponent of the standard comparison view. Davidson's critique of the elliptical simile theory of metaphor is not much more than an indictment of it for making the 'hidden meaning' of metaphor "all too obvious and accessible".[179] But Davidson is not so radical a prosecutor as he feigns. From one vantage point he argues that understanding a metaphor is much more than solving a simple riddle, but this argument seems to be rooted in his belief that in a very real sense there is no end to <u>any</u> paraphrase. From another vantage point he is actually attacking the very search for hidden meanings, for he believes that any meaning of a metaphorical statement is immediately present - embodied in the literal truth conditions of the sentence. In short, if Davidson has his way, the search for hidden meanings is completely confused and paraphrase is only necessary for 'the lazy or ignorant reader'. Davidson will only go so

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[178] Ibid., p.45.

[179] Ibid., p.37. This, of course, is an unjustified criticism of his forefathers in light of his own pretensions.

far as to say that metaphor is a special use of literal meaning that enables us to notice what might otherwise have been missed, that allows us "to see what the author of a metaphor wanted us to see".[180] A standard criticism is that his inability to consider either intentional meanings or Frege's meanings whose reference is fixed in special contexts, prevents Davidson from adequately exploring the question of why the author of a metaphor needs to rely on non-literal uses of language. His notes on the 'effects' that metaphors have on us, and on metaphor as a 'legitimate device', do not radically differ from the emotivism and substitution doctrine of the standard view.

The objections to the substitution/comparison theory of metaphor beyond our remarks on Davidson are certainly not in shortage. As we have seen, it argues that the governing principle that makes metaphorical understanding possible is similarity. Its reliance on a definitive operative principle makes it part and parcel of what Israel Scheffler calls a 'formulaic' approach to metaphor - "possible similarities need to be searched, appropriate ones determined and the rest rejected".[181] The guiding assumption of this approach is that no extra-linguistic knowledge is necessary for the comprehension of a metaphor. It ignores the influence of contextual elements and considers the semantic component as primary vis-a-vis the intentions or beliefs that may also be operative.

In attempting to explicate how we recognize metaphorical modifiers, several advocates of the standard view argue that a literal reading is

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[180] Ibid., p.45.

[181] Israel Scheffler, Beyond the Letter, p.93.

first attempted.[182] If this reading reveals an absurdity in the objects contrasted then the phrase is quite possibly metaphorical. Not only does this theory rely on a notion of some kind or another of fixed meaning for the subject, it also presupposes that a tacit knowledge of this meaning induces the 'tension' that propels one to seek a literal paraphrase.[183] It is clearly founded on an overly static view of language, and overlooks the possibility that what appears as a metaphor may actually be enlightened catachresis; i.e., that the literal inappropriateness might be the result of an attempt to fill in a lexical gap.

An investigation of the substitution theory would reveal that it exhibits some major oversights. Its main theses are wedded to a very static view of literal use wherein the possibility of the essential fluidity of language, that there are no precise literal meanings,[184] is not given appropriate credibility. It is, ipso facto, also compelled to argue that words originally had literal meanings and is, therefore, not able to adequately define how figurative words ever arose. The theory is also un-

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[182] Several writers on this subject have, however, argued that the psychological evidence does not support the claim that a 'literal' reading is first attempted when subjects are asked to interpret specified statements. See, for example, Allan Paivo, "Psychological Processes in the Comprehension of Metaphor", in Metaphor and Thought, ed. Andrew Ortony (Cambridge: Cambridge University Press, 1979), pp.150-171.

[183] It is attempts to explicate the nature of the 'tension' that both led to, and constrains, certain 'interactionist' accounts. Monroe Beardsley's 'verbal opposition' theory, wherein the 'ordinary reference' of the two subjects compels us to seek out connotations of the modifier, is a perfect case in point. See his "The Metaphorical Twist", in Philosophical Perspectives on Metaphor, ed. Mark Johnson (Minneapolis: University of Minnesota Press, 1981), pp.105-122.

[184] See Timothy Binkley's article, "On the Truth and Probity of Metaphor", Journal of Aesthetics and Art Criticism 33 (1974):171-180, for a look at how our conception of metaphor changes once we recognize that there is no precise core of literal meanings in language.

sympathetic to contextual elements, underestimating the perhaps symbolically irreducible nature of metaphor and avoiding the implications of considering metaphorical utterances as directives with suggestive force.[185]

For John Searle, the comparison theorists are wrong in equating the statement of similarity with the truth-condition and meaning of the metaphorical statement. Although the identification of a similarity is often decisive in the understanding of a metaphor, Searle argues that since "metaphorical meaning is always speaker's utterance meaning"[186] it is clear that the speaker's intentions"[187] must be considered. And it is the consideration of these intentions when one is trying to comprehend a metaphor that require assuming that the metaphorical utterance is not necessarily an assertion of similarity. Searle concludes that a literal paraphrase, in a trivial way, may reproduce the truth-conditions of a metaphorical utterance but that it is unable to reproduce its meaning. Given a consideration of intentional meaning, he argues, in contradistinction to Davidson, that in a metaphorical utterance "the truth conditions of the assertion are not determined by the truth conditions of the

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[185] In addition to the writings of John Searle, one might consult Ina Loewenberg's, "Identifying Metaphors", in Philosophical Perspectives on Metaphor, ed. Mark Johnson, pp.154-181, for an analysis of why we must understand metaphor as utterances dependent on an extra-linguistic context. For Loewenberg, metaphors often possess a special suggestive illocutionary force.

[186] See John Searle, "Metaphor", in Metaphor and Thought, ed. Andrew Ortony, p.93.

[187] Searle argues that in 'literal utterance' the speaker means exactly what he says. He uses the example 'Sally is tall' in illustrating the claim. I would suggest that even in 'simple' examples such as this it is erroneous to conclude that the speaker means what the literal utterance means. For example, a consideration of the context might reveal that the speaker was being sarcastic.

sentence and its general term".[188] The substance of Searle's logic is suggested in the following claim:

> the endemic vice of the comparison theories is that they fail to distinguish between the claim that the statement of the comparison is part of the meaning, and hence the truth conditions, of the metaphorical statement, and the claim that the statement of similarity is the principle of inference, or a step in the process of comprehending, on the basis of which speakers produce and hearers understand metaphors.[189]

To a very large degree the difference between Searle and Davidson on issues of metaphor stem from their general philosophic concerns. For Searle, it is only after one has devised a consistent theory of direct and indirect speech acts that one can adequately make use of talk of truth and meaning. Davidson on the other hand, is convinced that only after a Tarskian theory of truth for sentences is properly developed can one begin to explore how sentences are said and in what contexts they are spoken.

The contextual elements that the substitution and comparison views fail to acknowledge in their theory of metaphorical understanding are, however, more than just the intentions that govern the speaker's utterance meaning and the empathetic quality thereof. For example, one must take note of the possibility that some metaphorical utterances are non-intentional, that intentionality is perhaps not a necessary component of a metaphor. This possibility is often supported by those sympathetic to a psychoanalytic perspective on the nature of locution, wherein the 'romantic hermeneutical' attempt to decipher intentions implicit in conversation and text is suspended. Some metaphors, like some perspectives

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[188] Ibid., pp.98-99.

[189] Ibid., pp.99-100.

generated by statements, and like some jokes, may be unintentional. Deciphering such metaphors, or even identifying them as metaphors, may therefore require substantial knowledge of the speaker's beliefs, past, and historical-cultural milieu. In the same vein, the interpretation of an 'unintentional' metaphor may also tell us something about the interpreter's beliefs, past, and historical-cultural milieu. Sympathy to both implicit and explicit uses of metaphor may, therefore, lead to what Gadamer designates as the 'fusing of horizons'. If this be the case, one has clearly strayed from the concern of the literal-truth paradigm with truth-conditions and corresponding meaning. Via the standards of intimacy that Ted Cohen[190] argues are both implicit within and reflected by metaphor, one directly enters what could be called the play of the world.

It has been efforts to elaborate on the potential cognitive content of metaphor[191] and substantiate the Nietzschean view that metaphor is omnipresent in thought as well as language that have provided the groundwork for what has come to be called the interaction view of metaphor.

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[190] Ted Cohen, "Metaphor and the Cultivation of Intimacy", in On Metaphor, ed. Sheldon Sacks, pp.1-10.

[191] It initially appears easier to attribute a cognitive content to metaphor on the basis of a developed nominalism. However, as we will see in Chapter 6, such cognitive content may also be attributed on the basis of a realism that is conjoined with an evolutionary-naturalistic epistemology.

[192] Richards' views are decisive to consider in any examination of metaphor, especially in light of the influence that he had on the thought of Max Black. One should keep in mind that Richards was writing during the heyday of positivism and that his ideas on these

I.A. Richards,[192] in developing the view that metaphor is a pervasive principle of language and thought, argues that as philosophy "grows more abstract we think increasingly by means of metaphors that we profess not to be relying on. The metaphors we are avoiding steer our thoughts as much as those we accept....our pretence to do without metaphor is never more than a bluff waiting to be called".[193]

For Richards, a metaphor is not simply an embellishment of the contents of a principle or object phrase, whose imaginative use contributes no additional meaning. The interaction view, as expounded by Richards,[194] holds that metaphorical expressions cannot be reduced to literal paraphrases because their meaning is a product of a special interaction between two distinct thoughts. The so-called 'vehicle' as the modifying term gives to the primary subject, the tenor, an extended or surplus meaning.

Sympathetic to Coleridge's conception of imaginative growth, Richards argues that "when we use a metaphor we have two thoughts of different things active together and supported by a single word, or phrase, whose meaning is a resultant of their interaction".[195] Our world, for Richards, is a metaphorically projected world, a world whose complexity

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and related matters went very much against the vogue.

[193] I.A. Richards, "The Philosophy of Rhetoric: Lecture V, Metaphor", reprinted in Philosophical Perspectives on Metaphor, ed. Mark Johnson, p.50. Richards, of course, considers metaphorical usage to be prevalent in disciplines other than philosophy.

[194] Attributing a systematic interaction view to Richards would actually be the result of reading him after a consideration of the views of Max Black.

[195] I.A. Richards, "The Philosophy of Rhetoric", p.51.

grows through the interaction of vehicle and tenor. And it is this complexity that proves that there are other relations between the vehicle and tenor besides resemblance and similarity.

One can immediately see that this perspective rejects the distinctions of the standard view. Metaphor is not seen as only an elliptical simile (although the interaction may be based on similarities) nor is it considered as only constituting an ornamental linguistic device that gives pleasure and non-cognitive insight to those that comprehend it. In his consideration of metaphor, Richards severely draws into question the distinctions between literal and figurative uses of language, between deviant and non-deviant uses, and between cognitive and non-cognitive uses.

What remains decisive in a consideration of Richards position, however, is his view that metaphor is not a verbal matter. In Richards own words metaphor is fundamentally "a borrowing between and intercourse of thoughts, a transaction between contexts. Thought is metaphoric, and proceeds by comparison, and the metaphors of language derive therefrom".[196] What we have here is an ideational theory of meaning, wherein the metaphorical generation of meaning is considered to result from the interaction between copresent thoughts.[197]

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[196] Ibid.

[197] It does, of course, remain very unclear how Richards conceptualizes the notion of copresent thoughts.

[198] Max Black, "Metaphor", in Models and Metaphor (Ithica, N.Y.: Cornell University Press, 1962), pp.25-47.

Max Black, in his widely acclaimed article Metaphor[198] states that he considers Richards' picture of two ideas 'active together' an 'inconvenient fiction' and attempts to revise the account to avoid this fiction. In Black's interaction account a metaphorical statement consists of two subjects, a principal one and a secondary one, somewhat akin to Richards' tenor and vehicle. Black argues that metaphors work by an exchange of the systems of 'associated commonplaces'[199] that the principal and subsidiary subjects bring with them, and "the important thing for the metaphor's effectiveness is not that the commonplaces shall be true, but that they should be readily evoked".[200] This interaction of associative commonplaces produces an emergent meaning that is often indispensable for cognitive insight.

Interpreting a metaphor for Black is is filtering the associated commonplaces of the principal subject by the associated commonplaces of the subsidiary to produce or reorganize a view of the principal subject. Black contributes to the comparison view the 'insight' that "every metaphor mediates an analogy or structural correspondence",[201] but suggests that it is more illuminating "in some of these cases to say that the metaphor creates the similarity than to say that it formulates some similarity antecedently existing".[202] This is in part shown by the fact that what one takes as the 'focus' of the metaphor (which is often the

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[199] It appears that Black's notion of 'associated commonplaces' is strongly paralleled by Beardsley's notion of 'credence-properties'. See Monroe Beardsley, "Metaphorical Senses", Nous 12 (1978):3-16.

[200] Max Black, "Metaphor", p.40.

[201] Max Black, "More about Metaphor", in Metaphor and Thought, p.31.

[202] Max Black, "Metaphor", p.37.

secondary subject, but not necessarily so) more than often undergoes a change of meaning when its surrounding 'frame' is altered.

In Black's revised version the notion of systems of associated commonplaces has been replaced by that of 'implicative complex' - a notion which Black feels more adequately accounts for the novelty implicit in metaphor.[203] Yet this revision appears intended only for the secondary subject and therefore seems to come at the cost of his earlier suggestion that both subjects were illuminated in a metaphor. In addition, his recent talk of 'structural correspondence' seems to align his position that much closer to the standard version's view that in a metaphor nothing more than the comparison of two subjects is operative; except that the subjects are not things or ideas but rather systems. For Black to over-ride this perhaps unfair assessment he is going to have to explicate more precisely how the implicative-complex of the secondary subject fitted to the primary subject "reciprocally induces parallel changes in the secondary subject".[204] Black must also more adequately explore to what extent the notion of initial filtering by the secondary subject contradicts or limits the implications of an interactionist account.

In his more recent article[205] Black also insists that he was referring, in his earlier article, to 'strong metaphors'. These, he tells us, are metaphors that are both <u>emphatic</u> (its producer will allow no

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[203] Namely, a notion which places stronger emphasis on what Black had earlier called 'specially constructed systems of implications' (Max Black, "Metaphor", p.43), implications which are established <u>ad hoc</u> by the writer or speaker.

[204] Max Black, "More About Metaphor", p.29.

[205] Ibid.

variation upon or substitute for the words used) and resonant (prove rich in background implications). In light of this claim it is clear that he must respond to the same sorts of problems that were generated over the notion of intentionality by our earlier criticism of the standard view. And to the extent that strong metaphors are 'profound' metaphors, Black must heed his own warning about treating the latter as paradigm cases.[206]

Although extremely sympathetic to, and advocative of, the attempts by the interaction theorists to dispel the dichotomy that the substitution theorists had erected between the cognitively literal and non-cognitive metaphorical, it is Paul Ricoeur who, through his critique of interactionist accounts, offers a full-blown account of the 'rule of metaphor' in all aspects of life.[207] Ricoeur claims that interaction theories "cannot achieve its own goal without including imagining and feeling, that is, without assigning a semantic function to what seems to be mere psychological features and without, therefore, concerning itself with some accompanying factors extrinsic to the informative kernel of metaphor".[208]

Ricoeur considers the interaction theories to be extending the metaphor of space - "things or ideas which were remote now appear as

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[206] In commenting upon Empson's and Ricoeur's concentration on 'vital' metaphors, Black warns that "it may well be a mistaken strategy to treat profound metaphors as paradigms". See Max Black, "More About Metaphor", p.21.

[207] See Paul Ricoeur, "The Metaphorical Process as Cognition, Imagination, and Feeling", in On Metaphor, ed. Sheldon Sacks, pp.141-157.

[208] Ibid., pp.141-142.

close".[209] The productive or creative aspect of metaphorical usage Ricoeur denotes as 'predicative assimilation', that is, making 'semantically proximate' the subjects of a metaphorical utterance. He, therefore, argues that imagination is the "ability to produce new kinds of assimilation and to produce them not above the difference, as in the concept, but in spite of and through the difference".[210] To invoke the space metaphor again, one could say of the metaphorical subjects that the remoteness of their 'generic kinship' is 'preserved within proximity'.

Ricoeur also argues that an extended consideration of imagination allows us to include in our analysis of metaphor not only the schematization of a semantic innovation but also its pictorial dimension. The changing of logical distances which is operative in metaphor can "induce the reader, who has become a dreamer rather than a reader, to indulge himself in the delusive attempt, described by Sartre as fascination, to possess magically the absent thing, body, or person".[211] It is a consideration of imagination as the schematization of predicative assimilation as obtaining on "the borderline between a semantics of productive imagination and a psychology of reproductive imagination"[212] that allows us to see that the metaphorical meaning, by bluring the Fregeian distinction between sense and representation, "compels us to explore the borderline between the verbal and the non-verbal".[213] Concurring with Mar-

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[209] Ibid., p.145.

[210] Ibid., p.146.

[211] Ibid., p.148.

[212] Ibid., p.149.

[213] Ibid.

cus Hester, Ricoeur argues that metaphor, akin to poetic language in general, possesses the ability to merge sense and senses.

Ricoeur then extends his argument to a discussion of the referential character of metaphor. He contends that "in the same way as the self-abolition of literal sense is the negative condition for the emergence of the metaphorical sense, the suspension of the reference proper to ordinary descriptive language is the negative condition for the emergence of a more radical way of looking at things".[214] Metaphorical expressions, by creating ambiguity in reference, are governed, Ricoeur suggests, by what Jakobson has called 'split reference'. The gist of Ricoeur's position is that not only does imagination schematize the predicative assimilation between terms and picture the sense, it also enables "the projection of new possibilities of redescribing the world".[215]

A theory of metaphor equipped with these considerations of the role of imagination is still incomplete, Ricoeur argues, if it also does not correspondingly consider the role of feelings. The closing of logical space which follows a successful predicative assimilation is not only 'seen', it is felt as well; "we are assimilated, that is, made similar, to what is seen as similar".[216] Behind this thesis lies a more fundamental belief of Ricoeur's; namely, that "feeling is not contrary to thought. It is thought made ours".[217]

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[214] Ibid., pp.151-152.

[215] Ibid., p.152. It must be remembered that Ricoeur does not equate imagining with having a mental picture.

[216] Ibid., p.154.

In addition to the ability of feelings to "accompany and complete imagination as picturing relationships",[218] they also exhibit a split structure akin to the referential aspect of imagination. For Ricoeur, poetic feelings "imply a kind of epoche of our bodily emotions",[219] they "deny the first-order feelings which tie us to the first-order objects of reference".[220] But, positively, feelings also "insert us within the world in a non-objectifying manner",[221] and enable us to be "'attuned to' aspects of reality which cannot be expressed in terms of the objects referred to in ordinary language".[222]

Ricoeur himself candidly admits that one of his 'presuppositions' is that "the notion of metaphorical sense is not complete without a description of the split reference which is specific to poetic discourse".[223] Agreeing with Ricoeur on this matter, I would argue that when considering the role of productive imagination in the "the projection of new possibilities of redescribing the world" or in attributing to metaphor a cognitive component (the two are not necessarily isomorphic), the nature of reference cannot go unexamined. This is especially so given the fact that notions akin to Ricoeur's account of the projection of descriptive possibilities are adhered to by many prominent contributors

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[217] Ibid.

[218] Ibid. Notice again the emphasis on picturing relationships.

[219] Ibid., p.155.

[220] Ibid.

[221] Ibid.

[222] Ibid., p.156.

[223] Ibid.

to the debates on the nature of metaphor. In fact, in our next section and following chapter we will see the kinds of dilemmas that arise in both assigning a referential component to metaphors and in avoiding a consideration of that component. To get a look at the parameters of that dilemma as it arises in post-empiricist thought, we will conclude our discussion on non-foundational epistemology with a consideration of the philosophy of Nelson Goodman.

4.4.4 Nelson Goodman and Worldmaking

The importance that Ricoeur attributes to metaphor and its ability to provide different ways of redescribing the world by opening up epistemic, emotional, and imaginatory aspects of reality as well as his insistence that the nature of metaphorical reference must be examined has strong parallels to the importance that Nelson Goodman attributes to metaphor.[224]

Goodman's thesis that metaphor "involves withdrawing a term or rather a schema of terms from an initial literal application and applying it in a new way"[225] leads him to conclude that metaphor "participates fully in the progress of knowledge: in replacing some stale 'natural' kinds with novel and illuminating categories, in contriving facts, in revising theory, and in bringing us new worlds".[226] Although Goodman does tend to

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[224] The primary difference between the two, however, is that Goodman's views are largely the result of a thorough-going nominalism and do not invoke Ricoeur's use of 'phenomenological tools for apprehending' nor his talk of the 'primacy of the reference of ordinary language'.

[225] Nelson Goodman, "Metaphor as Moonlighting", Of Mind and Other Matters (Cambridge, Ma.: Harvard University Press, 1984), p.74.

wed all figurative uses of language to metaphor straight away, it is in his work that we see most prominently metaphor as an intentional category mistake[227] blend into metaphor as a 'way of worldmaking'.

In Goodman's interpretation, what is important about metaphor is that it cuts across habitual notions of what refers and what is referred to. Through its use new kinds are created which, in turn, make associations between previously disjunctive categories. The new linkages are, therefore, founded on a dialectical relationship between our creation and understanding of objects.

From this conception of metaphor, Goodman argues that a term can have two different extensions - a literal and a metaphorical one. A sentence, therefore, taken metaphorically, can be a declarative statement and so be true or false. This, of course, is in radical contradistinction to the thesis developed by Davidson, wherein it is argued that since there is no metaphorical extension, a literally false statement cannot be true when taken metaphorically. As we pointed out earlier, metaphor, for Davidson, performs the function of inviting comparison, not the function of referral.

Given Goodman's claims, one might ask what happens to the extension of a term when it ceases, through overuse, to be metaphorical? For Goodman, when a term loses its metaphorical power and acquires two literal extensions, the change is seen in terms of a disconnection in the refer-

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[226] Ibid., p.71.

[227] The thesis which views metaphor as an intentional category mistake is also developed to some extent by Colin Turbayne in <u>The Myth of Metaphor</u> (Columbia, S.C.: University of South Carolina Press, 1970).

ential chain. The initial metaphorical application had received its very power from its unusual referential conjunction with the literal extension. When its metaphorical clout is lost, however, there ceases to be this routing of one reference through the other. Instead, both extensions now unequivocally refer directly.

A second question could also be raised at this point: what does the fact that metaphor can be overused say about the 'referential' nature of metaphor? A Goodmanian response to this query would be that given the way that metaphor functions as a kind of reference that cuts across traditional categorizations, the death of a metaphor does not necessarily entail a drastic alteration of its metaphorical routes of reference. It entails rather the wearing of these once new routes into ruts. The referential chain becomes so entrenched by use that we no longer acknowledge the radicalness of the associations. And this can only be expected - for they are <u>no longer</u> radical.

On Goodman's account, therefore, metaphor, by declaring an identification, seems initially transparent, but its blatent 'falsity' (its lack of 'fit') forces us to re-examine the symbol itself, to work through the complexity of its referential chains in order to find a new 'version'. It is this element which perhaps most distinguishes metaphor from other provocative statements for example, the simile, which although making similar referential links, do not make the same strong identification. They do not demand that we make a radical choice and shift from 'literal falsity' to another kind of truth.

With metaphor, precisely because we are forced to make this choice, we become more aware of, and are forced to examine, the whole conventionalized structure of what we take to be literal or 'normal' reference. As result, we must consciously forego an adherence to literal truth and, through the non-transparent symbol which forces us to exercise greater freedom and flexibility in our thinking, discover another version, another way of systematizing the world.

Although Goodman does not deny that metaphor performs the functions of "inviting, warning, shocking, enticing, misleading, inquiring, informing, and persuading",[228] and acknowledges that these functions are absolutely integral to metaphor's role as a re-maker of reality, he does not believe that they are in any way unique to metaphor. Indeed, Goodman's unhesitating conflation of fact with discourse, content with convention and the emotive with the cognitive leads him to conclude that these functions can be achieved by a plethora of descriptive and non-descriptive systems.

In addition, and obversely, Goodman argues that all kinds of access to objects can contribute to knowledge. For him, "much of knowing aims at something other than true, or any, belief....[namely] an increase in acuity of insight or in range of comprehension".[229] From admissions like the following, we can see that he proudly stands in that tradition stemming from Hanson, Polanyi & Co., which wishes to dissolve the still largely entrenched dichotomies between justifying and discovering and

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[228] Nelson Goodman, Of Mind and Other Matters, p.74.

[229] Nelson Goodman, Ways of Worldmaking (Indianapolis: Hackett Publishing, 1978), p.21.

thinking and perceiving;

> In contending that aesthetic experience is cognitive, I am emphatically not identifying it with the conceptual, the discursive, the linguistic. Under 'cognitive' I include all aspects of knowing and understanding, from perceptual discrimination through pattern recognition and emotive insight to logical inference.[230]

Goodman is also representative of much of post-empiricism in his claim that we cannot sensibly conceive of the world as fixed and ready-made, waiting to be found out by the 'satisfaction relations' of a correspondence theory of truth. Meanings, for Goodman, cannot be resolved uniquely; he does not believe that the structure of any systematic description can mirror 'the world's' structure. Like Rorty, therefore, he too argues there is no privileged system which has epistemic priority in describing reality. And like most of the post-empiricists this belief is the logical outcome of his rejection of the sense-datum models of the phenomenalist strain in logical positivism; for Goodman, "seeing is an activity and the way we perform it depends in large part upon our training".[231]

True to his nominalist predispositions, Goodman argues that all frames of reference are relative to systems of description. As he states in the opening chapter to Ways of Worldmaking:

> If I ask about the world, you can offer to tell me how it is under one or more frames of reference; but if I insist that you tell me how it is apart from all frames, what can you say? We are confined to ways of describing whatever is described. Our universe, so to speak, consists of these ways rather than of a world or of worlds.[232]

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[230] Nelson Goodman, Of Mind and Other Matters, p.84.

[231] Nelson Goodman, "The Way the World Is", in Problems and Projects (Indianapolis: Bobbs-Merrill, 1972), p.29.

It is these ways of describing, depicting, and expressing, which constitute the world-versions with which Goodman is concerned. Goodman is not interested with defining once and for all whether there is one world of which we have many versions, or many worlds, each answering to a right version, or any worlds at all. These are problems, he believes, only for the idealist or realist. Rather, what he wants to explore is how these versions fit together and the relationships between them.

In order to formalize his central ambivalence to the realist-idealist dispute, Goodmam calls himself an irrealist. It is his main contention that "we cannot test a version by comparing it with a world undescribed, undepicted, unperceived".[233] He is, therefore, in substantial agreement with Rorty that an 'underlying world' is "perhaps on the whole a world well lost".[234]

That there is no one true version does not mean, however, that all the non-absolute versions are therefore useless and without significance. For Goodman, we cannot do without versions - they are all that we have - yet the richness and complexity of 'the world displaced by worlds that are but versions' remains because of the different ways we possess of seeing, describing, emphasizing, ordering, and patterning. Each way contributes a perspective and broadens our range of understanding. We lose the epistemic security of 'one-true-world' but we gain the choice

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[232] Nelson Goodman, Ways of Worldmaking, pp.2-3.

[233] Ibid., p.4. On these matters and others, Goodman receives much conceptual support from the 'internal realism' championed recently by Hilary Putnam. Putnam's doctrine, however, receives much of its sustenance by being explicitly anti-metaphysical, whereas Goodman's is more ambivalent in this regard.

[234] Ibid.

of how we put the versions-as-worlds together.

Given these claims, it is, however, important to realize that Goodman's worlds and versions are not akin to some obtruse Weltanschauung. In this regard, Goodman's views differ substantially from those writers, like Thomas Kuhn, who invoke large-scale, near monolithic structures possessed of methodological and valuational principles to account for the apparent consistency and encompassingness of an enterprise like that of science. For Goodman we are constantly engaged in ways of worldmaking to the same extent that we are constantly confronted and overwhelmed by logic, experiment, art, music, architecture, emotions, et cetera. And it is because we are constantly being confronted in this fashion that "worldmaking as we know it always starts from worlds already on hand; the making is a re-making".[235]

Much of Goodman's recent work is a reflective presentation of some of the ways of worldmaking as manifest in methods of organizing and interpreting. By composition/decomposition, we place a categorical grid over a world(s), giving us a means of establishing identity and repetitions within and between worlds. And it is repetition and identification that, although relative to organization, enables us to sort into relevant[236] kinds which in turn, provides us with the tool of projectability so

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[235] Ibid., p.6.

[236] In explaining his use of 'relevant' in this regard, Goodman states: "I say 'relavent' rather than 'natural' for two reasons: first, 'natural' is an inapt term to cover not only biological species but such artificial kinds as musical works, psychological experiments, and types of machinery; and second, 'natural' suggests some absolute categorical or psychological priority, while the kinds in question are rather habitual or traditional or devised for a new purpose". Ibid., p.10.

critical for inductive inference.

Weighting or emphasis, founded on the principle that "just as to stress all syllables is to stress none, so to take all classes as relevant kinds is to take none as such",[237] can also turn 'raw data' into different versions. What may be central or relevant in one system can be peripheral or incidental in another. Such emphasis is, in addition, not always binary, but instead many yeild hierarchies of important, valuable and/or utilitarian elements.

Ordering is also an important worldmaking tool. Pervading both perception and practical cognition it posits certain things as primitive, giving foundational priority and authority to some things and dependent status to others. Scientific explanation often invokes, or is premised upon, the procedures of deletion and supplementation. The ruthless editing of memory and the perception of motion are also clearly respective examples of deletion and supplementation. And deformation may be involved in making data more compliant or in transforming a theme into numerous variations.

It is Goodman's contention that these different ways by which we create and compose our versions do not just apply to the sciences. For him, we must recall, the arts and emotions contribute just as significantly to the domain of human understanding.

This multiplicity of acceptable world-versions, some conflicting, some 'scientific', some 'artistic' compels, however, those, like Goodman, who countenance them to respond to the standard questions all 'rel-

[237] Ibid., p.11.

ativist' positions must face. Primary amongst these is, of course, that query which attempts to isolate the paradoxes and inconsistencies of an 'anything goes' philosophy. But Goodman does not say that anything goes; indeed he claims that as a result of what he is saying "standards distinguishing right from wrong versions become, if anything, more rather than less important".[238] However, instead of rightness depending upon, and implying the world, the 'world' as we know it depends upon the rightness of our versions.

Now although Goodman insists that the "judgment of scientific theories is beset by much the same problems as judgments of works of art",[239] he also argues that only a small amount of our knowledge of the world can be tested for truth or falsehood. Much of what we know cannot be formulated as 'justified true belief'; it is constituted, rather, by the acquisition of new ranges of comprehension, more sensitive perceptions, and increased awareness of patterns, structures, and nuances. So the question is, how do we determine whether this 'softer' knowledge is right - whether the world it shapes and informs is a right world-version?

A fundamental thesis of Goodman's philosophy is that 'right versions are those that refer'. However, unlike several philosophers who write on these matters, Goodman does not conjoin talk of reference with talk of truth since he believes that talk of truth (as 'justified true belief') pertains only to verbal statements. And for Goodman there are other, non-verbal, ways of referring.

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[238] Ibid., p.107.

[239] Nelson Goodman, Of Minds and Other Matters, p. 163.

In Goodman's philosophy, Truth becomes subsumed in the more inclusive standard of rightness of Fit. He uses the word 'fit' to describe the way right versions interact with what is referred to, with each other, and with whole organized systems. And different versions are appropriate for different purposes and may, therefore, be right for those purposes and wrong for others. To acquire knowledge then, is to find what fits best in a particular circumstance - what frame of reference is most enlightening.

Now once again, in matters of reference, Goodman is not so much concerned with the metaphysical question of what we refer to, but rather with how we refer. Apropos what was said earlier, since 'to refer' means to make a right version, a consideration of ways of referring will focus on ways of worldmaking. For Goodman there are four major varieties of reference indicative of the different relationships that can be established between a symbol and its referent. These he delimits as denotation, exemplification, expression, and mediated reference.[240] While there are ways of referring that are common to symbols functioning in different symbol systems (i.e., pictorial, verbal, and notational systems) - for example, a story and a picture and a piece of music can all express - the system itself generally places certain constraints on how a symbol can refer.

For example, pictures can refer through pictorial denotation, but when we try to take them as declaration statements about the referent we run into trouble. Pictorial symbols work within a syntactically and se-

[240] For a discussion of reference so construed see especially, Nelson Goodman, Of Minds and Other Matters, pp. 54-99 and "How Buildings Mean", Critical Inquiry 11 (1985):642-653.

mantically dense system[241] where the symbols remain enmeshed within the whole and cannot be clearly segragated, making it impossible to clearly determine their distinct denotations.

Yet apart from the restraints of the symbol systems within which they work, symbols nevertheless are still able to refer in different ways. In exemplification, for example, a symbol does not denote. Rather than 'turning outward', it turns back on itself and refers to those properties or features it possesses. While non-representational art does not refer to anything beyond itself, it does refer to itself, to certain textures and plays of form and colour. In so doing, it alters our ways of seeing the world around us. A building, for example, if it exemplifies, "is designed to refer explicitly to certain properties of its structure".[242] If the same building, however, referred to properties possessed metaphorically then it may be said to refer via expression. Churches whose inner sanctums or fascades which are built in the shape of crucifixes is a perfect example of such expression. Mediated reference can also be fulfilled by something as unlikely as an architectual form when, for instance, it refers to some image or idea that people in turn associate with its function.

The examples of ways of reference abound and an enlightening understanding of them can only be attained by reading Goodman himself. What Goodman does believe, however, is that referential chains demonstrate that referring entails organizing reality in a number of ways. Things closely connected in one referential chain may be far apart in another.

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[241] See Nelson Goodman, Of Minds and Other Matters, p.7.

[242] Nelson Goodman, "How Buildings Mean", pp.645-646.

These complex forms of reference created by the many kinds of symbolic functionings of different, interacting symbol systems illustrates how such systemization makes and remakes the world. By moving through various referential levels and creating connections between different symbols and symbol features, symbolic systems essentially make and remake the world. Yet this talk of making worlds, as we noted earlier, does not imply building each time from scratch out of nothing; we always start with a world already categorized and unified by the practices of just such symbolic systems. The more complex the referential linkages, the more complex and inter-related the world it denotes, with each aspect of that world enriched by its association with other features.

Although Goodman discusses a variety of characterizations of 'truth' or rightness of reference including (in apparently increasing importance) utility, confident belief, credibility, and coherence, he ultimately opts simply for acceptability as a standard of rightness of fit and, correlatively, rightness of reference. Yet he immediately notes that "since acceptability involves inductive validity, which involves right categorization, which involves entrenchment, habit must be recognized as an integral ingredient of truth".[243]

In fact, it is via his development of the notion of habit that Goodman is able to skirt the criticisms of radical relativism directed by opponents of an 'anything goes' philosophy. Fit, in Goodman's philosophy has a lot to do with <u>practice</u> - with what has already become entrenched and habitual at the social level because it works. Standards of credibility and rightness, therefore, do not vary with individual opinion or

[243] Nelson Goodman, <u>Of Minds and Other Matters</u>, p.38.

belief. As Goodman states. "we often believe what is not credible and disbelieve what is credible".[244]

We can see, therefore, there is a circular chain between fit which is based on rightness of categorization which is based on entrenchment which is based on habit which is based on practice which, in turn, is based on fit. There is, in short, a dialectic operative in the evolution of practice; namely, practice always assesses practice itself. Analogous to Lakatos' concept of the hard core and positive heuristic constitutive of a scientific research program[245] we can see how it is possible for a potentially conflicting practice to exist on the periphery of entrenched practices - how Practice can be at one and the same time both rigid and flexible. And just as for Lakatos some hypotheses are more susceptible to falsification, so to for Goodman, dome practices are akin to 'fashions' in that they change with the most spontaneous of challenges.

It must be remembered that Goodman does not deal in ideal or possible worlds nor epistemic virtues established at an Archimedean point nor in moral judgements delivered from a God's eye point of view. Just as we do not make worlds, but rather remake the ones we live in and through, in the same way practice is not arbitrarily created - it is what we have to work with, it is the way we work. As it is with world-versions, so to is it with any given practice; on any occasion we start with a practice "that we are stuck with until we have the determination and

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[244] Ibid., p.40.

[245] See especially, Irme Lakatos, "Falsification and the Methodology of Scientific Research Programmes", in Criticism and the Growth of Knowledge, ed. Irme Lakatos and Alan Musgrave (Cambridge: Cambridge University Press, 1970), pp.91-195.

skill to remake it into a new one".[246] What applies to worlds applies also to the practices that remake and solidify and remake those worlds.

For Goodman whether versions which group elements and establishes connections is right or wrong is something that is ultimately determined by their afficacy in worldmaking. He is, therefore, ultimately confronted with another query from the opponents of relativism; namely, 'if fit with practice determines rightness where is the practice by which we judge this claim - where is the objective criteria?' Goodman's response must be that we can only hope to defend such a principle by appeal to other versions. It is his claim that 'relativity goes all the way up':

> 'How then', comes the question, 'can we ever establish anything finally and completely and for sure, even the most obvious truism and the most cherished credos? And the answer is, of course, that we can't, and that is no fault of mine. Neither by logic nor any other means can we prove something from nothing. We have to start with some premises and principles; and there are no absolute and incontrovertible certainties available. But that does not mean that we start from careless guesses. We follow our confidence and convictions, which are subject to strenthening or weakening or even reversal as we strive to build right versions or worlds on the basis of these. No starting points or ending points or points along the way <u>are either absolute or arbitrary</u>.[247]

So although Goodman acknowledges that all searches for a 'ready and conclusive' test of rightness are radically ill-conceived he offers the same solution to the problem of rightness of versions that he offered several years ago to the problem of the projectability of predicates and properties involved in inductive inferences;[248] namely, entrenchment.

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[246] Nelson Goodman, <u>Ways of Worldmaking</u>, p. 97.

[247] Nelson Goodman, <u>Of Mind and Other Matters</u>, p.40.

[248] See Nelson Goodman, <u>Fact, Fiction, and Forecast</u>, Fourth Edition (Cambridge, Ma.: Harvard University Press, 1983). This book has been the subject of much controversy since it was originally published in

Proudly acknowledging an affinity between his views and Venturi's remark that 'Order must exist before it can be broken', Goodman concludes that "entrenchment established by habit is centrally involved in the dermination of rightness and is, indeed, the basis that makes innovation possible".[249]

We can see, therefore, that in attempting to elucidate the relationship between practice and versions and by noting the ineffiable flexibility of the former Goodman has attempted to demonstrate how the fact that we are beings who live through and by a world can be reconciled with the apparent fact that we are also beings who create worlds. By depicting the relationship between the projectability and entrenchment of versions and the social afficacious aspect of the latter, he has also, to a large extent, skirted the attacks launced by the opponents of relativism and subjectivism alike. He has, at one and the same time, refused to countenance the distinctions between the necessary and contingent, the given and the inferred, and the scheme and its content. He has moved beyond the genericness of Kuhn's Weltanschauungs, has exemplified some of the 'methods' which lie behind the Methods that Feyerabend wishes to relativize and proliferate, and has spelled out some of the constraints that prevent us from engaging in Rortian edification. In short, one might say that Goodman, although championing what can be perceived as a social-historical-anthropological concretization of epistemology, nevertheless, does not feel the need to pivot his work on the generic types of claims upon which the work of Kuhn, Feyerabend, and

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1954.

[249] Nelson Goodman, "How Buildings Mean", p.651.

Rorty pivots. Although it can be argued to be implicit in the work of the latter philosophers, it is in the work of Goodman that the central pragmatic principle of post-empiricist philosophy is most explicitly revealed; namely, what goes goes, but not everything goes.

Chapter V

POST-EMPIRICISM AND THE PHILOSOPHY OF THE SOCIAL SCIENCES

Throughout the last chapter, I have tried to indicate how the guiding assumptions of the logical positivists' conception of science have been gradually chipped away by those thinkers whose work might be classified under the rubric of post-empiricist thought.[1] As a corollary of this, I also believe that I have shown how the attractiveness of the goals of the former have also progressively waned. Although it could be argued that the presentation of what had been delineated as post-empricism was accompanied by some rather broad demonstrative sweeps, I would suggest that such a 'technique' was required in order to reveal both the radically different image of science that is now the concern of several professional philosophers and social theorists, as well as the kind of questions that now interest those scholars.[2]

Although we must always be wary of 'image' talk in such matters, it is contended herein that such an image must be invoked; for rather than simply attacking positivist mandates in their varied attempts to demonstrate that science will prove unsuccessful in explaining the human ani-

[1] Post-empricist thinkers, it must be recalled, do not all agree with each other's criticisms and proposals. To this extent, they do not differ from those thinkers classified under the rubric of logical positivism.

[2] In similar fashion, I would argue that our demonstrative portrayal of debates within logical positivism helped to reveal the nature of the problematic wherein those debates took place. It is my belief that such a problematic could not have been revealed by simply listing the epistemic mandates of positivist philosophers.

mal and it political formations, social theorists are increasingly appealing to this 'new image' of science for support.[3] In an inter-disciplinary study as this, therefore, although we will be concerned with what post-empiricist philosophers have to say about the social sciences, the primary emphasis will be on how post-empiricist conceptions are being, and can be, interpreted by social theorists.

At the very outset of this thesis it was noted that the presentation of post-empiricist thinkers would be necessarily selective. One notable absence, for example, is that of Imre Lakatos. Without doubt Lakatos can be attributed with having stimulated several innovative developments within mainstream philosophy of science. Perhaps most important of these for our purposes would be his examinations of the validity of the distinction between the external and internal history of science.[4] His

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[3] It might be noted at this point that social theorists are also invoking post-empiricist developments to try and demonstrate that a science of society is possible. Arguably enough, however, this has not been the most pronounced tendency. As we will learn throughout this chapter, however, post-empiricist developments will increasingly undermine the importance of the question 'how are the social sciences like and unlike the natural sciences?'.

[4] See especially, Imre Lakatos, "History of Science and Its Rational Reconstructions", Scientific Revolutions, ed. Ian Hacking (Oxford: Oxford University Press, 1981), pp.107-127. Simply put, his view on the matter is the following: 'rationally reconstruct the internal history of science from the standpoint of present methodology and then footnote external history'. To some degree, this thesis is given renewed emphasis in the recent work of Laudan, wherein it is argued that the sociology of science has something to contribute to our understanding of science "only when beliefs cannot be explained in terms of their rational merits". See Larry Laudan, Progress and Its Problems: Towards a Theory of Scientific Growth (Berkeley and Los Angeles: University of California Press, 1977), p.202. What Lakatos and Laudan have to say on this matter is proof positive that not all philosophers of science who draw into question the positivist problematic fall victim to Feyerabendianism on the nature of rationality. An indepth examination of their views on other matters would also reveal some of

presentation of the 'methodology of scientific research programmes'[5] and his attack on the unrealistic demands of the 'naive falsificationists' also contain certain original and constructive elements which have not gone unnoticed by social theorists.[6] I am, nevertheless, in agreement with those commentators who argue that his views primarily serve as a mediator between the conflicting views of Popper and Kuhn and, in their innovativeness, are often eclipsed by the views of the latter.[7] In short, I do not believe that much harm has been done, nor the record distorted, in selectively avoiding a consideration of his philosophy of science.

Other notable philosophers who might have been included in a description of post-empiricism include Mary Hesse and Stephen Toulmin.[8] The views of Rom Harre might also have been considered if attacks on positivism were our exclusive concern; reading through what might be consid-

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the dangers inherent in presenting post-empiricism as a monolithic body of thought. Once again, however, I emphasize that in this thesis we are very interested in what philosophers of the social sciences are inclined to argue once post-empiricism has been so construed and then interpreted as the 'recieved' philosophy of science.

[5] For this presentation see, Imre Lakatos, "Falsification and the Methodology of Scientific Research Programmes", Criticism and the Growth of Knowledge, ed. Imre Lakatos and Alan Musgrave (Cambridge: Cambridger University Press, 1970), pp.91-196.

[6] See, for example, Donald J. Moon, "The Logic of Political Inquiry: A Synthesis of Opposed Perspectives", Handbook of Political Science: Volume 1 ed. Fred I. Greenstein and Nelson W. Polsby (Reading, Mass.: Addison-Wesley, 1975).

[7] It could be argued, however, that there is some substance to Feyerabend's claim that Lakatos' philosophy is really 'an anarchism in disguise' (Paul Feyerabend, Against Method, p.181.). A successful argumentation on this matter, however, would not, for our purposes, offer any additional insight - we have already devoted enough attention to one of post-empiricism's 'token' anarchists.

[8] See especially Mary Hesse, Revolutions and Reconstructions in the Phi-

ered his anachronistic brand of essentialism in order to decipher what he is actually proposing would be another matter indeed. In addition, mention might also have been made of the numerous philosophers writing within the Anglo-American tradition who have launched a variety of attacks against positivist assumptions on topics as diverse as the importance of extensional logic, the exact locus of the observational/theoretical language distinction, the (non)necessity of ontological commitment and the validity and formulation of universal laws. In regards to these absences, however, I still feel that the presentation of post-empricism has been justifiably parsimonious in its attempt to reveal an image of science that stands in radical juxtaposition to that of logical positivism.

5.1 AN OVERVIEW OF THE PROBLEM

It will be my intention in this chapter to try and distill the relevance, for social and political theorizing, of the sojourn which we have taken through post-empiricist thought. As the introduction made clear, the necessity for this exercise is due to a most interesting phenomenon of twentieth century academic thought. Somewhere between the attack on the notion of protocol statements and Nelson Goodman's championing of a multitude of (projectible) ways of world-making, certain fundamental theoretical developments have been coalesced into a 'new image' of science which several social theorists are increasingly presupposing in de-

losophy of Science (Bloomington, Indiana: Indiana University Press, 1980) and Stephen Toulmin, Human Understanding: Volume 1 (Princeton, N.J.: Princeton University Press, 1972), and "Conceptual Revolutions in Science", Boston Studies in the Philosophy of Science: Volume 1, ed. R.S. Cohen and M. Wartofsky (Dordrecht, Holland: D. Reidel Publishing, 1967), pp.331-355.

veloping their varied conceptions of both the human animal and the academic disciplines which attempt to understand that animal's socio-political worlds.

We have seen that in the Anglo-American philosophical community it is in the thought of radical nominalists like Goodman that the philosophy of science merges with the philosophy of art. Now it is my contention that the positivist influence on all Anglo-American academic thought has been so profound that our conception of science can not now merge with our conception of art without radically transforming our conception of ourselves. Indeed, it is in the recent attempts at a 'restructuring' of social and political thought that the former transformation is being employed to bring into effect the latter transformation.

In the opinion of Habermas the twentieth century has witnessed the transformation of epistemology into the philosophy of science. This is a claim which, apart from some minor terminological and institutional qualifications, I would also accept; in fact, it serves as a legitimizing factor of this entire thesis. For Habermas, however, this transformation has precipitated some negative changes in social scientific thought. In part, he argues that we have been victimized by this transformation, since he belives that it has proven a final tour de force in the severance of practical and theoretical thought. Habermas also contends that it is with the mandates of philosophy of science in hand that social theorists now feel 'legitimized' in the search, initiated by More and Machiavelli, for the 'laws of the civil life'. Habermas suggests, however, that this search belies the fact that politics has been divorced from ethics - that 'the structure of domination has been extri-

cated from its ethical context'.[9] Whilst appealing to mandates from the philosophy of science in order to justify its varied 'knowledge' claims, the social sciences increasingly become weapons of political oppression.

Now what becomes ironic for us at this point - or at least for those influenced by Habermas - is that many social and political theorists have argued that the post-empiricist philosophy of science is calling into question the validity of the search for determinate laws of civil life (or determinate laws of anything, for that matter). In many ways they have invoked post-empiricism to lend justifying support to the implementation of the various brands of hermeneutics which we considered in our third chapter. Post-empiricism has also been claimed to be providing support to those who claim that a wedge cannot be driven between practical and theoretical knowledge without forsaking much of what we understand to be the 'human' component of life. In regards to the latter construal, therefore, post-empiricism can be seen as lending conceptual legitimacy to the kind of 'Critical Theory' which Habermas & Company painstakingly advocate.

For Habermas, however, as for most thinkers influenced by the guiding assumptions of the Frankfurt School, all twentieth century philosophy of science is indicative of positivistic (read 'scientific') mandates.[10] An examination of the impact of post-empiricism on social and political thought might, therefore, prove inspiring, both to those inclined to shun either positive or negative portrayals of the 'epistemological

[9] Jurgen Habermas, Theory and Practice, trans. John Viertel (Boston: Beacon Press, 1973), p.52.

[10] One might even say that in this regard Habermas has implicitly taken quite seriously Comte's thesis of the progressive stages of history.

turn' that has driven much of twentieth century social scientific theorizing and to those who tend to think that the categorical thinking of philosophers of science is necessarily politically conservative and species threatening.

The substantive content of this chapter will be, at once, both demonstrative and speculative. On the one hand it will attempt to reveal how certain philosophers of the social sciences and social theorists are interpreting the post-empiricist turn in the philosophy of science, as well as how they are employing such interpretations in their own theoretical endeavors. Herein, we will be once again selective, choosing those thinkers whose work falls into one or another of the areas which I have deemed most susceptible to post-empiricist influence. These areas are akin in content to the 'disciplines' or 'traditions' of which I have spoken throughout this thesis; i.e., they should not be considered as immutable entities with institutionally and conceptually doctrinate boundaries, but rather as arenas of academic indulgence so delineated for heuristic and conversational purposes.

The speculative content of this chapter, on the other hand, will atempt to show <u>how post-empiricism can be interpreted</u> by philosophers of the social sciences and how its varied mandates <u>might be</u> employed by theorists in developing new and inspiring images of the social world. The conceptual freedom that we will be allowing ourselves here stems from the <u>prescriptive</u> component which is, arguably enough, implicit in most philosophies of science. To some degree, we will also be selective and categorical whilst fulfilling this speculative component; i.e., hypotheticals will be tradition-oriented, although, once again, largely

for heuristic reasons. For example, we might explore to what extent Rorty's notion of edifying philosophy can be justifiably be seen as lending support to the cause of Critical Theory, or how the thesis of the linguistic relativity of value formulation can enhance a Wittgensteinian criticism of rational choice theory's depiction of the political process.

It is hoped that this dual strategy will provide a systematic structure to the chapter that will reveal how a given image of science can be employed to delimit particular subject fields whilst at the same time guiding research towards unexplored vistas. Delimiting social scientific subject fields as well as extending research toward unexplored vistas, however, often has some very powerful political consequences.[11] Throughout this chapter, therefore, we will try to keep in mind, by way of periodic commentary, what socio-political arrangements are either presupposed or projected by those developments in the social sciences which countenance, or can be enhanced by, post-empiricist themes.

Nowhere in this chapter, however, will the claim be made, nor defended, that the post-empiricist philosophy of science has conceptually suffocated, and now stands victorious over, the positivist image of science.[12] Although, as stated earlier, the assumptions have been 'chipped away' and the goals have 'progressively waned', the positivist influence

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[11] This fact of the matter, shall we say, is also quite prevalent in the natural sciences. Political considerations often guide, and determine, the parameters of scientific research.

[12] As many commentators in the social sciences have often prematurely and over-zealously presupposed. See, for example, Eugene F. Miller, "Positivism, Historicism, and Political Inquiry", American Political Science Review 66 (1972):796-817.

is still a force with which to contend. Indeed, especially in regards to the philosophy of the social sciences, I concur with Richard Bernstein when he argues that "it would be naive to underestimate the extent to which the framework assumptions and categorical distinctions of a mainstream orientation are still widely held".[13] That I specifically note the social sciences in this regard is largely a reflection of the implicit claim running throughout this thesis; namely, that in Anglo-American academic circles the philosophy of the social sciences lags behind (both temporally and conceptually) the philosophy of the natural sciences.[14] Nevertheless, I also wish to give renewed emphasis to Bernstein's further claim that "insofar as the new post-empiricist interpretation of science has altered our understanding of the natural sciences, it affects any informed appraisal of the ways in which the social sciences are like and unlike the natural sciences".[15]

At the same time, however, I see no reason why debates in the philosophy of the social sciences must be dominated by the question 'in which ways are the social sciences like and unlike the natural sciences?'. In fact, I believe that, largely assisted by post-empiricist developments, the importance of this question is becoming less problematic for the

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[13] Richard J. Bernstein, The Restructuring of Social and Political Theory (Philadelphia: University of Pennsylvania Press, 1976), p.226.

[14] Speaking Hegelianly, one might say it arrives late on the scene, whilst speaking un-Hegelianly, one might further claim that it still has much to say. It might be noted at this point that unlike the Neo-Stalinists, who also talk of philosophical lags, I would not defend this claim by some idiosyncratic appeal to the 'dialectic of nature'. Let it simply be said at this point that there are several tools of understanding that once proved successful or inspiring in one area of inquiry and which were then applied (sometimes erroneously, sometimes prematurely) in other areas of inquiry.

[15] Ibid. p.xvi.

philosophy of the social sciences. The defenses are no longer exclusively for or against science, or for the employment of scientific methodology here, against it there. The radical redefinition of the scientific image that post-empiricism offers us shatters the old problematic and factionalizes beyond recognition the previous battlefronts. Even to compare the post-empiricist philosophy of science with the anti-methodological bias of the 'post-behaviouralist' movement in the social sciences - beyond noting particular influences running from the former to the latter - is perhaps to severely oversimplify matters.

Thirty-odd years ago the picture was, of course, a lot simpler. Radical behaviouralists on one side of the fence, 'normative' theorists ('philosophers') on the other side, with the odd imported Weberian standing on the posts scolding both of them. The simplicity of the dialogue matched that of the picture. Constructing 'patterns of reinforcement', the behaviourists claimed, would solve our major social ills whilst at the same time eradicating all the indeterminacies whose attempted clarification precipitated intellectual psychosis. The indeterminacies, claimed the normative side, signalled beyond doubt the lacunae created by our ignorance of the import of the 'classics' - by our insistence that one can conflate what ought to be with what is. Description with the most developed tools of the day should dictate the social sciences, the former felt, not prescriptions obtained by studying the wisdom of the past, as the latter argued. This scenario was, of course, most clearly reflected in many of the attacks launched by political theorists against the positivist influence in political science. The positions of Strauss, Oakeshott and Voegelin are especially recallable

in this context.[16]

There were those scholars, however, who did not want to get their hands dirty doing 'empirical research' but who were also allergic to the 'mold' one often encounters when examining books of the ancient past. Their contribution to the state of the art consisted in either excusing those with dirty hands or showing that certain mold, if consumed in reasonable amounts, could provide one with amazingly new perspectives on things. Since justification is usually the province of the philosopher, the conversation into which these scholars ventured could only be appropriately called the philosophy of the social sciences. Besides, the Weberians in their mediating role had been engaged in such an exercise for some time and, interestingly enough, their views on things could be used by those for and against 'science'. The problematic in which the behaviourists and classicists would inevitably face each other - a problematice which had arisen largely as a result of the positivist influence in the social sciences - had its boundaries and content defined by a series of questions, the responses to which usually neatly divided the

[16] An explanation for the intensity of such debates in political science could be offered at this point. Political science is a discipline wherein the conceptual groundwork for a 'scientific revolution' had been effected at least as far back as Hobbes but one wherein the infrastructural prerequisite for the experiment - the rationalization of the political - was not really institutionally available until the twentieth century. Without such a laboratory, shall we say, 'ancient wisdom' - in its political manifestations - was not confronted with a viable opposition. In fact, new fire was breathed into it by the plethora of prescriptive political philosophy that accompanied the early bourgeois revolutions. In a social science like economics, on the other hand, the availability of the requisite institutional infrastructure coincided with both its Ricardian and Keynesian conceptual revolutions. As a result, ancient economic wisdom in the laboratory of the twentieth century economist resembles a bull in a china shop. In the laboratory of the political scientist of the twenty-first century, might not Aristitelians also appear to behave like cattle?

participants into their respective colours. The constituent questions of that problematic are not so difficult to recall. For clarification purposes here is a sample of them:

1. Is value-free research possible?
2. Is the notion of social wholes a coherent one? (In its more refined formulation: Should the social sciences be governed by a methodological holism?)
3. Are social facts, if indeed there are any, entities or processes?
4. Are 'ideal types' essentially designatory or assertorial in character?
5. Are the social sciences, or rather should they be, idiographic or nomothetic?
6. What is the role of reduction in the social sciences; i.e., can 'social' predicates be defined in terms of individual predicates?
7. Are physical laws formalizable in the social sciences - or are we destined to contend with probalilistic and 'tendency' ones?
8. Should teleological or functional laws be allowed in the social sciences?
9. Sould the explanation of action be framed in the intentional idiom or one which seek only causal efficacy?

The influence of the later-Wittgensteinians on social theorists, however, helped immensely in paving the way for the introduction into Anglo-American debates of the various traditions of Continental theorizing - traditions whose influence only the Weberians could have understandably predicted in advance. In the 1960's, of course, these various influences came to a very forthright fruition. The 'normative' school in the philosophy of the social sciences, which had so obediently heralded the importance of the classics were now either regrettably or enthusiastically coming to terms with everything from phenomenology to existentialism to hermeneutics to a plethora of 'Western Marxisms', in addition

to all the varied syntheses thereof - syntheses often achieved, and mediated, by an equally diverse array of pseudo-psychological conceptions.

At about this time, the proponents of the behaviourist approach were discovering that they would have to come to terms with the factionalism that was disrupting the nest of 'formal' theory. The variants of functionalism which had enjoyed an insulated calm in the disciplines of anthropology and sociology under the respective guidance of Malinkowskians[17] and Parsonians were now seen by many philosophers of the social sciences as somehow competing with variants of Eastonian systems theory and the school of rational choice (which had recieved a respectable impetus from the work of Arrow and Downs) for the leading edge in the race to devise a science of society. That the competition was also enlarged in order to account for a bizarre array of structuralists that included everyone from the linguist Chomsky to the neo-Althussarian Poulantzas was a further indication that the original problematic in the philosophy of the social sciences was being perceived with a certain apprehensiveness even by those largely favorable to the search for a science of the human animal and its 'civil' life.

Now it was often the case that those social theorists who were favorable to this search resisted the labels bestowed upon them and argued that 'research' was simply being done - quite in spite of how its guiding assumptions were being codified into this or that 'body of thought' by methodologists and philosophers of the social sciences who were obvi-

[17] For an assessment of the functionalist vogue in anthropology and how much of the misunderstanding that surrounds it can be traced back to the early views of Malinkowski, see Adam Kuper, Anthropologists and Anthropology: The British School 1922-1972 (Middlesex, England: Penguin Books, 1973).

ously self-conscious about the state of the enterprise. Radcliffe-Brown, for example, in rejecting the functionalist label often used to describe his views, was quite confident in stating the following:

> There is no place in natural science for 'schools' in this sense, and I regard social anthropology as a branch of natural science. Each scientist starts from the work of his predecessors, finds problems which he believes to be significant, and by observation and reasoning endeavors to make some contribution to a growing body of theory. Cooperation amongst scientists results from the fact that they are working on the same or related problems. Such cooperation does not result in the formation of schools ... There is no place for orthodoxies and heterodoxies in science. Nothing is more pernicious than attempts to establish adherence to doctrines. All that a teacher can do is to assist the student in learning to understand and use the scientific method.[18]

It is quite clear that behind his attack on labelling in the social sciences, and serving as fundamental conceptual support, lies Radcliff Brown's particular image of science. It is, of course, an image that belies much of what actually constitutes scientific research. The formation of 'schools' within twentieth century quantum theory, arguably no different in kind than the same formation within pre-Darwinian biology,[19] is proof positive that his initial claim is quite off the mark. His last claim is indicative of a refusal to countenance the possibility that <u>methodology is not underdetermined by guiding assumptions</u> (or, 'choice of significant problems'), i.e., that there might be at <u>least</u> a dialectical relationship between the former and the latter. This is a

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[18] A.R. Radcliffe-Brown, <u>Structure and Function in Primitive Society: Essays and Addresses</u> (London: Routledge & Kegan Paul, 1952), pp.188-189.

[19] Although I personally am not sympathetic to the general approach and conclusions, an interesting book to look at for a portrayal of apparently conflicting paradigms in pre-Darwinian natural history is John C. Greene, <u>Science, Ideology and World View: Essays in the History of Evolutionary Ideas</u> (Berkeley and Los Angeles: University of California Press, 1981), esp. ch.3.

refusal which can only be justified if by 'the scientific method' he is making reference to a particular scientific logic, perhaps deduction. However, a method is much more than a logic - it is a whole storehouse of received wisdom on how to collect data, how to synthesize that data, how to control independent variables in order to bring about an experimental situation, et cetera. As we have seen, a fundamental contribution of the post-empiricist philosophy of science is the emphasis it gives to the possibility that the guiding assumptions of research (even its 'problem selection') often determine the substantive content of those methodological mandates.

Radcliff Brown's efforts to ridicule the application of 'labels' in the social sciences can therefore be seen to be largely tied to a much dated brand of positivism.[20] In fact, his unwillingness to explore the extent to which social factors enter into the scientific enterprise smacks of a twentieth century Baconianism. Such arcane understandings of what constitutes the activity of science were, however, quite widespread throughout the 'behaviouralist movement' in the social sciences - wherein science was often portrayed as a procedure of careful inductive enumeration.[21] In fact, to a certain degree this portrayal of science

[20] Of course, not all arguments against the 'labelling tendency' need to be supported in this fashion. For example, I continue to appreciate that the invocation of disciplinary labels in order to enhance historical-cum-rational reconstructions often serves to blur the specific insights and theoretical innovations of individual thinke

[21] For a description of some naive portrayals of the scientific enterprise by social scientists see M.W. Jackson, "The Application of Method in the Construction of Political Science Theory", Canadian Journal of Political Science 5 (1972):402-417. In spite of the fact that one of the major goals of Jackson's paper is to indict political scientists for holding anachronistic views of science, Jackson himself appears unsuitable for the role of prosecutor. On page 409, for example, he argues thus: "Though a variety of competing and con-

was shared by those opposed to a science of politics and society. To this extent, the interchange between the proponents and opponents of the behavioural 'revolution' was conducted within a problematic that had much cruder boundaries than the ones which were drawn by twentieth century positivism. What is being suggested here is that many social theorists throughout the twentieth century - whether favorable or unfavorable to a science of of society - have not even been acquainted with the formulations offered by, or the uncertainties that plagued, the positivist philosophy of science. One could say, therefore, that I am giving a certain credence to those who argue that behaviourism was well on its way to fruition long before the 'positivist tendency' congealed into the mandates of logical positivism and logical empiricism.[22]

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flicting positions exist under the rubric of the philosophy of science, ranging from sociology of knowledge, phenomenology, to crude positivism, nearly all seem agreed on some basic points which bear most heavily on the matter at hand. First amongst these is the analytic distinction between contexts of discovery and justification as made by Hans Reichenbach". The blatant falsity of this statement, of course, is totally inexcusable, especially when it is made by an author who claims to understand the import of Polanyi's distinction between implicit and explicit knowledge. For more responsible considerations of the validity of Reichenbach's distinction, one might consult Thomas Nickles, ed., Scientific Discovery, Logic, and Rationality (Dordrecht, Holland: D. Reidel Publishing, 1980).

[22] In a response to the article by Eugene Miller cited in footnote twelve (this chapter) Martin Landau noted the following: "Unless numbers are equated with logical positivism, the line between it and behaviourial research becomes rather tenuous ... the National Conference on the Science of Politics in the 1920's was responding, not to the Vienna Circle, but to the extensive use of 'tests and measurements' during World War 1; and the upsurge of survey reearch in the 1950's owed more to advances in research design and statistical technique than it did to Schlick, Carnap, Feigl and Hempel". See Martin Landau, "Comment: On Objectivity", American Political Science Review 66 (1972):846.

What needs re-emphasizing here, however, is the fact that most philosophers of the social sciences became increasingly aware of the specific formulations and prescriptions of twentieth century positivism. The thesis of the philosophical lag accounts for the intial arcane understanding of science shared by many philosophers of the social sciences. It is not being argued here that behaviourism (or the search for a science of society) emerged exclusively from epistemic mandates drawn up by members of the Vienna Circle. Rather, what is being argued is that social theorists increasingly made reference to those mandates in order to defend or attack behaviouralism and the search for a science of society.

What also wants mentioning at this point is that the attack on labelling in the social sciences in the fashion of Radcliff-Brown presupposes the institutional implementation of the unity of science [23] and belies the fact that such labelling was an initial signal that the problematic of the philosophy of the social sciences was being displaced. Now it is my contention that the diplacement of the old problematic - one largely engendered by the conflicting mandates of positivism and Verstehen theorists and one which served as the battlegroun for the war between the behaviourists and the classicists - has been a displacement that has received, and will continue to receive, impetus from developments within Anglo-American post-empiricist philosophy. It is, therefore, also my belief that, although it once constituted an appicable description, it is no longer appropriate to argue that in social

[23] project, Something which, it might be added, no logical positivist presupposed; for them it was very much a prescription, not a description. Hence Neurath's comments on the immature state of the social sciences, et cetera.

scientific circles "while the 'positivistic' conception is vigorously rejected as a model for social science methodologies, it is more or less taken at face value when it refers to the natural and technological sciences".[24] In fact, it is the willingness on the part of philosophers of the social sciences to countenance post-empiricist developments that has proven instrumental in the recent increase of self-conscious attempts to further displace the old problematic.

I would also disagree with the view held by those who, for example, argue that "Post-behaviouralists have typified themselves as holding that some things cannot by known, unlike behaviouralism's earlier critics who held that some things should not be known".[25] Now I grant that an epistemic exploration into the 'realm of the intimate' was something that did worry the early critics of a science of society, but I would condition this construal of things by arguing that the worry was really founded on the belief that a state of 'total scientific knowledge' would signal the fact that something specifically human had been lost; i.e., intentionality, individual uniqueness, historical consciousness, et cetera. In short, although I would argue that most of the early critics of behaviouralism held a positivist view of science, I would not argue that they also held a positivist view of the social sciences and only wanted to direct research down 'different lines of inquiry'.[26]

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[24] Karin D. Knorr-Cetina, "Social and Scientific Method or What Do We Make of the Distinction between the Natural and the Social Sciences?", Philosophy of the Social Sciences 11 (1981):335.

[25] M.W. Jackson, "The Application of Method in the Construction of Political Science Theory", p.407.

[26] This might be presumptuous on my part, as I am assuming that when emphasis is placed on 'should not be known' in this context, it means that the early critics believed all things 'could be known' - and

On the other hand, what might be loosely refered to as post-behaviouralism is not so much characterizd by the belief that 'some things cannot be known' as it is characterized by a tendency to blur the lines that once seperated the notion of understanding from that of explanation and to decenter the questions of what it means 'to know' and what it means for a theory to explain. The image being reacted to is one wherein it is held that the philosophy of the social sciences should be engaged "with the logic of any theory construction in social science and with the logic of justification of (any) social scientific theory"[27] or, more specifically, tht a social scientific theory "is a systematically related set of statements, including some lawlike generalizations, that is empirically testable".[28]

If anything, post-behaviouralists would argue - in a manner not entirely unlike the early critics of behaviourism - that we can 'know' much more than what 'science' (under the positivist image) offers us. What the major difference is in this regard is that 'post-behaviourlists' are increasingly turning to post-empiricist developments in order to support their varied claims. In terms of their strategy, therefore, they do not differ from the early twentieth century behaviouralists and proponents of a science of society who increasingly turned to the refined mandates of logical positivism and logical empiricism in order to support their theoretical stance.

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that is a signifier par excellence of crude positivism.

[27] Richard Rudner, Philosophy of the Social Sciences (Engelwood Cliffs, N.J.: Prentice-Hall, 1966), p.3.

[28] Ibid., p.10.

It is, of course, a near truism that "the modern era is characterized not only by advances in the sciences, but also by the rationalization of their application to society".[29] What this thesis also defends is that twentieth century Anglo-American academic thought is characterized not only by advances in the philosophy of science, but also by the rationalization of their application to the philosophy of the social sciences. In addition to post-empiricist developments precipitating a changing image of science, their rationalization to the social sciences will precipitate a radical change in the old problematic wherein we concerned ourselves with how the social sciences were like or unlike the natural sciences.

It would, however, be overly misleading to insinuate that there is a consensus amongst social theorists influenced by post-empiricist developments about what is the major import of these developments. In adddition, most social theorists have only been influenced by certain aspects of post-empiricism, whilst some are only aware that positivist mandates are being subjected to thorough-going questioning. It is for these reasons that I would <u>not</u> argue that those social theorists so influenced are part and parcel of the 'post-behaviouralists' or 'post-structuralist' movements.

Although both construals have already been attempted, I do not believe that post-empiricism will increasingly be seen as helping to justify a "renewed interest in traditional approaches to political philoso-

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[29] Although a near truism, this particular formulation of it comes from Richard Harvey Brown and Stanford M. Lyman, eds., <u>Structure, Consciousness and History</u> (Cambridge: Cambridge University Press, 1978), p.ix.

phy"[30] nor as lending support to the proponents of a science of society by demonstrating that the social sciences can become 'naturalistic' if naturalism is understood along post-empiricist lines.[31] In fact, although it is clearly the case that both those for and against a science of society have turned to post-empiricism for conceptual support, there is no reason to presuppose that its mandates will help them achieve either their theoretical or institutional goals.

If I was to engage in the art of speculation, however, I would say that, more than anything, post-empiricist developments will continue to strengthen the case for a methodological pluralism in the social sciences. Pluralist tendencies can, of course, be argued to be implicit in all of the thinkers (save perhaps Sellars) discussed in the last chapter. Such tendencies, as we have also seen, take a formidable form in the recent views of Feyerabend, Rorty and Goodman. Especially to the extent that the views of Goodman will be countenanced by social theorists (something which is yet to happen in a systematic way), the philosophy of the social sciences will offer a historical parallel to the

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[30] As is held to some extent by Eugene Miller "Positivism, Historicism, and Political Inquiry", p.844. For another example of this sort of interpretation, see the introduction to Quentin Skinner, ed., The Return of Grand Theory in the Human Sciences (Cambridge: Cambridge University Press, 1985).

[31] Such an interpretation serves as the backdrop for many of the suggestions in David Thomas, Naturalism and Social Science: A Post-Empiricist Philosophy of Social Science (Cambridge: Cambridge University Press, 1979). In part, I believe Thomas takes post-empiricist developments too seriously, for he seems to presuppose that any philosophy of science must be 'naturalistic'. Under such an interpretation the claim "social study can model itself on natural science, if natural science is understood along post-empiricist lines" (p.196) can find compatible company with the claim 'the study of God can model itself on natural science, if natural science is understood along religious lines'.

German Idealism of the nineteenth century. Kant's 'Copernican Revolution', we will recall, stated that the apparent structure of the world resulted from the structure of the categories of the mind. Once the permanence that Kant had seen in those categories, along with the noumenal world to which they gave structure, was removed, the gate to speculative heaven was opened by those idealists who argued that a fluidity of categories signalled a fluidity of worlds. The revolution that the twentieth century has witnessed in the philosophy of language has very strong parallels. With the early logical positivists the 'limits of language' came to be seen as the 'limits of the world'. For the positivists, once again, there was a formal and permanent structure to the language through which the world was revealed. And since that permanence has been questioned by later-day Wittgensteinians and post-empiricist philosophy, one might say that the ground-work has been established for a revival of idealism, albeit one tempered by an anthropological, cultural, and philosophical pragmatism. That the possibility of this revival has been so tempered is very likely due to the twentieth century's implicit acceptance of a fundamental Kantian maxim: any perceived structure in things belies the fact that it is already a structure which is doing the perceiving. A fundamental contribution of much of post-empiricism, however, is its insistence that, although the number is non-infinite, there are many different structures from which that perceiving can be done.

In light of this possibility, therefore, what might emerge as unique to post-empiricist philosophy of the social sciences will be the claim that the dividing line between the statements 'there are many ways of approaching the world' and 'there are many worlds to understand (know)

and make' is a line that can no longer be drawn. And in a philosophy of the social sciences wherein this claim is defended, the importance of 'labelling' would emerge as increasingly tantamount - for what labelling serves to indicate above all is the non-tranquility of axioms.

It is therefore my speculative contention that the future of the philosophy of the social sciences, as well as much of social and political theory, given post-empiricist influences, will not be so much constitutive of thinkers 'for or against science' as it will be constitutive of thinkers for or against different descriptions and ways of social worldmaking - and a discipline, moreover, wherein the distinction between description and worldmaking will prove increasingly difficult to define. One might say that, as in the disciplines of engineering, architecture, and the fine arts, the line which separates 'doing something' from 'designing something' (wherein the 'doing something' for the social sciences is constitutive of the acts of description and explanation) will no longer be able to be defended. To the same extent that several post-empiricists advocate the conflation of philosophy with literary and cultural studies, a philosophy of the social sciences influenced by post-empiricism might increasingly view social scientists as artists in their own right - necessarily[32] engaged in ways of social worldmaking and offering us descriptions (maps?) of how we might find our way around those varied worlds.

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[32] Necessarily? Intentionally? Non-intentionally? Whether or not these distinctions will be problematic for 'post-empiricist' social and political theory is a question that will deeply concern us throughout this chapter.

5.2 HATS OFF TO NASA: PARADIGMS, WORLD VIEWS AND RELATIVITY

Out of all the post-empiricist philosophers of science whom we have considered, Karl Popper has undoubtedly addressed the social sciences in a direct and explicit way the most frequently. His contributions have primarily revolved around his attacks on historicism and general-cum-utopian theorizing[1] and his much re-iterated emphasis on the importance of deductive theorizing and the critical component of reason as countenanced by falsificationism. The uncomfortable confrontation which he had with members of the Frankfurt School in the 1960's led to increased clarification on exactly how he interpreted the relevance of his views to the social sciences, but much of the fruit that could have been reaped from such a dialogue was prevented from ripening due to the preconceptions held by both sides about each other. For the Critical Theorists, Popper was the next thing to a dogmatic positivist, whilst according to Popper, they were necessarily paving the way for some sort of totalitarian world order.[2]

Since this confrontation, however, the need to seriously contend with Popper has diminished substantially in social scientific circles. It is not so much that Popper is non-contentious, but that the debates which ensue from his views tend not to fly off along unexpected tangents. There can be no doubt, however, that if the conceptual connection be-

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[1] The landmark work here is Karl Popper, The Poverty of Historicism (New York: Harper Torchbooks, 1964). The reader who comes to this book after Conjectures and Refutations and the Logic of Scientific Discovery will undoubtedly be quite surprised at its almost unprofessional didactic quality.

[2] For a look at these debates see, Theodore Adorno, et.al., The Positivist Dispute in German Sociology, trans. Glyn Adey and David Frisby (London: Heinemann Educational Books, 1969).

tween him and Feyerabend were more readily appreciated, this non-contentious element would rapidly fade. And the methodologists who briefly make reference to the 'principle of falsification' and the need for a 'null hypothesis' in research might even cease doing so with such confidence.

Nevertheless, I believe that the reason why Popper is no longer at the centre of some of the real heated debates in contemporary philosophy of the social sciences is that his own philosophy does not center on what might be called a 'global' or 'holistic' notion. Whether or not this absence is to be lauded or not is something I do not wish to explore at this point. Let it only be said that one of the primary reasons for the powerful influence that post-empiricist philosophy of science has exerted on the social sciences and the humanities is due to the fact that such notions are widely countenanced.

Perhaps the foremost notion of this sort to have influenced social scientists has been that of Kuhn's 'paradigm'. To the extent that it represents a turn toward 'holistic' analyses of the scientific enterprise, it can be seen as closely paralleling notions developed by other post-empiricist philosophers. The 'influence of holism' is marked by Quine's presentation of the Duhemian network model of belief; by Stephen Toulmin's 'conceptual systems'; Lakatos' 'research programmes'; Dudley Shapere's 'scientific domains'[3] and Larry Laudan's 'research traditions'. Rorty's notion of 'normal discourse' might also be considered a

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[3] For a look at Shapere's views in this regard see Dudley Shapere, "Scientific Theories and Their Domains", The Structure of Scientific Theories, Second Edition, ed. Frederick Suppe (Urbana, Illinois: University of Illinois Press, 1977), pp.518-565.

close cousin, as might his and Feyerabend's frequent invocation of Gadamerian 'traditions' and Wittgensteinian 'forms of life'. Goodman's 'world-versions' might also be a candidate for such a classification, although he tends to use it in a way less sweeping and more refined.

Many of these notions are used to cover some social factors in a way similar to Kuhn's paradigms. These elements, be they values, disciplinary orthodoxies, or vaguely defined 'approaches to subject matter', serve to depict the scientist as a member of a particular community at a specific point in historical time. The resulting image - the scientist as engaged in a project, is an image which most positivists would have felt it all the wiser to leave undeveloped. Nevertheless, the post-empiricist painting has been framed (granted, in a loose and unappealing sort of way) and it is something which social scientists will have to contend with for some time.

Within a short time after the publication of The Structure of Scientific Revolutions in 1962, many social scientists became aware that they were being offered a whole storehouse of 'new' terminology with which they could analyse the state of their disciplines. The influence of the concept of 'paradigm' cannot be underestimated in this regard. The extent to which it was not paradoxical that Kuhn's work appeared in the Encyclopaedia of Unified Science was largely overlooked and social scientists began to read the content of the book as a description of both what constituted 'science' and how a field of inquiry became 'scientific'.

One of the most standard interpretations of Kuhn's notion of a paradigm that emerged amongst social scientists was that it highlighted the consensus required in a discipline in order for scientific inquiry to ensue. The notion, therefore, so thought many social theorists, would help to answer the questions 'are the social sciences 'scientific'?' and 'can the social sciences become scientific?'. Equipped with the notion of 'paradigmatic science' to help them solve these questions, social scientists turned a glance to the history and present-day status of their disciplines.

In political science, although both Truman and Almond seemed undecided about whether or not their discipline had paradigm-status in the past, they both believed, in an optimistic sort of way, that it was on the verge of acquiring one. Truman claimed that he was 'disposed to bet' on the possibility that 'most of the discipline may have acquired a degree of self-awareness sufficient to permit it to set the outline of what to do, if not altogether how to proceed".[4] In a similar way, Almond was ready to gamble that "in the last decade or two, the elements of a new, more surely scientific paradigm seem to be manifesting themselves rapidly".[5] The paradigm heralded was that which was centered on the 'core concept' of the political system. The 'loosely analogous paradigm' from which this new paradigm had emerged was presented by both (in slightly different ways) as something akin to a naive political realism marked by a 'non-explicit' theoretical emphasis and 'confining commit-

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[4] David B. Truman, "Disillusion and Regeneration: The Quest for a Discipline", American Political Science Review 59 (1966):869.

[5] Gabriel A. Almond, "Political Theory and Political Science", American Political Science Review 60 (1965):869.

ment to concrete descriptions' of constitutional components (Almond) and 'things American' (Truman).

In addition, although Truman was uncertain whether the 'common qualities' shared by the work of political scientists (that served "to identify the nature of the general agreement and the form and character of the discipline")[6] from the 1880's to the 1930's was worthy of the name paradigm, he did feel that some 'crisis' theorizing was required to account for the waning of those qualities. Yet, in a very non-Kuhnian fashion, he did not attempt to isolate theoretical anomolies that arose in the process of inquiry, but rather innumerated global political developments to account for this change of pace (most notably, the First World War and the break-up of the colonial system). Employing the same kind of socio-political analysis, Almond accounts for the alleged scientific revolution by arguing that "we are becoming a science by inference from changes in the magnitude, structure, age distribution and intellectual environment of the political science profession".[7] In short, Truman points to political events in order to provide reasons for the crisis and Almond points to a socio-economic one (namely, professionalism) as proof that the scientific revolution has arrived.[8] Examinations into the scientific status of one's discipline constructed along these lines are, of course, only possible after one has defied most of what Kuhn has to say.

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[6] David Truman, "Dissillusion and Regeneration", p.866.

[7] Gabriel Almond, "Political Theory and Political Science", p.869.

[8] That Truman and Almond defy Kuhnian mandates on these matters is nicely illustrated in Richard J. Bernstein, The Restructuring of Social and Political Theory (Philadelphia: University of Pennsylvania Press, 1976), pp.96,98.

Other reasons are given by Truman and Almond to substantiate that political science has finally achieved paradigmatic status. In this regard Almond mentions "a statistical approach to the universe of political systems" and "the differentiation and specification of variables and the assumptions of probability and reflexivity in their relations". In a slightly more specific way he also refers to "a logic which will enable us to relate changes in internal processes and conversion patterns and to changes in recruitment and socialization patterns".[9] As one commentator quite critical of Almond's approach has argued, all Almond "seems to be referring to [is] an increasing awareness of the need for careful conceptualization".[10]

Indeed, what often tends to emerge from such Kuhnian construals of disciplines within the social sciences is that Kuhnian verbiage is used to account for the rise of a paradigm and then standard positivistic explanations are employed to explain what is occurring therein. In the philosophy of the social sciences those proponents of a 'science of society' more than often see Kuhn and positivism as comfortable bed-fellows. Truman and Almond are certainly not alone in arranging this affair. In a book on 'behavioural archeology' published in 1976, Michael Schiffer forthrightly proclaims that "a period of normal science has emerged in archeology".[11] Like Truman and Almond, he also takes 'consensus' (broadly construed) as the signifier par excellence of scientific

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[9] All of these quotes are from Gabriel Almond, op. cit., p.876.

[10] Philip L. Beardsley, "Political Science: The Case of the Missing Paradigm", Political Theory 2 (1974):54.

[11] Michael B. Schiffer, Behavioural Archeology (New York: Academic Press, 1976), p.1.

research:

> As in many normal science periods, basic concepts and principles are beginning to submerge into the murky inaccessible depths of the discipline, where they no longer can be easily questioned or challenged until, of course, the next major paradigm clash.[12]

This period of normal science has allegedly 'liberated' archeologists "from their persistent practice of 'interpreting' rather than explaining their data".[13] In a most un-Kuhnian way the author then calls for a 'reintegration' of past developments in the field and even goes so far as to cite Kuhn for support:

> The fact is evident that much of what stood for archeology in decades preceding the 1960's has yet to be reintegrated into the discipline: such reintegration is an expectable consequence of major paradigm change in a science (Kuhn 1970).[14]

With this as a starting point the book then introduces us to the views of Hempel and Nagel on covering laws and then proceeds with the usual presentation of data collecting techniques, measuring instruments and computer simulations. Towards the end of the book, Schiffer, in wishing to preserve the paradigmatic status of his discipline, has some proposals for the future:

> Skills in research design, mathematics, statistics, modelling, and logic need to be acquired at the undergraduate level ... graduate courses in anthropology should cease being histories of thought.[15]

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[12] Ibid., pp.1-2.

[13] Ibid., p.2.

[14] Ibid., p.3.

[15] Ibid., p.193.

The fundamental difference between Schiffer's and Truman's and Almond's interpretation of the period of 'normal science' is that the former - in a manner more akin to Kuhn (and Polanyi) - believes that the 'basic concepts and principles' are submerged in 'inaccessible depths'. Truman and Almond, on the other hand, believe that being scientific means being explicit. What is unclear in all three, however, is whether they only mean to say that their disciplines have become more conceptually defined (because they are 'measuring' more 'things' and using more 'logic') or whether they really do mean that a paradigm has emerged.

For many psychologists consensus amongst practitioners has also been seen as determinate in the achievement of paradigmatic status. Such a view has led Robert Watson to be dubious about whether psychology has a 'defining' paradigm, since "there is still debate over fundamentals",[16] while Palermo has been led by the same presuppositions to proclaim that psychology has had at least two paradigms (Wundt's introspection and Pavlovian behaviourism).

Examples of this sort can, of course, be drawn from every discipline in the social sciences. An interesting (and often amusing) phenomenon which results from 'paradigm conciousness' on the part of social scientists is the search for already existing paradigms within their disciplines. The classical works in this regard are Holt and Richardson[17] in

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[16] Robert I. Watson, "Psychology: A Prescriptive Science", American Psychologist 22 (1967):436.

[17] Robert T. Holt and John Richardson, Jr., "Competing Paradigms in Comparative Politics", The Methodology of Comparative Research, eds. Robert T. Holt and John E. Turner (New York: The Free Press, 1970), pp.21-71.

political science and Ritzer in sociology.[18] In these kinds of studies it often appears as if the authors feel that an enumeration of research strategies with 'distinct underlying principles' requires a Kuhnian philosophy of science. The procedures of delimitation are not that distinct from the procedures implicitly employed by any one throughout history who has applied a proper name to a 'body of thought'. Certainly one does not need to have read a word of Kuhn in order to say that within, for example, the discipline of political science there are some 'functionalists', some rational-choice theorists', and some 'systems' theorists.[19]

I believe that this search for paradigms is an unruly descendent of the search for the line of demarcation between science and non-science. Many of the initial searchers in the 1960's eemed to be both under the asssumption that Kuhn had successfully displaced Carnap's and Popper's distinctions and guided by the belief that if they could find a paradigm in their dicipline then that discipline would be worthy of the name 'science'. It was in such a context that something as vague as behaviouism could become, for good or bad, accepted by many as paradigmatic. At this stage science *per se* was construed as being uni-paradigmatic.[20]

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[18] George Ritzer, *Sociology: A Multiple Paradigm Science* (Boston: Allyn & Bacon, 1975).

[19] On this point I might make reference to a recent article wherein cybernetics, structuralism, emergenticism, and organicism are all discussed quite nicely without any use of Kuhnian-cum-Lakatosian terminology. See Archie J. Bahm, "Five Systems Concepts of Society", *Behavioural Science* 28 (1983):204-218.

[20] In this context even Sheldon Wolin appeared close to accepting that "the behavioural movement satisfies most of Kuhn's specifications for a successful paradigm". See Sheldon S. Wolin, "Paradigms and Political Theories", *Paradigms and Revolutions: Appraisals and Applications of Thomas Kuhn' Philosophy of Science*, ed. Gary Gutting (Notre

Once the diversity of inter-disciplinary 'guiding assumptions' was noticed, however, social scientists who sought 'scientific status' shifted the emphasis slightly. Epistemic legitimacy, one could say, was then bestowed on research conducted within a paradigm; in fact, so the argument often went, in 'multi-paradigm' science the paradigm was not to be found. The gist of such non-Kuhnian excursions could be seen as underlying a near institutional mandate; namely, that the optimism of the proponents of a uni-paradigmatic social science should be distilled into the resigned contentment of multi-paradigmatic researchers. This allegedly necessary predicament for the social sciences was even deemed by one commentator to be "an inevitable result of the impossibility of thoroughly intergrating all diverging political viewpoints".[21]

The varied attempts to invoke Kuhn to support either the cause for uni-paradigmatic or multi-paradigmatic research actually has a similar flavor to the attempt to invoke the views of Lakatos to serve a demarcational role. Assuming that "those who reject the naturalist model of social and political inquiry generally focus on the covering law model of explanation", Donald Moon has proposed that political scientists employ Lakatos' more lenient views in determining whether or not they are

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Dame, Indiana: University of Notre Dame Press, 1980), p.181. It might be added that Wolin was not very happy about this development. For a look at what one might call a 'pre-Kuhnian' perspective on such matters, see Robert A. Dahl, "The Behavioural Approach in Political Science: Epitaph for a Monument to a Successful Protest", American Political Science Review 55 (1961):763-772.

[21] Philip L. Beardsley, "Political Science: The Case of the Missing Paradigm", Political Theory 2 (1974):54. Beardsley's article is somewhat strange in at least the following way: Kuhnian verbiage is used both to argue against the claim that political science has, or can have a paradigm and to defend the proposal that the discipline should have several of them.

doing progressive scientific research.[22] On at least one score, Moon countenances research programmes for the same reason that others have countenanced paradigms; namely, "that without such frameworks, the results of research would be a motley assemblage of miscellaneous observations, at best merely a storehouse of 'facts'".[23] Moon's insinuation seemed to be that without such a programme we would be back on the road in search of an acceptable justification of inductive enumeration.

For Moon, a 'model of man' would specify the negative heuristic of an acceptable research programme. His own preference for such a heuristic is "the conceptualization of social phenomena in terms of the rational choices of individual actors responding to the structure of incentives they face",[24] namely, the 'model of man' projected by rational choice theory. It is a little unclear whether Moon is saying that all rational choice theorists must subscribe to Lakatosian mandates or whether he is arguing that they all implicitly assume the validity of such mandates. In short, like most philosophers of science it is unclear whether Moon is being prescriptive or descriptive.

Moon is of the opinion, however, that it can not "be said that most theories in political science are based on clear, well-articulated images of man"; i.e., that "contemporary empirical studies do not develop out of a well-articulated research programme".[25] What is interesting,

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[22] Donald J. Moon, "The Logic of Political Inquiry: A Sythesis of Opposed Perspectives", Handbook of Political Science: Volume 1, eds. Fred I. Greenstein and Nelson W. Polsby (Reading, Mass.: Addison-Wesley, 1975), p.153.

[23] Ibid., p.195.

[24] Ibid., p.151.

however, is his view that political philosophy as 'radical' and 'diagnostic' "is a source of paradigms or 'models of man'".[26] So here we have Kuhn's notion of a paradigm paralleling that of 'well articulated images' and, by way of a small inference, that of Lakatos' 'negative core'. Political philosophy, initially considered an interference in the search for a 'defining paradigm' in the discipline now, at the hands of Moon, comes to be viewed as playing a decisive role in the very formulation of its conceptual successor; namely, 'research programmes'. As another political scientist, who expands on a Lakatosian perspective along lines similar to Moon, has concluded:

> the 'normative' theories of yesteryear may now be viewed as methodological prescriptions in Lakatos' sense. For what they 'prescribe' or 'recommend' is that we view man and society in certain ways and not in others ... What each of these 'normative' theorists did, in other words, was - firstly - to propose a research program consisting of a not-directly-criticizable set of basic assumptions about human nature and society, and - secondly - to construct a crude protective belt of auxiliary hypothese designed to insulate the hard core from a direct hit ... The 'oughts' of 'normative' theory are as much methodological as moral.[27]

Yet other social scientists, acknowledging that Kuhn's use of the term 'paradigm' is more often than not rather loose, have claimed that the advocacy of both uni-paradigmatic and multi-paradigmatic research is

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[25] Ibid., p.194.

[26] Ibid., p.209.

[27] See Terence Ball, "From Paradigms to Research Programs: Toward a Post-Kuhnian Political Science", American Journal of Political Science 20 (1976):173. It might be noted that Ball, like Moon, also considers rational choice theory to be the most logically sound research programme. At the same time, however, he also comes to the partial defense of Marxism and 'functional analysis', arguing that both have been the victims of 'naive falsificationists' who "went duck hunting with antiaircraft guns" (see especially, pp.171-172).

'consonant' with his views.[28] What many social scientists have left unquestioned in the midst of such speculation, however, is the extent to which one can justifiably say that on any reading of Kuhn that paradigmatic science is 'brought about' by a community of inquirers 'deciding' which 'general set of assumptions' they will share. Michel Verdon, a welcome exception to what was at one point becoming a general trend, has recently given pointed emphasis to why, on a Kuhnian account, paradigms must not be seen as 'coming to life' once such a decision is made. In a review of a book which heralds yet another 'emerging paradigm' in the social sciences Verdon pointedly notes:

> The solution to our conceptual problems ... will not come to us because we begin 'sharing common views' after having elucidated the 'deep structure' of our discipline. A change of paradigm is not a search for a common denominator, a simple set of definitions about which everyone would agree ... paradigmatic changes are like Gestalt shifts ... They rather explode, marking radical discontinuities with the past, changing our representation of the world and encountering stiff resistance among contemporaries. Their spread is not collateral, but pyramidal[29]...

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[28] Martin Landau, "Objectivity, Neutrality, and Kuhn's Paradigm", in Political Theory and Political Science: Studies in the Methodology of Political Inquiry (New York: The MacMillan Company, 1972), p.77. Landau is, it might be noted, actually quite pessimistic about the value of employing Kuhn on such matters. Although acknowledging that Kuhn's views can be employed to equal success by both the methodological monists and pluralists, Landau also states that "Paradigm is so ambiguous, so elastic a concept as to permit any claim" (p.75).

[29] Michel Verdon, "Midwife or Toad? Philosophy and the Social Sciences", Philosophy of the Social Sciences 15(1985):62-63. For another attack on social scientists who suppose that theoretical consensus is basically all that is needed to bring about paradigmatic science (whether monolithic or pluralistic), see Paul A. Roth, "Who Needs Paradigms", Metaphilosophy 15 (1984):225-238. Interestingly enough, after his attack on the errors of the 'Kuhnian turn' in the social sciences Roth then proceeds to invoke the views of Feyerabend in his call for theoretical pluralism in the social sciences. The influence of the philosophy of science - even in its Feyerabendian turn! - lives on.

In yet another interesting twist of Kuhnian mandates, the advocacy of multi-paradigmatic social science was often accompanied by the claim that such disciplinary factionalism would off-set the incipience of a single, monolithic research confining paradigm. Beardsley, for example, has gone so far as to claim the following:

> Any attempt by political scientists to achieve a uniparadigmatic condition for their discipline would be morally indefensible and ultimately self-defeating. For such a uniformity of perspective could be achieved only by arbitrarily choosing one viewpoint and excluding all others ... American political science would have to become a closed fraternity, stifling academic freedom and clinging to a viewpoint which would inevitably favor one segment of American society or one nation at the expense of others, and would therefore be unjust.[30]

There is indeed a perplexing overtone to Beardsley's central claims. When he argues that a single paradigm in political science may well wind up favoring 'one nation at the expense of others' it is more than a little unclear exactly what he is getting at. Lacking any empirical support for such a claim one can only guess. He may, of course, be arguing that something akin to 'Marxism', if it was the domineering paradigm, would precipitate an academic state of affairs wherein socialist states were 'favored'. Correlatively, perhaps the 'liberal democrat' paradigm would lead to the favoring of capitalist states. His notion of paradigm would appear to have to necessarily be so broad - for the academics who chose to say they were working within the 'functionalist', 'rational choice', or 'systems theory' paradigm could all just as consistently say they politically favored the United States or socialist states.

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[30] Philip Beardsley, "Political Science: The Case of the Missing Paradigm", p.59.

Such broad construals of what is constitutive of fundamental Kuhnian notions also underlines the request for a more 'radical' paradigm in economics. Robert Heilbroner, for example, has argued that the 'scientific' and 'mathematical' paradigm necessarily makes economics politically conservative.[31] Strangely enough, even the reaction to such a request from within mainstream economics often implies that the request, although unwarranted apropos the discipline of economics, nevertheless can be seen as based on a correct reading of Kuhn. For example, in attempting to answer the rather loaded question 'Is economics politically conservative?', two economists have responded to the request for a more 'radical' paradigm as follows:

> Here, in a special sense, economics, like most scientific disciplines, is conservative. Scientists tend, as a group, to cling to established paradigms until they are discredited, and the process of advancing a new paradigm, or idea, naturally involves communication with other scientists.[32]

[and]

> Economics can be better or worse science, but it has no other choice. Breadth is not the issue either. What Thomas S. Kuhn remarked about natural science holds for social science too: '... though the scientist's concern with nature may be global in its extent, the problems on which he works must be problems of detail'.[33]

The general import of these responses is that the reading of Kuhn which has him claiming both that consensus is required for paradigm formation and that science is necessarily 'conservative' is essentially a correct

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[31] See Robert L. Heilbroner, "On the Limited 'Relevance' of Economics", in The Economic Approach to Public Policy: Selected Readings, eds. Ryan C. Amacher, et al (Ithaca, N.Y.: Cornell University Press, 1976), pp.54-66.

[32] Ryan C. Amacher, et al, "The Economic Apprach to Social Policy Questions: Some Methodological Perspectives", in Ibid., p.33.

[33] Robert M. Solow, "Science and Ideology in Economics", in Ibid., p.78.

reading. The 'philosophical lag' which I have alleged defines the relationship between the social sciences and the philosophy of science is demonstrated here by the fact that Kuhn is ipso facto invoked as the voice of authority on what constitutes scientific practice.

Most important, however, is the fact that such an interchange in the social sciences stems from a shared problematic wherein matters epistemic are grossly conflated with matters political and ideological. To some degree, we must grant that such a conflation is, in part, a result of Kuhn's own tendency, especially in his early writings, to be far from explicit on the matter. As one observant social theorist has recently pointed out:

> Kuhn does not help to distinguish scientific paradigms from ideological paradigms - a fundamental point ignored by those who are so eager to see Kuhn's relevance to social and political studies.[34]

Many social scientists, however, appear to be using Kuhn's lack of explicitness as a conceptual springboard from which to launch a whole array of interpretations which even many Kuhnians in the philosophy of science would consider blatantly questionable. Often such interpretations can be seen as being fueled by otherwise harmless claims. In economics, for example, Olson and Clague, although critical of the request for a 'radical' paradigm, attempt to explain how such a request might be seen as a coherent one by social scientists by arguing accordingly:

> Kuhn argued that it is the accumulation of anomalies ... that leads to a revolutionary change in the theory. But in economics, and presumably in social science generally, much of the impetus for new developments comes from changes in the society

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[34] Richard Bernstein, The Restructuring of Social and Political Theory, p.105.

and what it wants.[35]

As Olson and Clague conclude:

> Someone must, in short, take account of the politics in large corporations and the sociology behind changing values.[36]

It is, in fact, from such a moderate perspective that one is able to get a better glimpse at the kind of logic which allegedly fuels Sheldon Wolin's debatable extrapolation of Kuhn's views on the nature of science. It is Wolin's belief that the Kuhnian conceptual package can be employed as a tool for analyzing political society itself. Indeed, for Wolin, political society _is_ a kind of paradigm. He introduces his thesis as follows:

> My proposal is that we conceive of political society itself as a paradigm of an operative kind. From this viewpoint society would be envisaged as a coherent whole in the sense of its customary poltical practices, institutions, laws, structures of authority and citizenship, and operative beliefs being organised and interrelated ... This _ensemble_ of practices and beliefs may be said to form a paradigm in the sense that the society tries to carry on its political life in accordance with them.[37]

In fact, in Wolin's account one finds all the standard Kuhnian notions applied to society and politics. So tight are his analogies that one cannot help thinking that if Kuhn's philosophy of science proved entirely inadequate then so too would Wolin's account of politics. Within 'normal politics', Wolin alleges public policy is validated by the 'ruling paradigm', here too anomolies are destined to arise; namely, 'polit-

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[35] See Mancur Olson and Christopher K. Clague, "Dissent in Economics: The Convergence of Extremes", in _The Economic Approach to Public Policy: Selected Readings_, eds. Ryan C. Amacher, et al, p.98.

[36] Ibid., p.99.

[37] Sheldon Wolin, "Paradigms and Political Theories", pp.183-184.

cally disaffiliated' classes. So too are 'crises situations' and 'revolutions' bound to occur when society cannot solve its 'puzzles'. Revolutions, however, will not be the order of the day; since, as Wolin agues, "a political society will seek to adapt its system to the new developments brought about by change".[38]

Now there is good reason to believe that Kuhn's philosophy of science has become as influential as it has because he employed political concepts to analyze and describe matters of epistemic importance. It is markedly interesting to see a political scientist like Wolin applying those concepts back to the study of society and apparantly believing that such an application borders on the innovative. In reading Wolin's article one cannot help but get the feeling that some political scientists have been so influenced by the philosophy of science that they have forgotten about Marx. Wolin does, however, also wish to apply the Kuhnian problematic to an understanding of political theories. As he argues:

> Throughout the history of western political theories we find that most of the major theories have been produced during times of crises, rarely during times of normalcy. This phenomenon suggests that the major theories resemble 'extraordinary science'.[39]

The responses provided by this further Kuhnian analogy are then used by Wolin to indict behavioural research for its 'acceptance of the prevailing political paradigm'. 'Traditional' political theory, Wolin apparently alleges, is, on the other hand, not fueled by such an acceptance. This distinction is depicted by him as follows:

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[38] Ibid., p.184.

[39] Ibid., p.186.

> the contrast between behavioural theory and traditional theory comes to resemble the difference between normal and extraordinary science. Traditional theory, like extraordinary science, is preoccupied by possible rather than actual worlds and, as a consequence, it jeopardizes rather than repairs the regnant paradigm.[40]

Apart from not providing any concrete examples of how traditional political theory is necessarily radical, what Wolin unjustifiably underemphasizes is the extent to which the 'preoccupation with possible worlds' may well have its parameters set by the 'actual political world'.

We have earlier seen how wide spread the acceptance in the social sciences is of the view that concesus is all that is required in order for a field of study to become scientific. It is the popularity of this view, coupled with the emphasis on the social components of knowledge even by social scientists like Wolin, that serves as a good indication of the influence that the sociology of knowledge will have on post-empiricist social and political theory. Indeed, two leading proponents of the strong programme in the sociology of science have recently admitted that they "refer to any collectively accepted system of beliefs as knowledge".[41]

It is, in fact, in the sociology of knowledge that the positivist distinction between the context of discovery and justification is rejected <u>tout court</u> and where, through the championing of the 'principle of symmetry', no distinction is drawn between true and false beliefs. It is the belief of the sociologists of knowledge that the study of sci-

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[40] Ibid., p.187.

[41] Barry Barnes and David Bloor, "Relativism, Rationalism, and the Sociology of Knowledge", in <u>Rationality and Relativism</u>, ed. Martin Hollis and Steven Lukes (Cambridge, Mass.: MIT Press, 1982), p.22.

ence must increasingly become the study of the social causes of belief. In a book "which takes Kuhn's work as its point of departure",[42] Barry Barnes has argued that such investigations are necessitated by the fact that "texts incode messages about social relations in statements about nature".[43]

Given that for the sociologists of knowledge all of scientific concepts and categorical distinctions are rooted in our habits, conventions, and pracitices (more precisely, that there is a dialectical relationship between) the rising importance of such examinations will necessarily lead to the exponential proliferation of debate wherein 'forms of life' relativism is championed on the one hand and the desperate search for rational bridgeheads of translation is conducted on the other. The respective proponents of Rationality and Relativism will definately have fire thrown into their debates by the 'sociological turn'[44] in post-empiricist philosophy of science. What remains to be seen, however, is whether a strong programme of the sociology of knowledge that emerges within the confines of the linguistic turn that philosophy has taken this century can avoid the quagmire of linguistic idealism.

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[42] Barry Barnes, T.S. Kuhn and Social Science (New York: Columbia University Press, 1982), ix.

[43] Ibid., p.21.

[44] See James Robert Brown, ed., Scientific Rationality: The Sociological Turn (Dordrecht, Holland: D. Reidel Publishing, 1984).

5.3 IT'S ONLY TALK: CONVERSATIONS AND OTHER ACADEMIC HAPPENINGS

Even though he does not desire to be thrown in with the Verstehen crowd, Rorty's views on hermeneutics will undoubtedly continue to influence those social and political theorists who are at least in part sympathetic to an 'interpretational' social science. Clearly indicative of the importance of the theory of knowledge for the social sciences, however, has been the attention which social and political theorists have paid to his attack on traditional epistemology.

Rorty's views, for example, have been invoked by at least one political theorist in an attempt to substantiate that "traditional epistemology is largely a bankrupt enterprise with no intrinsic legitimacy, let alone the ability to lend legitimacy to other activities".[45] So employed, Rorty's attack on epistemology is read in support of the claim that the conjoining of epistemology and political theory is indicative of some sort of intellectual pathology which, in addition to distorting the political object, mostly "directs attention away from it".[46]

Now as I see it, this is a very poor reading of Rorty. Rorty does not so much say that epistemology distorts objects as he says it provides us with an unjustifiably overwhelming sense of epistemic certainty about these objects.

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[45] John G. Gunnell, "In Search of the Political Object: Beyond Methodology and Transcendentalism", What Should Political Theory Be Now? ed. John S. Nelson (Albany: State University of New York Press, 1983), p.31.

[46] Ibid., p.33.

When, for example, Kant set out to determine, via Cartesian introspection, the a priori constituting principles of mind, he was not 'distorting' an object but rather was providing a doxastic certainty about an 'object' which, on Rorty's construal of things, did not, and does not, exist. Epistemology fools us into thinking that there are standards apart from mere opinion to which an inquirer can appeal. Epistemology does not direct attention away from the object of inquiry, it attempts to permanently fix it, thereby sealing that object off from future sceptical inquiry. And by seeking to preclude the possibility of future doubt, as well as new suggestions on the matter, it winds up sterilizing the theoretical womb. It is on this matter that Rorty's concerns are akin to those of Feyerabend - both are worried about the premature blockade that epistemology (and Method) erect against future lines of research.

Epistemology, for Rorty, is really no more than what we do when we attempt to systematize a field of inquiry whose discursive parameters our community is more or less agreed upon. In the study of politics, therefore, its impact would be to bring into confining focus the political object(s). It is edifying philosophy which Rorty argues would direct our attention away from such an object. Political theory governed by immutable epistemological dictates would not be pathological so much as it would be immunized from all future 'viruses'.

For much of post-empiricist philosophy it is these viruses that are potentially very important. For Rorty, they can serve as the basis of edifying philosophy; for Kuhn they could foreshadow the revolutionary incipience of a new paradigm of scientific research; for Feyerabend they may signal the presence of alternative 'forms of life' whose standards

must be allowed a place in a pluralistic democracy; and for Goodman they are quite possibly aspects of different ways of worldmaking. On the other hand, the eradication of such viruses was a scenario envisioned by the early positivists - a group of thinkers perhaps unparalleled in their awareness that with an adequate epistemology in store it would only be a matter of time before inquiry would reveal all the constitutive variables of any phenomenal object.

What those social and political theorists who argue against their discipline's 'epistemological turn' usually wish to object to is the overly 'self-conscious' state of the art. They are baffled by the amount of doubt which has entered the discipline and by the whole circus of 'what do you really mean?', 'what does it mean to mean?', 'how do you know that I mean?' style of questioning. This reaction is quite understandable. However, if they are speaking in, or choose to speak in, Rortian terms, they should be reacting against the kind of philosophy which paves the way for edification - against thought which is attempting to break out of normal ways of looking at things. For 'normal' discourse is a sign that epistemology has won the day and that business will continue to proceed as usual.

It was with such an 'epistemology' in hand that Neurath and other positivists turned to 'substantive' political problems. A 'fascination' with epistemology need not turn one away from 'normal' political discourse and 'substantive' problems.[47] In fact, it is the rejection of all epistemologies (of theories, 'naturalized' or otherwise, about how one

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[47] As is alleged by Paul Kress in "Against Epistemology: Apostate Musing", Journal of Politics 42 (1979):526-542.

can justify knowledge claims and thereby move beyond 'mere belief') that precipitates the chaos signalled by the demand to look at things in different ways. Many of the social and political theorists who read Rorty in the topsy-turvey sort of way outlined above and believe that he can be used in defence of their goals are thereby erring on a fundamental 'philological' point. In addition, they forget, or appear largely ignorant of the fact, that their sense of security stems from the epistemology that their position presupposes. In conclusion, therefore, one could say that Rorty's attack on traditional epistemology does not provide any support to those political theorists who wish to get on with exploring the 'substantive problems' and 'gut issues' of politics. In fact, as we will see later in this section, Rorty's predominate contribution to the social sciences result from his attempt to draw into further question the lines of demarcation which presently separate the study of politics from that of literary, cultural and philosophical studies. Real chaos can reign, one might say, when we stop 'doing epistemology' and introduce Foucault to Easton.

A more common construal of Rorty's position by those in the social sciences is that which depicts him as providing support to the 'principle' that "theories help to establish the very epistemology by which they are to evaluated".[48] Herein, the construal is not always positive, especially when it is considered that such a 'principle' leads to the 'loose and faddish talk' of 'multiple method research'.[49] Rorty's per-

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[48] John S. Nelson, "Education For Politics: Rethinking Research on Political Socialization", What Should Political Theory Be Now?, ed. John S. Nelson, p.439.

[49] Ibid., p.441.

ceived contribution to 'contextualism' and his perpetuation of the paradoxes that allegedly ensue therefrom is, in fact, now being presented to those just venturing into the philosophy of the social sciences by way of introductory texts. To provide a look at how such perceptions are presented and where the worries that Rorty seems to be precipitating are rooted, it might be appropriate to quote the author of one such text at length. Here, for example, is how Roger Trigg has framed things:

> Rorty arrived at his position through repudiating empiricist views of knowledge. Yet philosophy seems cut adrift without the security of a foundationalist epistemology. Part of the trouble is that empriricism relied heavily on the notion of experience of the world to the detriment of any emphasis on the world as such. Consequently, once the theoretical or even cultural influences on what seemed 'raw' experience are exposed, it is difficult to recover any conception of the world or reality which does not itself seem to be merely a theoretical or cultural construct. Yet without such a conception the hopelessness which leads some ethnomethodologists to give up ethnomethodology can soon set in. What is needed is a concept of objective reality which is divorced from the presuppositions of empiricism and which, as a consequence, is not tied too closely to the methods and findings of empirical science. The latter may be a source of knowledge, but its claim to be the <u>only</u> source has undoubtedly led many to intemperate opposition to the idea of knowledge or objective truth.[50]

In quoting Trigg in this regard I am not seeking to prey on the kinds of generalizations that abound within, and give an apparent coherency to, introductory texts. In many ways, and for obvious reasons, introductory texts are a good source to turn to in order to discover whether or not the views of an 'outsider' are being deemed worthy of respect by the practitioners of that discipline. Such texts also provide a good glimpse of how recent views are being molded (framed) to fit into antecedently existing categories.

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[50] Roger Trigg, <u>Understanding Social Science: A Philosophical Introduction to the Social Sciences</u> (London: Basil Blackwell, 1985), p.89.

As might have been expected from the above quote, on Trigg's account Rorty is furthering the irrationalist cause and reducing all philosophy "to the level of the idle chatter of a cocktail party".[51] It is therefore argued that, if Rorty "is not attempting to provide rational accounts, it is difficult to see what he is writing for".[52]

It is, in fact, quite interesting that when Rorty employs the conversational metaphor he is interpreted as wanting to view all intellectual endeavors as simply 'loose and faddish talk' or as the 'idle chatter of a cocktail party'. We might well ask why he is not interpreted as referring to the sombre conversations that ensue after someone's death, or to the 'secretive conversations that precede a criminal act', or to 'the dramatic conversations that result in a declaration of war'. For as we all know, there are numerous kinds of conversations wherein 'faddish talk' and 'chatter' neither find a place nor are permitted.

What is hinted at by the former interpretations of what Rorty means when he suggests that innumerable benefits could be reaped if we started to view philosophy and social scientific endeavors along conversational lines is that he has <u>over-reacted</u> to the failures of empiricism and is now engaged in 'intemperate opposition'. When Rorty claims that he rejects, along with Nietzsche, the 'longest lie',[53] he is interpreted as

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[51] Ibid., p.88.

[52] Ibid.

[53] The 'longest lie': "the notion that outside the haphazard and perilous experiments we perform there lies something (God, Science, Knowledge, Rationality, or Truth) which will, if we only perform the correct rituals, step in and save us". See Richard Rorty, "Method, Social Science, Social Hope", <u>Consequences of Pragmatism</u> (Minneapolis: University of Minnesota Press, 1982), p.208.

rejecting attempts at 'rational argument'. It is therefore wondered why he does not give up in the face of futility and why he continues to write.

Yet at the same time, commentators like Trigg are willing to accept much of Rorty's attack on empiricist epistemologies; they long, however, for a 'concept of objective reality' that is 'not tied too closely to the methods and findings of empirical science'. What is overlooked, however, is that for Rorty, the reason that empiricisit epistemologies are unable to give us a concept of objective reality is the same reason that all foundational epistemologies are unable to give us such a concept. The pivotal notion here, it might be added, is not so much that of 'objective reality' as it is that of representation. For Rorty, as for any respectable pragmatist, the incoherency of the notion of representation plagues 'rationalist', 'intuitionist', and 'revelationist' accounts of knowledge as much as it plagues empiricist accounts. Russell, as Rorty has often pointed out, suffers the same fate as Husserl.[54]

The spectre that haunts Rortian-type accounts is not that of Relativism or Irrationalism. Rortian mandates do not tell the social scientist that his attempts to communicate with, or understand, other cultures are doomed to failure because 'everything is culturally relative'. Neither do they tell us that attempts to communicate amongst ourselves are doomed to be reduced to the insincerity of idle chatter because 'all that we say is theory-laden'.

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[54] He had only the good fortune to live longer.

What Rortian mandates do tell us is doomed to failure is the search for an objective, atemporal Standard of Rationality whose formulation will be unconditioned by human interests, cultural biases, and 'epistemic virtues'. No such standard can be invoked to facilitate translation and adjudicate knowledge claims. However, the fact that we will not find such a rational bridgehead does not mean that social scientists are doomed to suffer the consequences of incommensurability. Indeed, Rorty believes that the social sciences can play an indespensable role in enabling us "to see any exotic specimen of humanity as also 'one of us'".[55] It is a belief that enables him to claim that what we can "hope for from social scientists is that they will act as interpreters for those with whom we are not sure how to talk".[56] And this is clearly not a hope akin to 'the hopelessness which leads ethnomethodologists to give up ethnomethodology'. What the critics of Rorty forget, especially those in the social sciences, is that Rorty is a pragmatist. They forget that a pragmatist can quite easily claim that there will be lots of ways of communicating with others that we will find do work - and with which we will be quite comfortable. But we will only 'find these ways by communicating.

That Rorty possesses such hope and looks upon the state of things so optimistically perhaps comes as a bit of a shock to those who wish to brand him as a relativist and an irrationalist. Their shock, however, and their inability to understand why he and others like him 'continue to write' is a reaction that may clearly reflect their own bias. As the

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[55] Richard Rorty. "Method, Social Science, Social Hope", p.203.

[56] Ibid., p.202.

old adage goes, 'it is only those who have been intensely shaped by belief that view unbelief as the end of the world'.

The optimism to which Rorty subscribes in the face of his attack on foundational epistemologies can be seen as a quieter cousin to the Dionysian fullness that carried Nietzsche beyond the limits of nihilism. It is a condition, however, that is not unique amongst the post-empiricist philosophers whose views we have considered. As far as Feyerabend is concerned, for example, science can get on just fine without Method; only the philosophers ('moralizers') of science who try and force it to obey the commandments of Reason would think otherwise. In a similar fashion, Goodman also subscribes to optimism; he believes that simply <u>because</u> the world is not 'ready-made' there must exist a multitude of ways in which <u>we</u> can make and remake it.

We have seen that for Rorty all philosophy, including social philosophy, should cease being driven by the mandates of the Cartesian tradition in epistemology. It should become hermeneutical and, moreover, edifying, rather than systemic. What we might call his political prescription is one that is flavored with a tone reminiscent of Oakeshott; namely, 'to keep the conversation of mankind going'. And within that conversation, we are told, many voices will be heard - not least the voice of poetry, which Oakeshott claimed "brings to the conversation a unique utterance, not to be assimilated to any other".[57]

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[57] Michael Oakeshott, "The Voice of Poetry in the Conversation of Mankind", <u>Rationalism in Politics</u> (London and New York: Methuen & Co., 1962), p.246.

It must be noted, however, that Rorty's advocation of hermeneutics followed in the wake of his description of the 'epistemological breakdown' - a breakdown whose inevitability was foreshadowed by Locke's conflation of the etiology and justification of belief. Rorty's arguments, however, are explicitly not presented in support of the Verstehen tradition that permeates much of the philosophy of the social sciences. And his brand of hermeneutics is clearly not the kind which can be tacked onto 'natural' scientific accounts in order to produce a synthesis capable of providing both a 'meaningful' and 'causal' explanation of human behaviour.

In several contexts, in fact, Rorty has voiced his opposition to the views of Charles Taylor and others who claim that scientific accounts of the human animal will necessarily 'leave something out', albeit a 'something' which can be grasped by 'other means'. That the starting point for Rorty's views on the matter radically differs from that of these writers can be seen from his following statement:

> From the point of view I wish to suggest, the whole idea of 'being scientific' or of choosing between 'methods' is confused. Consequently, the question about whether social scientists should seek value-neutrality along Galilean lines, or rather should try for something more cozy, Aristotelian and 'softer' - a distinctive 'method of the human sciences' - seems to me misguided.[58]

In Rorty's opinion, the "line that Taylor is describing is not the line between the human and the nonhuman but between that portion of the field of inquiry where we feel rather uncertain that we have the right vocabulary at hand and that portion where we feel rather certain that we do".[59] For him it is likely only a 'mere coincidence' that this line now

[58] Richard Rorty, "Method, Social Science, Social Hope", p.195.

corresponds to that line which, on standard construals, now separates the natural from the social sciences.[60] Rortiasn hermeneutics is simply that activity which attempts to find new vocabularies that will help us better cope with that which is unfamiliar; it is "not 'another way of knowing' - 'understanding' as opposed to (predictive) 'explanation'".[61] It is "the study of an abnormal discourse from the point of view of some normal discourse".[62]

One would be safe in assuming, therefore, that although the attention which Rorty pays to hermeneutics will increasingly attract the curiosity of those proponents of an 'interpretational' social science, the substantive content of his views on the matter will disappoint many of them. And this disappointment largely stems from the fact that Rorty quite readily countenances naturalism and does not consider hermeneutics as a method which will illuminate those aspects of the human animal and society that necessarily evade the explanatory techniques of science.

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[59] Richard Rorty, Philosophy and the Mirror of Nature, p.352.

[60] Although I am largely sympathetic with Rorty on this matter, I do not believe that one is compelled to deem this state of affairs as a 'coincidence' of any sort. Without invoking any 'state of nature' hypothesis, I would be quite content in arguing that the reason for this paralleled hiatus results from the fact that what is mutually recognized as a problem evolves along with the human animal and its socio-political formations. Science it might be said, in non-Baconian fashion, is very much a social institution, and 'nature' posed the first major threat to its members. Perhaps a loose conjecture here: If Sade had taken Plato's place in history, the 'social' scientist of today would probably not be looking for a laboratory - he would already have one. Only a 'last ditch effort' like the hypostitization of another world (in the non-Goodmanian sense, of course) could have prevented the dictates of 'denotational refinement' from skirting this 'hiatus'.

[61] Richard Rorty, Philosophy and the Mirror of Nature, p.356.

[62] Ibid., p.320.

Support for an 'interpretational' social science can, of course, be seen as forthcoming from post-empiricists other than Rorty. One commentator, perhaps overstating his case in a 'moment' of optimism, has even suggested that post-empiricist philosophy of science in general has 'recovered the hermeneutical dimension of science'.[63] Kuhn, it will be acknowledged, has recently admitted that the 'most immediate and decisive affect' of his discovery of hermeneutics was on his view of science.[64] Mary Hesse has also devoted some attention to exploring the 'hermeneutic principle' of charitable translation and admits to be paying it some credence in claiming that "the logic of science is circular interpretation, reinterpretation, and self-correction of data in terms of theory, theory in terms of data".[65] In addition, Feyerabend has praised "some students of the social sciences" for noticing "that understanding a practice is impossible without participation".[66] Even Hilary Putnam is presently claiming that we must face up to the fact that "Verstehen is a source of prior probabilty".[67]

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[63] I am referring here to the views of Richard Bernstein, especially as developed in Beyond Objectivism and Relativism: Science, Hermeneutics, and Praxis (Philadelphia: University of Pennsylvania Press, 1983).

[64] See Thomas Kuhn, The Essential Tension, p.xiii. He does go on to say, however, that "the term 'hermeneutic' ... was no part of my vocabulary as recently as five years ago" (p.xv). These words were written in 1977.

[65] Mary Hesse, Revolutions and Reconstructions in the Philosophy of Science, p.173.

[66] Paul Feyerabend, Philosophical Papers: Volume 2: Problems of Empiricism, p.130.

[67] Hilary Putnam, Meaning and the Moral Sciences, p.75.

It is my belief, however, that in the future the impact of what Rorty has to say about hermeneutics will predominate over the impact of what any other post-empiricist has to say. We are certainly going to have to wait for something more substantial and to the point from Kuhn in order to determine where he personally stands on the matter. In addition, it is questionable indeed whether those social scientists inclined towards hermeneutics, who wish to argue that hermeneutics is an alternative method that can help us reveal the irreducible 'constitutive meanings' behind action, are going to receive conceptual support from the other post-empiricist philosophers.

Hesse, for example, has clearly shown some opposition to the Verstehen tradition in the social sciences[68] and Feyerabend, right after lauding those students of the social sciences who recognized that participation is decisive in achieving an understanding of a practice, notes that they have 'misdescribed' the phenomenon because of attachment to a Verstehen conception of things. And when Putnam talks about Verstehen it is usually to clarify what he has to say about implicit, non-formalizable, 'practical' knowledge. Unlike Rorty, Putnam invokes 'implicit' knowledge to account for necessary epistemological limitations, but unlike the classical Verstehen theorists, not to account for necessary ontological differences. Actually, both Feyerabend and Putnam are closer to Verstehen theorists than Rorty for both wish to speak of 'alternative forms of knowing'. For Putnam these are alternatives to 'explicit-sci-

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[68] For some of Hesse's critical reaction to the Verstehen tradition, see her article, "Theory and Value in the Social Sciences", Action and Interpretation: Studies in the Philosophy of the Social Sciences, ed. Christopher Hookway and Philip Pettit (Cambridge: Cambridge University Press, 1978).

entific' knowledge and for Feyerabend they are alternatives to 'Western-White-Man- Rationalism'.[69] Rorty, on the other hand, is quite comfortable with arguing that it "would make for philosophical clarity if we just gave the notion of 'cognition' to predictive science, and stopped worrying about 'alternative cognitive methods'".[70] By so arguing, he substantiates that his concerns are exclusively directed at culture and edification; he wishes that we will continue to view ourselves as poir-soi in addition to en-soi.

A social science influenced by a Rortian account of hermeneutics would have to drop the Husserlian and Weberian emphasis on intentionality. Explanations framed in the intentional idiom - whether they be so framed by the agent of by the radical ethnomethodologist - would be viewed as only one of may rudimentary bases from which we might come to understand exotic discourse and cultural lives. As Rorty himself states:

> The relation, on my view, between actions and movements, noises and assertions, is that each is the other described in an alternative jargon. ... The only general hermeneutical rule is that it's always wise to ask what the subject thinks it's up

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[69] The difference between all three might not be as great as they appear, however. Apart from possible differences in terminology (and the fact that Putnam has always been a stickler) the reason for the apparent differences might be that on the one hand we have a very careful and refined pragmatist and on the other hand two thinkers who are still mesmerized by the practical/theoretical knowledge distinction. And given that the latter two, especially Putnam, tend to conflate this distinction with the implicit/explicit knowledge distinction, one can see how these disagreements might have occurred. Further confusion is also precipitated by Putnam's more recent claim that practical knowledge is moral knowledge.

[70] Richard Rorty, Philosophy and the Mirror of Nature, p.356. As he continues, "The word knowledge would not seem worth fighting over were it not for the Kantian tradition that to be a philosopher is to have a 'theory of knowledge', and the Platonic tradition that action based not on Knowledge of the truth of a proposition is 'irrational'.

> to before formulating our own hypotheses. But this is an effort at saving time, not a search for the 'true meaning' of the behaviour.[71]

In de-emphasizing the importance of the actor's intentions and 'subjective meanings', Rortian hermeneutics is also critical of the methods employed by classical Verstehen theorists in their attempts to access them; namely, the psychological procedures of intuition and empathy. The Rortian hermeneuticist may well agree with Hyppolite's claim that "the growth of human culture is the growth of human sensibility",[72] but they will resist the temptation to try and provide a psychologistic theory and methodology that will both account for the phenomenon and show how we can more readily achieve it. To the extent that 'increased sensibility' helps to describe the process whereby peoples from 'alien' traditions are drawn into our discourse, its own value is at most edifying. It simply is another way of describing ourselves as beings who are becoming more familiar with their surroundings.

With this attack on the methodological validity of empathy and intuition comes an equally sustained attack in the notion of 'spontaneous understanding' whose alleged possibility has given much credence to the psychologistic methodologies that mark the history of the philosophy of the social sciences. Making familiar that which is unfamiliar is a long and painstaking process, often involving gradual changes to the parameters of what we have become accustomed to as 'normal discourse'. An intense 'be-in' with those we consider exotic will reveal no ghost in

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[71] Richard Rorty, "Method, Social Science, Social Hope", p.200.

[72] Jean Hyppolite, Studies on Marx and Hegel, trans. John O'Neill (New York: Basic Books, 1969), p.xvi.

their machine; nor will a careful Althusserian re-reading suddenly precipitate a ghost between the lines.[73]

On a Rortian constural of hermeneutics yet another long-honored concept for many philosophers of the social sciences will be consigned to a place in the conceptual museum. The 'a priori socialization of individual consciousness' through the subtle mandates of the Lebenswelt, which so may phenomenologists argue make the entire hermeneutical enterprise possible, is seen as yet another epistemic security-blanket employed by those who demand that their discourse have foundations other than 'mere opinion'. In demanding that all discourse be somehow ('unformalizably') normal, and arguing that without it hermeneutics is impossible, the defenders of this notion are forgetting that hermeneutics is necessary simply because some discourse is completely abnormal. The invocation of the Lebenswelt is, of course, an attempt to provide twentieth century substantive content to the old Hegelian claim that understanding is impossible "without the original unity and likeness of all spiritual content and without the original unity of all things in the Spirit".[74] On a Rortian account, however, the hypothesis of the 'unitary Spirit', and that of all its historical descendents, is seen as just something we might do in order to help us cope as translators of the abnormal. It is the result of an over-blown and enthusiastic 'benefit of the doubt'.

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[73] 'Ghost between the line' is a phrase borrowed from Rorty; although its sarcastic tone has been around for a while.

[74] As phrased by William Outhwaite, Understanding Social Life (London: Routledge & Kegan Paul, 1975), p.19.

In a similar fashion, Rortian hermeneutics does not signal a move from the study of subjective meanings to 'objective' Verstehen - wherein we attempt to understand the context of cultural meanings against which an action is produced. For Rorty, invocations of 'cultural contexts' and 'social webe of belief' embody no more than the old wisdom that in order to say something about one thing we need to know alot about other, 'related' things and presuppose even more about other, 'unrelated' things. As he states it, "Anything is, for purposes of being inquired into, 'constituted' by a web of meanings".[75] The fundamental claim of the 'objective Verstehen' theorists therefore emerges as a near truism, albeit one that is unable to delineate 'cultural' from 'physical' inquiries.

That the standard streams of hermeneutic thought in the social sciences are not going to receive much support from the 'post-epistemology' brand of hermeneutics advocated by Rorty is quite obviously due to Rorty's refusal to accept that we require an ontology of 'social' being that is radically distinct from an ontology of 'natural' being. Although it could be said that in rejecting the Cartesian-Kantian conception of certain knowledge Rorty has opted for a 'knowledge within being', it is very important to remember that he does not seek epistemological grounds for that knowledge. There is no First Philosophy, no 'dialectic of nature', and no special ontology of social being that is the province of the social sciences.

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[75] Richard Rorty, "Method, Social Science, Social Hope", p.199.

On a Rortian account there is at least a half truth in the much worn claim that 'the historicity of the political theorizer suggests the idea that political theory as a human activity is a hermeneutic event'. But instead of implicitly invoking the epistemic veil that is in part bestowed on us by the specificities of history, it would be more appropriate to say that the necessity for political theory to be hermeneutical simply stems from the fact that "conversation generates abnormal discourse as the sparks fly upward".[76]

Herein, it would be inappropriate to argue that Rorty transforms the Weberian basis of the theory of understanding into a vague sort of historical understanding. Weber's claim that we must 'understand' actions in addition to being able to give a 'casually adequate' explanation of them is, of course, transformed into the caution that we must not presuppose that: "our own spirit has now got hold of the best vocabulary for formulating hypotheses which will explain and predict all the other spirits (or, perhaps, the other bodies)".[77] This caution, however, is something which the most thorough-going naturalist could subscribe to; indeed, Rorty himself is no foreigner to the naturalist school. On this score, what philosophers of the social sciences might have to come to terms with is that a Rortian construal of hermeneutics can be employed in the same way as a positivistic construal of empathy. It must be recalled at this point that Rorty says that hermeneutics attempts to reinterpret abnormal discourse in the terms of our normal discours. Those defenders of the present state of normal discourse (the orthodox, non-

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[76] Richard Rorty, Philosophy and the Mirror of Nature, p.389.

[77] Ibid., p.350.

revolutionary elements in Kuhn's paradigms) can, therefore, view hermeneutics as an epistmeic parallel to the mercenaries who preceded the imperialists' armies. The ground which Rorty has cleared for this very possibility cannot go underestimated.[78]

There is also no reason to think that those influenced by Rorty's brand of hermeneutics will spend their energies trying to discern how the 'spirit of our age' can be distilled from the content of our various conversations. By making commensurate the voices of 'abnormal' discourse, they will allow us to hear the diversity of our times. The 'horizon of expectations' (as Gadamer would have it) which that diversity constitutes, however, is something which could just as well be left to the thinkers of tomorrow to rationally reconstruct off the pages of history. The 'brokeness of intersubjectivity' which hermeneutics attempts to resolve may well be of a historicist nature (because of its contingency) but this does not mean that we will never be confronted with the brutality of its presence. Reading and rereading the Great Books of the Past may well constitute the activity of those hermeneuticists influenced by the tradition of philology, but there is no reason to assume that those influenced by Rorty's conception of a post-Philosophical culture must spend their time doing the same thing. Rortians recognize that the result is always history, but appreciate that the process is marked by the development of techniques which help us to cope. Hermeneutics, on their score, is neither an epistemological theory of under-

[78] And conscious, stategic scientific realists - those who do not mind travelling a conceptual highway paved by good ol' American pragmatists - would be well-advised to explore this ground. The ground, of course, is not necessarily reserved for those orthodox defenders of present-day science, but the foot-working required to find a place on it might be a little tricky for those not so inclined.

standing nor a tool which we use exclusively for conversing with past.

Conversing with the present, however, does confront one with at least some small scale social and political considerations. And indeed, Rorty does believe that the declining importance of epistemology and of our responses to the Great Questions of the Past[79] will precipitate some dramatic cultural changes. It might, therefore, be beneficial to take a look at some of the changes that are alleged to be possible as well as how his views on such matters mesh with other work in social and political thought.

Rorty's views on hermeneutics and edifying philosophy could be used by social and political theorists in a variety of ways. They help to bring into sharp relief Arendt's emphasis on judging rather than truth, as well as the importance she assigns to examinations of the nature of the 'subjectivity' that is overcome when one ventures into the polity. They also provide a backdrop against which one can view her claim that the act of courage which makes possible an individual's 'self-disclosure' does not guarantee that the individual will be judged by his or her community as a hero and bringer of new worlds.[80]

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[79] For a look at how Rorty views these questions, their rational and historical reconstructions, and the impact that they have on our contemporary disciplinary demarcations see Richard Rorty, "The Historiography of Philosophy: Four Genres", Philosophy in History: Essays on the Historiography of Philosophy, ed. Richard Rorty, J.B. Scheewend, Quentin Skinner (Cambridge: Cambridge University Press, 1984), pp.49-75.

[80] For an interesting side-by-side look at Rorty and Arendt with Gadamer and Habermas employed as various mediators see Richard J. Bernstein, Beyond Objectivism and Relativism, esp. pp.197-223.

Analyses of what is involved in breaking out of, and being confined by, conceptual confines are, of course, prevalent throughout the work of many post-empiricists. In a fashion not unlike that of Kuhn, Rorty has argued that those who disembark from the confines of normal discourse through attempts at edification will either be proclaimed as kooks or revolutionaries. The desire to see ourselves as pour-soi as he argues, is in large part conditioned by how we see ourselves as en-soi. Feyerabend has also argued that science requires both the 'expert and the 'dilettante' and Goodman, in the style of philosophical Gombrich, has shown how the projectibility of alternative worlds is determined by the flexibility of our habitual standards.

All of this, of course, has major import for thos interested in cultural criticism. Our criticism of the reigning powers and standards that be, in addition to being well-timed, must be sensitive to the parameters of those standards. Much of Critical Theory,[81] in arguing that such criticisms must serve the interests of the revolutionary class - the future judges of normal discourse - has countenanced this very point. Therein, criticism was seen as possessing the seeds of the future world, and demanding that it serve particular interests (a demand fundamental to Machiavelli, Marx and Lenin) was a way of justifying its projectibility.[82]

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[81] I am thinking here of the times when it still appreciated the orthodox Marxist reasons for critique and its later Marcusian days. Habermas, of course, is calling the shots now. It will be interesting to see whether he continues in his early-Benjamin 'will to the future' style of theorizing. See Jurgen Habermas, The Theory Of Communicative Action: Volume 1: Reason and the Rationalization of Society, trans. Thomas McCarthy (Boston: Beacon Press, 1981), esp. pp.273-337.

[82] All apologies, of course, to Goodman for this rather sweeping termi-

Rorty's notion of edifying philosophy does, however, seem to countenance all kinds of cultural criticism - all those little 'sparks' that fly from the fiery conversations of mankind. This, of course, is no small baggage, and quite a mixed one at that. Even on a superficial (supermarket) level we find here everything from Leary's championing of a 'politics of ecstasy'[83] to Lasch's sniffling about a 'culture of narcissism',[84] and between them everyone from the Riessmans to the Tofflers. And this is not to mention countless culture critics who attempt to shatter our images of the present[85] and of the past,[86] and the cultural-cum-political indictments from the anarcho-Marxists to the William Buckleys - some of which include direct assaults on the whole notion of 'professionalized' philosophy and cultural criticism.[87] Rorty may well be serving up a dish he himself may not choose to taste.

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[83] Timothy Leary, The Politics of Ecstasy (London: Pantheon Books, 1970).

[84] Cristopher Lasch, The Culture of Narcissism (New York: W.W. Norton & Co., 1979).

[85] See, for a small example, Stuart Ewen, Captains of Consciousness: Advertising and the Social Roots of the Consumer Culture (New York: Mcgraw-Hill, 1976) and Stuart Ewen and Elizabeth Ewen, Channels of Desire: Mass Image and the Shaping of American Consciousness (New York: Mcgraw-Hill, 1982).

[86] And often in some very specific ways; see, for example, David Dary, Cowboy Culture: A Saga of Five Centuries (New York: Avon Books, 1981). Being a journalist and latching on to a topic like this might gain Dary the status of a Rortian 'edifier'! But this, of course, depends on whether, when Rorty says 'culture', he means all of culture.

[87] For a classic example, see Paul Nizan, The Watchdogs: Philosophers and the Established Order (New York and London: Monthly Review, 1971).

The recent work of both Rorty and Feyerabend is also presented in such a way as to make us question the place of both science and philosophy in our culture. Feyerabend, of course, is going out on alimb in his recent demand that voodoo be taught in our universities 'if that's what the people want'. Rorty is more reserved on the matter - primarily because he does not think that a culture which indulges science cannot at the same time indulge itself in edification. Both, however, appear quite unequivocal in their request for at least an increase in interdisciplinary studies within the university.

The role of literature is apparently to become quite important in this context. Rorty, Feyerabend and Putnam all seem to believe that with the declining influence of positivism on academic thought, the question 'how to live?' regains some of its old credibility. Apparently literature helps us in answering this question. Putnam puts the matter thus:

> I want to suggest that if moral reasoning, at the reflective level, is the conscious criticism of ways of life, then the sensitive appreciation in the imagination of predicaments and perplexities must be essential to sensitive moral reasoning. Novels and plays ... do something for us that must be done for us if we are to gain any moral knowledge.[88]

Now as we mentioned somewhat earlier, Rorty is not inclined to use the word 'knowledge' in such a generous fashion. Putnam actually has some reservations about its use as well, for he goes on to say that:

> No matter how profound the psychological insights of a novelist may seem to be, they cannot be called <u>knowledge</u> if they have not been tested.[89]

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[88] Hilary Putnam, "Literature, Science, and Reflection", <u>Meaning and the Moral Sciences</u> (London: Routledge & Kegan Paul, 1978), p.87.)

[89] Ibid., p.89.

A Feyerabendian, of course, would not be very happer with this construal of things. For them, different traditions test their 'insights' in different ways; the Don Juans of our planet appeal to the Yacqui 'way of knowledge', et cetera. Putnam also flexes on the matter here:

> Yet it is not correct to say that [a literary image] is not knowledge at all ... It is a knowledge of a possibility. It is conceptual knowledge.[90]

So although much terminological clarification is required it would be appropriate to say that Rorty, Feyerabend and Putnam all agree that because literature provides us with various 'ways of looking' at things it is indispensable to the question 'how to live?' Herein, they also receive support from Goodman. Putnam's inconsistencies on the matter only stem from the fact that he also wants to Moralize in a Kantian-style that is largely foreign to Feyerabend and Rorty.

In a recent article by Edward Davenport, a professor of English who, like Goodman, believes that post-empiricist developments draw into question the classical 'science as cognitive'/'art as non-cognitive' distinction, we are asked to view literature as a 'thought-experiment'. Davenport believes that the validity of this view finds particular credence in the social sciences:

> Social scientist routinely report that they find in literature evidence which they take to confirm, refute or criticize social science theories, or which they take to suggest better ways of formulating social science problems.[91]

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[90] Ibid., p.90.

[91] Edward A. Davenport, "Literature as Thought Experiment (On Aiding and Abetting the Muse)", Philosophy of the Social Sciences 13 (1983):281.

For Davenport, there is no good reason not to consider literature as a social science and, via a short journey through the history of political thought, he implicitly demonstrates what that discipline would look like if the use of literary images and devices was precluded. At this point the parallel to Goodman is most prominent:

> When a psychologist constructs a model of a person, or when a sociologist constructs a model of society, or when an economist constructs a model of the economy - and then draws implications from the model - they are all performing thought experiments.[92]

Rorty, therefore, as could only have been expected, is not alone in requesting interdisciplinary studies with an importance assigned to the fields of cultural criticism and literature. Several post-empiricist developments will continue to provide fuel for such requests in the social sciences. But the request, of course, is certainly not new and it will continue to be confronted with the same institutional and political opposition that it always has been.[93]

Interdisciplinary studies may well be required in a smoothly functioning 'pluralistic democracy' as Rorty and Feyerabend allege, but upon hearing their requests we are back to the well-worn and basic questions: 'do we have a pluralist democracy?'; 'is such a democracy, as well as the interdisciplinary studies it sponsors, possible or desirable in a technocratic socio-economic system?'. In short, as Rorty and Feyerabend fall out of Philosophy they must pass through the land where Dahl, Mac-

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[92] Ibid., p.283.

[93] For a lucid desription of some of the problems encountered in fulfilling such a request, albeit from a rather optimistic stance, see Cyril S. Belshaw, Towers Beseiged: The Dilemma of the Creative University (Toronto: McClelland and Stewart, 1974).

Pherson and Habermas have roamed for some time. And there they might be new-comers but they certainly won't be lauded as revolutionaries.

Arendt's emphasis on the distinction between plurality and interchangeability and her positive portrayal of the former is also reflected in the pluralism countenanced by many post-empiricist philosophers. Feyerabend's philosophical pluralism blends straight-away into his political pluralism. Rorty's pluralism, although it can be seen as a strategy initially developed to enable naturalism to continue as a progressive research programme that later was brought in to protect aesthetic-cum-cultural enhancement, has also recently become quite political. In fact, Rorty believes that his brand of philosophical pluralism can be used to help "celebrate bourgeois capitalist society as the best polity actualized so far".[94] And although the 'actual worlds' that Goodman claims he is talking about tend to be cognitive-cum-aesthetic ones, rather than the kinds one encounters on the streets of Manhattan or in the jungles of South America, his pluralism can also be seen as having substantial political overtones. For even the worlds that jump off the streets of Manhattan are worlds viewed, and hence framed, by our habitualized standards of perception.

Rorty's construal of philosophy along conversational lines can be seen as lending conceptual support to thinkers as diverse in orientation as Foucault, Gadamer and Oakeshott. The pluralism countenanced by him - his desire to hear a multitude of voices - would appear to have at least two concrete proposals contained within it. In a post-Philosophical culture the orthodox disciplinary lines which now seperate philosophy,

[94] Richard Rorty, "Method, Social Science, and Social Hope", p.210.

literature and cultural-political studies must be removed. This proposal we have already briefly considered. In addition, it would appear tantamount that social and political theorists both speak and listen to a large 'popular' audience. It is this very interchange of views amongst themselves and society at large that enables the academics of the post-Philosophical culture to feel comfortable with their consciousness of that culture's nature.[95]

We must, however, be cautious of too readily interpreting Rorty's views as possessed of a necessary political component. As his defense of hermeneutics is launched in light of the failures of traditional epistemology, so too are his comments on the 'conversation of mankind'. It must be kept in mind, however, that the 'epistemological breakdown' was not effected by the inadequacies of philosophy's political goals; rather, it was a result of anomolies which arose out of the attempts to achieve epistemological goals (Truth, Rationality, Representation). Therein, the guiding hand was epistemic virtues, not political ones. On at least this score, therefore, the breakdown of the epistemological community need not have any necessary political ramifications.

Rorty appears to be of the opinion that the declining importance of the epistemological enterprise will signal the future eroding of the disciplinary lines that now separate literary, philosophical and cultural studies. He does not seem to seriously consider the possibility that

[95] 'How can the post-Philosophical culture exist with a consciousness of its own nature?' is a question which seems to perplex Bernard Williams in a recent review of Rorty's position. See Bernard Williams, "Critical Review: Consequences of Pragmatism", New York Review of Books, April 28,1983. He is, of course, referring to the consciousness that one has no epistemic foundations for what one says and no moral foundations for what one does.

epistemology will die a natural disciplinary death (akin to that of alchemy, for example) and that other disciplinary demarcations will stay in place. In other words, he believes that the decline of the importance of epistemology will precipitate some dramatic changes for a post-Philosophical culture and largely ignores the possibility that our future culture might well be our present one minus professional epistemologists. What I wish to note here is the possibility that Rorty still assigns an unwarranted importance to epistemology, albeit an importance attributed to its death rather than to its life. 'Philosophy' has served as Rorty's community, he has been trained in its 'disciplinary matrix'. In trying to understand its death, he assumes that everyone else is also trying to understand it. In rearranging his life, he seems to believe that everyone else will soon be rearranging their's.

It is Rorty's claim that philosophy, in its hermeneutical dress, should keep the 'conversation of mankind' going. Images of 'democratic pluralism' immediately come to mind. It must be remembered, however, that when Rorty speaks of the 'conversation of mankind' he really means, in a more precise and revealing fashion, 'the conversation Plato began'. Now one could, of course, question whether Plato - or any one for that matter - started such a conversation and, correlatively, whether philosophers (as hermeneuticists) are going to keep it going. Yet Rorty thinks that more people than 'philosophers' are going to converse in the conversation of the future - this why he speaks of post-Philosophical culture. Apparently this indicates that the future of hermeneutics will not be constituted by a series of studies of Gadamer, Wittgenstein, and Heidegger by Gadamerians, Wittgensteinians and Heideggerians. One

could, however, be nasty when further exploring what Rorty is really suggesting.

Does Rorty mean that, in attempting to bring them into normal discourse, hermeneuticists will actually converse with the voice that stems from other 'traditions' and 'forms of life'? Does he mean that they will conduct conversations with the Hell's Angels or the latest Family out of Sicily? Perhaps we will find them dropping by Death Row to conduct interviews (hermeneutical ones, of course) with the latest breed of recreational killers? Or will we find them on the battlefields of Central America or the streets of South Africa? For that matter, will we find them on the streets at all, anywhere? Perhaps they will sneak into the corporate boardrooms and give us a 'look' at the discourse of high finance. Maybe they will help the 'conversation' between Blacks and Chicanos in Los Angeles go a little more smoothly. Maybe some will even be venturesome like Sartre and provide us with a glimpse of the 'Saint Genets' that roam the docks of Barcelona.[96] After all, if they possess the tools and desire for facilitating the conversations of mankind, why shouldn't they? Maybe they will play it safe instead and subcontract to the William Burroughs and Hunter S. Thompsons. All of these possibilities would have to be worked out carefully, I imagine, before the hermeneuticists could be expected to depart from the comfort of the normal discourse that nurtured both respect and freedom in them - that told

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[96] The contrast between Genet and Sartre is a good case in point here. From Genet (The Thief's Journal: Our Lady of the Flowers) we get some of the most sensual writing around. From Sartre (Saint Genet) we get an image of Genet as constitutive of every historical archetype that has been alleged to exist; i.e., we get sensuality phenomenologized French-style. The latter, I believe, would be the kind of 'voice' we would, unfortunately, hear from Rortian edifiers.

them how they were en-soi and then allowed them to be pour-soi.

Paul Feyerabend is one post-empiricist inclined towards pluralism who is more to the point on this matter:

> It is clear that a fruitful exchange between science and 'non-scientific' world views will be in even greater need of anarchism than is science itself.[97]

Clearer about the method, Feyerabend is also clearer about the solution: 'fundamental debates between traditions will be settled by no higher authority than the authority of laymen, i.e., democratic councils'. And it is at this point that we have arrived at a fundamental question posed by all democratic theory; namely, 'how do we limit public power so as to maintain the survival and enhance the quality of individual life?'.

When we get down to the nitty-gritty institutional considerationa of the pluralism advanced by Rorty and other post-empiricists we are at stage one in Anglo-American democratic theory. It becomes requisite upon us to respond to the problems encountered in articulating what a social optimum is and to recognize the gist of Arrow's proof that a social choice function is always dictatorial. And here we come face to face with the fact that "the assumption of unanimity is the idealist view of political philosophy.[98]

It must be granted, of course, that Rorty's advocation of pluralism is largely prescriptive. In addition, the request to hear a multitude of voices does not necessarily mean that one need concern themselves with the problems encountered in trying to base a social welfare func-

[97] Paul Feyerabend, Against Method, p.180.

[98] Kenneth J. Arrow, Social Choice and Individual Values (London: Yale University Press, 1973), p.74.

tion on individual preferences. The literature does reveal, however, that Rorty's prescriptions are being taken quite seriously by some social and political theorists. In a recent publication, Richard Bernstein has lauded Rorty's "advocacy of a type of pragmatism that changes our orientation for coping with human problems".[99] For Bernstein, such an advocacy "is also directed to cultivating the types of communities in which human solidarity and 'Socratic virtues' are concretely embodied in social practices".[100]

So construed, this is the point at which Rorty's social hope emerges with social design. And Bernstein (and Feyerabend) argue that this design should be effected from the bottom up. The call is then made for 'conversation communities' in which 'civility and the moral life' can be sustained. Apparently the 'recovery of the hermeneutic dimension in science', which Bernstein feels post-empiricist thought has achieved, leads to a recovery of Rousseanian political philosophy in social-political theorizing. The question does remain, however, whether the desire to establish such communities must presuppose the Jeffersonian ideal of a genuinely free society constitutive of a hierarchy of self- governing units. For as Jefferson's ideal must respond to the fact that only certain hegemonic structures (read constitutions) can facilitate the establishment of such units, so must Bernstein's (and Rorty's) goal take note of the fact that only certain 'normal discourses' can facilitate a plurality of voices.

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[99] Richard Bernstein, Beyond Objectivism and Relativism, p.228.

[100] Ibid., pp.228-229.

The quandry that we get into with Rorty's view at this point has a parallel to the dilemma encountered in much of the Gadamerian strain in hermeneutics; namely, how and when do we invoke traditional elements and how and when do we invoke innovative elements? But most primary: how do those traditional elements prevent us from countenancing the innovative elements? Gadamer tends to emphasize a conservation with history and is very much inclined to be sympathetic with traditional (conservative) elements. Rorty is also well aware that traditional elements cannot be underemphasized; but when one emphasizes a conversation with the present,[101] as Rorty does, one cannot avoid institutional questions. One cannot avoid the question of power.

One might argue that in a post-Philosophical culture Rorty's hermeneuticists are going to play a role similar to that of Gramsci's 'organic intellectuals' in stimulating the construction of 'conversational communities'. We would, however, have to decide where we are going to 'plant' them; i.e., we are going to have to discover where the various voices will be 'self-disclosed'. The problem here is reflected in what Sartre has constantly reminded us of; namely, that there are numerous mediations that interfere with the development of class consciousness - the workers do not spend all of their time in the factories. For our purposes we might say: the development of self-disclosures are mediated

[101] It might be noted at this point that the dichotomy between history and the present implied here has been formulated in a variety of ways. Those who would like to do away with it all together and are inclined to argue that the quotidianal does not stand in the way of an understanding of history might find some stimulation in Lefebvre's claim that "the history of a single day includes the history of the world and civilization" (Henri Lefebvre, Everyday Life in the Modern World, trans. Sacha Rabinovitch (London: Allen Lane, 1971), p.4.) Apart from exhibiting phenomology at its most mystical, such a claim presupposes that 'history' does in fact exist.

in a variety of ways by normal [102]

Foucault is another thinker who wishes to view philosophy along conversational lines. He, however, has chosen to devote his energies to analyzing (or, at least, 'attempting to portray') the forms of power which control and delimit the parameters of our (normal) discourse. From Foucault's perspective:

> In every society the production of discourse is at once controlled, selected, organized and redistributed according to a certain number of procedures, whose role is to advert its powers and its dangers, to cope with chance events, to evade its ponderous, awesome materiality.[103]

As far as Foucault is concerned, the structures of power perpetrate a rarefaction among speaking subjects:

> None may enter into discourse on a specific subject unless he has satisfied certain conditions or if he is not, from the outset, qualified to do so ... not all areas of discourse are equally open and penetrable; some are forbidden territory (differentiated and differentiating)...[104]

For whatever reasons, Rorty largely side-steps this point of contact between his views and those of Foucault. His tactic up to this point has been to play off Dewey's optimism with what he sees as Foucault's under-estimation of the possibility of human solidarity. As Rorty sees things:

> Dewey and Foucault make exactly the same criticism of the tradition. They agree, right down the line, about the need to abandon traditional notions of rationality, objectivity, method, and truth ... But Dewey emphasizes that this move 'beyond

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[102] discourse. For a look at various kinds of self-disclosures as well as the political risks encountered by them see Sheldon Wolin, "The Politics of Self-Disclosure", Political Theory 4 (1976):321-334.

[103] Michel Foucault, "Orders of Discourse", Social Science Information 10 (1971):8.

[104] Ibid., p.17.

> method' gives mankind an opportunity to grow up, to be free to make itself ... His experimentalism asks us to see knowledge-claims as proposals about what actions to try out next...[105]

As I see it, both Rorty (Dewey) and Foucault have something to contribute on this matter. And I believe that Foucault's constant attempts to make us aware of the omnipresence of power actually finds a place in Rorty's over-all philosophy.

Rorty believes that with the recognition that knowledge has no foundations comes the awareness that we are able to try out a variety of different descriptions of ourselves as beings-in-the-world. He does, however, also argue that we must keep in close touch with what constitutes the confines of normal discourse. If we do not keep so aware, in our search for alternative descriptions, we soon move beyond the place from which edification becomes possible into the land of the totally incommunicable. There is a fine line over which one passes from edification into 'kookery'. In short, we must be aware of the confines of normal discourse, for it is an awareness that provides us with an implicit understanding of the range of edification that is possible.

To a very large degree, therefore, anyone who helps us become aware of the parameters of normal discourse - and where they are most strongly in place - assists in the goal of edification. Foucault's depiction of the loci of power and 'directed' communication is helpful in just this way. Dewey's and Rorty's optimism must respond to the Foucaults among us if it is to have any pay-off.

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[105] Richard Rorty, "Method, Social Science, and Social Hope", p.204.

Science, Feyerabend informs us, needs both the expert and the dilettante (Kuhn, of course, says the same thing, 'in the long run'). A post-Philosophical culture would require both its Deweys and Foucaults. If it purports to be a culture wherein more than book-reading is done (and even if it doesn't) it doesn't have a 'sting' without its Foucaults.

By helping to explore where the external threats to our 'freedom' lie - by the very act of rendering them threats - it is the Foucaults that may precipitate those sudden comprehensions of mutuality that accompany the perception of a common threat.[106]

Although in a way quite contrary to how Foucault might be tacked on to a Rortian political philosophy, the views of Karl Mannheim, as they concern the strategical component of utopian 'possible community' projections, might also help in broadening the parameters of Rorty's edifying philosophy. Here again we might see the post-Philosophical culture as giving credence to the advocacy of social science as design science.[107]

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[106] The debates between those sympathetic to Foucault's approach and those sympathetic to Rorty's will undoubtedly continue to proliferate in social and political theory circles. So will those debates that take as their point of departure the hiatus that exists between the views of Rorty and Foucault and Habermas on the nature of communication in general. For both Rorty and Foucault there is no 'pure form' of communication that lies presently oppressed somewhere. Hence Rorty refers to normal and abnormal discourse and Foucault to 'directed' conversations. Habermas, on the other hand, has been quite to the contrary in developing his thesis of 'distorted' communication, and employing, in near Weberian methodology, his notion of the 'ideal speech situation'. For Habermas' views on the matter see Jurgen Habermas, Communication and the Evolution of Society (Boston: Beacon Press, 1979).

[107] Mannheim, it might be added, may well come to be seen as someone who mediates the views of Foucault and Rorty, for he also emphasizes the

Perhaps prevented from doing so by his Jamesian pragmatist roots, however, Rorty does not provide us with an explicit analysis of how edification or hermeneutics is possible. No specific depiction is given of how traditional conventions are to be examined nor is one given of what facilitates the 'conversation of mankind'. Normal discourse just 'goes on' and the conversation, facilitated by hermeneutics, 'simply works'. This lacunae, perhaps one inevitably rooted in that which may exist between description and explanation, will undoubtedly continue to interest post-empiricist social and political theory. If alternative discourses and ways of social worldmaking are deemed possible by post-empiricist philosophy, social and political theorists so influenced will find it most difficult to avoid offering explicit formulations in response to the inevitable question, 'how, and when, are such alternatives possible?'.

5.4 METAPHOR AND THE SYMBOLIC CONSTRUCTION OF SOCIAL WORLDS

With the decline of the positivist emphasis on the syntax of formal language and its ability to portray the logical structure of the world, an increasing amount of the research began to center on the Duhem-Quine thesis of the network theory of language and on the nature of ontological commitment implicit in everyday discourse. The former branch of research became very much the province of post-empiricist philosophers of science whilst the latter branch, stimulated by the investigations of Ryle, Austin and Wittgenstein, was primarily attended to by 'ordinary

importance of understanding the power that directs, and is implicitly within, hegemonic structure. See Karl Mannheim, Ideology and Utopia: An Introduction to the Sociology of Knowledge, trans. Louis Wirth and Edward Shils (New York: Harvest Books, 1936).

language' philosophers. Yet although research was being stimulated along radically different lines, the territory being explored remained within the parameters determined by the 'turn' which twentieth century philosophy had taken after Frege. The function of language and its structural relation to the world was still deemed of paramount importance.

In spite of their willingness to entertain the possibility that the linguistic determination of meaning and reference is ubiquitous even within science, most post-empiricist philosophers have largely avoided expending too much energy on examining the role of metaphor and the other tropological uses of language in this and other contexts. A variety of explanations, of course, could account for this phenomenon. For example, it could have been that a theory of metaphor was not perceived as adequate or pertinent to the task of undermining positivist presuppositions. The pillars upon which these presuppositions rested - foundationalism, reductionism, universal reason, epistemic convergence - perhaps appeared to run so deep to those who wished to uproot them that using anything less than the conceptual dynamite that often results from historical and psychological investigations was precluded from the outset. Yet another possible explanation is that the underminers still remained largely tied to the Lockean tradition which had enabled the philosophy of <u>science</u> to look so respectable in the first place and simply assumed, along with their blood brothers, that metaphor, being the seducer that it was, should be completely avoided.

Nevertheless, whatever the reasons have been for the dirth of research on metaphor by post-empiricist philosophers one can only say that the conceptual dynamite used has only left fragments of the positivist

pillars and that the paranoia one feels when confronted by a seductress has subsided over time. In fact, recent frolicking with the great seductress by Quine, Davidson, and Kuhn, regardless of their cautious approach, is proof positive that Goodman's concern with metaphors' ability to make and remake worlds is not a sign of an individual psychosis.[108]

As we have noted, however, many post-empiricists have been hard pressed to concede very much importance to the role of metaphor. Karl Popper, for example, in warning us of the conceptual and political dangers in applying the terms of science to the study of society has argued that in describing changes in social organization as 'movements' "we ought to be clear that we are simply using a metaphor, and a rather misleading one at that".[109] It is his view that when social scientists employ such a metaphor they can only hope 'to convey some intuitive impression' and that if they use it with 'scientific pretensions' their discourse enters the realm of 'jargon'.

Popper's belief, of course, is that much of social science, especially in its historicist and evolutionist guises, is plagued with not knowing 'where metaphor ends and serious theory begins'. Science, on the other hand, is aware of this divide and to the extent that it is worthy of its name, it has moved beyond metaphor. On Popper's account, it must be noted, the scientific enterprise is marked by the extirpation of explanations from the essentialist statements and descriptions sought by

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[108] Group psychosis, of course, is another matter still. Yet that, for better or for worse, has been something of which philosophical communites have been largely unconcerned.

[109] Karl Popper, The Poverty of Historicism (New York: Harper Torchbooks, 1964), p.113.

'what is it' questions. Although this construal of things can be argued to be compatible with the claim that descriptive statements usually define the parameters within which our explanations operate, it often belies the fact that science claims to have knowledge of particulars in addition to knowledge of relations. Popper's general view on the matter is actually quite akin to that of Quine's, wherein it is argued insistently that scientific knowledge is achieved by 'clearing tropes away'.[110] Speaking quite metaphorically, Quine reminds us that 'after play all serious men get down to work'. On a Quinean construal one might say that metaphors help dig the tunnels which provide science with epistemic access to the 'real' - although these tunnels, nevertheless, serve as their inevitable graves.[111]

Popper and Quine are not the only post-empiricists who deny metaphor a central cognitive function within science. Donald Davidson, in denying metaphorical statements a truth-value, also pays much lip-service to the standard substitution theory. Even Polanyi, who, as we have seen, chooses to countenance non-explicit ways of knowing, seems sympathetic to the claim that metaphors are maintained in art but destroyed in science.[112] In a similar fashion, Kuhn, in stating that "unlike art, sci-

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[110] W.V.O. Quine, "A Postscript on Metaphor", On Metaphor, ed. Sheldon Sacks (Chicago Press, 1979), p.160.

[111] In a similar, yet slightly more sympathetic fashion, Martin and Harre argue that the role of metaphor in scientific theory construction is largely akin to that of intentional catechresis - used for 'filling in' lexical gaps in a language. On their view, metaphor assists science in substituting dispositional attributes for occurrent ones by supplying predicates whose intensional content is greater than the extensional. For a reading of their thesis see, J. Martin and R. Harre, "Metaphor in Science", Metaphor: Problems and Perspectives, ed. David S. Miall (Sussex: The Harvester Press, 1982).

ence destroys its past",[113] could be interpreted as believing that scientific knowledge is able to extirpate itself from its symbolic origins. However, on a more adequate reading - one that takes into account his historicist understanding of science - Kuhn can be seen as saying no more than that within paradigms science forgets it old symbolic origins (to the same extent that it forgets its old research problematic). On such an historicist interpretation science could still be very much ridden with symbolic activity.

In fact, Kuhn is amongst those post-empiricist philosophers who are willing to draw radical conclusions from an investigation into the nature and function of metaphor, thereby bringing into serious question the ontological and epistemological assumptions inherent in Popper's and Quine's views on the matter. It is Kuhn's belief that those philosophers who argue that metaphors are 'cleared away' after they assist us in 'zeroing in' on a phenomenon or entity presuppose that nature has only one set of joints - to which we gain epistemic access through verificationist or falsificationist procedures. As Kuhn sees it, however, there is "no historical evidence for a process of zeroing in".[114] In fact, he is even willing to admit that "metaphor reminds us that language might have located different joints".[115]

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[112] Michael Polanyi and Harry Porsch, Meaning (Chicago: University of Chicago Press, 1977), p.100.

[113] Thomas Kuhn, "Metaphor in Science", The Essential Tension: Selected Studies in Scientific Tradition and Change (Chicago and London: The University of Chicago Press, 1977), p.345.

[114] Thomas Kuhn, "Metaphor in Science", Metaphor and Thought, ed. Andrew Ortony (Cambridge: Cambridge University Press, 1979), p.418.

[115] Ibid., p.414.

On a Kuhnian construal, in an enterprise such as science instrumental effectiveness cannot be divorced from ontology - regardless of whether that ontology is dictated by 'observational' or 'theoretical' terms and statements. The indeterminateness associated with metaphor extends across both Quine's 'occasion sentences' and the explanatory principles of 'serious theory' which Popper alleges demonstrate that the scientist has moved beyond metaphor.[116] For Kuhn, when one examines the function of metaphor it becomes very questionable whether we should talk of accomodating language to the world rather than of accomodating the world to language.

From a consideration of Kuhn's view on the role of metaphor in science we can get a glimpse of the kind of rationale that drives Goodman to countenance metaphor as one of the most important ways of worldmaking. In fact, it is the work of Goodman that lays the philosophical groundwork for seriously entertaining the idea that metaphor has the capacity to redefine, and provide models for the rereading of, reality in substantial ways. And of course, the ramifications that such a philosphical groundwork could be seen as having in social and political theory is profound indeed.

It is the combination of this sort of groundwork with a neo-Chomskian ideational theory of meaning which has led Lakoff and Johnson to argue that linguistic metaphors are governed by metaphorical structures that

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[116] Another philosopher who might well be deemed a post-empiricist, Mary Hesse, goes so far as to suggest that the "deductive model of explanation should be modified and supplemented by a view of theoretical explanation as metaphorical redescription of the domain of the explanadum". See Mary Hesse, "The Explanatory Function of Metaphor", Revolutions and Reconstructions in the Philosophy of Science (Bloomington, Indiana: Indiana University Press, 1980), p.120.

run deep into our thought and experience. It is their belief that if "our conceptual system is largely metaphorical, then the way we think, what we experience, and what we do every day is very much a matter of metaphor".[117] Their examination of what they percieve as the omnipresence and indespensableness of metaphor in the organization of everyday life results in their conclusion that "The acceptance of the metaphor, which forces us to focus only on those aspects of our experience that it highlights, leads us to view the entailment of the metaphor as being true".[118]

In a similar fashion, many social and political theorists, having freed themselves from the intellectual confines of the orthodox 'language of social research' inspired in large part by the positivistic understanding of science, have hypothesized that social and political worlds, as well as the theories used to reach an understanding of them, are structured in large part by the omnipresence of metaphor. This hypothesis is often applied when examining the history of political thought, since that history, we are all aware, provides a landscape which is abundant with metaphorical descriptions. Plato's cave analogy (perhaps the most widely acknowledged metaphor in political theorizing), the countless physiological metaphors in Hobbes, and the various technical metaphors that proved indispensable in providing systems and cybernetic theory with their initial coherency, can be readily cited as prominent examples.

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[117] George Lakoff and Mark Johnson, Metaphors We Live By (Chicago and London: The University of Chicago Press, 1978), p.3.

[118] Ibid., p.157.

Investigations into the use of metaphor throughout the history of political theory can prove inspiring for a vaiety of reasons. For one thing, they can help to demonstrate the presuppositions of such theories. The darkness of Plato's cave and the anarchy depicted by 'state of nature' metaphors clearly depict the world that Plato and Hobbes believed the human animal would be destined to populate without leaders and the state apparatus. Although in one sense the validity of these presuppositions need hardly concern us in the twentieth century (since an attempt to bring about the experimental situation in which to test them would be ludicrous if not impossible), an awareness that they might have been entrenched by way of metaphor could lead to some interesting questions about our alleged origins. It might even lead us to appreciate the implicit modes of social organization that preceded the establishment of the first Western polities - modes of organization that are often brushed over by grandiose 'systems' accounts.

In addition to an understanding of the presuppositions of the distant past, examinations into the use of metaphor in political theory may also help to provide an understanding of our present presuppositions. Although the metaphorical origins of many of these presuppositions are often eclipsed through our contemporary tendency to speak in terms of social scientific models, it is quite clear that in the last four centuries metaphors used in the social sciences have been drawn primarily from the domain of the natural sciences. As Martin Landau observes:

> Mechanism underwrote a rigidly structured formalism that made possible an almost wholly deductive study of politics. Evolution stimulated the 'pragmatic revolt' that overthrew formalism and transformed political science into an empirical discipline. The contemporary revival of a theoretical politics derives much from prevailing models of 'system', few of which are mechanical (closed), most of which are biological

(open).[119]

It has often been argued that although the transfer of metaphors from the natural sciences can reap many research benefits, it can also, given their uncritical acceptance, lead to a constraining view of the way the social and political world hang together.[120] There can, of course, be no doubt that in addition to serving as a device of understanding, metaphor can also be quite dangerous; as a political tool it can just as easily be used by those seeking 'freedom' as it can be used by those seeking 'control'. This fundamental aspect of metaphor has been reflected in Ted Cohen's observation that metaphor, like humor, can be used to create intimacy, but that it can also, like an 'in-joke', be used to preclude the possibility of intimacy (for those on the 'out').[121]

Now a variety of arguments against the uncritical acceptance of 'scientific' metaphors in social and political theory can be offered by those who desire to see the social sciences become more 'naturalistic'. For example, it could be argued that because many social theorists are unaware of the intricacies of scientific developments, in choosing to use a metaphor to express a structural or relational similarity between certain 'social' and 'natural' phenomena they may be misconstruing the use to which it is put within the scientific theory. Its use in the so-

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[119] Martin Landau, Political Theory and Political Science, p.79.

[120] That metaphor can constrain and assist research is also true in the 'natural' sciences. This dichotomy, however, actually underemphasizes the complexity of their role. See, W.H. Leathersdale, The Role of Analogy, Model and Metaphor in Science (Amsterdam: North-Holland Publishing Company, 1974).

[121] Ted Cohen, "Metaphor and the Cultivation of Intimacy", On Metaphor, ed. Sheldon Sacks (Chicago: University of Chicago Press, 1978), pp.1-10.

cial theory to which it has been transferred may therefore precipitate a kind of understanding possessed of nothing more than scientific pretentions. Such is undoubtedly the case for those metaphors drawn from 'information-processing' theory and other artificial intelligience developments wherein it appears that one can easily separate functional from structural components. For example, in selecting a metaphor like 'feedback', which has largely functional connotations, one must be sure that the structural medium wherein such a relation is realized is not exclusive to a specific range of entities and their corresponding properties.

Another reason for opposing the premature transfer of metaphors from the natural to the social sciences is that the explanatory resources of the latter, even on an historicist reading, are not up to par with those of the former. To some degree, it could be argued that this reason is only a distillation of the previous argument. What needs emphasizing here, however, is that even if the metaphor borrowed from the natural sciences is justifibaly employed (apropos the previous argument), the resources requisite for offering an acceptable explanatory account (a 'laboratory'; the repeatability of the experiment; prediction; et cetera) may not be available. What the ultimate effect might be, therefore, is that the research potentials opened up by the metaphor are limited to offering an array of what Popper has called 'essentialist' statements. The social sciences would become increasingly constituted by descriptive accounts and the metaphors which stimulate such accounts would brush over other more specific areas of inquiry that might be susceptible to nomological explanations.

Many social theorists who warn against the transfer of metaphors from the natural to the social sciences, however, are not worried about how such a transfer may come to interfere with the development of nomological explanations. For them, the primary danger of such a transfer of metaphor is not so much the confining parameters which it bestows on research as it is the confining parameters into which it corrals speculative thought and other, 'non-scientific' ways of knowing, in addition to the over-arching political ramifications that ensue. In fact, the major concerns of the theorists who offer an opposition to such a transfer of metaphor parallel in many ways the concerns of those commentators considered in our first chapter who have something negative to say about the rationalization of society and the scienticization of modes of knowing.

One of the major complaints offered by this group is that the growing prevalence of mechanical and evolutionary metaphors in social and political theory reflects the fact that social scientists are increasingly following the blind dictates of scientific theorizing whilst at the same time bypassing considerations of the nature of human agency and responsibility. By accepting the picture drawn by scientific metaphors, social and political theorists become accomplices in the procrustreanization of the human being. In a social science dominated by such metaphors, so the story goes, the raison d'etre of public policy comes to be seen as efficiency and the neutralization of 'factors' contributing to systemic imbalance (and an 'imbalance', it might be added, largely defined by those metaphors).

Those opposed to the transfer of metaphor from natural to social science on the grounds that it inhibits the growth of scientific theory construction usually emphasize the inappropriateness of specific metaphors. In contradistinction, those who argue that the transfer facilitates the rise of scientism tend to concentrate their attack on what have come to be known as 'root' or 'dominant' metaphors.

Almost forty years ago Stephen Pepper, in noting that hypotheses framed intitally on the basis of a small set of facts soon expand in reference and become world hypotheses or metaphysical systems, argued that "the set of facts which inspired the hypothesis is the original root metaphor".[122] In fact, it was Pepper's view that most of philosophy is generated by the interchange of "alternative world theories based on different root metaphors".[123]

This notion of a root metaphor is strongly reflected in Landau's examination of the metaphoric usage made possible by the metaphors of mechanism and evolutionism and in his claim that such a metaphor "structures inquiry, establishes relevance, and provides an interpretative system".[124] In a similar fashion, another commentator has argued that within the 'paradigm' of the 'pragmatic theory of the positive state' the "dominant metaphors are organic, evolutionary, and institution-

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[122] Stephen C. Pepper, "The Root Metaphor Theory of Metaphysics", Essays on Metaphor, ed. Warren Shibles (Whitewater, Wisconsin: The Language Press, 1972), p.20. See also Stephen Pepper, World Hypotheses: A Study in Evidence (Berkeley and Los Angeles: University of California Press, 1948).

[123] Ibid. He further argued, in World Hypotheses, that when 'cognitive use' is taken into account the multiplicity of metaphors 'melt down' to four standard root metaphors.

[124] Martin Landau, Political Theory and Political Science, p.100.

al".[125] By insinuating that a Kuhnian construal of science can strengthen the coherency of the notion of a root metaphor, such a claim gives credence to the views of those who argue that the root metaphors which facilitate further metaphorical transference can be confining. In fact, two other commentators, implicitly countenancing Wolin's paralleling of paradigms and political society, argue that "in normal science, as in normal political times, the governing paradigms or root metaphors are not brought into question".[126]

There can be no doubt that this style of argumentation - which combines Kuhn's views on paradigmatic orthodoxies with the view that root metaphors can confine intellectual development and neutralize political dissent - will continue to attract a following that must be reckoned with. In fact, it is a style of argumentation that helps us to give credence to a similar development within social theorizing circles. Partly stimulated by post-empiricist attacks on foundational epistemologies, many social and political theorists interested in the study of metaphor have begun to look more closely at the metaphors which underline, and give coherency to, those very epistemologies. As the introduction to the thesis noted in passing, much of the history of social and political thought has been rooted in certain epistemologies. And even if we accept, along with Rorty, that this claim is only the result

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[125] Charles Anderson, "Political Theory and Political Science: The Rediscovery and Interpretation of the Pragmatic Tradition", What Should Poltitical Theory Be Now?, ed. John S. Nelson, p.393.

[126] Richard Harvey Brown and Stanford M. Lyman, "Symbolic Realism and Cognitive Aesthetics: An Invitation", Structure, Constciousness and History, ed. R.H. Brown and S.M. Lyman (Cambridge: Cambridge University Press, 1978), p.8.

of a rational reconstruction[127] whose parameters have been determined by the rise of the 'theory of knowledge' over the last couple of centuries, there can be no doubt that the twentieth century has witnessed an epistemological turn in the study of politics and society. Atempts to explore the metaphorical roots of such epistemologies could, therefore, prove quite inspiring.

For many social and political theorists the most grandiose pressuppositions of our times have been solidified into 'obvious truths' by dominant ocular metaphors. The argument advanced is that due to the relative stability in visual sensation, ocular metaphors have helped to largely justify our search for epistemic certainty.[128] And it is our presupposition of epistemic certainties that guide the search for stable, non-historicist, political objects. For these theorists, the declining validity of the visual metaphor dominant in epistemology, and political and social theory, may well signal a turn to social science studies governed by anti-ocular metaphors whose goal is therapeutic edification rather than foundational/systematic theory building.[129] Herein, it is argued that metaphors borrowed from the art of <u>reading</u>, which are

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[127] Rorty oftern warns of the danger of such reconstructions, because he feels they both give rise to, and pride, our Whiggishness. He does, however, also claim that there is much to be gained from the fact that 'the history of philosophy, like the history of anything, is written by the victors'. See his article, "The Historiography of Philosophy: Four Genres", <u>Philosophy in History</u>, ed. R. Rorty, et.al., pp.49-75.

[128] Proof for their pudding also can be seen as resulting from the fact that when hallucinations are taken into consideration, many philosophers opt for coherence theories of knowledge.

[129] See the brief discussion in Allan Megill, "Martin Heidegger and the Politics of Crises", <u>What Should Political Theory Be Now</u>?, ed. John S. Nelson, pp.264-304.

especially abundant in Gadamerian hermeneutics, will more adequately take account of the 'subject' and help us understand that systematic accounts of the social and political world are largely constructed rather than built upon phenomena which are 'discovered'.

In a similar fashion, some social and political theorists have objected to the predominance of ocular metaphors in the social sciences because such metaphors are unable to come to terms with the fact that most political things cannot be seen. Eugene Miller, for example, in attempting to come to terms with the fact that 'the language of political inquiry is inescapably metaphorical', has argued that visual metaphors seem particularly unsuited given the role of metaphor in such inquiry; namely, providing "a way of moving from the observable or sensible to the political".[130]

The willingness to hold the realm of the political as somehow transcendent in this manner has motivated other attacks on the reliance of visual and all other sensory metaphors. The views of Arendt are particulary notable in this context. In accepting, in a manner not unlike Pepper and even Kuhn, that all philosophical language is metaphorical, Arendt suggests that metaphor's ability to bridge "the gap between inward and invisible mental activities and the world of appearances, was certainly the greatest gift language could bestow on thinking and hence on philosophy".[131] She, too, however, warns of the danger of certain metaphors, especially to the extent that we use them to clarify the na-

[130] Eugene Miller, "Metaphor and Political Knowledge", The American Political Science Review 73 (1979):163.

[131] Hannah Arendt, The Life of the Mind: Volume One: Thinking (New York and London: Harcourt Brace Jovanovich, 1977), p.105.

ture of what she considers to be the primary activity of the mind - thinking. For Arendt, no metaphor drawn from the senses can possibly illuminate the activity of thinking. If it is attempted - as she believes the reliance on the metaphorical language of vision in Western philosophy reveals - the outcome is the intellectual pitfalls of philosophical dualisms and the incipience of scientism. The latter, in its reduction of thinking to cognition, deals a death blow to the reflective and creative aspect of this special activity of the mind. Arendt therefore argues that "the only possible metaphor one can conceive of for the life of the mind is the sensation of being alive".[132]

Arendt's entire philosophical edifice is itself, however, constituted by numerous dualisms[133] that reflect a strong Heideggerian attempt[134] on her part to break free of the invasion of positivistic thought in the social sciences. These dualisms to which she so intensely subscribes, as well as the essentialism on the nature of mind that she derives from Husserl, would not stand the scrutiny of most post-empiricist philosophers. To countenance the justification she gives for her views on metaphor would, I believe, be a step in the wrong direction for social and political theorists.

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[132] Ibid., p.123.

[133] All of which appear to stem from the standard phenomenological dichotomy between 'world' and 'earth'. We thus encounter in her writing the following distinctions: work/labor, political/social, plurality/multiplicity, action/behaviour, private/public, freedom/necessity, solitude/loneliness, event/process.

[134] Namely, 'Trace the etymology of any word your opponent employs until you find a lacunae between its 'original meaning' and the present use of it. Then indict them for overlooking a profound philosophical distinction'.

One might argue that the attack on the predominance of the visual metaphor in the social sciences has come somewhat belatedly, especially given the post-empiricist attack on traditional/positivistic conceptions of what constitutes seeing, an attack which goes back at least to the early views of Hanson. Herein we might stress the following: the attack on visual/ocular metaphors can be inspiring if we are still within the confines of a positivistic interpretation of vision and other sensory activities. However, if we have broken free of these confines - something that post-empiricism is helping us to do - then there is no necessary reason to trade those visual metaphors for metaphors drawn from the 'activity' of reading or the 'sensation of being alive'. Once vision itself is seen as partly a constructive activity then the metaphors drawn from it need not serve to entrench the idea that knowledge has certain necessary foundational roots.

So far we have only considered those social and political theorists who believe metaphors enhance/confine our descriptions of the social-political world and guide explanatory resources down fruitful/dangerous paths. Some contributors to these debates, however, argue that explanatory principles are themselves impregnated with metaphoric content. One political scientist, for example, has argued along the following lines:

> Explanatory principles are thus metaphors, but metaphors that satisfy two particular requirements. First, they must be able to account for what we have already observed: the generalizations with which we began. Second, they must also be able to suggest new relationships later confirmed by observations; they must be fruitful. Consequently, not just any metaphor will do.[135]

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[135] William H. Panning, "What Does It Take to Have a Theory? Principles in Political Science", What Should Political Theory Be Now?, ed. John S. Nelson, p.488.

As this particular author concludes, the "self-conscious study of such metaphors for politics has largely been abandoned by political sciencs, due to our discipline's conception of theories as generalizations".[136] His claim that 'explanatory principles' are metaphors is, however, not quite as radical as it might initially appear - for it implicitly assumes the correctness of the verificationist conception of metaphor. That conception, it might be noted, is largely rooted in the 'standard theory' of metaphor that goes back to Aristotle, and wherein it is considered that a metaphor highlights an already existing similarity between two objects or relations. The view depicted in the above passage is that a metaphor will assist the extension of our speculations and theories into new domains, but that at some point the metaphor must be tested to see if the objects and relations that it helps to isolate are 'confirmed'; i.e., determined to be 'real'. It is, at heart, the Quinean view of metaphor noted earlier.

This particular quotation does, however, help us in getting that much closer to the heart of the matter implicitly at hand; namely, the rift that separates verificationist and constitutivist views of metaphor. Many theorists, as we have seen, in arguing that political 'objects' transcend the limitations of contingent sensation and the metaphors drawn therefrom, object to the verificationist view. Hence, Miller and Arendt argue that metaphors which can be tested and confirmed on empirical grounds are necessarily metaphors that cannot provide us with an understanding of that which is uniquely and most importantly political. Hence, their opposition to a heavy reliance on metaphors borrowed from

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[136] Ibid., p.502.

the natural sciences - since they believe that such metaphors are necessarily those whose 'empirical confirmation' gives a false sense of 'certain political knowledge'. The inevitable result, so they argue, is a conception of the political void of an understanding of human agency and those elements ('historical consciousness', et cetera) which, although they may have their roots within it, ultimately 'transcend' individual sensation. [The bias we see throughout this argument?: it is assumed that all 'scientific' metaphors are 'empirically confirmed' in the natural sciences; the image of science, therefore, is thoroughly positivist.[137] Although the theory of 'empirical confirmation' to which reference is being made is not stated explicitly, given the emphasis on sensation in the argument it would appear it is one which does not countenance any inferences. At least positivists had trouble with this sort of thing!]

Miller, however, wishes to avoid what he sees as the subjectivism and historicism of the constitutivist view. As he readily admits, his view presupposes that political things 'have an intelligible structure',[138] and that 'political knowledge is fundamentally non-metaphorical'.[139] Yet although he grants that we can have knowledge of political things 'in themselves' he feels that our expressions of this knowledge is perhaps inextricably metaphorical. His attempts to pay credence to both views,

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[137] It is indeed strange that Miller of all people still carries this assumption with him. As we have seen earlier in this chapter it has been some time since he declared that positivism was more or less completely dead (cf., "Positivism, Historicism, and Political Inquiry").

[138] Eugene Miller, "Metaphor and Political Knowledge", p.169.

[139] Ibid., p.168.

therefore, can be seen as forcing him to reject a thesis fundamental to much of twentieth century philosophy; namely that the limits of language are the limits of the world. The alternatives to this conception, however, are not that numerous. The most common one is that which invokes the intuition allegedly constitutive of a 'pre-scientific', pre-linguistic awareness. Miller has trouble with this phenomenological alternative. Another alternative, that there is practical knowledge of these things which is implicit and linguistically unformalizable he strangely enough does not consider. And yet another alternative, also one which Miller does not consider, (but one which we will consider in our chapter on Scientific Realism),[140] one drawn largely from research in cognitive neurobiology, suggests that lingusitic formulations are only one small part of information-processing ('knowledge') in general. Rather than any of these, Miller seems to feel most comfortable with a bizarre variant of nineteenth century perspectivism. He argues accordingly:

> Political inquiry is the attempt to move from the perspectives to an integral view, from opinions to a grasp of the thing in its wholeness. It proceeds by taking a variety of opinions or viewpoints into account ... The closer we approach an integral or comprehensive view, the more fully we are able to appreciate both the truth that each metaphor makes manifest and the partiality of that truth.[141]

The viability that Miller sees in such an alternative leads him to argue that 'metaphorical thinking is like a ladder,[142] and that political inquiry 'can move beyond its metaphorical beginnings'. The general Quinean view is therefore countenanced but the roots of that view - that

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[140] Yet an alternative which doesn't necessarily have anything to say about the 'political things' which Miller is referring to.

[141] Eugene Miller, "Metaphor and Political Inquiry", p.167.

[142] Ibid., p.168.

empirical adequacy is possible - are not. Whether any coherency is established by Miller's position is another matter indeed. His alternative seems to be founded on the same sort of faith that guides many liberal democrats' advocacy of plurality and progress; i.e., that the Good (for Miller, read Truth) emerges from the totality of diverse views on the matter.

Miller, however, believes that this is the only alternative left to those who want to avoid the unconvincing historicism implicit in the constitutivist interpretation of metaphor - an interpretation that "eliminates the possibilites of testing political metaphors by an independent grasp of what is real".[143] According to Miller, it is hard to see, given constitutivist assumptions, how "political inquiry can yield anything more than a history of political symbols that have proved useful to people at one time or another, depending on their political purposes".[144]

Miller's opposition to the constitutivist view of metaphor seems to be largely rooted in what he sees as the inevitable historicism growing out of the claim that political reality is constituted by metaphorical language. It might be noted, however, that constitutivist views of metaphor, or of any other symbols, do not necessarily have to countenance historicism. One who subscribes to such a view may simply argue that the metaphorical structure of political life remains the same over time.

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[143] Ibid., p.166.

[144] Ibid., p.169.

Indeed, it is strange that Miller draws the historicist inference so readily. For as we have seen, one of the major arguments against metaphorical descriptions of the political bases its criticism on the alledged fact that such structures can become very permanent - guiding our thought and our actions. In addition, many psychological theories over the last one hundred years have readily countenanced the symbolic structure (and construction) of reality whilst at the same time allowing that the structure(s) remained realitively stable over time. Jungian iconographic studies, laden as they are with the invocation of historical archetypes, are perhaps the most mentionable in this regard.

Even though many constitutivisits readily admit that political reality is necessarily historicist, Miller's case is not won on this point. Miller refers, in a critical manner, to the political symbols of the constitutivists that have 'served people at one time or another'. Playing off against the historicist gambit, however, makes the implicit indictment rather problematic; i.e., what temporal slice is being referred to by 'at one time'? Those Marxists, for example, who are inclined towards symbolic-cum-hegemonic studies, would consider this element of time very important. If that temporal slice corresponds to the reign of a particular mode of production then there is no reason why they should feel less secure in conducting their studies. In addition, many would argue that the real art behind cultural criticism is being able to recognize that certain symbols only stay around for so long. In both of these cases, however, the appropriativeness (for those sympathetic to the approaches) of the study of symbols is not at all diminished. Subscribing to historicism, as we noted in our discussion of Rorty, does not mean giving up doing things in the present.

As far as the cash value of their research goes (and I am not supposing that it is anything), it does not appear that constitutivist views necessarily have anything less to reap than the 'perspectivist' position to which Miller adheres. In fact, many of the analyses open to the former are closed to the latter.

Constitutivists would have no trouble entertaining the possibility that certain dimensions of social and political reality (1984, et cetera) are best expressed through novels and other literary mediums. They are also well equipped to point to the fact that certain political phenomena are best expressed (or created) through specific metaphors (for example, threat by 'domino effect'; magnitude by 'star wars'; distance by 'third world') and that political action is either guided or stimulated through what might be called 'crises metaphors' (for example, 'The Doomsday Report').

Constitutivist views could also quite adequately take account of the argument that our ability to create worlds may be limited by a crisis in meaning theory.[145] Nothing precludes the advocates of such a view from arguing that metaphors might serve certain 'ethical' purposes (for example, in helping to link the notions of 'the individual' with that of 'the political order'). And if they were oriented along the constructionalist lines of Goodman (this is not an impossibility) they would appreciate that the adequacy of a metaphor results from the nature (degree) of its projectibility.

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[145] As is alleged by Tracy B. Strong, "Nihilism and Political Theory", What Should Political Theory Be Now?, ed. John S. Nelson, pp.247-248.

As was mentioned earlier, however, Miller's position and that of the constitutivists are not the only alternatives one can choose when examining the relation between metaphors and other symbols and the social-political world. In a co-authored book, Elder and Cobb, have invoked Kuhn for conceptual support in a manner quite similar to the sociologists of knowledge who we have already considered. As they see it:

> The overall cultural configuration of which symbols are a part constitute something of a social paradigm characterizable in much the same term that Kuhn has used to describe a scientific paradigm. Individual understanding of this social paradigm is largely 'tacit knowledge' which is acquired simply through experience and which often cannot be articulated explicitly.[146]

Although they invoke Polanyi to give credence to the view that 'knowledge of the social paradigm' is largely tacit, they nevertheless seem to agree with Miller - perhaps much to his awe - that some measurement procedure is required in the study of symbols. As they put it:

> The distinctive features of a symbolic perspective on politics are to be found not so much in its methodology as in the questions it asks and the framework it offers for interpreting research findings. This is not to say, however, that the perspective is without methodological implications. It tends to require a measurement approach that is distinctly more phenomenological in nature than those commonly used in survey research.[147]

The integration of measurement techniques and symbolic analysis does, however, introduce one to a variety of problems the depth of which cannot be underestimated. Primary amongst these problems is that of metaphor and reference. As we saw in our section on metaphor earlier in the thesis, this problem has been deemed worthy of concern by thinkers as

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[146] Charles D. Elder and Roger W. Cobb, The Political Uses of Symbols (New York and London: Longman, 1983), p.143.

[147] Ibid., p.152.

diverse in orientation as Davidson, Goodman, and Ricouer. In one of the more classic studies of symbolism in political science, Edelman has made a distinction between condensation and referential symbols as follows:

> Referential symbols are economical ways of referring to the objective elements in objects or situations: the elements identified in the same way by different people.[148]
>
> [and]
>
> Condensation symbols evoke the emotions associated with the situation. They condense into one symbolic event, sign, or act patriotic pride, anxieties, rememberances of past glories or humiliations, promises of future greatness: some one of these or all of them.[149]

Although Edelman did go on to argue that "no example can ever be wholly free of either referential or of condensation symbols",[150] his presentation of things largely assumed the validity of many positivist presuppositions, including the distinction between cognitive and non-cognitive activities.

In one way it is rather strange that right at the time when the referential status of scientific terms becomes so problematic attempts to discern the referential aspects of metaphor become so important. To a large part it appears that this has happened as a result of post-empiricist attempts to draw into question the positivist distinction between cognitive and non-cognitive activities. And as a result of such attempts a two-pronged attack emerges - one trys to show how the classical cognitive activities do not live up to their name, and another which at-

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[148] Murray Edelman, The Symbolic Uses of Politics (Urbana, Ill.: University of Illinois, 1964), p.6.

[149] Ibid.

[150] Ibid., p.7.

tempts to show how 'non-cognitive' elements function in a way similar to that supposed to constitute cognitive functioning. The Kuhns and the Feyerabends from within post-empiricism have largely been responsible for the former, and Polanyi and Goodman for the latter.

There is, however, no necessary reason to believe that post-empiricist developments will continue to support attempts to explicate the referential nature of metaphor. The force of their attacks on the notion of representation and the idea that there are 'referents' in an extra-mental, extra-linguistic realm can only make one very dubious whether they are going to expend their resources on asking the same questions about metaphor as they did about the ontological status of 'observable' and 'postulated' entities.

But if examinations into the referents of metaphorical statements and other symbolic devices are deemed as constitutive of a degenerating research programme, metaphor and symbol study in the social sciences could wind up taking some unexpected turns. One such turn may well be that towards what has become known as Symbolic Realism (whose practitioners also do not seem to mind the label 'cognitive aesthetics'), a position that quite readily countenances the constitutivist view of metaphor.

The elements of design becomes very tantamount to such an approach wherein the propositional axioms of the logical positivists are seen as on par with the 'guiding assumptions' that those influenced by Kuhn so frequently (and loosely) employ, and the world-versions which are just starting to come into vogue as a result of Goodman's latest efforts. The extent to which recent developments in Symbolic Realism can be seen as drawing on the conceptual and terminological resources of post-empi-

ricism is clearly illustrated in the following passage from a book which heralds its general approach as a 'new paradigm with broad implication for all human studies':

> The perspective of cognitive aesthetics has several advantages for social scientific discourse. First, it permits us to go beyond the debate between the positivists' copy theory of truth and the intuitive approach favored by idealists. Second, a cognitive aesthetic framework draws attention to the the central role of paradigm innovation in the development of science. Both the artist and the scientist, as well as the politician or citizen who is seeking to create a new mode of public discourse, are seen as having a basic affinity: They are creating paradigms through which experience becomes intelligible. Third, by stressing the world creating aspects of scientific innovation, a cognitive aesthetic approach provides a bridge between what experts do and what all of us do in our everyday lives. We all create worlds.[151]

The influence which post-empiricist thought can be seen as having on the formulation of this declaration from Symbolic Realists is readily apparant. It is, of course, a very interesting formulation and one presented in a tight enough fashion to be nearly inspirational. In what has become nearly programmatic for many social and political theorists, the positivist position on such matters is reduced to their 'copy theory of truth'. We are then introduced to some neo-Kuhnian paradigm philosophizing. Although a specific definition of what exactly constitutes such paradigms remains somewhat vague, the insinuation is clearly that they serve as some sort of (mental?) classificatory system that organizes an otherwise chaotic array of experiences. The tone of the insinuation, at this point anyways, remains unmistakenly Kantian.

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[151] Richard Harvey Brown and Stanford M. Lyman, "Symbolic Realism and Cognitive Aesthetics: An Invitation", Structure, Consciousness, and History, eds. Richard Harvey Brown and Stanford M. Lyman (Cambridge: Cambridge University Press, 1978), p.6.

This particular formulation, as well as others akin to it, does, however, depart from the Kantian problematic in some very fundamental ways. The categories of mind which Kant spoke, we must recall, were conceptualized as rigid and permanent; moreover, they were what enabled 'experience' to be possible in the first place. They were not flexible and malleable entities that allowed 'experience' to be organized one way now, and countless other ways at countless other points in time. For Kant, they gave us, enabled us to have, one world.

As we have noted before, the groundwork for multiple worlds theorizing was provided via the historicist tendency rampant within German Idealism. And systematic coherency was the epistemological hallmark of much of the legacy that followed in the wake of such idealism. By contrasting 'the positivist copy theory of truth' with 'the intuitive approach favored by idealists', the authors of the above formulation are attempting to overlook the fact that their approach is very much a part of that very legacy. They may well have something important to contribute to social scientific discourse, to the same extent that those proponents of the constitutivist view of metaphor may well have something to contribute. To deny that either of these schools of thought are not firmly rooted in the tradition of (linguistic) idealism[152] is, however, only possible after the past-time of philosophy is radically reshuffled.[153]

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[152] Idealism in general and linguistic idealism in particular are not necessarily compatible, nor equivalent, doctrines. In fact, in our next chapter we will examine to what extent a form of linguistic idealism can be seen as entering into various formulations of Scientific Realism.

[153] Let me remain true to my own position on these matters. The historical deck may well be reshuffled in this fashion one day. The time

That German Idealism should be viewed as the backdrop against which much of the work that goes under the rubric of Symbolic Realism takes shape is, however, quite secondary to our considerations at this point. It is rather the post-empiricist contribution which is most problematic - specifically the support allegedly forthcoming from Kuhn's notion of paradigmatic science.

For Brown and Lyman, the paradigms of which they speak "provide the frameworks for structuring appearance, for creating those realities that become accessible to our understanding".[154] Extending their employment of Kuhnian verbiage, whilst urging us to view such paradigms as 'metaphoric', they also feel quite confident in claiming that "in normal science, as in normal political times, the governing paradigms or root metaphors are not brought into question".[155] The primary import of these basic theses - that 'formal thought has the power to name the real' - allegedly compels us to except that "intellection is a highly political act".[156]

This conceptual integration of what might be called a constitutivist view of metaphor with a Kuhnian philosophy of science provides the investigative fuel for Brown's and Lyman's brand of Symbolic Realism - "the view that the only realities accessible to us as Knowledge are sym-

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for such a reshuffling is, however, presently - 'doctrinarily' - premature. We must remain sincere to, and conscious of, our contemporaries; i.e., we must speak in a discourse that fits.

[154] Richard Harvey Brown and Stanford M. Lyman, "Symbolic Realism and Cognitive Aesthetics: An Invitation", p.9.

[155] Ibid., p.8.

[156] Ibid., p.9.

bolically constructed".[157] Remaining steadfast to the tendency of many of those who embark on symbol study to presuppose that the content of symbolic constructions are 'meanings', Brown and Lyman further presuppose that "analysis of meaning construction involves a hermeneutic interpretation of action, rules and reasons".[158] By stressing the notion and function of paradigm innnovation as the 'creation of a world', however, Symbolic Realism is allegedly able to overcome 'the traditional dichotomies between subjectivist and objectivist ways of theorizing'. Its contribution to social and political theory is outlined by Brown and Lyman as follows:

> The aesthetic approach to paradigm constructions draws the social scientist into a consciousness of the paradigmatic limits imposed by his own outlook. In this process he becomes critical of the modes by which his discourse proceeds and opens himself up to the possibility of a multiplicity of discourses by which he might proceed better and farther.[159]

They are also very ready to point to what might be called the Foucaultian element in all of this:

> The notion of paradigm innovation as the creation of a world raises the question of power. What worlds might be more or less useful to the powers that be or to aspiring nonelites? How is the power or capacity to create such worlds differentially distributed socially: What is the proper role of intellectuals?[160]

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[157] Ibid., p.5. In order to provide a glimpse of the kind of conceptual meat that Brown and Lyman believe is implicit in this thesis, it might be added that they also claim that such a view 'transcends both scientific realism and romantic idealism'.

[158] Ibid., p.7.

[159] Ibid.

[160] Ibid., p.6

That Kuhnian-Rortian-Goodmanian philosophies can be used to lend support to such a perspective is quite obvious. Indeed, post-empiricist influences are readily admitted by many contributors to Brown's and Lyman's collection of essays. In an article which takes issue with the content and ramifications of transformations in the grammar of our political understanding, Tracy Strong heralds Kuhn's The Structure of Scientific Revolutions as the seminal work in such investigations.[161] Like Lyman and Brown, Strong also believes that the social scientific examination of such transformations may well make possible an ethical-political payoff. As she sees it:

> Once the structure of such revolutionary transformation is sketched out, it may then be possible to suggest some forms of writing and discourse that might (though certainly not necessarily) produce similar transformations in our time.[162]

In urging a dramaturgical model of political discourse and 'enactments', Strong urges (via metaphor) social and political theorists to appreciate that "we may not be persuaded by a play, but if it be a good play, we have no choice but to recognize that it is there".[163] The message in this metaphor is not so difficult to unpack; it is one that emphasizes the malleable yet organized component of any received socio-political understanding - it points to the fact that such understanding may change (like any play) but also that while the performance is on, we must abide by the correspondingly entrenched norms of 'audience behav-

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[161] Tracy B. Strong, "Dramaturgical Discourse and Political Enactments: Toward an Artistic Foundation for Political Space", Structure, Consciousness, and History, ed. Richard Harvey Brown and Stanford M. Lyman, p.240.

[162] Ibid., p.242.

[163] Ibid., pp.256-257.

iour'.

What is quetionable about Strong's approach, and others akin, however, is the attempt to 'sketch out' the structure of the revolutionary transformations that affect our understanding of the political. The attempt is, of course, most questionable when such alleged transformations are conceptually set within a Kuhnian problematic. In speaking of paradigm-cum-world- creation Symbolic Realists are employing Kuhn's work in a rather loose and deceptive fashion.

Brown and Lyman, we have already seen, argue that the creation of such worlds is something 'all of us do in our everday lives'. This is a very powerful claim. We have learnt from our last chapter that such a claim is very much the province of Goodmanian philosophy. Goodman, however, resists the temptation to speak generically in terms of paradigms. Rather, his views are very much ridden with the narrower notion of 'variations and variations thereupon'. Styles of literary quatation, musical composition, metaphorical reference, and even the entrenchment of previously vague predicates are all part and parcel examples of ways of worldmaking. One might even say that worlds are easier to make and remake within a Goodmanian problematic than within a Kuhnian problematic. Given, that is, if it really is worlds which 'we make'.

Rom Harre, in an article[164] wherein he develops the notion of 'architectonic man', in making reference to changing standards of fashion and acceptable architectural notions of what constitutes 'living space' is,

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[164] The article, "Architectonic Man: On the Structuring of Lived Experience", is also contained within the Brown and Lyman collection (pp.139-172).

for example, operating more within the Goodmanian problematic. Brown and Lyman, on the other hand, in speaking of paradigms of experience seem to be constantly emphasizing a more grandiose notion of world-making - more akin in import and substance to Kuhn's much misunderstood claim that Newtonian and Einsteinian scientists 'lived in different worlds'.

However, even if we overlook Kuhn's more recent retraction of the received import of his claim and go with 'worlds', (in the later Kuhn, exemplars plus disciplinary matrixes) it does not follow that on a Kuhnian construal such world creation is something 'we all do everyday'. Kuhnian 'worlds', apart from being the exclusive conceptual living space of scientists (i.e., members of a specific community) are not susceptible to such dramatic alteration. In addition, even if we allow the socio-political extension of fundamental Kuhnian notions, such worlds (paradigms) would not be created by 'a citizen seeking a new mode of public discourse'. Kuhnian paradigms (worlds) are both more constraining and irreducible to acts of individual whim than either Brown or Lyman seem prepared to admit.

Even Strong, who largely resists the generic approach of Brown and Lyman, nevertheless seeks to 'sketch out the structures of revolutionary transformations', albeit, in order to achieve an understanding of how to most adequately effect further such transformations. Such an attempt, however, would find more conceptual affinity with a philosophical Leninism than with the view of Kuhn.

The pardoxical thing about Kuhn's The Structure of Scientific Revolutions is simply that it refuses to countenance such a 'structure' as traditionally understood; structure is the province of 'normal science'. In addition, even if there was such a structure, the tacit, non-formalizable component of scientific change would preclude its specification. Within the problematic she has decided to theorize, Strong would actually be well-advised to conclude that just as a 'good' play must be acknowledged whether it persuades us or not, our acknowledgement that the play has changed comes quite in spite of the fact that we largely remain in ignorance of exactly how (or why) the performance has changed.

One can provide numerous other examples to substantiate that the tendency within post-empiricism that sponsors paradigms/worlds/discourses philosophizing can lend much support to the 'reasearch programme' of something like Symbolic Realism. Such conceptual support may also be so interpreted to fuel the optimism of those social theorists, implicitly interested in the import of Marx's 'Eleventh Thesis on Feuerbach', who claim that "our recognition that social order is a conctruction invites us to actively reconstruct our world".[165] The optimism embedded in claims like this, however, belies some central problems of the entire Symbolic Realist approach and other 'post-empiricist' symbol studies.

Those social and political theorists who are interested in iconography and the role which symbols play in our everyday (political) lives can, of course, be seen as remaining largely within the Durkheimian tradition.[166] Conceptual resources provided in general by the linguistic

[165] Richard Harvey Brown and Stanford M. Lyman, "Symbolic Realism and Cognitive Aesthetics: An Invitation", p.9.

turn that philosophy has taken in twentieth century, as well as those resources specifically offered by much of post-empiricism can, however, be seen as greatly assisting those theorists in their attempt to integrate the Romantic notion of man as self-creative with the Kantian notion of man as constituting a phenomenal world. Granted all of this, however, such theorists seem bound to choose between an Hegelian or Nietzschean approach.

What I mean by this is that they appear bound to choose between an approach which looks upon the products of symbol construction as monolithic entities constituting a cultural tradition (or a hegemonic political discourse) or an approach that underlines the necessarily fragmenteds and inevitably disjunct products of such 'world-making' endeavors. A third approach is, arguably enough, also possible; namely, that wherein the latter, Nietzschean, approach is seen as providing the resources for achieving a new cultural tradition or political discourse. Tracy Strong actually appears to be predisposed to this very outlook on things, as is exhibited in her advice to political theorists to disengage themselves from the reigning (and constraining) discourse by employing chaos producing metaphors, riddles, and even silence as well as unorthodox styles of writing (i.e., aphorisms). Such techniques, so the allegation goes, will shake up the reigning discourse and (possibly) provide the groundwork for conceptualizing (and viewing) political life

[166] Accordingly, many social theorisits who have become interested in symbol study and the (unacceptable) distinction between cognitive/non-cognitive activities via the affective influence of post-empiricist developments, herald the work of Mary Douglas as a decisive contribution to such debates. For a glimpse of the work of the latter as well as some of the age-old questions that stimulate such debates see Mary Douglas, Natural Symbols: Explorations in Cosmology (New York: Penguin Books, 1973).

in innovative ways. Rather than moving 'beyond Hegel and Nietzsche', however, such an approach assumes the validity of both of their approaches to understanding (and making) social-political worlds.

The bugbear in all of this is language. Much of twentieth century philosophy in general and post-empiricism in particular is paving the way for the incipience of a full-blown linguistic idealism. Language, at once simply a method for communication, is increasingly coming to be seen as constituting that which is communicated. Herein lies the world-making power of language that is recognized by the Goodmans of Anglo-American philosophy and the Gadamers of its Continental cousin. Since language is by definition a social artifact the worlds it create _ipso facto_ come to be seen as generically binding monolithic entities. If symbol construction is inevitably linguistic (or, more precisely, if the _study_ of such construction cannot break out of the labyrinth of language), then it appears that iconography is by nature 'world-view' analysis. Hence the tendency in much of post-empiricist social and political theory to speak in terms of discourses, traditions, and worlds. Hence also the radicals' call for the imaginative development of 'alternative conceptual schemes'.

On the other hand, however, if one emphasizes the necessarily hegemonic nature of contemporary discourse and political understanding, then one is left hard-pressed to develop an adequate account of how and why such discourses ('worlds') _change_. This problem, of course, in one form or another plagues all those thinkers who have tried to formulate the schism that sparates tradition and innovation and who remain remarkably destined to operate within the confines of a debate whose parameters were established by Parmenides and Heraclitus.

The predominate tactic employed by those theorists who wish to avoid the overly simplistic talk that results from generic 'world view' philosophizing (i.e., 'the tradition of Western Rationalism'; 'the Anglo-American culture'; 'the natural scientific paradigm'; 'the conceptual scheme of bourgeois liberal democrats'; 'the White Man's world'; et cetera) is to emphasize idiosyncratic ways of world-making. Such idiosyncracy need not be 'subjective' (indeed, given language it can't be) - it may simply be the province of different 'language-games'. In Derridean phraseology, we might make the paradoxical claim that our world is constituted by, and viewed through, various frames. The World of Plato, and of the positivists, is inextricably a 'world well lost'.

Post-empiricist symbol studies conducted by social and political theorisits along Nietzschean lines, can be seen as implying some inspiring theses about the human animal and proposals for theorizing about that animal. Such studies may help social and political theorists in giving renewed emphasis to the Sartrean claim that humans are possessed of no essence but necessarily embody the possibility of freedom.[167] As a result of such studies cultural patterns may be accepted as severely circumscribed and subject to change but, nevertheless, at one and the same moment, also considered as general enough (primarily because of the intersubjective nature of language) to serve as the subject for explanatory purposes. 'Situational analyses' in the fashion of Goffman[168]

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[167] And if they were operating within these horizons, emphasis might also be extended to the import of other Sartrean claims; i.e., 'Man is the future of Man' and 'Man is condemned to invent man at every instant'.

[168] See, for example, Irving Goffman, The Presentation of Self in Everyday Life (New York: Anchor Books, 1959).

might also be seen as providing resources for the examination of the wworl-making aspects of everyday life. The importance bestowed upon fragmentary thought and social organization by post-empiricist symbol study would also help immensely in freeing up the orthodox tendencies in many Marxist analyses of oppression, the mechanics of class formation and the loci of power of ideological state apparatuses.

Attention might also be paid to those who have long argued that social and political theory should be concerned with the 'integrative, ordering aspects of an entire society'. Social and Political itself, however, would be seen as an on-going activity rather than a reified product of an otherwise unaltered cultural world; for such theory is inevitably framed through yet another frame (through normal discourse?). On such a construal greater appreciation might also be paid to those 'symbolic interactionists' who offer implicit conceptual resouces to the attempt to comprehend how the Hiedeggerian attack on the spectator theory of knowledge still permits the mediation of varied discourses ('worlds framed'). Herein, the post-structuralist claim that fundamental dimensions of the social-political world are created in the process of writing must also be counteneanced.

With the countenancing of the latter post-stucturalist claim, however, also comes a consideration of Derrida's fundamental maxim that interpretations ('constructions', 'frames') can be called into question at any time.[169] Herein, conceptual space is provided for demanding that

[169] For a brief, but amazingly interesting, look at the kind of work that inspires many French post-structuralists see Jacques Derrida, "Sending: On Representation", Social Reasearch 49 (1982):294-326. In Derrida's opinion: "Representation becomes the most general category to determine the appprehension of whatever it is that is of

cultural and political theory be constitutive of unrestrained criticism of contemporary society as well as necessarily possessed of the resources for 're-creation'. Hence the inevitable consideration that must be paid to those cultural critics who, for example, wish to view the political through the 'lenses of ecstasy'[170] or who urge Marxists to view the world in ways other than through the 'mirror of production'.[171] Hence, even the importance of novels and science fiction.

Although extending a political importance to innovative and presriptive socio-political theory (and thereby enlarging our appreciation of various frames and our capacity to judge), post-empiricist social thought, in its semiological phase, if it desires 'alternative worlds', must at the same time underline the importance of being aware of the projectibility of conjectures.[172] It must recognize that an 'escape from freedom' may have intrinsic value. Marcuse is one social theorist who

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concern or interest in any relation at all. All of post-Cartesian and even post-Hegelian discourse, if not in fact the whole of modern discourse, has recourse to this category to designate all the modifications of the subject in its relation with an object". (p.310). In this particular article he weaves together, pulls apart, and juxtaposes the traditional political and epistemological uses of the term 'representation'. The tactics employed throughout parallel his more renowned conflation of the 'end(s) of man' as depicted in the teleological sense and the 'death of metaphysics' sense. In the latter, we will recall, the death of metaphysics inextricably brings about the death of Man (as a universal subject, as an agent within History, as possessed of a constituting consciousness, et cetera).

[170] See, for example, Timothy Leary, The Politics of Ecstasy (London: Pantheon Books, 1970).

[171] Jean Baudrilland, The Mirror of Production, trans. Mark Poster (St. Louis: Telos Press, 1975). Baudrilland, of course, is certainly not unique in making this request - political theorists as diverse in orientation as Kollantai and Arendt also have very similar things to say. For our purposes, Baudrilland is interesting because his request is made in the midst of a semiological examination of Marxism. It is also important to note that he is listened to by many Marxists; i.e., he is in more of a position to disrupt their normal

understands this matter. He depicts it thus:

> No matter how much art overturns the ordinary meanings of words and images, the transfiguration is still that of a given material. This limitation of aesthetic autonomy is the condition under which art can become a social factor.[173]

[and]

> While art bears witness to the necessity of liberation, it also testifies to its limits. What has been done cannot be undone; what has past cannot be recaptured.[174]

The import of all of this, of course, is something which has been mentioned on numerous other occasions throughout this chapter. It has a necessary parallel to a similar phenomenon in architectural design; namely, that what one builds is in large part necessarily determined by the resources at hand and by the constitution of structures that are to be altered.[175]

With primarily only this one, largely pragmatist limiting factor (symbolic constructions and interpretations thereof must fit)[176] post-

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discourse.

[172] It must, shall we say, make bed-fellows out of Popper and Goodman.

[173] Herbert Marcuse, The Aesthetic Dimension: Towards a Critique of Marxist Aesthetics (Boston: Beacon Press, 1978), p.41.

[174] Ibid., p.68.

[175] For some interesting insights into the connections between social and archetectural (spacial) ways of world-making, as well as how the latter delimits the former see Robert Sommer, Personal Space: The Behavioural Basis of Design (Englewood Cliffs, N.J.: Prentice-Hall, 1969). Another mildly interesting piece of work in this regard is Robert David Sack, Conceptions of Space in Social Thought: A Geographic Perspective (Minneapolis: University of Minnesota Press, 1980).

[176] Many would argue that an awareness of this basic delimiting factor has been explicit throughout the work of even the most 'prescriptive' (normative? idealist?) political philosophers. For a look at how Thomas More's projections were inevitably rooted in 'concrete' historical and political-structural analyses see Louis Marin, "To-

empiricist social and political theory seems capable of opening up an inestimatable number of unexplored horizons. It appears almost inextricably destined to continue forcing the tradition to underline its basic affinity to artistic endeavors. If social and political theory of this variety, however, continues to draw its support from post-empiricist developments in Anglo-American philosophy of science it will have to appreciate how talk of 'design' is potentially beset with the same problems that plague the intentional idiom in general.

5.5 CONCLUDING COMMENTS

Some twenty-five years ago C. Wright Mills expressed his regret at the influence the philosophy of science was having in the social sciences by way of the following, not so passive, query:

> The young, it has frequently been noticed, are often corruptible, but is it not curious to see older scholars of social science also made uneasy by the pretensions of the philosophers of science?[177]

In many ways, Mills subscribed to a positivistic image of science. He was quite comfortable in stating that 'everyone agrees that scientific advance is cumulative' and that 'for one's work to count it must relate to what has been done before'. The latter, he insisted, was needed to 'communicate', and for objectivity.[178] In many other ways, however, Mills was explicitly Feyerabendian:

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ward a Semiotic of Utopia: Political and Fictional Discourses in Thomas More's Utopia", Structure, Consciousness and History, ed. Richard Harvery Brown and Stanford M. Lyman, pp.261-282.

[177] C. Wright Mills, The Sociological Imagination (London: Oxford University Pres, 1959), p.123.

[178] Ibid., p.127.

> Advance in methods ... is most likely to occur as modest generalizations stemming from work in progres ... The slogans we ought to raise are surely these: Every man his own methodologist! Methodologists! Get to work![179]

That Mills' views might appear contradictory to some nicely illustrates the extent to which twentieth century philosophy of science has categorized our thinking about science. It would be interesting to know, if he were alive today, how Mills would have reacted to post-empiricist developments. His reaction may well have been that they 'defied common sense'. Nevertheless, if he was to continue to display ambivalence about such developments in the philosophy of science it would probably be a unique ambivalence. Being versed in the philosophy of science has become important for most social theorists. Indeed, in an increasing number of cases the verse has become the whole dialogue - it is here that the line between being a philosopher and being a social theorist becomes very blurred. Perhaps Mills would have scolded contemporary theorists for allowing their 'meta-theoretical' reflections to interfere with their perceptions of the real world. And perhaps they would have responded that the 'real world' had become stale, and that they had only jumped at the chance to taste something new. If such an interchange were to take place those responding to Mills would not be misdescribing things - they have indeed jumped at the chance which post-empiricist developments have offered them.

Post-empiricist philosophy in general, and post-empiricist philosophy of science in particular, has influenced social and political theorists in a variety of ways. For those inclined to think that <u>any</u> philosophy

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[179] Ibid., pp.122-123.

of science is ipso fact naturalistic, post-empiricism is seen as lending support to the quest for a science of society. Those who invoke Kuhn when arguing that their research has become 'paradigmatic' (and hence 'scientific') are part and parcel of this group. So are those, like David Thomas, who argue that since post-empiricism has 'proven' that all scientific explanations are necessarily theory-laden and holistic, then, because social scientific explanations are of this nature, social science can become 'naturalistic'.

Other social theorists, still largely under the conception of science that positivism provided them with, point to post-empiricists developments to show that since values are an inextricable component of research, even science proper cannot reach the 'scientific ideal' Therefore, as the inference goes, one must not expect social science to achieve such an ideal. Such a construal, of course, ends with the question: 'If an objective, value-free research is not possible in science, why expect it to be possible in the social sciences?'

Yet others who have been influenced by post-empiricism in this regard then proceed to champion 'multi-method', 'multi-paradigm' research. Several sociologists of knowledge often offer support to this proposal by arguing that multi-method-cum-anarchist research is actually what constitutes the work of the natural scientist. Others invoke Quine's indeterminacy thesis and the 'doctrine' of incommensurability that stems from Kuhn and Feyerabend in attempts to substantiate this and other relativistic claims.

Then there is that group of thinkers who believe that post-empiricism has 'recovered' the hermeneutical dimension of science and thereby restores credence to investigations into the nature of man as a being-in-the-world. Phenomenologically-inclined political theory (in the tradition of Arendt) often steps in at this point to receive what it considers its long-overdue recognition. The hermeneutical construal, coupled with the conflation of paradigms and world-views, also has led to an increased intensity in the debate about relative 'conceptual schemes'.

The emphasis that is being increasingly placed on the (rather loose) examination of paradigmatic thought, world-views, traditions and discourses, however, need not be seen as providing support to the kinds of anti-scientisms depicted in our first chapter. The primary stance of those critics was that there was a world to be preserved that science would either destroy or be unable to consider. But the relativization of what constitutes the scientific world-view by Kuhn and Feyerabend, as well as the attack on attempts to formalize a rational/irrational distinction within 'world-views' by sociologists of science, have led many social theorists to drop the distinction between a scientific and a 'non-scientific' world-view. The picture we therefore get is of a multitude of worlds in collision, and nowhere in this picture do we see a pre-scientific world-view that demands our attention. And with the countenancing of a multiplicity of worlds the emphasis is no longer on the search for the True and the Good but, if anything, on the search for the Beautiful - for that which allows us to look at things in a variety of ways.

Paying credence to the mandate that 'with world-view analysis comes symbolic analysis', many social theorists have set out to investigate how the human animal constructs their varied social worlds. And the indication seems to be that post-empiricist developments will continue to lend support to such endeavors. Symbolic realism, and the study of what Harre has called 'archetectonic man', has yet to have its hey-day in social and political theory circles.

Of course, much of the work in social and political thought and the philosophy of the social sciences that has been influenced by post-empiricist developments proceeds in radically distinct and often incompatible directions.

The emphasis on paradigms as world-views conjoined with a countenancing of incommensurability, has led many theorists to proclaim that research in the social sciences must proceed under the full recognition of conceptual and cultural relativism. Many symbolic realists, on the other hand, who feel that post-empiricist developments have primarily shown the invalidity of the cognitive/non-cognitive distinction, tend to countenance a multiplicity of ways of social world-making that often defy categorization into monolithic 'world-views' or 'conceptual paradigms'. The whole notion of a social construction of reality is, for them, largely non-problematic. Even if it were, however, the specific units of social construction would be considered so diverse as to preclude the championing of the kind of cultural relativism which often stems from 'tradition' and 'world-view' talk. The latter kind of ralativism receives support from Feyerabend when he talks of 'Western Rationalism', the 'Black Culture', and the 'Women's Culture'. Those influenced by someone like Goodman, however, would not be able to speak in such sweep-

ing terms. Feyerabendians, we will recall, in speaking of 'traditions' and forms of life', may have set out to take account of diversity, but along the way they have ended up ignoring it.

Those social theorists who feel that post-empiricist developments have helped give renewed emphasis to the practical/theoretical knowledge and implicit/explicit knowledge distinctions also do not ride too well on the incommensurability bandwagon. Kuhn, we will recall, has argued that there is no formalizable alogrithm for theory choice to which scientists can always appeal. This helped to get the incommensurability ball rolling. Feyerabend, in arguing for it from a radical meaning-variance stance has done much to increase its momentum. On most counts, however, incommensurability refers to theoretical knowledge and has its roots in either the lack of a formalizable alogrithm for theory-choice or the theory-ladeness of observation. For those who wish to make the distinctions noted above, however, there remains the possibility that practical or implicit knowledge can skirt the incommensurability quagmire. This possibility has not yet been given enough systematic attention in the literature.

I am of the opinion that in the philosophy of the social sciences attempts to give credence to the possibility of translation achieved via practical knowledge are usually at loggerheads with those attempts that seek to prove or disprove the validity of searches for a rational bridgehead that can be appealed to in formally translating 'what other cultures have to say'. This situation is actually very much on par with the contrast between the symbolic and inter-cultural diversity countenanced by some symbolic realists and the monolithic entities invoked by

those who speak of 'conceptual schemes' and 'forms of life'. In both cases, we might say, something akin to indeterminacy wins out over incommensurability.

The importance being directed at the role of practical knowledge in translation could be seen as lending support to an increase in symbol studies and, through such studies, to examinations of how we frame the social world. The Goodmanian strain in post-empiricism can also be seen as lending support to those symbolic realists who have decided to study what specifically constitutes our symbolic present rather than the grandiose symbols which some allege once constituted our past and now shape our present. And the increasing amount of work on symbolic entities and symbolic communication does lend some credence to the proposal that the social sciences be viewed as one of the design sciences. If such studies, however, do not move towards a more Derridean (or at least Goodmanian) perspective the possibility always reamins open that they will begin to emphasize more and more the role of intentionality in symbol construction. For in the standard use of the term, 'design', perhaps more than any other word, provokes an image of both an agent and a goal. Here the proposal for social science as design science would not seem as radical as it might be, since the primary questions for its practitioners would be very old ones; namely, 'what is the nature of intentionality?' and, 'how do we get hold of it?'.

We have seen, however, that there is no necessary reason to expect a return to the Verstehen alternative to positivism by those influenced by post-empiricist developments. Those developments, like positivism, have not been sympathetic to classical meaning theory and the intentional

idiom. They do, however, appear to provide some justification for examinations into the limiting factors of discoursive interchange, as well as for examinations into the role of tradition and innovation in community development.

The importance that post-empiricism (both explicitly and implicitly) places in alternative descriptions will also undoubtedly continue to stimulate 'possible social worlds' theorizing. Herein political philosophy may well be viewed as prognostic, not so much in the way that Toffler and Co. are pretensiously prognostic, but rather in the way which horoscopes for the coming day are prognostic for one who does not take astrology seriously. That a 'prediction' may be recognized by everyone as 'unfounded' does not mean that no one is going to listen to it. Many very well may - 'simply for the fun of it'. Besides, just as the unfounded prognosis of the horoscope still compels the unbeliever to hypothesize certain connections between what they thought were necessarily disjunct elements of their experience (as well as draw inferences therefrom), so too might 'unfounded' prognostic philosophy lead us to consider relationships between what were once thought to be disparate phenomena. The progressive story of Man as told by our ancestors is undoubtedly a fiction, as Derrida alleges, but this need not concern us here. When one feels one is going nowhere there is lots of time for play.

With the structure of this chapter I have also implicitly tried to indicate some of those areas of social and political theorizing to which post-empiricist developments could be seen as providing conceptual support.

One general area of influence (depicted in section 5.2) is that which has stimulated discussions on 'paradigms' and 'world-views'. The views of Kuhn and Feyerabend emerge as very important in this regard. Although the social component of paradigms is often deemed tantamount, the accentuation is often on the conceptual component and its constitutive 'guiding assumptions'. Here we witness a concern with loosely defined monolithic entities. The problematic generated is largely delimited by competing views on translation and by the doctrine of incommensurability. Sociologists of knowledge stand to reap the most rewards from the debates that ensue and they are increasingly organizing the stage upon which future debates will take place. Strangely enough, however, the content of these debates inevitably revolve around standard Philosophical questions; namely, those of Truth, Rationality, and Method. What many practitioners of the social sciences so influenced behoove to extract from these debates is a theory of practical knowledge; i.e., a theory of action. But up to this point the haunting spectre has always been Relativism.

The second general influence which post-empiricism can be seen having in the social sciences (depicted in section 5.3) is marked not so much by those concerned with world-views in general as it is marked by those concerned with, and the relation between, traditional and innovative world-views. Herein, interchange is conducted within a problematic whose parameters are largely determined by ethical stances. The pronounced tendency is an advocacy of pluralism and a championing of the innovative. The question as to how we are going to make the political room wherein the numerous voices of the different 'traditions' and 'life-forms' can be heard returns us to the fundamental problems of po-

litical philosophy and democratic theory. The over-arching point of contention is when and how to acknowledge the existence of power whilst seeking a plurality that countenances innovativeness. Concrete proposals for what Rorty has called the post-Philosophical culture, as well as analyzes thereof, however, appear to be few and short in coming. Those thinkers, influenced by post-empiricist developments, who decide to entertain a multiplicity of world-views and take a 'Rortian turn' will almost certainly find themselves breathing the often passive air of political philosophy.

A third area of influence (depicted in section 5.4) one which I think will increasingly extend into unexpected domains, predominantly reflects neither an exuberant proclamation of many worlds nor an aesthetic-cum-political demand that those worlds be allowed to interact and 'speak'. First and foremost it reflects a recognition of a multiplicity and diversity that defies the neat and tidy categorization into a world/paradigm/life-form/tradition - a categorization often presupposed by those who make the above proclamations and demands. The stimulus for this recognition comes primarily from studies into the substantive content of alleged worlds and the respective tools of their correlative organizaton and construction. Herein post-empiricism, in general, fuels the interest in design by continuing its attack on the positivist image of an ahistorical uni-structural world and, in particular, by Goodman's depiction of the diversity of elements that permit the projection of any possible and actual world.

As I see things, the possible routes that can be taken by research constitutive of this third area of post-empiricist influence are the following:

1. By placing an emphasis on the specific structure and ways of constructing social worlds, the 'move towards design' could actually, and quite ironically, give rise to a renewed period of neo-positivistic social science and lend support to present studies so inclined. The response on the part of the positivists would be something like: 'You have shown us that there are multiple worlds (rooted in different epistemic virtues, social norms, et cetera) where we had only thought there was one. Thank-you very much. Now we will attempt to analyze the structure of these worlds with our own tools of analysis (which we will now accept are rooted in different epistemic virtues, 'tacit knowledge' ... whatever). You post-empiricists were wrong in thinking that your historical-social-psychological critiques of our position would do any irreparable damage to logical analysis per se'.

2. However, if the post-empiricist attack on the cognitive/non-cognitive distinction (primarily that by Goodman) held the day, the 'move towards design' might well pave the way to studies which emphasize the indespensable importance of the symbolic construction of social reality. Herein, we can see two further possibilities:

   a) If, under the mandates of Symbolic Realism, social scientists continued to adhere to the intentional idiom in a non-pragmatist way (and if they adhered to it in a pragmatist way we know they would not really be adhering to it), the road would be repaved back to the old Verstehen debates.

   b) If, under the mandates of Symbolic Realism, social scientists did not pay 'honest' recognition to the intentional idiom (and post-empiricism provides many good reasons for not paying such recognition), then research would move rapidly in a direction towards something akin to Derrida's attempts at dissemination.

If this latter possibility was effected, however, the 'I' - in every way that we have come to understand and 'appreciate' it - would be radically decentered - 'right out of focus', shall we say. But it is this very 'I' which is presupposed by several post-empiricists, and other philosophers, when they argue that 'warranted assertibility' is the be-all and the end-all of epistemic justification.

Chapter VI

CLEANING UP THE STREETS WITHOUT EXTERMINATING ALL THE KIDS: A LOOK AT SCIENTIFIC REALISM

6.1 INTRODUCTION: BEYOND VILLAGE ATHEISM TO THE KALEIDOSCOPE OF REALISM IN THE PHILOSOPHY OF SCIENCE

It is the goal of this chapter to take a therapeutic and critical look at some of the more generic arguments and doctrines that underline the image of science that one receives from the post-empiricist philosophy of science. Many of the arguments that will be presented can be found in the work of self-proclaimed 'Scientific Realists' or in the work of those writers whom, in a conscious attempt to free themselves from the discoursive parameters of their philosophical forebearers, would simply prefer to call themselves evolutionary naturalists. The import of these designators, which will be employed loosely throughout, will become apparant towards the end of the chapter.

A therapeutic chapter such as this is necessary for a variety of reasons, albeit reasons which will really show their force only after the chapter is read. 'Does this phenomenon stem from the fact that Scientific Realists and evolutionary naturalists offer us yet another image of science?' Perhaps. Perhaps not. Let it only be said at this point that old languages may not be adequate to the task of parcing up new worlds or of surviving admidst new discourses. This sort of claim is fundamental to much of post-empiricism - what I am suggesting is simply that we recognize its import throughout the reading of this chapter.

Nevertheless, let us consider some of the reasons for offering a chaper of this sort. Most scientific realists are in agreement with post-empiricist philosophers concerning the invalidity of positivist presuppositions and dichotomies. They do not, however, feel the same inclination to invoke the grandiose holistic notions pronounced among many post-empiricists - notions that provide a perhaps unjustifiable credence to the recent style of 'worlds', 'discourses', and 'traditions' theorizing. And it is these very styles which, as we saw in our last chapter, fuel the course of relativism and Symbolic Realism in social and political theory circles. A critique of the roots of such theorizing could therefore prove very beneficial.

A second reason why I have chosen to present matters thus is because the approach of the people presented in this chapter receives much of its impetus from Quine and Sellars - two philosophers who reacted forcefully to positivist presuppositions, and helped to get the post-empiricist cause rolling. The thinkers who have been influenced by Quine and Sellars appear to me to fall into two (loosely construed) categories. There is that group influenced by Quine on the nature of ontological commitment and by Sellar's argument that to have good reasons for accepting a scientific theory is to have good reasons for believing in the existence of the postulates of that theory. The debates that these Scientific Realists get into tend to center around the question of the validity of inference to the best explanation. Another group is constituted by those deeply influenced by Quine's portrayal of naturalized epistemology and by Sellars naturalism and his attack on the Myth of the Given (the Myth: that existence comes to us other than through the descriptive categories of science). This is the kind of scientific real-

ism that most visibly rears its head most predominately in this chapter. As we will see towards the end of the chapter it may also be a kind of Scientific Realism that comes very close to throwing its metaphysical surname to the wind. Its presuppositions are perhaps best revealed in its acceptance of Quine's dictum that 'epistemology is science self-applied'.

A third and final reason for taking a look at what these philosophers have to say is that a number of theses advanced by them may have some profound influences on social scientific theorizing in the future. One of these theses suggests that the way we view ourselves is as concept-mediated as the way we view the world. The strength of this thesis compels us to consider the possibility that the folk-psychological concepts so prevalent in the intentional idiom constitute a <u>theory</u> and, moreover, a theory whose usefulness may have outlived itself. Another thesis, one which may in the end <u>contradict</u> the former one, draws on research in cognitive neurobiology and suggests that our linguistic formulations are only one (perhaps very small) part of the total information-processing that constitutes the human animal.

In presenting the substantive content of this chapter as a therapeutic alternative to the kind of post-empiricist philosophy considered in chapter four, I may be paving the way to much confusion. For the purpose of clarification it must first of all be mentioned that the philosophical positions of even self-proclaimed Scientific Realists form no unified monolith. Here we witness no 'school' even akin to that of the Vienna Circle; indeed, one might say that factionalism is the order of the day within debates about Scientific Realism.

Secondly, it must be pointed out that in many ways the varied Scientific Realisms that will be considered in this chapter are representative of a post-empiricist philosophy of science. They all find conceptual sustenance in attacks on the positivist image of science. To a large extent the primary point of departure between positivists and realists concerns the ontological status which the latter readily extends to the theoretical entities postulated in scientific theory construction. In fact, the debates between positivists and realists perhaps best reveals the schisms that exist between late-twentieth century Scientific Realism and its alleged historical precursors - Plato, the proponents of 'abstract' mathematical entities, the crude materialism of the nineteenth century,[1] et cetera.[2] Exactly how many Scientific Realists have 'moved beyond' the kind of post-empiricism which has been emphasized up to this point will become increasingly clear throughout this chapter.

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[1] Although contemporary Scientific Realists need not be materialists (i.e., 'if the scientific community at some time is agreed that all there really is are fields of force why should we believe in some atiquated building-block theory?'), many have offered defences of certain forms of materialism. See, for example, J.J.C. Smart, Philosophy and Scientific Realism (London: Routledge and Kegan Paul, 1963).

[2] In a critical examination of Sellars' brand of Scientific Realism, Bas van Fraassen implicitly points out how contemporary realists in the philosophy of science can be seen as departing from the old battlelines. As he expresses in the opening words to his article: "There are a number of dimensions of the realism-nominalism controversy. The topics comprise: necessary connections and causality, dispositions and counterfactuals, space and time, the existence of abstract entities and mathematical objects, the existence of the theoretical entities of science. On all of these except the last, Sellars takes a non-realist line ...". See Bas C. van Fraassen, "Wilfred Sellars on Scientific Realism", Dialogue 14 (1975):606.

Several authors have, of course, tried to construct typologies of the various kinds of Scientific Realism and the respective claims championed by each. Others have argued that, apart from the assertion that there is a 'mind-independent' world, there are certain common philosophical stances implicit in any formulation of Scientific Realism. William Newton-Smith, for example, as an opening strategical move in his attempt to demonstrate that the realist position is incompatible with the underdetermination of theory by data thesis, has outlined what he sees as the four 'basic ingredients' of any Scientific Realism. So portrayed, these constitute:

1. The Ontological Ingredient: scientific theories are either true or false and which a given theory is, it is in virtue of how the world is ... to speak the truth or falsity of a theory is to talk of the truth or falsity of the conjunction of the postulates.

2. The Causal Ingredient: if a theory is true, the theoretical terms of the theory denote theoretical entities which are causally responsible for the observable phenomenon whose occurence is evidence for the theory.

3. The Epistemological Ingredient: we can have warranted beliefs (at least in principle) concerning the truth-values of our theories.

4. The Thesis of Convergence: the historically generated sequence of theories of a mature science may well be a sequence of false theories but it is a sequence in which succeeding theories have greater truth-content and less falsity content than their predecessors.[3]

As broad as the import of these ingredients are, they nevertheless fail to capture the specificities of many formulations of Scientific Realism. In fact, any study which attempts to enumerate the various kinds of Scientific Realism seem necessarily destined to fail in just this

[3] William Newton-Smith, "The Underdetermination of Theory by Data", in Rationality in Science, ed. R. Hilpinen (Dordrecht, Holland: D. Reidel Publishing, 1980), pp.91-92.

fashion.[4] At one and the same time, they include and preclude too much.

The 'ontological ingredient' of which Newton-Smith speaks has, of course, been decisive to the argumentation of many self-avowed Scientific Realists. Several realists, for example, in varied attempts to escape from what they see as the inevitable epistemological relativism of the radical meaning variance thesis championed by many post-empricists, argue that the truth-condition of a proposition is distinct from its meaningfulness. Often such argumentation stems from the belief that as correspondence theory of truth must be a fundamental component of any well-developed Scientific Realism. As Laurence Sklar sees it:

> Whatever realism about theories means, it should include a claim that truth is correspondence to objective reality (in the metaphysical sense in which this is a controversial thesis)[5]...

Wedding the ontological ingredient with a demand for such a correspondence theory is also often implicit in the view of those who argue that a defence of realism 'hinges' on the issues of reference and truth.[6] Other commentators seem convinced that the ontological and epistemological ingredients must be conjoined in the formulation of Scientific Realism or, more precisely, that a causal theory of knowledge can actually be seen as implicity within the 'picturing theory' of realism. William Rottschaefer puts the matter thus:

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[4] For a look at further such attempts, albeit interesting ones at that, one might consult Geoffrey Hellman, "Realist Principles", Philosophy of Science 50 (1983):227-249; and Hilary Putnam, "Three Kinds of Scientific Realism", The Philosophical Quarterly 32 (1982):195-200.

[5] Laurence Sklar, "Saving the Noumena", Philosophical Topics 13 (1982):89-110.

[6] See, for example, Edward A. MacKinnon, "Scientific Realism: The New Debates", Philosophy of Science 46 (1979):530.

> If knowledge results from a causal interaction between knower and object, an ontological basis is provided for an understanding of how the Knower might come to a knowledge of what-is by means of its causal effects upon his cognitive apparatus ... Thus the rules of picturing are constituted by the physical, physiological, and psychological laws governing the interaction of object and perceiving organism.[7]

Further support for Newton-Smith's claim that the ontological and causal ingredients are fundamental to Scientific Realism comes from those philosophers, like Richard Boyd, who argue that the entities referred to by well-established scientific theories exist, and that Scientific Realism "entails that experimental evidence for a theory is evidence that those causal relations it describes ... operate to produce the regularities in observable phenomena which the theory predicts.[8]

In much of the literature the ontological ingredient is represented by the 'semantical thesis'; namely, that the theories of science provide us with a literal description of the world.[9] The coherency of such a thesis may be said to be presupposed by Sellars in his claim that within the confines of the fully developed 'scientific image' theoretical terms

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[7] William A. Rottschaeffer, "Ordinary Knowledge and Scientific Realism", in The Philosophy of Wilfred Sellars: Queries and Extensions, ed. Joseph C. Pitt (Dordrecht, Holland: D. Reidel Publishing, 1978), pp.140-141.

[8] See Richard Boyd, "Realism, Underdetermination, and a Causal Theory of Evidence", Nous 7 (1983):1. For a rather truncated defence of Scientific Realism offered on the grounds that realism is unavoidable at the level of causal descriptions of experimental situations (i.e., descriptions embodied in 'phenomenological' laws) see Nancy Cartwright, How the Laws of Physics Lie (Oxford: Clarendon Press, 1983). Cartwright, it might be added, provides an account that is realist about theoretical entities and yet anti-realist about fundamental laws and general theories.

[9] Other Scientific Realists, however, argue insistently that the semantic issue of truth must be kept independent of the ontological issue of realism. See, for an example of such argumentation, Michael Devitt, Realism and Truth (Princeton, New Jersey: Princeton University Press, 1984).

acquire 'first class semantic status'. Such a claim, of course, is an update of the Piercean claim that in the 'final community' of rational inquiriers 'theories' as such disappear.[10] And it is precisely claims of this nature which many realists (and non-realists alike) would argue pay credence to Newton-Smith's inclusion of the 'thesis of convergence' as a fundamental ingredient of any formulation of Scientific Realism.

Scientific Realism has, however, been defended on a variety of grounds not covered by Newton-Smith's four 'ingredients'. Perhaps most renowned amongst these alternative ways are those constitutive of what van Fraassen has recently called the 'demand for explanation'.[11] Proceeding abductively, the argument is that if scientific theories were not (approximately) true or possessed of central terms that (approximately) referred, one would not be able to account for the 'success' of science.

Such an abductive inference is implicit in Smart's claim that "if the phenomenalist about theoretical entities is correct, we must believe in a cosmic coincidence".[12] It has also led Hilary Putnam (in his Realist days) to argue that realism must be considered an 'over-arching' empirical hypothesis, since without it the 'success of science would be a mir-

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[10] For Pierce, what the 'final community' of rational inquirers believes is real constitutes reality. This reflects his epistemological thesis, recently championed by Putnam, that Truth is ideal warranted assertibility.

[11] Bas C. van Fraassen, The Scientific Image (Oxford: Clarendon Press, 1980), p.34. For van Fraassen, the 'demand for explanation' is really only a demand for "imaginative pictures which have a hope of suggesting new statements of observational regularities and correcting old ones".

[12] J.J.C. Smart, Philosophy and Scientific Realism, p.35.

acle'.[13] Such logic may also be inevitably responsible for fueling Boyd's claim that "Scientific Realism offers an explanation for the legitimacy of ontological committment to theoretical entities".[14] And it can also be found in the argumentation of those who have chosen to defend Reichenbach's 'principle of the common cause'.[15]

Apart from van Fraassen's diatribe, the employment of such arguments for Scientific Realism have been shown by Laudan to have gained a legitimacy not justified by the historical record.[16] And perhaps most damaging of all to this defence of realism has been Arthur Fine's forcefully argued thesis that the abductive inference and the implicit realist demand for explanation belies a most obvious form of circular reasoning. As Fine puts things:

> The issue over realism is precisely the issue as to whether we should believe in the reality of those individuals, properties, relations, processes, and so forth, used in

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[13] Hilary Putnam, "What is Realism?", The Aristotelian Society 76 (1975-76):178. Therein, realism is advocated as being superior on heuristic grounds. Putnam, we will recall, has recently begun to champion a form of anti-metaphysical realism which he calls 'internal realism'. This conceptual change of pace on Putnam's part reflects a particular bias; namely, he assumes that without the 'ontological (metaphysical) ingredient' all formulations of Scientific Realism are doomed. What has, however, become very problematic for many philosophers is whether or not this metaphysical ingredient is decisive to such formulation. Many have argued that anti-metaphysical arguments are not damaging to naturalistic versions of Scientific Realism. See, for example, Edward Stabler, "Naturalized Epistemology and Metaphysical Realism: A Response to Rorty and Putnam", Philosophical Topics 13 (1982):155-170.

[14] Richard Boyd, "Realism, Underdetermination, and a Causal Theory of Evidence", p.2.

[15] See, for example, James Robert Brown. "The Miracle of Science" Philosophical Quarterly 32 (1982):232-244. In speaking of a posteriori correlations (those which can only be determined a posteriori), Brown wishes to defend realism by arguing that the 'imperative to explain' significant correlations in a range of phenomena is often simply the imperative to postulate theoretical entities. As van Fraassen ade-

> well-supported explanatory hypotheses. Now what is the hypothesis of realism, as it arises as an explanation of scientific practice? It is just the hypothesis that our accepted scientific theories are approximately true, where 'being approximately true' is taken to denote an extratheoretical relation between theories and the world. Thus, to address doubts over the reality of relations posited by explanatory hypotheses, the realist proceeds to introduce a further explanatory hypothesis (realism), itself positing such a relation (approximate truth).[17]

In fact, the force of criticism has led Smart to reformulate his original position,[18] and other philosophers inclined towards realism, apparantly overcome by the problems involved in assuming that an inference to the best explanation will justify belief in theoretical entities, have opted for a realism about postulated entities premised along 'interventionist' lines. Such added color to the Kaleidoscope of realism in late twentieth century philosophy of science is Ian Hacking's refusal to countenance a realism about theories and Truth. For Hacking,

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quately argues, however, the 'explanatory imperative', if driven by the common cause principle, seems necessarily bound to demand the very deterministic theories of the world which many realists have painstakingly sought to reject. The primary epistemic virtue for van Fraassen is, of course, empirical adequacy; he therefore sees the demand for explanations of universal regularities as an unwarranted request, save such explanations' ability to increase that very adequacy.

[16] As Laudan reads it, that very record shows that the reference of central terms does not ordain success on a theory; that an empirically successful theory need not be true nor approximately true; and that future theories do not subsume the content of past theories nor explain their failure. These, in fact, constitute only a few of his examples. His paper is becoming increasingly influential and a reading of it would be well-advised. See Larry Laudan, "A Confutation of Convergent Realism", Philosophy of Science 48 (1981):19-49. It might be added, however, that the substantive content of the paper has been forcefully and critically responded to by two 'self-avowed' realists. To hear how the other half speaks, therefore, one should also consult Clyde L. Hardin and Alexander Rosenberg, "In Defense of Convergent Realism", Philosophy of Science 49 (1982):604-615. Further dialogue is also provided by Laudan's counter "Realism Without the Real", Philosophy of Science 51 (1984):156-162.

engineering emerges as the proof of Scientific Realism about entities i.e., our best evidence for the existence of theoretical entities comes from the fact that we can 'use' them in experiment to create and build phenomena. In short, if such entities help us in intervening deeper into nature then we are justified in believing in their existence.[19]

Further ingredients to an already indeterminable stew results from the fact that many Scientific Realists have also insisted that global coherency must remain a fundamental epistemic virtue of a realist philosophy of science. C.A. Hooker, for example, has argued that "The goal of Realism is nothing less than the construction of the true model of reality, a unified account of the world, including its reasoning inhabitants".[20] As Hooker sees it, 'the final, true science is a presumably fully internally global theory, the ultimate in unity'.[21] His account has an obvious Piercean-cum-Sellarsian ring about it.

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[17] See Arthur Fine, "The Natural Ontological Attitude", in Scientific Realism, ed. Jarrett Leplin (Los Angeles and Berkeley: University of California Press, 1984), p.86. For another kind of attack on similar realist argumentation also see the article by Michael Levin in the same volume, "What Kind of Explanation is Truth?", pp.124-139.

[18] J.J.C. Smart, "Laws of Nature and Cosmic Coincidences", Philosophical Quarterly 35 (1985):272-280.

[19] See Ian Hacking, Representing and Intervening: Introductory Topics in the Philosophy of Natural Science (Cambridge: Cambridge University Press, 1983). One of the most cogent presentations of his position is the chapter entitled "Experimentation and Scientific Realism" (which also appears in Philosophical Topics 13 (1982):71-87). For a different style of realism about theoretical entities, anti-realism about explanatory laws, see Nancy Cartwright, How the Laws of Physics Lie. For Cartwright, we are justified in calling an entity 'real' when we understand, via experiment-generated descriptions, what its causal properties are. A fundamental paradox which can be discerned in interventionist accounts stems from the fact that they often avoid indepth considerations of the extent to which the descriptions of said intervention are embedded in a particular theoretical apparatus. On interventionist grounds, could not the religious person claim that belief in God is justified because prayer 'works'?

In similar fashion, others have argued that explanatory unification is the decisive component recognized by Scientific Realists in their countenancing of the postulation of theoretical structures.[22] Indeed, one Scientific Realist, in claiming that 'global excellence of theory is the fundamental measure of all ontology',[23] has argued that the importance of explanatory coherence and unity may well be rooted in the fact that they "are some of the brain's criteria for recognizing information, for distinguishing information from noise".[24]

6.2 BEYOND THE UNIVERSE OF COMMON SENSE: ELIMINATIVE MATERIALISM AND REPLACEMENT REALISM

Not only do many Scientific Realists offer 'ingredients' not covered by Newton-Smith's typology, several refuse to countenance those which are included in his account. In fact, in the work of two of the most fire-brand realists writing today - C.A. Hooker and Paul Churchland - we see a forthright rejection of foundational epistemologies.[25] According-

[20] C.A. Hooker, "Systematic Realism", Synthese 26 (1974):464.

[21] C.A. Hooker, "On Global Theories", Philosophy of Science 42 (1975):159.

[22] See, for example, M. Friedman, "Explanation and Scientific Understanding", Journal of Philosophy 71 (1974):5-19.

[23] To see how such a thesis fits into his larger philosophical edifice see, Paul M. Churchland, Scientific Realism and the Plasticity of Mind (Cambridge: Cambridge University Press, 1979), pp.2-3.

[24] Paul M. Churchland, "The Anti-Realist Epistemology of van Fraassen's The Scientific Image", Pacific Philosophical Quarterly 63 (1982):231. Others, remaining more autobiographical in their analysis, may well argue that the importance which these epistemic virtues assume in Churchland's philosophy is actually 'rooted' in Sellars' views on explanatory coherence! Remaining serious, however, all we can say about the allegation that this epistemic virtue is rooted in the brain is that it requires much substantiation from neurophysiology.

ly, many philosophers have argued that Scientific Realisms which are compatible with such a rejection serve as unconsidered limiting cases to Rortian-styled construals of the scientific enterprise as simply another discourse.[26] Indeed, in paying credence to the possibility that traditional post-empiricist attacks on foundationalism may have enthusiastically overstated their case, Hooker has argued that such a rejection does not entail that:

1. one cannot draw a legitimate observational/theoretical dichotomy.
2. there are no epistemological asymetries among the claims of science, so that these claims can be ordered in respect of epistemological primacy or acceptability.
3. semantic content is purely non-ostensive and that the notion of ostensive definition must be given up.[27]

Even more radical than Hooker's rejection of foundationalism has been Churchland's recent rejection of the following theses (theses which are often assumedd fundamental to any realist programme):

1. on the whole our beliefs must be at least roughly true.
2. the terms of 'mature' science must typically refer to real things.
3. the Reason of humans will eventually encompass all and/or only true statements.[28]

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[25] See the bibiliography for the works of Hooker and Churchland.

[26] For example, see Victoria Choy, "Mind-Body, Realism and Rorty's Therapy", us Synthese 52 (1982):515-541.

[27] C.A. Hooker, "Systematic Realism", pp.424-425.

[28] Churchland's formal pronouncement on where he stands vis the rejection of these theses can be found in "The Anti-Realist Epistemology of van Fraassen's The Scientific Image, Pacific Philosophical Quarter 63 (1982):226-235. The rejection of the second thesis, to the effect that there may be no natural kinds represented by our scientific theories, can be found in a recent article wherein Churchland's brand

What realists like Churchland wish to give expression to is a Scientific Realism that is opposed to both the instrumentalist component in positivism that claimed that theoretical terms possess meaning and positivism's more sophisticated view, wherein it was claimed that the meaning such terms possess is due only to their connection with experience. This juxtapositional formulation can, of course, be found in the early work of Paul Feyerabend.[29] Such realism also owes a fundamental debt to Hempel's argument that those positivists who sought to 'eliminate' theoretical terms could not avoid making reference to theoretical entities.[30] It is also indebted to the philosophical stance taken by Sellars as represented in the following dictum:

> It is not that the 'physical thing framework' doesn't sustain enough inductive generalizations, but rather that what inductive generalizations it does sustain, it sustains by a covert introduction of the framework of theory into the physical thing framework itself.[31]

In a very influential paper, the inevitable ramifications of such realism, that our 'observational' language posits entities that are ontologically on par with the entities postulated by the 'theoretical' lan-

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of Scientific Realism comes very close to merging with a form of pragmatism; see, "Conceptual Progress and Word/World Relations: In Search of the Essence of Natural Kinds", Canadian Journal of Philosophy, 15 (1985):1-17.

[29] See Paul Feyerabend, "An Attempt at a Realist Interpretation of Experience", Realism, Rationalism and Scientific Method (Cambridge: Cambridge University Press, 1981), pp.17-36.

[30] Carl Hempel, "The Theoretician's Dilemma: A Study in the Logic of Theory Construction", Aspects of Scientific Explanation and Other Essays in the Philosophy of Science (New York: The Free Press, 1965), pp.173-226.

[31] A much earlier argument of his as re-presented in Wilfred Sellars, "Is Scientific Realism Tenable?", in PSA 1976: Volume Two, eds. F. Suppe and P.D. Asquith (East Lansing, Michigan: Philosophy of Science Association, 1977), p.315.

guages of advanced science, has also been cogently expressed nearly a quarter of a century ago by Grover Maxwell.[32]

The kind of Scientific Realism that emerges from this philosophical background is at once radical and cautious in its epistemological and ontological claims. What it inevitably sponsors is a consideration of our 'common-sense' framework as simply another theoretical matrix. Herein, the universal acknowledgement accorded the common-sensical matrix is explained as simply resulting from the fact that it "is just the theory that got there first".[33] The question of ontological committment bracketed for the time being, Scientific Realism so construed proceeds from the postulate wherein "our observational ontology is rendered exactly as dubious as our non-observational ontology".[34]

What is most problematic for this kind of Scientific Realism once the ontic spectre is acknowledged has in part been revealed by the following formulations recently outlined in an article by Gary Gutting:

1. Basic Realism: the postulated, unobservable entities of theoretical science do in fact exist.

2. Replacement Realism: there is nothing except the postulated entities of science.

3. Radical Replacement Realism: he postulated scientific ontology is to replace even our common-sense ontology of thought, perceptions, feelings, and the persons who have them.[35]

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[32] The article is, in fact, very necessary reading. See Grover Maxwell, "The Ontological Status of Theoretical Entities", Minnesota Studies in the Philosophy of Science, 3 (1962):3-27.

[33] See Paul M. Churchland, Scientific Realism and the Plasticity of Mind, pp.41-45. This specific reference is from page 45.

[34] Paul M. Churchland, "The Anti-Realist Epistemology of van Fraassen's The Scientific Image", p.227.

The real gist of what remains problematic for this kind of Scientific Realism is perhaps best clarified by invoking Sellars' depiction of the so-called 'Manifest and Scientific Images'. Sellars has attempted to give coherency to the alleged nature of these images by contrasting them, within an historical perspective, with what he calls our 'original' image of the world. For Sellars, the original image of man-in-the-world is best characterized as "a framework in which all the 'objects' are persons".[36] Sellars is, however, quite concerned with preventing a common confusion that one may have with this characterization from arising. Clarification on his part is offered by way of the following example:

> A primitive man did not believe that the tree in front of him was a person, in the sense that he thought of it both as a tree and a person, as I might think that this brick in front of me is a doorstep. If this were so, then when he abandoned the idea that trees were persons, his concept of a tree could remain unchanged, although his beliefs about trees would be changed. The truth is, rather, that originally to be a tree was a way of being a person, as, to use a close analogy, ... to be a triangle is a way of being a plane figure ... When primitive man ceased to think of what we called trees as persons, the change was more radical than a change in belief; it was a change in category.[37]

For Sellars, the correlational and categorical refinement of this original image - epitomized by the gradual de-personalization of its objects - precipitated the shaping of the manifest image. In the manifest image the primary objects are persons, inanimate things are no longer

[35] See Gary Gutting, "Scientific Realism", in The Philosophy of Wilfred Sellars: Queries and Extensions, ed. Joseph C. Pitt (Dordrecht, Holland: D. Reidel Publishing, 1978), p.105.

[36] Wilfred Sellars, "Philosophy and the Scientific Image of Man", in Science, Perception and Reality (New York: The Humanities Press, 1963), p.10.

[37] Ibid.

considered to 'do' things in the manner in which we now speak of people doing them. Within the manifest image man first comes to conceive of himself as a being-in-the-world. Indeed, such a conceptual change of pace provides the rudimentary base from which the tradition of 'perennial philosophy' has arisen.

The manifest image, in Sellars view, is in many ways a 'scientific image' itself; i.e., the correlational and categorical refinement of the original image by the manifest image partially parallels the explanatory refinement of the latter by the postulational theory construction indicative of the scientific image. Historically speaking, the major clarification that is in order here is that while "the manifest image took shape in the mists of pre-history, the scientific image ... has taken shape before our very eyes".[38]

However, the radical changes which the manifest image was, and is, bound to undergo is foreshadowed by the fact that our view of ourselves is as concept-mediated as our view of the objects of the 'external' world.[39] That such radical changes can be seen as methodologically unavoidable is outlined by Sellars as follows:

> The manifest must ... be construed as containing a conception of itself as a group phenomenon, the group mediating between the individual and the intelligible order. But any attempt to explain his mediation within the framework of the manifest image was bound to fail, for the manifest image contains the resources for such an attempt only in the sense that it provides the foundation on which scientific theory can build an explanatory framework; and while conceptual structures of this

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[38] Ibid., p.5.

[39] For an elaboration on this very important thesis, wherein reflection is brought to bear on the social character of conceptual thinking, see Sellars article, "Empiricism and the Philosophy of Mind", in Science, Perception, and Reality.

> framework are built on the manifest image, they are not definable within it ... It is in the scientific image of man in the world that we begin to see the main outlines of the way in which man came to have an image of himself in the world.[40]

Sellars depiction of the manifest and scientific images has fueled much debate in Anglo-American philosophy of science and philosophy of mind. Sellars largely urges us to view the manifest image as a primitive sort of conceptual scheme inclusive only of the observable features of in(animate) life and a simple theoretical elaboration thereof (an elaboration inclusive of thought, feelings, sense-impressions, et cetera). To a large degree this construal fuels his attack on the instrumentalist component of positivist thought, proponents of which inevitably deem 'picturing' as the 'inalienable perogative of the perceptual level of our current conceptual structure'.[41] In such an attack we often hear Sellars making an equation straight-away between manifest image/observational framework/common sense.

Thus in his defense of Scientific Realism Sellars entertains the possibility that in the scientific image the notion of a person that we recieve from the manifest image will be replaced by a 'multiplicity of logical subjects'; i.e., that 'in principle' the language of physical theory "could replace the common-sense framework in all its roles".[42] Such implicit optimism can, in fact, be seen as fueling Feyerabend's early argument that there is no reason why we should not now attempt to

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[40] W. Sellars, "Philosophy and the Scientific Image of Man", p.17.

[41] For Sellars' argument in this regard, see Wilfred Sellars, Science and Metaphysics: Variation on Kantian Themes (London: Routledge and Kegan Paul, 1968), pp.143-150.

[42] Ibid., p.146.

replace the theoretical framework of sense-impressions with the language of micro-physical theory. In fact, Feyerabend's unrestrained attack on phenomenalistic accounts of experience (wherein sense impressions are accorded primary ontological status) precipitated what to most positivists would have been a ludicrously incomprehensible thesis; namely, that 'experience', as traditionally concieved, is not essential to the acquisition of scientific understanding. As Feyerabend argued, for example:

> A theory (such as electrodynamics) may be understood even by a blind person. The only difference between a blind person and a seeing person consists in the fact that the first one uses a different part of the theory (or of the consequences of the theory) as his observation language. Hence, even a blind person may understand 'red' and similar terms (of his theoretical language) and there is no reason why he sould not be able to explain 'red' to a seeing person 'by ostension'. This being so we cannot assume that when ceasing to be blind he automatically improves his knowledge of redness.[43]

Although his views have changed in remarkable ways over the years, Feyerabend was indeed quite emphatic in insisting on the validity of such a perspective.[44] In response to the question which has so stimulated empiricists over the centuries 'What do sensations contribute to our understanding?', his response was quite forthright: "Taken by themselves, as they would appear to a completely disoriented person, they are of no use, either for understanding, or for action".[45]

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[43] Paul Feyerabend, "An Attempt at a Realistic Interpretation of Experience", p.33.

[44] It might be noted that an indepth examination of his more recent views may well reveal that they are not all incompatible with what he has to say here.

[45] Paul Feyerabend, "Science Without Experience", in Realism, Rationalism and Scientific Method (Cambridge: Cambridge University Press, 1981), p.133.

In his request for scientists to abandon the entire common-sense conceptual framework, however, Feyerabend's position has been challenged in an equally emphatic way by Sellars himself. In outlining his discord with Feyerabend's views Sellars, while agreeing "that the conceptual framework of 'common sense' is, in the last analysis, false",[46] nevertheless objects to speaking of that framework as a false theory. On Sellars account, "the conceptual framework of common sense has no external subject-matter and is not, therefore, in the relevant sense a theory of anything".[47]

Sellars' major point of contention with Feyerabend, however, is on another matter. It is a contention, conceivably enough, that may be fueled by the disagreement over the 'theoretical' status of the common-sense conceptual framework - for Sellars does admit that common-sense concepts have an irreducible 'practical dimension'.[48] Nevertheless, what Sellars is most desirous to underline is that "the abandonment of the common-sense framework would result in serious methodological and conceptual loss".[49] Parting company in this fashion with Feyerabend on

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[46] Wilfred Sellars, "Scientific Realism or Irenic Instrumentalism: A Critique of Nagel and Feyerabend on Theoretical Explanation", in Philosophical Perspectives (Springfield, Illinois: Charles C. Thomas, 1967), p.338.

[47] Ibid., p.339.

[48] Ibid., p.354. The extent of disagreement between Sellars and Feyerabend on this matter may not be as great as it appears. Feyerabend has, however, stated the following: "The fact that the pragmatic properties of some parts of the everyday language have remained unchanged may well be due to the fact that the people using these particular sections are not interested in science and do not know its results". See Paul Feyerabend, "An Attempt at a Realistic Interpretation of Experience", p.31.

[49] Ibid., p.355.

methodological issues, Sellars does, however, rejoin him for the ontic feast. His explanation for the temporary conceptual departure?: "no one who stresses the methodological primacy of the framework of common sense is committed ... to preserving either outmoded common sense beliefs ... or common sense constructs ... in the corpus of science".[50]

This latter point of contention, however, can be seen as belying a more important aspect of Sellars' depiction of the manifest and scientific images. For Sellars, as we saw in our depiction of his views in our chapter on post-empiricism, 'sense impressions' are really theoretical entities, talk of which has arisen to provide an explanatory account of the perceptual aspects of physical objects. Such talk, allegedly, will find no place in the scientific image of things. Perhaps quite unexpectedly, however, Sellars does not advocate a full-blown Quinean physicalism. The reason for this is because he believes that the scientific image's equivalent to the 'states of perception' of the manifest image (the theoretical elaboration of sense-impressions, described in the adverbial mode; i.e., 'Jane senses the book redly') must reproduce the 'logical spaces' of secondary quality concepts. These equivalent states, Sellars alleges, are constituently possessed of 'sensa' - 'theoretical <u>inner</u> nonphysical events' - that represent the emergent property of sensing irreducible to the physical states depicted by the scientific image. One is thus forced to back-track somewhat and reclarify what Sellars says about the replaceability of the 'primary objects' of the manifest image by the 'multiplicity of logical subjects' in the scientific image. In fact, such clarification is implicitly forthcoming from

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[50] Ibid.

Sellars himself when he states that:

> the idea that persons 'really are' such multiplicities ... does not require that concepts pertaining to persons be analysable into concepts pertaining to set of logical subjects. Persons may 'really be' bundles, but the concept of a person is not the concept of a bundle.[51]

Argumentation of this sort can, in fact, be seen as precipitating Sellars' view of the aim of philosophy as being constitutive of the fusing of the manifest and scientific images into a 'unified image of man-in-the-world'. More precisely for Sellars:

> the most fruitful way of approaching the problem of integrating science with the framework of sophisticated common sense into one comprehensive synoptic vision is to view it not as a piecemeal task ... but rather as a matter of articulating two whole ways of seeing the sum of things, two images of man-in-the-world and attempting to bring them together in a 'stereoscopic view'.[52]

Sellars belief that 'sensa' and the ascription of intentions to others (for Sellars, intentional properties have a functional significance) necessitates that the manifest image must be reconciled with the scientific image has, however, met with some opposition from other Scientific Realists. C.A. Hooker, for example, has argued that the apparant validity of Sellars argument is rooted in his construal of secondary qualities as simple and homogeneous and in his 'Principle of Framework Transformation Adequacy'. Hooker outlines that principle as follows:

> For any two conceptual schemes S, S', if S' is to be an adequate successor conceptual framework to S then S' must be capable of explaining all the phenomena describable in S; but S' will not be capable of this unless it is able to reconstruct within its resources the same logical structures ('logical spaces') of each of the concepts of S.[53]

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[51] Wilfred Sellars, Science, Perception and Reality, p.101.

[52] Ibid., p.19.

As Hooker rightly points out, this principle amounts to the demand that any successor conceptual framework must reproduce all of the conceptual relationships among the concepts of the succeeded framework, as well as any other logical characteristics of those concepts, for example, simplicity and homogeneity.[54] In light of the matter at hand, this amounts to the demand that in the scientific image something akin to 'sensa' reproduce the 'logical space' (read structure) of the secondary qualities. In short, from the supposition that the having of sense impressions is of a homogeneous nature, and can therefore not be reduced to systems of particualr components none of which possess such an attribute in their own right, Sellars is led to the conclusion that persons cannot be exclusively reduced to the multiplicity of non-homogeneous logical subjects depicted by the scientific image.

Seizing the bull by its horns, however, Hooker simply attacks Sellars main suppositions; namely, that there is a simplicity and homogeneity to the manifest image as well as to the secondary qualities discerned therein. For Hooker, there is really no such thing as <u>the</u> manifest image brought to bear in experience; such a thing is largely a myth, "an idealised construction of a certain sort extracted from a changing kaleidoscope of conceptual schemes".[55] In reality, the experiences of the species has been dictated by "multitudinous conceptual schemes, stretch-

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[53] As presented, this principle is actually a synthesis of two depictions that Hooker gives it. See C.A. Hooker, "Sellars' Argument for the Inevitability of the Secondary Qualities", <u>Philosophical Studies</u> 32 (1977):339,343.

[54] Ibid., p.336-337.

[55] Ibid., p.342.

ing over centuries".[56]

This attack on the 'neat separation' which Sellars has drawn between the manifest and scientific images has some major consequences. Such consequences are partly foreshadowed by Sellars' unjustified inference from the premise that secondary qualities are experienced as irreducible homogeneous properties to the conclusion that they are such properties. Invalid syllogisms of this nature, however, are not the prime mover behind the hard rain that befalls Sellars' vision of the aim of philosophy. The really hard rain falls as an inevitable result of the evolutionary nature of 'manifest image' conceptual schemes - that at no time can we a priori dictate what conceptual components of a given conceptual scheme must be 'explained' by its successor. As Hooker notes, Sellars has implicitly run together concepts and beliefs. The apparantness of Sellars' reporting on how the manifest image is belies the fact that his construal of secondary qualities as simple and homogeneous "represents a belief of unknown truth value formulated in terms of secondary quality concepts which are, qua ostensively defined, agnostic on the subject".[57] By way of a related example, Hooker notes the import of recognizing Sellars' conflation of beliefs and concepts in this regard as unjustified; i.e.,

> in at least one version of the Manifest Image the belief that all solid objects are completely filled with matter in the relevant sense would be represented as just that, a belief, no longer as part of the concept of solidity.[58]

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[56] Ibid.

[57] Ibid., p.341.

[58] Ibid., p.342.

Attacks akin to Hooker's on Sellarsian arguments for the inclusion of qualitative properties in the picture of the world provided by advanced science can only lend conceptual support to the kinds of replacement realism outlined by Gutting which we mentioned earlier.[59] In accepting that all conceptual talk about sense-data are necessarily theory-laden one can see the import of Feyerabend's radical stance on the matter. As Paul Churchland argues (in neo-Feyerabendian flavor), if we accept that "sensations are just causal middle-men in the process of perception ... the possibility of a dramatic modification and expansion of the domain of human perceptual consciousness - without modification of sense organs - becomes quite real".[60] The only real bugbear that remains in all of this is whether one should champion the in-principle-replaceability of 'manifest image' predicates and corresponding ontologies, or, being more forthright, claim that given the superior explanatory account of neuroscience, they ought to be replaced by that taxonomy. This dilemma, remaining even given a fully developed defense of eliminative materialism, serves, in fact, as a point of contention between pragmatists and more thorough-going scientific realists. Thus Churchland, quite optimistic about science 'coming closer to ideal of seeing reality as it really is', in championing the replacement of the common-sense taxonomy, states that he is "advocating only that we assist a process that has been underway for many millennia".[61] One the other hand, Richard Rorty, one of

[59] For a differently inspired attack on Sellars' views of perception, see James W. Cornman, "Sellars on Scientific Realism and Perceiving", in PSA 1976: Volume Two, ed. Frederick Suppe and P.D. Asquith (East Lansing, Michigan: Philosophy of Science Association, 1977), pp.344-358.

[60] Paul Churchland, Scientific Realism and the Plasticity of Mind, p.15.

[61] Ibid., p.36. Churchland, of course, has recently voiced some scepti-

the earliest proponents of eliminative materialism, has outlined, on pragmatist grounds, what prevents his advocacy of scientific realism on this score as follows:

> I am not in any sense claiming that the customary vocabulary of introspection is 'illegitimate'. Rather, I am merely claiming the same legitimacy for the neurological vocabulary ... My attitude is, not that some vocabularies are 'illegitimate', but rather we should let a thousand vocabularies bloom and then see which survive ... I take no sides on the question of whether the materialist is right in his prediction that the ordinary ways of reporting on introspections will wither away[62]...

It could well be said that optimistic-cum-voluntaristic and agnostic stances respectively divide the scientific realist and pragmatist on this matter. On methodological grounds, however, the pragmatist may have to concede something to the mandates of evolving conceptual schemes as outlined by the realist. In fact, if we acknowledge that the common-sense conception of man-in-the-world is best described as a 'loosely integrated patchwork of subtheories' then even Sellars' demand that we methodologically honor the categories of 'the' Manifest Image until 'the' Scientific Image happens on the scene emerges as a presription that stands in the way of theoretical innovations. As Churchland pointedly notes, "the 'facts', as currently conceived and observed by us, form the starting place for theoretical inquiry, but its successful pur-

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cism about the possibility of finding a 'final True Theory'. See Paul Churchland, "Conceptual Progress and Word/World Relations: In Search of the Essence of Natural Kinds", Canadian Journal of Philosophy 15 (1985):1-17. We will soon see how this scepticism is fueled by evolutionary-naturalistic considerations.

[62] Richard Rorty, "In Defense of Eliminative Materialism", in Materialism and the Mind-Body Problem, ed. David M. Rosenthal (Engelwood Cliffs, N.J.: Prentice-Hall, 1971), pp.229-230. For his classic defense of eliminative materialism also see, in the same volume, Rorty's article "Mind-Body Identity, Privacy, and Categories", pp.174-199.

suit may well reveal that we should vacate that starting place as hastily as possible".[63]

The inevitable ramification of championing eliminative materialism to any extent is that it gives one conceptual footing for entertaining the possibility that the conceptual apparatus, and corresponding categorical distinctions, of any given common-sense theoretical framework need not have its 'logical spaces' preserved by a successor framework.[64] The most powerful ramification, however, of evaluating common-sense distinctions as part of theoretical matrixes[65] is that the realm of the intentional - of propositional attitude - befall the same fate as talk of secondary qualities and 'subjective perception'. In short, what a thorough-going eliminative materialism (under the guise of replacement realism) must inevitably call into question is the whole store-house of folk psychology and its reliance on sentential attitudes.[66] Fueled by an eliminative

[63] Paul Churchland, Scientific Realism and the Plasticity of Mind, p.44.

[64] It might be noted that Sellars' interpretation of the Manifest Image as an homogenous monolith, which partly precipitates his demand for the preservation of the 'logical space' of its concepts, has been attacke by a variety of philosophers of different persuasions. Gary Gutting, for example, has argued that "the Manifest Image ... cannot comprise, without contradiction, both Marxist materialism and Buddhism; yet each of these proports to be, in principle, a total world view". See Gary Gutting, "Scientific Realism", in The Philosophy of Wilfred Sellars, ed. Joseph C. Pitt (Dordrecht, Holland: D. Reidel Publishing, 1978), p.615. In all fairness to Sellars, however, I suppose one could siply counter this argument with the reply: 'proporting to be a world-view and actually being one are two quite distinct things'.

[65] Or, if we want to pay some regard to Sellars on this matter, as an 'amalgam of concepts which feign theory-hood'. For a brief attack on the attempt to construe common-sense as constituting a theory, see Bas C. van Fraassen, "On the Radical Incompleteness of the Manifest Image", PSA 1976: Volume Two, eds. Frederick Suppe and P.D. Asquith (East Lansing, Michigan: Philosophy of Science Association, 1977), pp.335-343. More on this matter later.

materialist stance[67] it is this very questioning which can be seen as serving as the hallmark of a fundamental version of scientific realism. We will look at the resources for this scepticism vis a vis folk psychology after a consideration of the evolutionary naturalistic aspects of scientific realism. In fact, we will see how a scepticism in regard to folk-psychological taxonomies (and corresponding sentential attitudes) also emerges from evolutionary-naturalistic considerations.

6.3 FUELING THE ENTERPRISE: A LOOK AT EVOLUTIONARY NATURALISTIC REALISM

Many of those realists who have been influenced by the Quinean request for a naturalized epistemology[68] are perhaps more appropriately called (following Hooker's suggestion) evolutionary naturalistic realists. On a variety of counts, however, their views are almost indistin-

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[66] It might be pointed out at this point that in extending at least a quasi-theoretical status to common-sense 'descriptions', one is acknowledging that in its invocation of countless unobservable entities folk psychology may well be said to be partly constituted by 'naive scientific psychology'. However, the import of this, as Myles Brand has aptly noted, is that one must admit that, "Sellars' distinction between the Manifest and Scientific images doe not correspond to the distinction between folk and scientific psychology ... [since] ... upon closer inspection, terms referring to nonobservables are seen to appear in folk psychological explanations". See Myles Brand, Intending and Action: Toward a Naturalized Action Theory (Cambridge, Mass.: MIT Press, 1984), pp.164-165. Accepting Hooker's account of a 'changing kaleidoscope of conceptual schemes', however, overcomes any conceptual problem that may be precipitated by Brand's observation.

[67] The distinction between eliminative materialism and the identity thesis in the philosophy of mind must always be acknowledged. The latter, which appears to have so far received most of the attention in social science circles, supposes that mental state talk can be reduced to talk of brain states; in short, it supposses that the two vocabularies are referentially identical. Eliminative materialism, on the other hand, is, at the one and the same time, more radical and less optimistic in regards to this matter. It argues that such a re-

guishable from a naturalistically-oriented pragmatism. In fact, whether or not, as self-proclaimed scientific realists, this group of thinkers may well be tossing their metaphysical surname to the wind is a question we will shortly explore.

Meta-philosophical concerns aside for the time being, however, it may well be said that for this kind of realism many of the excesses and dilemmas of post-empiricist philosophy stem from the fact that its proponents have not adequately responded to the limitations placed on the human animal's cognitive apparatus by the environment within which it evolves. On this account, post-empiricist developments reflect a thesis that is common to the Kantian-cum-linguistic turn in philosophy; namely, that our knowledge of the world is posssible because we, at least in part, structure that world. However, because it is largely constitutive of this very legacy, much of post-empiricism - quite in spite of Popperian influences - has been prevented from underlining the Darwinian claim that we learn about the environment by being challenged by it. Much of post-empiricism, for example, in not paying due attention to Quine's argument that natural language emerges as an end result of a

duction is not going to come about - that talk of mental states will simply be eliminated in favor of more (pragmatically?) adequate taxonomies. On the eliminative materialist's score-card talk of beliefs and desires will one day suffer the same fate that talk of witches and phlogiston has already suffered. Any resaonable anthology in the philosophy of mind will give depiction to the intricacies of the debates between identity theorists and eliminative materialits. Two nicely structued ones are C.V. Borst, ed., The Mind/Brain Identity Theory (London: The MacMillan Press, 1970) and David M. Rosenthal, ed., Materialism and the Mind-Body Problem (Engelwood Cliffs, N.J.: Prentice-Hall, 1971).

[68] See W.V.O. Quine, "Epistemology Naturalized", in Ontological Relativity and Other Essays (New York: Columbia University Press, 1969), pp.69-90. We will recall the rallying cry that accompanies this request: 'epistemology is science self-applied'.

trial and error process of adjustment,[69] is led to give an unjustified emphasis to the possibility of language to change almost spontaneously - and to thereby 'gestalt' its users into unencountered worlds.

Although evolutionary naturalistic realists applaud much of the post-empiricist attack on positivist presuppositions, they are unconditional in their rejection of a First Philosophy - including that which dictates the 'linguistic turn'. Fundamental to these realists is the acceptance of the principle that 'once a science is born, philosophical assumptions no longer have a privileged status'. So argued, their stance is often quite simplistically expressed. Feyerabend, for example, at one point in his thorough-going Realist days, once claimed that, "as opposed to positivism, a realistic position does not admit any dogmatic and incorrigible statement into the field of knowledge".[70]

Indeed, what might appear to many as the ultimate presupposition of evolutionary naturalistic realism has been best expressed by Hooker's (perhaps unintentionally) truncated claim that "To be a Scientific Realist is not easy - it requires that science be taken realistically, hence seriously".[71] For the opponents of evolutionary naturalism such a claim reveals that its defence of scientific realism rests on a specific sort of faith or, at best, a 'pragmatic choice of research programmes'. Sci-

[69] In light of the objections from those who argue that the explanatory aspect of natural languages is not ubiquitous - i.e., that there are several other uses of language - we might say that this principle applies straight across the spectrum. In short, we would be claiming that 'trial and error' governs jokes, sarcasm, commands, retorts, et cetera.

[70] Paul Feyerabend, "An Attempt at a Realistic Interpretation of Experience", p.35.

[71] C.A. Hooker, "Systematic Realism", Synthese 26 (1974):409.

entific realists, however, as we have already seen, have a variety of reasons for choosing the 'conceptual scheme' of science as the best (theoretically) speculative apparatus for apprehending the world. Besides, the allegation of 'faith' is very inappropriate in this context. The invocation of contemporary evolutionary theory is not irrevocably dogmatic. Unlike religious folk, for whom the Great Book speaks of the world till the end of time, the evolutionary naturalistic realist may quite readily admit that the 'story' of evolution may well undergo dramatic alteration - i.e., that the science of tomorrow may well be (in fact, probably will be) radically different from the science of today.[72] We will have no choice but to employ our contemporary theoretical resources (all the while keeping a closse eye on possibly innovative developments). Especially on evolutionary grounds, there is no contradiction here.

As part of their advocacy of a turn towards naturalized epistemology, evolutionary naturalistic realists champion a naturalistic approach to the theory of rationality in general and to the issue of perception in particular. With their replacement of the positivists' sense-datum model by a vigorously developed information-processing model of knowledge acquisition,[73] evolutionary naturalistic realists provide us with the

[72] This possibility, we will note, also receives sustenance from the Kuhns and Feyerabends of post-empiricism; on an historicist reading, our inability to comprehend the inticracies of the science of the past necessarily becomes an inability to foretell the intracacies of the science of the future.

[73] For a glimpse of some of the philosophical consequences of such a replacement, ee C.A. Hooker, "The Information-Processing Approach to the Brain-Mind and its Philosophical Ramifications", Philosophy and Phenomenological Research 36 (1975):1-15. How this replacement overcomes many of the failures (in fact, how it accounts for the failures) of sentential epistemologies is nicely depicted in Patricia

resources for conceiving of the human animal as simply one very elaborate 'epistemic engine'.[74] Ipso facto, what is decisive to note is the fact that the posssession of a particular cortical structure "represents a commitment on our part (albeit neither voluntary nor conscious) to certain ways of understanding".[75] Viewing perception in this light, what wants underlining is that "our present way of seeing the world is, though incorrect, pragmatically the least confusing and simplest way of organizing our visual experience".[76]

Although certain evolutionary naturalistic realists may well argue that 'our present way of seeing the world is incorrect' because it necessarily falls short of the 'true' picture that only the 'fully developed' Scientific image can provide us with,[77] not all of them need argue accordingly. 'Incorrect' may be invoked in this context for a variety of reasons. One of these reasons finds sustenance in evolutionary theo-

Smith Churchland, "Language, Thought, and Information Processing", Nous 14 (1980):147-170.

[74] As Paul Churchland, urges, "we must contrive to step out of our parochial self-conception, to transform our narrow concern with the rationality of belief into a global concern, with the parameters of operation of 'epistemic engines' generally". See Paul M. Churchland, Scientific Realism and the Plasticity of Mind, p.6. Also see Patricia Smith Churchland and Paul M. Churchland, "Stalking the Wild Epistemic Engines", Nous 17 (1983):5-18.

[75] C.A. Hooker, "Empiricism, Perception and Conceptual Change", Canadian Journal of Philosophy 3 (1973):71.

[76] C.A. Hooker, "An Evolutionary Naturalistic Realist Doctrine of Perception and Secondary Qualities", Minnesota Studies in the Philosophy of Science 9 (1976):427.

[77] The tendency to argue thus is quite apparent in the work of Hooker, while it is becoming increasingly less apparent in the recent work of Churchland. For those who don't argue so the importance of championing Realism (apropos picturing) becomes less of an issue (i.e., Putnam, Rorty, Feyerabend ... Churchland?). This is also why many would argue that a defence of Scientific Realism inevitably winds up being

ry in general. Disregarding the Lamarkian twist that philosophers often endow it with,[78] there is nothing in the Darwinian account of evolution which necessarily compels us to equate the process of adapting to the world with our acquiring 'knowledge' of that world. To speak generally of survival value is not to say how our species is fitted to survive. Knowledge (as 'representations') may be at best an unsystematic and peripheral by-product of biological adaption and genetic change in general. Correlatively, it is alo quite possible, on the evolutionary account, that the brain may be more complex than it is smart i.e., that we are not possessed of the resources for either 'knowing' how our representations hook up with the world or the adequacy of those representations.[79]

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a defence of pragmatism. On this and related issues one is well advised to consult R. Nola, "Paradigms Lost, or the World Regained: An Excursion into Realism and Idealism in Science", Synthese 45 (1980):317-350. More on this matter later.

[78] As perhaps Popper has when he speaks of 'increasing versimilitude'. For some of the relations that Popper sees between biology and knowledge, see Karl R. Popper, Objective Knowledge: An Evolutionary Approach (London: Oxford University Pres, 1972). What I simply wish to underline here is that there is no necesssary reason to subscribe to Lamarkian optimism (humanism) on matters epistemic; in short, that there is no over-riding reason to assume that through 'trial and error' ('conjecture and refutation') we will increasingly be able to provide increasingly 'better' representations (via theory) of even our species-specific environment. Abiding by the mandates of mutation and variance, we may only be able to say that we are 'representing' different, perhaps more multifaceted, components of that environment.

[79] We will shortly see how a consideration of these possibilites fuels much of Churchland's philosophy. There is another very important ramification of this scenario; namely, that the brain's capacity for knowledge may be tragically incompatible with its having survival value.

Another aspect of the evolutionary story also justifies the evolutionary naturalistic realist in speaking of 'incorrect perceptions'; namely, the species-specific nature of the environment within which the human animal evolves. This aspect, however, only really causes trouble for metaphysical - God's Eye View - realists. Several realists, on the other hand, will insist that it does not illegitimize the championing of the ontological component which Newton-Smith argues is fundamental to the defence of Scientific Realism.

Donald Campbell, for example, in arguing that "the evolutionary perspective is fully compatible with an advocacy of the goals of realism and objectivity in science",[80] has invoked the work of Konrad Lorenz to support his general thesis. For Campell, the import of Lorenz's work is that it gives credence to the view that "the mind has been shaped by evolution to fit thoe apects of the world with which it deals, just as have other body parts".[81] This can,however, be seen as a rather loose presentation on Campbell's part. What, for example, might constitute 'mind' in this regard? Mental (conceptual) representations? Are these representations adequately captured by linguistic (theoretical) taxonomies? And further yet, what is constitutive of 'fit'? Precision of 'picturing'?

There can, in fact, be no doubt that claims such as Campbell's require evaluation by the most advanced biological sciences of the day. Indeed, the very nature of such claims necessitate that further philo-

[80] Donald T. Campbell, "Evolutionary Epistemology", in The Philosophy of Karl Popper: The Library of Living Philosophers: Volume 14, Book 1, ed. P.A. Schlipp (Open Court, Illinois, 1974), p.451.

[81] Ibid., p.447.

sophical discussions on the salient issues must be imbued with an awareness of recent development within those sciences.

It does, nevertheless, remain quite clear that the species-specific nature of environments is that aspect of evolutionary theory which most prominently fuel debates over whether or not evolutionary epistemology is compatible with ontological realism. Some philosophers, of course, question the validity of the whole notion of evolutionary epistemology. Often their attacks are directed at the Quinean request for naturalized epistemology,[82] often they stem from an evaluation of the supposed scientific status of such an enterprise.[83]

Some philosophers, however, notably less critical of the enterprise, argue that evolutionary epistemology can be seen as lending conceptual support to both realism and anti-realism.[84] Still others remain more forthright in their view on the matter. Gonzalo Munevar, for example, has recently argued, in direct opposition to Campbell, that evolutionary epistemology necessarily undercuts the realist cause on semantical and ontological grounds. In arguing that "the biological foundation of

[82] See, for one small example of such criticisms, Harvey Siegel, "Justification, Discovery and the Naturalizing of Epistemology", Philosophy of Science 47 (1980):297-321. For a counter to Siegel's criticisms from within the Quinean camp, see Paul A. Roth, "Seigel on Naturalized Epistemology and Natural Science", Philosophy of Science 50 (1983):482-493. Of course, the philosophies of Putnam, Rorty, and Feyerabend provide one with a whole storehouse of criticisms that can be used, to varying success, to attack the Quinean call for naturalized epistemology.

[83] Once again, for a small sample of such criticisms one might consult Carla E. Kary, "Can Darwinian Inheritance Be Extended From Biology to Epistemology?", PSA 1 (1982):356-369.

[84] A.J. Clark, "Evolutionary Epistemology and Ontological Realism", Philosophical Quarterly 34 (1984):482-490. For Clark, this dual support may be extended on semantical grounds.

knowledge leads to the relativity of perception, intelligence, and science",[85] Munevar advocates a 'performance' model of knowledge; i.e., "the question of rationality should be determined by whether science is structured so as to carry out its function (enabling the species to 'get along' in the world)".[86] For Munevar, evolutionary considerations compel us to collapse metaphysics into epistemology; "the way the universe 'really is' or 'really is not' is relative to an interactional frame of reference".[87]

There is no doubt that the extent to which the evolutionary aspect of naturalized epistemology pulls against the ontological claims of many scientific realists is something that requires much further clarification.[88] What emerges as interesting at this pont in our discussion is the extent to which a heeding of evolutionary theory in general may propel evolutionary naturalistic realists to question the taxonomy of our

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[85] Gonzalo Munevar, Radical Knowledge (Indianapolis, Indiana: Hackett Publishing, 1981), p.4. Strangely enough, however, Munevar believes that the 'utopian man/machine symbionts' of the future will have the capacity for 'total knowledge'.

[86] Ibid., p.50. Clearly, the self-admitted influence of Feyerabend on Munevar's thesis has not been extended to this particular formulation. For Feyerabend, we will recall, what contstitutes 'getting along' is really what is most problematic.

[87] Ibid., p.37. What is interesting in Munevar's work, especially in light of our previous chapter, is his willingness to consider the possibility that "If science is an attempt to satisfy intellectual curiosity, then it seems that the queen of our intellect was not born in problem-solving but in play" (p.69).

[88] It might be noted that there is a neo-Davidsonian ploy that pinpoints some of the incoherencies in trying to argue either for or against ontological realism given the species-specific nature of environments. The gist of such a ploy would be osmething like this: 'if we are necessarily compelled to evolve within a species-specific environment how can we say, either way, whether of not there are other environments; i.e., how could we get out of ours to identify others ... and if we can't identify others why say ours is only one?'.

common-sense view of the world. We have earlier seen how the import of Sellars' depiction of the Manifest and Scientific Images, as well as his thesis that the common-sensical account of the world serves as a model-theoretic parallel to the structural relations of language itself, has provided several resources to scientific realists in championing an eliminative materialist stance. From that stance, we will recall, the categorical distinctions and corresponding ontologies of common-sense are rendered at least as dubious as, and irreducible to, the taxonomies of theoretical science. From a purely evolutionary naturalistic perspective we have a parallel. Acknowledging that 'human software' is constantly changing compels us to seriously countenance the possibility that common-sense is "just the theory that got there first".[89]

In fact, what may well be garnished from a naturalistic perspective are the resources for attacking one of the most fundamental assumptions that fuels the linguistic turn that philosophy - in both its positivist and historicist guises - has taken in the twentieth century. It is, in fact, an assumption that has precipitated many of the dilemmas of post-empiricism - from radical meaning variance to incommensurability - the extirpation from which often seems to require the neo-idealist countenancing of a multitude of actual ways of worldmaking. Paul Churchland isolates this assumption for us accordingly:

> It is the assumption that, for the prurposes of a theory of knowledge and its growth, one's knowledge (or our knowledge, or knowledge, period) at any time is relevantly and adequately represented by <u>a set or system of sentences or propositions</u> ... Theories of knowledge spawned by this conception of things I shall call <u>sentential</u> epistemologies.[90]

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[89] As is aptly phrased by Paul Churchland, <u>Scientific Realism and the Plasticity of Mind</u>, p.44.

There is, of course, no doubt that there are tendencies within post-empiricism which also indicate some dissatisfaction with the view - decisive to sentential epistemology - that knowledge (learning) is both governed, and reflected, by the ability to procede from one propositional stage to another. Goodman, for example, is quite in agreement with Churchland that we would be much better off if we no longer viewed knowledge as having propositional or judgemental foundations. When he advocates considering knowledge as the 'discovering and devising of fit of all sorts', Goodman is urging that we cease construing knowledge as Justified True Belief, wherein 'beliefs' are sententially individuated.[91]

If one looks closely enough, other parallels can be discerned between Churchland's attack on sentential epistemologies and developments within post-empiricism. What wants emphasizing here, however, is that any post-empiricist reaction to sentential empistemology one discovers no direct and substantial reference to the functioning of the brain itself as proof of the inappropriateness of the sentential paradigm. In short, we do not see the post-empiricist rushing into the lab of the neuroscientist to examine the sources of the dilemmas generated by sentential epitemology; rather, we find them joining rank with 'magicians', novelists, and artists. If in fact, this is only a matter of preferred company so be it. However, on these (pragmatist) grounds there is no nec-

[90] Paul M. Churchland, "Karl Popper's Philosophy of Science", Canadian Journal of Philosophy 5 (1975):155.

[91] For a short consideration of just how deep the acceptance of the thesis that knowledge is justified true belief permeates philosophy of science from Hume to Feyerabend, see Suppe's "Afterword" in The Structure of Scientific Theories, Second Edition, ed. Frederick Suppe (Urbana: University of Illinois Press, 1977), pp.716-728.

essary reason not to give an ear to the company to which the evolutionary naturalistic realist would like to introduce us.

Evolutionary naturalists like Hooker and the Churchlands have a variety of reasons for entertaining a scepticism about the benefits that can be reaped from the traditional sentential approach. In its very construal of knowledge, for example, this approach is necessarily limited in appreciating the extent of cognitive activity that is discernible in all the non-human entities not possessed of any linguistic capacity as traditionally understood.[92] In addition, and most shockingly, the epistemologist who analyzes knowledge sententially is also left groping for explanations to account for the obvious cognitive activity exhibited by pre-linguistic children and those adults (inclusive of deaf mutes and those extensively brain damaged) lacking any capacity for understanding language and speech.[93]

One may, of course, take a neo-Chomskian ploy and argue that there is a (biologically?) innate functional organization that at some stage of evolutionary development (both phylogenetically and ontogenetically) both makes possible, and is reflected by, linguistic activity. The evo-

[92] Communication ability is another matter here.

[93] These, of course, are only two of the most obvious shortcomings. For these and numerous other instances of the insufficiencies of sentential construals of knowledge one is well advised to consult the following papers: C.A. Hooker, "The Information-Processing Approach to the Brain-Mind and its Philosophical Ramifications", Philosophy and Phenomenological Research 36 (1975):1-15; Paul Churchland, "Eliminative Materialism and the Propositional Attitudes", Journal of Philosophy 78 (1981):67-90 and "Is Thinker a Natural Kind?", Dialogue 21 (1982):223-238; Patricia Smith Churchland, "A Perspective on Mind-Brain Research", Journal of Philosophy 77 (1980):185-207 and "Language, Thought, and Information Processing", Nous 14 (1980):147-170; Patricia Smith Churchland and Paul M. Churchland, "Stalking the Wild Epistemic Engine", Nous 17 (1983):5-18.

lutionary natrualist, however, will not be convinced by thi ploy; indeed, they can provide a number of counter-instances to such a thesis. For example, although we must throw speculation to the wind and admit that the matter is exclusively the province of cognitive neurobiology, Patricia Churchland has urged us to consider some of the contemporary research on hemisphere specialization. As Churchland argues, many developments therein:

> have revealed that the left cerebral hemisphere is normally the center of linguistic competence, while the right hemisphere is especially competent at certain apparantly non-linguistic tasks, such as visuo-constructive recognition of human faces.[94]

Churchland admits that a counter to such research is expectantly forthcoming from those convinced of the validity of the sentential approach; i.e., "a determined sententialist might try to save his theory by arguing that the processing in the right hemisphere is only apparantly non-linguistic".[95] As Churchland aptly notes, however, the best we can say of such a counter is that it is 'decidedly ad hoc'. And as ad hoc, it can only turn to research in the neurosciences for subtantiation. Even if we allowed that it may get such substantiation (which, as we will soon see, may necessarily not be possible) this still remains to be seen. Hence, a scepticism in the face of sententialism on this matter is still quite warranted.

This specific example, however, only really serves to introduce us to the more general argument that evolutionary naturalists have directed against diehard sententialists. Stemming from a consideration of lan-

[94] Patricia Smith Churchland, "Language, Thought, and Information Processing", p.165.

[95] Ibid.

guage in light of its use by evolving epistemic engines the argument can be seen as baically two pronged. As Paul Churchland notes, the naturalist perspective compels us to appreciate that:

> language use is something that is learned, by a brain already capable of vigorous cognitive acitivity; language use is acquired as only one among a great variety of learned manipulative skills; and it is mastered by a brain that evolution has shaped for a great many functions, language use being the very latest[96]...

That linguistic representations are late-comers from an evolutionary perspective is not, however, all that the evolutionary naturalist wishes to underline. More importantly, what the naturalit brings emphasis to is that even as a late-comer language remains a superficial and peripheral mode of information-processing in general; i.e., that:

> even in humans it may play a relatively minor role in our overall cognitive activities ... the bulk of cognition may take place in other subsystems, and follow principles inapplicable in the linguistic domain.[97]

The upshot of all of this? If, as the evolutionary naturalists allege, neuroscientific research substantiates that 'perceptual' skills are broader than linguistic skills, we must let go of the view that considers cognitive representation as necessarily sentential and information processing as basically processes of inferences between propositional states within deductive and inductive parameters.[98] This, in

[96] Paul Churchland, "Eliminative Materialism and the Propositional Attitudes", p.83.

[97] Patricia Smith Churchland and Paul M. Churchland, "Stalking the Wild Epistemic Engine", p.16.

[98] It might be noted that these naturalist conclusions receive much support from the work of Jean Piaget. Piaget, for example, also argues that language is not the exclusive means of representation - that it is only one small part of the semantic functions in general. He also argues, against much of positivism, that logico-mathematical struc-

turn, has some profound consequences. Perhaps most dramatic of these consequences is that we are compelled to entertain the possibility that through linguistic representations we are necesssarily mis-perceiving reality,[99] or, less metaphysically speaking, that sentential epistemologies are necessarily unable to provide an adequate depiction of the relation between any given cognitive state and incoming information.[100]

In light of what has already been said about eliminative materialism in this chapter it should also be noted that an obvious consequence of these naturalistic considerations is that "explanations drawn from neurophysiology will alway be defective in one decisive respect - they will have no trunk with representation, sententially conceived".[101] Yet if the explanations of cognitive activity that are forthcoming from neurophysiology are not going to fit into the constraining parameters drawn up by sententialists then here too a scepticism must be championed vis a

tures are not derived uniquely from linguistic forms. For a simplified discussion of these matters, see Jean Piaget, Genetic Epistemology, trans. Eleanor Duckworth (New York: W.W. Norton & Co., 1970).

[99] To a large degree this 'fact of the matter', shall we say, fuels the claims that 'conceptual schemes' remain irrevocably speculative and that the brain may be more complex than we (vis linguistic representations). The serious countenancing of the latter possibility has recently led Churchland to argue that the human animal (as epistemic engine) may well be a total 'representational cripple'. It is on these naturalistic grounds that he also argues that all 'natural kinds' we think we have discovered may well only be pragmatical kinds. For a discussion of these possibilities, see Paul Churchland, "Conceptual Progress and Word/World Relations: In Search of the Essence of Natural Kinds", Canadian Journal of Philosophy 15 (1985):1-17. More on this matter later.

[100] Clarification is perhaps in order here. When naturalists like the Churchlands claim that many information processing states are not isomorphic with, or captured by, sentential attitudes, what they mean is that those states "are not describable in terms of the person's being in a certain functional state whose structure and elements are isomorphic to the structure and elements of sentences". See Patricia Smith Churchland, "Language, Thought, and Information

vis our folk psychological notion of ourselves. This, of course, is a hearty claim and it requires some examination. Taking a glimpse at the 'opposition' to this construal may facilitate this examination.

Zenon Pylyshyn, a prominent researcher in artificial intelligience and computational psychology, in attempting to clarify how cognizers act on the basis of representations, has recently made the following claim:

> what makes it possible for humans (and other members of the natural kind informavore) to act on the basis of representations is that they instantiate such representations physically as cognitive consequences of operations carried out on these codes.[102]

It is Pylyshyn's view that since computers also operate on the basis of such codes, we are justified in arguing that cognition is a type of computation. Now although substantive clarification may well be in order, the major point of contention between our naturalist friends and cognitive scientists like Pylyshyn does not stem from the latter's claim that humans act on the basis of representation. Rather, it stems from what Pylyshyn claims constitutes such representations. After arguing that the 'mind' is best viewed as 'operating upon symbolic representations or

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Processing", p.147. Throughout their work 'information' is usually used quite loosely, as in: "the state S of an object O contains the information that P just in case O would not be in S unless P". For this particular clarification, see Patricia Smith Churchland, "A Perspective on Mind-Brain Research", p.194. However, for a look at how the notion of information processing states maps onto the Churchlands' more refined notion of 'calibrational content', see Patricia Smith Churchland and Paul M. Churchland, "Stalking the Wild Epistemic Engine", pp.14-15.

[101] Patricia Smith Churchland, "A Perspective on Mind-Brain Research", p.196. For a discussion of whether or not materialists should really concern themselves with such a 'terminological gap', see Richard Rorty, "Mind as Ineffable", in Mind in Nature, ed. Richard Q. Elvee (San Francisco: Harper & Row, 1982), pp.60-88.

[102] Zenon W. Pylyshyn, Computation and Cognition: Toward a Foundation for Cognitive Science (Cambridge, Mass.: MIT Press, 1984), p.xiii.

codes', Pylyshyn then lets the cat out of his conceptual baggage by claiming the following:

> The semantic content of these codes corresponds to the content of our thought (our beliefs, goals, and so on).[103]

Pylyshyn well knows what major presupposition lurks behind such an otherwise innocent claim; namely, that the propositional attitudes of folk psychology will constitute these very codes. As we have come to appreciate, it is this presupposition which naturalists like Hooker and the Churchlands are attempting to undermine. In an attempt to defend this presupposition Pylyshyn actually intensifies this point of contention by arguing that "we can assume that the taxonomy or descriptive vocabulary over which our beliefs are expressed has made correct cuts through phenomena".[104]

The kind of research programme that cognitive psychologists like pylyshyn advocate is, therefore, one primarily constituted by the search for <u>the</u> most efficient code that can be used for manipulating propositional attitudes. It is a search ubiquitous in artificial intelligence and one that receives its philosophical justification from 'functionalism' in the philosophy of mind.[105] The proponents of these positions are often said to be advocating 'top-down' research, since they presuppose that we already know what constitutes the 'hard-ware' of cognitive rep-

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[103] Ibid., p.xviii.

[104] Ibid., p.20.

[105] For two differently-inspired evaluations of functionalism, see P.M. Churchland and P.S. Churchland, "Functionalism, Qualia, and Intentionality", <u>Philosophical Topics</u> 12 (1981):121-145 and Paul M. Churchland, "Is <u>Thinker</u> a Natural Kind?", <u>Dialogue</u> 21 (1982):223-238.

resentations. Their primary goal is to find the universal software program that can most efficiently store and manipulate these representations.

The counter position that is forthcoming from the evolutionary naturalists is that, since language is only one part of information processing in general, we cannot assume that propositional attitudes are going to reveal the integracies of cognition. It is the naturalists' view that we cannot avoid 'opening the skull' in our attempt to understand how the human animal constructs representations of the external world. It is upon such a conceptual platform that the naturalist advocacy of neurophysiological research is based. As opposed to computational psychologists like Pylyshyn, the naturalist is steadfast in their request for a 'bottom-up' research programme in the cognitive sciences.[106]

Pylyshyn's claim that the taxonomy of folk psychology 'correctly cuts through phenomena' is also the subject of much contention. On a thorough-going naturalist account the attribution of mental states to people is not the result of reading these states 'straight off the world' in fine essentialistic style. Nor are such attributions deduced from a subject's behaviour, nor are they inductively inferred from one's own state.[107] Indeed, on a naturalist reading even the tendency to speak of

[106] A standard complaint, that the functionalists have about 'bottom-up' research is that, although it may enlighten our view of what constitutes the structure of cognitive activity, it will be unable to offer a depiction of its functionalist characteristics. For a brief look at how bottom-up research may well be able to provide us with an understanding of such characteristics, see Patricia Smith Churchland, "A Perspective on Mind-Brain Research", pp.206-207.

[107] For a discussion of these matters, see Paul M. Churchland, "The Logical Character of Action Explanations", Philosophical Review 79 (1970):214-236. Also see Paul M. Churchland, "Eliminative Material-

ourselves as possessing mentalistic attitudes is an end result of the fact that 'mental states' have served as hypotheses for explaining behaviour; i.e., our tendency to treat beliefs, desires, hopes, et cetera as 'facts of the matter' is simply the result of the fact that folk psychology (read: common sense 'wisdom') has become an entrenched theory. As Churchland notes, "the intentionality of mental states here emerges not as a mystery of nature, but as a structural feature of the concepts of folk psychology".[108]

It is becaue they view these 'structural features' as constituting a theoretical matrix that the naturalist is led to argue that we cannot forgo criticalness - we must evaluate the corpus of folk psychology as a theory. Since folk psychology stands in need of such an evaluation we cannot assume that its categories serve as a neutral and sufficient base from which an understanding of cognitive activity can be generated.[109]

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ism and the Propositional Attitudes", pp.69-70.

[108] Paul M. Churchland, "Eliminative Materialism and the Propositional Attitudes", p.70. For a more extensive look at why Churchland considers folk psychology to constitute a theory, see Paul Churchland, Scientific Realism and the Plasticity of Mind, chapter 4.

[109] Defences of folk (intentional) psychology in light of the Churchlands' attack will no doubt continue to proliferate exponentially in years to come. Hopefully, such counters will not overlook the differences between Churchlandian attacks on folk psychology and earlier behaviouristic attacks on the intentional idiom. Our goal in this chapter, we will recall, was only to offer a 'therapeutic' critique of much of post-empiricist thought from the vantage point of other 'theories of knowledge' which have 'gone beyond' positivist mandates; hence, I am, regrettably enough, avoiding an analysis of the criticisms of both the Churchlands' construal of folk psychology as a theory and their further view that it constitutes a bad theory that should be replaced. For a look at a variety of criticisms of the Churchlands' position on these matters one is well advised to consult the following articles: Terence Horgan and James Woodward, "Folk Psychology is Here to Stay", The Philosophical Review 94 (1985):197-226; Patricia Kitcher, "In Defense of Intentional Psychology", Journal of Philosophy 81 (1984):89-106; Barbara von Eck-

In fact, if, as the Churchlands alledge, folk psychology after such an evaluation does indeed emerge as a 'degenerating research programme',[110] then not only is cognitive 'psychology' in for rough times, but so too is pretty well all of the social sciences as we understand them today.[111]

The naturalist confronts the goals of artificial intelligience research with a well-founded scepticism. If propositional attitudes do not embody our primary mode of representation - if language is only one small part of information processing in general - then their 'ideal' instantiation in a computer software program will still prove an inadequate depiction of the total cognitive activity constitutive of an epistemic engine like the human animal.[112] Hence, on natrualistic grounds there may well be good reason for arguing that, apropos the human ani-

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ardt, "Cognitive Psychology and Principled Skepticism", Journal of Philosophy 81 (1984):67-88; K.V. Wilkes, "Pragmatics in Science and Theory in Common Sense", Inquiry 27 (1984):339-361.

[110] The reasons for such an allegation are ubiquitous throughout their work. For a cursory glimpse at a whole spectrum of them, see especially Paul Churchland, "Is Thinker a Natural Kind?", Dialogue 21 (1982):223-238. In many ways the views of the Churchlands find good company in the argumentation of Stephen Stich. For an extensive examination of why folk psychology is unable to specify content for propositional attitudes ('S believes that P'; 'S hopes that P'; 'S desires that P'; et cetera), see Stephen Stich, From Folk Psychology to Cognitive Science: The Case Against Belief (Cambridge, Mass.: MIT Press, 1983).

[111] As Stephen Stich notes: "If all talk of beliefs, desires, expectations, preferences, fears, suspicions, plans, and the like were banished from the social sciences, those disciplines as we know them today would disappear ... Of course, this observation might be viewed as a two-edged sword, indicating not that folk psychology is more respectable than the Churchlands maintain, but rather that the social sciences which share its conceptual apparatus are themselves targets for elimination from the growing canon of science." See Stephen Stich, From Folk Psychology to Cognitive Science: The Case

mal, there are, in principle, lots of things computers 'can't do'.[113]

The scepticism which the naturalist may well have towards much of 'artificial' intelligence research is not, however, a scepticism that is extended to all 'scientific' attempts to discover the intricacies of human cognition. Indeed, that the naturalist will readily turn to the resources of neuroscience to critique the running assumptions of the proponents of artifical intelligence is proof of this fact. In short, the naturalist, in their critique of artificial intelligence research, is not in search of some a prior 'funding and founding' Lebenswelt.

Precisely what naturalist accounts of cognition and epistemic engines may well, in fact, undermine is all that has hitherto been alleged to constitute the 'human'. The acknowledgement that there is a high degree of 'covert intellectual activity' seriously calls into question the whole storehouse of variously formulated views of 'human' consciousness[114] which have vigorously competed with each other for centuries. And the fact that cognitive control is distributed - "that a distinct subject that is aware cannot be identified",[115] also compels us to whol-

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Against Belief, pp.213-214.

[112] More normatively oriented functionalist theories in the philosophy of mind are also in for hard times once we accept that there is no structural isomorphism between cognitive activity and sentences.

[113] For a more phenomenologically-inspired critique of artificial intelligence, see Hubert L. Dreyfus, What Computers Can't Do: A Critique of Artifical Reason, Revised Edition (New York: Harper & Row, 1979). At one and the same time Dreyfus gives too much to, and takes too much away from, the artificial intelligence people. From a naturalistic perspective his criticisms are both somewhat parochrial and not as radical as they could be.

[114] Including the Freudian triad.

[115] For this particular formulation, see C.A. Hooker, "An Evolutionary

ly revise (or, more probably, do away with entirely) the classical views on 'self-hood' and personal unity.[116] On a naturalist construal of things there is reason to believe either that the human being has any place of epistemic and ontic grace, or that it will remain on the 'historical stage' until the species is extinct.[117]

To appreciate that the brain "is unlikely to have been adequately grasped by folk theory in the misty dawn of emerging verbalization"[118] is to appreciate the tentative nature of the categorical distinctions which facilitate our descriptions of both the external world and our 'inner lifes'. It is to see as radically circular the argumentation of those who claim that "it appears paradoxical in the extreme to deny the existence of entities which both make the very enterprise of science intelligible and serve as the logical subject of what is sensorily dis-

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Naturalistic Realist Doctrine of Perception and Secondary Qualities", Minnesota Studies in the Philosophy of Science 9 (1976):409.

[116] In an article wherein the concept of consciouness is assessed in light of a naturalistic interpretation of cognition, Patricia Churchland outlines some of these transformations that may well be in store for us. See Patricia Churchland, "Consciousness: The Transmutation of a Concept", Pacific Philosophical Quarterly 64 (1983):80-95. Herein, Churchland also underlines a fundamental Sellarsian thesis; namely, that introspection is neither transparent nor reliable. Attacks, from a naturalistic perspective, on phenomenological and emergentistic construals of perceptual consciousness are also nicely presented in Paul Churchland, "Reduction, Qualia, and the Direct Introspection of Brain States", Journal of Philosophy 82 (1985):8-28. For a different perspective on how the erroneous assumption that there is a 'center' to thinking prevents us from appreciating the continuity of 'consciousness' between animal and human life, see Norman Malcolm, "Thoughtless Brutes", Proceedings and Addresses of the American Philosophical Association 46 (1973):5-20.

[117] There is, in short, no reason to expect (as do Foucault and Derrida) that it will necessarily be replaced on the historical stage by the 'being of language'.

criminated".[119] To appreciate that even 'logical subjects of sensations' are largely 'brought to life' by theoretical taxonomies is to appreciate the implications - both conceptually and biologically - of evolving in a world where nothing is sacred.

If, as the naturalists allege, the only way we are going to arrive at an adequate understanding of cognitive activity is by engaging in 'bottom-up' research then many of the traditional problems of epistemology and the philosophy of science are going to emerge as simply pseudo-problems. Seeing them as pseudo-problems, however, will not be a signal that we have returned to positivist times. Pseudo-problems for the positivists, we will recall, resulted from questions phrased outside of the confines of ideal language - their view was that if we remined loyal to those confines such problems would simply 'disappear'. The naturalist is being more radical at this juncture. For them, the road to bypass the source of the problem isn't going to be paved by drawing a nice distinction between 'impure' and 'ideal' languages. For the naturalist, the source of the problem may well be language itself.

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[118] Patricia Churchland and Paul M. Churchland, "Stalking the Wild Epistemic Engine", p.7.

[119] Such a claim apparantly embodies Margolis' fundamental opposition to any formulation of the 'radical replacement' thesis; see Joseph Margolis, "Scientific Realism, Ontology, and the Sensory Modes", Philosophy of Science 36 (1969):114-120. Margolis' view is, in short, that eliminative materialism is self-refuting. The problems that plague his view, however, come into clearer focus when it is contrasted with strikingly similar argumentation; e.g.,: 'it is paradoxical in the extreme to deny the existence of God since we wouldn't be here to deny anything if it wasn't for Him'. For a brief and critical look at this style of argumentation, see Patricia Smith Churchland, "Is Determinism Self-Refuting?", Mind 90 (1981):99-101.

It is from this perspective that solving the problems generated by questions of Truth, Rationality, and Methodology - as formulated within the sententialist problematic - may not be deemed by the naturalist to be tantamount to an understanding of science. If, however, such questions are not deemed of fundamental importance then many of the post-empiricist dilemmas (i.e., incommensurability), generated by certain responses to them, are also not going to appear as standing in the way of achieving a tentatively adequate understanding of the epistemic products of science. Indeed, it is the evolutionary naturalist who suggests that the philosophy of science would be well-advised to expand its conceptual resources in developing a systematic theory of epistemic ignorance.

6.4 THE VOYAGE OF REPRESENTATIONAL CRIPPLES: THE PARADOXES GENERATED IN LEAVING LANGUAGE BEHIND

Although an evolutionary naturalistic perspective, may prove to be therapeutic vis a vis much of post-empiricism it may inevitably present some problems for the 'radical replacement' scientific realists who subscribe to its underlying mandates. Both Cliff Hooker and Paul Churchland have argued that there are several good reasons for replacing the common-sensical taxonomy of folk psychology with the more refined taxonomy of cognitive neuroscience. Both, at various times, have also claimed that such a replacement is justified given the greater explanatory globalness of our most 'advanced' scientific theories. In launching a defence of the employment of this epistemic virtue in assessing the adequacy of respective conceptual schemes, Churchland even claims that it actually constitutes one of the brain's 'criteria for recogniz-

ing information'.[120]

In extending some of his earlier scepticism about the representational adequacy of language, Churchland has, however, recently gone some distance in blunting the realist sting that his philosophy often carries. Here we witness him arguing that, even if the world is not an 'infinitely-layered explanatory onion', "there is still no guarantee that there exists a unique and final theory (= set of sentences) flawlessly adequate to its complete description".[121] The reason he offers for such 'global' scepticism is encapsulated in the following confessions:

> I think it would be a miracle if evolution had already fitted us out with cognitive equipment that is structurally adequate to representing the deepest mysteries and subtlest intricacies of the cosmos.[122]

[and]

> I think that the idiosyncratic linguistic structures we call theories, and even the idiosyncratic neural systems we call brains, will prove to have fundamental shortcomings, qua media for models of reality.[123]

The gist of these confessions? Churchland is underlying the possibility that 'reality' may well be more complex than we (as speculative epistemic engines) are smart. Hence his recent scepticism about the possibility that we will ever discover natural kinds and corresponding natural laws. Hence his conclusion that the human animal may well be a

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[120] Paul Churchland, "The Anti-Realist Epistemology of van Fraassen's The Scientific Image", p.231.

[121] Paul M. Churchland, "Conceptual Progress and Word/World Relations: In Search of the Essence of Natural Kinds", p.15.

[122] Ibid.

[123] Ibid.

total 'representational cripple' that is destined to epistemologically contend with only 'practical kinds'.

This conclusion, however, generates a variety of paradoxes. The thesis that the human animal is a representational cripple has, of course, an obvious neo-Kantian ring about it. As advanced by Churchland, however, it is apparantly not the product of armchair philosophizing - throughout most of his work the allegation is quite clear that it recieves the 'empirical support' of cognitive neuroscience. But if the human animal is a representational cripple how do we know that the evidence of the neurosciences tells us anything about the human animal - for is not the 'evidence' inextricably part of a theoretical taxonomy? In short, if the human animal is a representational cripple how do we know that the human animal is a representational cripple? How can 'we' (qua speculative epistemic engines) attempt to prove (falsify) such a thesis? By scientific <u>experiments</u> bolstered by our most systematically global account of the world? But <u>if</u> the human animal is a representational cripple will we not systematically <u>misrepresent</u> what is happening in those experiments?

All of this, of course, has ramifications for those who champion the epistemic virtue of globalness as a criterion for evaluating conceptual schemes. Certianly we must acknowledge that if the human animal is a representational cripple then we are going to have to reject Pierce's notion of an 'ideal limit theory', as well as many of its historical descendents - including Sellars' 'scientific image' (wherein all theoretical terms acquire 'first class semantical status') and Hooker's 'fully

internally global theory'.[124] Churchland, for example, appreciating the import of his 'representational cripple' thesis has recently questioned the notion of a 'Complete and Final True Theory'. Indeed, his views on the matter serve as a nice break from most of the naively optimistic construals of scientific realism.

Why then does Churchland still call himself a scientific realist, for would not his views best be described as constituting a form of pragmatism, or a neo-Kantianism flavored by twentieth century naturalism? Churchland has recently claimed that he remains a scientific realist for three basic reasons. As enumerated by him these reasons are the following:

1. The term 'realism' still marks the principal contrast with its traditional adversary, positivistic instrumentalism. Whatever the integrity of the notion of truth, theories about unobservables have just as much a claim to truth, epistemically and metaphysically, as theories about observables.

2. There exists a world, independent of our cognition, with which we interact, and of which we construct representations: for varying purposes, with varying penetration, and with varying success.

3. Our best and most penetrating grasp of the real is still held to reside in the representations provided by our best theories. Global excellence of theory remains the fundamental measure of rational ontology.[125]

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[124] See C.A. Hooker, "On Global Theories", Philosophy of Science 42 (1975):153-179. We might note that if the human animal is a representational cripple the only possibility for achieving fully global theories may arise from what might be called a 'representational freeze' - wherein evolving linguistic schemes reached some sort of (built-in) structural limit. Even here, however, we would not have a fully global account of how the world 'really is'.

[125] Paul M. Churchland, "The Anti-Realist Epistemology of van Fraassen's The Scientific Image", pp.234-235.

Now let us take a look at these reasons for being a scientific realist. With the first, Churchland is still launching a frontal attack on positivism. And rightly so, for the influence of positivism on this matter has been so great that underlining this 'point of contrast' is still warranted. To a large degree, however, bestowing the realist label on those who extend the same ontological status to unobservables as they do to observables is somewhat anachronistic. Not only can idealists take such a stance, but so too can many of our non-realist post-empiricist friends - including Kuhn, Rorty, and Goodman.

The second reason that Churchland offers for being a scientific realist is to a large degree a residual left-over from the Great Debates stimulated by the Great Questions of philosophy. Basically it is an updated version of the 'there is a mind-independent world!' stance. It is a stance, however, that loses much of its sting when we do away with talk of 'mind'; 'there is a brain-independent world' just doesn't seem to inspire the same kind of enthusiasm or convictions. When the sweeping Cartesian (intuitive?) brush no longer paints the great divide in question its very coherency diminishes greatly. At what point does the 'world' stop and 'our' brain's representations of it begin? Isn't perhaps talk of representation on this score, as Rorty alleges, just a little bit ludicrous - isn't it perhaps a further residue of the Great Tradition. Doesn't it bring with it all the paradoxes of the scheme/content distinction which Davidson has highlighted for us? Whatever the problems generated by its formulation this second claim of Churchland's can certainly be championed by a whole spectrum of philosophers who resist the label of scientific realist. Isn't something akin

to it implicit in Goodman's claim that world-versions can only be constructed out of existing world-versions?

It is, however, really the third reason he provides that Churchland believes contains the 'central claim' of scientific realism. Although he is sceptical about us ever having a fully global theory (due to our representational limitations) Churchland still feels that globalness is the epistemic virtue that marks our 'best theories'. Although concrete examples of such theories are seldom forthcoming from Churchland, apparantly at this point in time it would be something which "encompasses particle physics, atomic and molecular theory, organic chemistry, evolutionary theory, biology, physiology, and materialistic neuroscience".[126] Indeed, it is Churchland's belief that "the greatest theoretical synthesis in the history of the human race is currently in our hands".[127]

To a large degree this third reason for being a scientific realist is rooted in a Quinean construal of ontological commitment.[128] Even Quine, however, is willing to acknowledge that we must distinguish between the short term and long term efficaciousness of a theory <u>and</u> be prepared to compromise our epistemic virtues in the short term if we want benefits in the long term to accrue.[129] Churchland would undoubtedly acknowledge that such a 'cost-benefit' analysis has at various times in the history

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[126] Paul M. Churchland, "Eliminative Materialism and the Propositional Attitudes", p.75.

[127] Ibid.

[128] Namely, that belief in variables is only justified if our 'best theories' quantify over them.

[129] See, for example, the short discussion in W.V. Quine, "On Multiplying Entities", <u>The Ways of Paradox and Other Essays</u> (Cambridge, Mass.: Harvard University Press, 1976), pp.259-264.

of science led to a de-emphasis on the appropriateness of 'global excellence' as an unconditioned epistemic virtue.[130] Twentieth century physics is also living proof that 'global excellence' has not been dictatorially invoked to herald either the wave or particle interpretation in quantum light theory as the clear victor. Churchland is clearly to be lauded for his attack on van Fraassen's advocacy of 'empirical adequacy' as the only non-pragmatic epistemic virtue; however, on his own account it would appear that global excellence may well compete at times with simplicity as the determining epistemic virtue. In fact, one could just as easily point to the phenomenon of vertebrate habituation in arguing that simplicity is, in the last analysis, the primary criterion employed by the brain in 'extracting information from noise'.

It could, of course, be argued that Churchland is so vehement in his insistence that global excellence is the primary epistemic virtue - 'the fundamental measure of all ontology' - because he wants (needs?) something like it to separate cognitively meaningful discourse from all other accounts. In so many other ways, however, Churchland's philosophy is moving increasingly towards pragmatism. This schism can be seen in fact as generating several problems for his advocacy of scientific <u>realism</u>.

Churchland forcefully argues that sentential epistemologies are <u>wrong</u> in assuming that all knowledge is propositional. It is his view that the sententialists overlook the fact that language is only one part of information processing; indeed, that through linguistic representations we are systematically <u>misperceiving</u> reality.

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[130] Feyerabend has become infamous for offering examples of such compromises. See especially Paul Feyerabend, <u>Against Method</u> (London: Verso Press, 1975).

In many ways, however, Churchland can be seen, as a result of this very thesis, as providing support to the pragmatist position of Richard Rorty. For if through language we are misperceiving reality, no linguistic idiom can claim any kind of ontological primacy - no descriptive (explanatory) discourse 'cuts the world at its joints'. But here we lose alot of conceptual support for arguing that some discourse is more cognitively important. All language (including the most elaborate accounts of physics) 'cuts us off' from the world.

We will recall Aristotle's problem about finite space - what are its boundaries, what is outside of these boundaries? A similar problem plagues those who argue that language is only one small part of information-processing in general - who reject Wittgenstein's view that Truth is the 'totality of speakable things'. The problem is this: we cannot linguistically (theoretically) invoke the 'other side' for epistemic justification. And without the invocation we cannot even say that modern science is 'denotationally refining' the 'practical kinds' with which we, as representational cripples, are forced to contend. Herein scientific realism (recall Hooker: 'scientific realism means taking science seriously') irrevocably merges with pragmatism.

All of this need not undermine the evolutionary naturalist's view of cognition. Even if 'denotational refinement' is a myth it may well be the myth that drives the human animal to displace its old ways of talking. And it may well be that since our capacity to build is enhanced by speaking (theorizing) in certain ways rather than other ways we will increasingly, in our evolution as artificial world-making animals, increasingly employ the evolving physicalistic idiom. Here may be the

primary reason for merging the philosophy of science with the philosophy of technology - for providing an account of epistemic engines as world-making machines.

Speculation aside, however, all of this does not serve to necessarily undermine even Churchland's account. It simply serves to underline the fact that 'taking science seriously' means ceasing to do First Philosophy - as logical analysis, as paradigm talk, as 'global accounts'. For some it may mean ceasing to 'do philosophy' altogether; i.e., it may well be time for Hooker and Churchland to become cognitive neuroscientists.

Nevertheless, whatever company evolutionary naturalists may choose to parlance with they must remain committed to the most important mandate that separates them from both positivists and the pragmatist-cum-neo-idealist post-empiricists. They must continue to underline, and employ in self-criticism, their belief that "philosophical doctrines are held explicitly to evolve in dynamic interplay with the evolving scientific world view itself".[131]

6.5 POST-EMPIRICISM ON TRIAL: NEW HORIZONS OR HEGEL REVISITED?

In the above outline of the naturalistic alternative to the post-empiricist critique of positivism I have only hinted at the general points of contention between these two philosophies. In the remainder of this chapter, I will outline the gist of some more specific criticisms that scientific realists and evolutionary naturalists in particular may well

[131] C.A. Hooker, "Philosophy and Meta-Philosophy of Science: Empiricism, Popperianism, and Realism", Synthese 32 (1975):206.

direct against their post-empiricist contemporaries. Although it is my belief that such criticisms can positively serve as a support for an evolutionary naturalistic interpretation of science, the import of such criticisms, given the scope of this thesis, should merely be read as proof positive that the post-empiricist interpretation of the epistemic products of science is certainly not the final word. Through such a reading it is hoped that it will become apparant, by inference, that many of the post-empiricist theses launched in philosophy of the social sciences and social and political theory have been fueled by a cursory reading of what the 'received view' presently is in the philosophy of science. In the concluding chapter an attempt will be made to outline what kind of contribution an evolutionary naturalistic perspective of the sort already outlined could have on the discourse that continues to take place between philosophy of science and social and political theory.

The two major sources that most post-empiricists have drawn from are respectively important in the following ways:

1. <u>The Argument From History</u>: When studying the history of science, the 'evidence' compels us to consider a 'meta-induction'; namely, that since several laws and general theories (along with the corresponding postulated entities) which the scientific community has accepted in the past have proven to be false, or have been falsified, or simply no longer 'warrant assertibility', there is no reason to assume that the laws and theories which the scientific community presently accept are any more likely to 'cut nature at its joints' - are not anymore likely to refer or indicate

truth. In short, the history of science does not warrant us in adhering to a whiggish view of science. The belief in epistemic convergence is no more than a contemporary optimist's myth.

2. The Argument From the Psychology of Perception: Research in cognitive psychology informs us that all seeing is on par with a theoretical undertaking, albeit one that is speculative and systematic. Kant's famous thesis has been vindicated: 'intuitions without concepts are blind'. This proves a very important discovery and has ramifications right across the philosophical spectrum. It is primarily important in forcing us to recognize that no epistemologically significant distinction can be drawn between 'observational' and 'theoretical' languages. What has been traditionally considered to constitute postulation theory construction also constitutes our 'common-sensical' language and everyday interaction with the world. As a result, ventures will prove unsuccessful which appeal to a non-theoretical substratum in attempting to 'reduce' theories to common epistemic denominators. Representative of Popper's attack on the 'psychologism' of the logical empiricists (especially of the phenomenalistic variety) the rejection of such a distinction also fuels Sellar's depiction of the 'manifest image' and Rorty's lauding of a 'world well lost'. It also lies at the heart of Goodman's willingness to countenance a plurality of worlds and Feyerabend's rejection of non-imminent research methodologies.

Largely as a result of his own failure to be explicit on the matter, many commentators have displayed an uncanny ability to read over what Quine often has to say about physical theory being free of the indeter-

minancy that affects the translation of natural languages. The Duhemian network theory of belief is then often conjoined with his indeterminacy thesis and results from investigations into the history of science and psychology of perception to yield support to the following claims so pronounced in post-empiricist philosophy:

3. Meaning Relativity: No scientific terms or concepts are possessed of a meaning that does not result from the theoretical matrix in which they are embedded. Thus the doctrine's name that countenances meaning variance: 'the cluster theory of meaning'.
4. Inscrutability (Relativity) of Reference: The referents of any given scientific theory - that which is denoted by its central terms - cannot be fixed extra-theoretically. Hence the latest anti-metaphysical chant led by Rorty, Goodman and Putnam: The metaphysical urge that compels one to argue that the terms of any scientific theory refer (or approximately refer) to an extra-linguistic (theoretical) world is founded on a fundamental misconception of representation.
5. Ontological Relativity: As a necessary corrolary of the inscrutability of references, it becomes impossible to speak of the entities of the world - 'fundamental' or 'derivative' - apart from how they are depicted by a given theory. Ontology is inextricably theory relative.
6. Methodological Relativism: Methodological standards and epistemic virtues are also theory (paradigm, tradition, et cetera) relative. Read Feyerabend: to argue that a theory is epistemically more successful than another is to erroneously assume that there are extra-theoretical methodological principles and rules.

It is these four theses which make up the substantive content of perhaps the most renowned doctrine championed by many post-empiricist philosophers and the social theorists influenced by them; namely,

7. The Doctrine of Incommensurability: Since the meaning and references of terms (concepts) and methodologies employed in scientific explanations are relative to the theory in which they are embedded, the possibility of translation and cross-theoretical comparison is precluded. To assign epistemic primacy to a particular theory is, at best, the result of a pragmatic (and theory relative) assessment.[132]

Over the last few decades, many post-empiricists, most notably Kuhn and Feyerabend, have attempted to strengthen the argument from history by conducting historical investigations into specific periods of scientific research. The varied results of such investigations have usually been employed to show as inadequate the rational reconstructions of contemporary science given by philosophers of science who believe that, without universal evaluative principles and methodologies, science cannot be attributed the status of a rational enterprise. Without this rational component, it is argued, we are precluded from suggesting that science progresses and that its epistemic products are slowly converging towards a representation of the real.

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[132] Read Nietzsche: "The 'real world' - an idea no longer of any use, not even a duty any longer - an idea grown useless, superfluous, consequently a refuted idea; let us bolish it! (Broad daylight; breakfast; return of cheerfulness and bon sens, Plato blushes for shame; all free spirits run riot.)" (Twilight of the Idols).

The historical picture that is presented by the Feyerabends and Kuhns reveals much ad hoc behaviour on the part of individual scientists and changing standards of acceptable rational justificational procedures. The epistemic virtues of simplicity, predictive success and explanatory coherence are depicted as being lauded on some occasions and totally ignored on others. It is concluded that the history of science, in its diachronic approach to the subject matter, is able to reveal the provisional validity of all rational standards and justificational procedures - something to which the philosophy of science, in its exclusively synchronic approach to the subject matter, is necessarily blinded.

To a large degree this supposed conflict between the diachronic and synchronic approaches can be seen as itself resting on yet another troubled 'dogma of empiricism' - namely, the descriptive/normative distinction. It is, in fact, quite strange that post-empiricist historians of science of all people should often neglect to appreciate this point. Indeed, the major tactic on the part of the Kuhns and Feyerabends - attempting to prove as irrelevant the mandates of present day philosophy of science by displaying the historical tradition's unwillingness to heed to them - is a little contradictory given their broader philosophical perspectives. For if incommensurability rules, then all logical and historical reconstructions must necessarily be impregnated with the theoretical dictates of contemporary science. Kuhn especially seems to have no trouble writing overly descriptive accounts of past periods of normal science whilst at the same time entertaining the possibility that Newton and Einstein 'lived in different worlds'.

That the study of history in general has become as questionable and contentious as it is would almost be good enough reason for ceasing to employ the past in indicting the present. But given that Kuhn obviously (albeit implictly) presupposes the validity of Davidson's attack on his position by allowing the past a most generous 'benefit of the doubt', as well as the possibility that "historically developed theories radically underdetermine the rational reconstruction of these theories",[133] one is definitely left wanting better reasons for indicting the mandates of the present. Given the broader nature of their philosophical perspectives both Kuhn and Feyerabend would be well advised to pursue something akin to Lakatos' rational reconstructions.[134]

To the extent that the argument from the psychology of perception has been employed to give support to the world-making theory of Goodman and of the Symbolic Realists in the social sciences, post-empiricism might also have over-stated its case somewhat. The opinion of many of those working in the field is that the distinction between sensory, phenomenal and cognitive aspects of the visual process have proved to be less clear than traditionally considered. However, they are also convinced that the study of its exact limits in particular contexts is the province of naturalized epistemology[135] and, more than likely, requires considerable cooperation between psychologists, logicians, and cyberneticians.[136]

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[133] As phrased by Edward Mackinnon, "Scientific Realism: The New Debates", Philosophy of Science 46 (1979):507.

[134] Which were noted in section 5.2, note #4.

[135] See John Heffner, "Some Epistemological Aspects of Recent Work in Visual Perception", PSA 1 (1976):165-174.

[136] See Jacques Voniche, "Genetic Epistemology within the Context of Evolutionary Epistemology", Change and Progress in Modern Science, ed.

The questions as to why we consider hallucinations as cases of epistemic failure and how perceptual experience is structural vis a vis the perceptual process are perfect indications of the magnitude of the problem. And it is a magnitude that is not likely to be captured in the kind of speculative phraseology rooted in the by now almost redundant claim that 'intuition without concepts are blind'. It is quite strange indeed that speculatively inclined philosophers would jump at the work of a Hanson in order to claim the 'psychology of perception' as a partner in their onslaught on positivist dichotomies and then trot away, along the rosy path of possible worlds theorizing, never checking back to see how their former partner is doing.

Some critics, for example, have been less robust in their analysis of the import of attacks on the observation/theory distinctions. C.A. Hooker, for example, is inclined to accept that the evidence is much in favor of dropping the distinction but believes that it points more in favor of a continuum of theory-ladeness than in favor of a homogeneity. Preserving the view that concepts are information-processing structures he argues that, 'for all intents and purposes', some are 'genetically programmed' and some are learned. The former, which he denotes perceptually active concepts, are essentially observationally untheoretical and are a necessary condition in allowing the species to have intelligible perceptual experience. Constitutive of the three-dimensional world, time, causality, identity, et cetera, these concepts "arise from the deeper structure of the world at large and our particular neurophysiology - and we retreat to this level whenever we wish to make epistemologi-

J.C. Pitt (Dordrecht, Holland: D. Reidel Publishing, 1985), pp.199-232.

cally less daring claims".[137] Hooker is convinced that although these concepts account for the relative stability of common-sense vocabulary their contribution to the semantics of scientific theories is rather small. Their terminology has acquired an observational role rather than a reporting role in observation.[138] Having been with mankind for 'millenia' they remain essentially theory-neutral - a neutrality that will be "affected only by radical neurophysiological change".[139] As Hooker sees it, as far as the scientific enterprise is concerned "their only value is that they are needed to supply part of the instructions for introducing theory-laden terms that are to acquire a reporting role in observation".[140]

The import of all this, of course, is that the positivistic tendency to establish the distinction a priori is overturned whilst at the same time the urge to move headlong towards linguistic idealism is given no fuel. While accepting that without First Philosophy the observational/theoretical dichotomy is a will o' wisp, we must also appreciate the fact that the human animal is, and always has been, the stop-gate for idealism.

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[137] C.A. Hooker, "Systematic Realism", Synthese 26 (1974):409-497.

[138] Akin to Kuhn's and Hanson's distinction between 'seeing' and 'seeing as' (also indicative of the respective assigning of dispositional and occurent properties).

[139] C.A. Hooker, "Empiricism, Perception, and Conceptual Change", Canadian Journal of Philosophy 3 (1973):73.

[140] C.A. Hooker, "Systematic Realism", p.487. Hooker denotes his thesis as a 'mild-radical, quasi-empiricist account of the observation language'(!).

Under such a construal, it can be argued that the 'conceptual framework' which the species possesses at any given time has evolved with the species' organization of perceptual information. The 'framework' is simply not taken and placed over the data. The tendency on the part of some post-empiricists to make reference to 'conceptual schemes' as some sort of entity that 'fits' over and organizes disparate subject matter has, of course, some strange parallels in social scientific circles; perhaps the most interesting one being the attempt by some to find 'paradigmatic thought' and then force it on their respective disciplines. Davidson's attack on this misconstrued notion of 'conceptual schemes' is again appropriate here - although his is an attack certainly not launched from a naturalistic standpoint (indeed, much of what he has to say smacks of idealism).

Naturalistic attacks on the observational/theoretical language distinction of the positivists are also quite ammenable to the fact that "it is not until incoming information has been abstracted, conceptualized, etc., and trained into something resembling propositional beliefs that anything properly called data emerges".[141] And whether the control of any part of this process is located in the cortex, or distributed throughout deeper regions in the brains, or closer to the sensory organs themselves, is solely a matter of fact to be studied by none other than the investigative methods of natural science. The gist of this position remains that it is the entirety of this process that we are making reference to when we speak of our perception of the mind-independent world.

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[141] C.A. Hooker, "An Evolutionary Naturalist Realist Doctrine of Perception and Secondary Qualities", Minnesota Studies in the Philosophy of Science 9 (1976):410.

Futhermore, the indispensibility of the 'totality' of this process introduces a conservative element and one is able to "undermine the suggestion that the world of perceivings ... is in a constant state of flux at the behest of theory".[142] Not only do theories not implant structure on a neutral material, but the structure itself is not solely determined by theory or beliefs or 'interests'.[143]

The implicit inference that appears to abound in much of post-empiricist thought is that since there is no ontological distinction between observational and theoretical languages then there is no significant methodological or epistemological distinction either. This rather generic conflation of ontological and epistemological aspects often fuels the countenancing of radical meaning variance, reference relativity, and 'conceptual scheme' incommensurability.

Evolutionary naturalists have been at the forefront in demanding that the ontological and epistemological aspects of attacks on positivist presuppositions must not be conflated. Paul Churchland, for example, accepts Quine's rejection of any epistemologically significant analytic/synthetic distinction (thereby accepting that intensional bias is

[142] C.A. Hooker, "Empiricism, Perception and Conceptual Change", p.64.

[143] This particular attack on some of the generic tendencies of post-empiricism receives much sustenance from Maxwell's important paper of twenty-five years ago, wherein it was argued that the observational/theoretical dichotomy is an integral part of science albeit, an integral part that arises naturally out of our sensory limitations. See Grover Maxwell, "The Ontological Status of Theoretical Entities", Minnesota Studies in the Philosophy of Science 3 (1962):3-27. Although they are often conflated in the literature for heuristic purposes, it is important to keep in mind that the real distinctions on this matter are between observable and unobservable entities and untheoretical and theoretical languages. As van Fraassen argues, it can be seen that even Maxwell committed the category mistake involved in blurring this distinction.

'everywhere')[144] and acknowledges that any 'observation' vocabulary is extensionally biased (at root, simply because it "parses the world along certain lines rather than along other lines").[145] Churchland's acceptance of these theses comes, however, without condemning himself to the view that any holistic thesis of meaning and understanding inevitably precludes any notion of translation - thereby compelling 'sincere thinkers' to champion radical incommensurability.

Churchland avoids this slippery slope by simply rejecting the claim that meaning and understanding are determined by the set of all accepted sentences. For Churchland, when one is treating meaning as a collective affair one must stop equating the notion of radical incommensurability with the impossibility of a perfect translation. Rather, if one subscribes to the view that "communication depends on semantically important sentences"[146] then one can argue that a <u>workable</u> translation must simply preserve these very sentences. Translation need not even maximize agreement nor preserve dispositions to assent to observation sentences. Herein it is argued that traditionally considered analytic sentences are simply those which the community of speakers have not found adequate alternatives to and are, therefore, unwilling to displace; they thus remain high in semantic importance.[147]

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[144] See Paul M. Churchland, "Two Grades of Evidential Bias", <u>Philosophy of Science</u> 42 (1975):251.

[145] Ibid., p.258.

[146] Paul Churchland, <u>Scientific Realism and the Plasticity of Mind</u>, p.35.

[147] Such a thesis can also be seen as lending support to those who argue that an observation may be theory-laden but not laden with the theory under question; in short, to those who draw a distinction between theory-laden and theory-neutral. See, for example, William A. Rott-

Given such a position it becomes possible to see incommensurability as a matter of degree and translation as the possiblity of "advancing from semantically important foundations" and "becoming increasingly bi-lectical".[148] It is with this thesis in mind that Churchland is quite prepared to offer a rather flexible definition of the process of inter-theoretic reduction; namely, "determining which of the two conceptual alternatives allows us to construct a consistent and coherent account of our experience as it pressed further and further into unfamiliar do-mains".[149] It is also such a thesis that bolsters Churchland's claim that an 'observation' vocabulary "is itself just another theoretical vo-cabulary, one distinguished from others in that it is ... the current vocabulary of 'first response' to the causal impingements of the envi-ronments".[150]

One can see, therefore, how it is possible for the Scientific Realist to introduce a methodological continuum of theory-ladenness that over-comes the positivist error of establishing the observation and theory distinction a priori, whilst at the same time avoids many of the dilem-mas of post-empiricist thought. It is from such a vantage point that coherency can also be readily discerned in the evolutionary naturalist's willingness to entertain "the possibility of our being trained to make

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schaefer, "Ordinary Knowledge and Scientific Realism", in The Philosophy of Wilfred Sellars, ed. Joseph C. Pitt (Dordrecht, Holland: D. Reidel Publishing, 1978), especially p.135.

[148] Paul Churchland, Scientific Realism and the Plasticity of Mind, p.77.

[149] Ibid., p.87. Herein Churchland is not construing the epistemic vir-tues of consistency and coherency in a pragmatic way - at least not in van Fraassen's sense of pragmatic.

[150] Paul Churchland, "Two Grades of Evidential Bias", p.259.

systematic perceptual judgements in terms of theories other than the common-sense theory learned at mother's knee".[151]

In a similarly cautious way some realists have attempted to show how one can construct a modified cluster theory that, allowing for overlap of content, permits one to bypass the quagmire of indeterminacy by demonstrating how both translation and referential continuity between theories is possible.[152] Truer to the ontological ingredient of their position, however, a large number of scientific realists have argued that we must completely forego the neo-Platonic tendency to construe meanings as determining reference. Rather, so argue these realists, it is the reference of a term that determines its meaning and, moreover, there is a causal connection between the referent and the actual utterance of the term. The slippery-slope to incommensurability is bypassed since the reference of a term is held to be determined by facts about the referent itself.

This so-called 'causal theory of reference', as it stems from the work of Putnam and Kripke,[153] is alleged by its proponents to be able to show how two scientists from different historical periods can be talking about the same entity even though they may hold divergent beliefs about

[151] Paul Churchland, Scientific Realism and the Plasticity of Mind, p.2.

[152] For a carefully argued attempt of this nature, see Peter Smith, Realism and the Progress of Science (Cambridge: Cambridge University Press, 1981).

[153] This very important and controversial theory is forcefully presented in Hilary Putnam, "The Meaning of 'Meaning'" and "Explanation and Reference", in Mind, Language and Reality (Cambridge: Cambridge University Press, 1975). An intensely argued and, on several issues, slightly divergent account, also appears in Saul A. Kripke, Naming and Necessity (Cambridge, Mass.: Harvard University Press, 1980).

that entity. In short, since there is a causal connection between the experential effects of the entity in question and the original application of a term to those effects, the reference of that term is ontologically immune to the desriptive revision which it may later undergo via its place in a different theory.[154] On such an account, a 'linguistic division of labor' - also governed by a causal process - is invoked to explain the fact that not all present users of a term were around for the original baptizing of the entity (or effects thereof) in question.

It is the acceptance of a somewhat modified causal theory of reference, for example, which has lead Hartrey Field to argue against Quine's view that the meaning and reference of terms is relative to the theory in which they are embedded. As Field argues:

> What I contest in this argument is the assumption that the semantic relations of denotation and signification are in any interesting sense, 'relative to the conceptual scheme'; on my view they are perfectly objective relations which hold between terms on the one hand and extralinguistic objects or sets of objects on the other. The existence of referential indeterminacy shows only that the relations of denotation and signification are not well-defined in certain situations.[155]

For Field, the 'more general' relations of partial signification and partial denotation can be employed to account for the referential indeterminacy which is apparant in certain situations. In fact, Field is quite ready to admit that it is possible that "science will never reach

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[154] Hence, what becomes important for the causal theory is the necessity of drawing a sharp distinction between referential and attributive uses of language. For a discussion of this matter, see Keith S. Donnellan, "Reference and Definite Descriptions", in Naming, Necessity, and Natural Kinds, ed. Stephen P. Schwartz (Ithaca, N.Y.: Cornell University Press, 1977), pp.42-65.

[155] Hartrey Field, "Theory Change and the Indeterminacy of Reference", Journal of Philosophy 70 (1973):481.

the stage where all of its terms are perfectly determinate".[156] To some extent, however, Field underestimates the extent to which the notion of partial denotation undercuts the coherency of a realist semantics. For if we are honestly sceptical about how closely we have represented an entity (effect, property, et cetera) when we speak of the denotation or extension of a singular or general term it does appear somewhat questionable whether we gain anything by talking about its 'partial' representation or partial denotation. To some extent the invocation of 'partial' in this regard can overcome some of the problems associated with a strictly determinate causal theory of reference. On the other hand, if it is used too extensively it appears destined to be gobbled up by the pragmatist, 'anti-representations' stream which is rampant in post-empiricism.[157]

Other scientific realists have attempted to overcome the partial referential indeterminateness that even seems to plague the standard causal account of reference without employing the partial denotation maneuver. Thus Hardin and Rosenberg, while paying due credence to the overall import of the causal theory, have argued that all scientific realists have to do to demonstrate the <u>increasing</u> explanatory success of theories is "to show how, in particular cases, the terms of past theories served to isolate some of the causal roles played by the entities of present theories".[158]

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[156] Ibid., p.480.

[157] For an interesting look at how a scientific realist has interpreted metaphors as <u>tools</u> of denotational refinement, see Richard N. Boyd, "Metaphor and Theory Change: What is Metaphor a Metaphor For?", in <u>Metaphor and Thought</u>, ed. Andrew Ortony (Cambridge: Cambridge University Press, 1979).

A tactic similar to Hardin's and Rosenberg's has also been used by those realists uncomfortable with the fact that the causal theory can be seen as providing an inappropriate account of theoretical-context terms like positron and photon, "terms of which we experienced neither the referent nor its effects in initially fixing their reference".[159] As Jarrett Leplin has aptly noted, the referents of such terms "is generously speculative at first, and the hypotheses introducing them rather tentative".[160] For Leplin, however, this fact of the matter need not compel us to champion indeterminacy. In his view, "it is reference as fixed by current theory rather than as fixed by past theory that provides the basis for evaluating coreference".[161] Hence Leplin argues that we are justified in saying that an earlier theory may have been wrong about the nature of the referent of a present theoretical term but that it wasn't wrong about its existence if "an intervening experimental result successfully predicted by the earlier theory becomes part of the foundation for the latter".[162]

The physicalist aspect of the causal theory of reference is clearly something that can be employed by the naturalist in their varied attempts to blockade the 'incommensurability turn' that much of post-empiricist philosophy of science has taken. However, the 'benefit of the

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[158] Clyde L. Hardin and Alexander Rosenberg, "In Defense of Convergent Realism", Philosophy of Science 49 (1982):614.

[159] Jarrett Leplin, "Reference and Scientific Realism", Studies in the History and Philosophy of Science 10 (1979):271.

[160] Ibid., p.279.

[161] Ibid., p.282.

[162] Ibid., p.280.

doubt' that many proponents of the theory perhaps too generously give to the past every time coreference cannot immediately and determinately be established is, of course, an often questionable maneuver.[163] Extending the benefit of the doubt to the past - whether as part of the over-arching 'principle of humanity' or not - is itself in need of an extensive theoretical justification. It is also a maneuver that can be seen as providing conceptual fuel to a thorough-going pragmatist account of translation; i.e., there is nothing necessarily 'realist' or 'determinate' about it.

In addition, it is blatantly obvious that the causal theory presupposes that there is at least a respectable number of natural kinds in the world - something which the naturalist, especially if they champion the 'representational cripple' thesis outlined earlier, may well be sceptical about.[164] Nevertheless, in light of a critique of post-empiricism, there is much that can be mustered from the historical accounts provided by the proponents of the causal theory. The theory does have numerous problems but what has been worked out in its account of the fixing of the extensional component of terms does pose a serious challenge to the advocates of radical indeterminacy and incommensurability.

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[163] For an attempt to patch up the causal theory by emphasizing the indespensableness of the 'benefit of the doubt', see Michael Levin, "On Theory-Change and Meaning-Change", Philosophy of Science 46 (1979):407-424.

[164] For such a scepticism about the causal theory's reliance on natural kinds, see Paul Churchland, "Conceptual Progress and Word/World Relations: In Search of the Essence of Natural Kinds", Canadian Journal of Philosophy 15 (1985):1-17.

Given the ubiquitous acceptance of the radical meaning variance theory by post-empiricists, however, many naturalists and scientific realists have launched a full scale attack on that theory, rather than attempting to provide a theory of reference that can co-exist with meaning variance. For many critics, post-empiricists, in their overly generic construal of the network model of explanation and meaning, have been unable to provide an explicit account of how new meanings apparantly arise out of context that undergoes some 'peripheral' change. Feeling such a dissatisfaction with post-empiricist accounts, Kate Millikan has recently pointed to a variety of problems associated with the network model of belief and the thesis of radical meaning variance. Millikan argues that not only does the 'total interactionist' hypothesis of the network model and radical meaning and belief variance theories need a lot of case work to back up its' claims, it is unlikely to ever get such support. As she argues:

> Not all of my beliefs do end up interacting with one another in such a way that they either support one another or help discredit one another. Indeed, an enormous number of one's beliefs never face a trial at all; they are never either challenged or confirmed in any way.[165]

In fact, it is Millikan's view that the network model of belief and concept formation is at loggerheads with the coherency theory of truth championed by most of its advocates. The primary contradiction is pointedly outlined by her as follows:

> If it were also true that no inner term-iterating program could be tested without testing all of one's other term-iterating programs simultaneously, the problem of weeding out empty or faulty concepts from the system by the test of coherence

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[165] Ruth Garrett Millikan, Language, Thought, and Other Biological Categories: New Foundations for Realism (Cambridge, Mass.: MIT Press, 1984), p.321.

would certainly be a completely hopeless one.[166]

The mere fact that we do isolate contradictions between certain concepts and beliefs, Millikan argues, is proof positive that it is possible to test evolving concepts in small sub-groups.

The rejection of an ontologically significant observational/theoretical language distinction has, of course, helped us to further appreciate how Quine's work has been indispensable in revealing the ludicrousness of the positivist presupposition that the meanings of terms (and propositions) can undergo no alteration whilst the propositions (and theories) in which they are embedded can be assigned varying truth values. In light of attacks on meaning variance, it must be noted, however, that a fundamental Quinean thesis has been argued by many post-empiricists to necessarily lend support to the radical indeterminacy of translation and ontological relativity. This thesis, of course, is the infamous underdetermination of data thesis, which holds that "physical theories can be at odds with each other and yet compatible with all possible data even in the broadest sense. In a word, they can be logically incompatible and empirically equivalent".[167]

Now there is admittedly quite a few problems generated by Quine's formulation of the underdetermination of data thesis. Many of these problems are rooted in his claim that physical theories are underdetermined by all possible observations. Hence, for many philosophers who defend Quine's thesis in one form or another, "two theories are empiri-

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[166] Ibid., p.298.

[167] W.V.O. Quine, "On the Reasons for the Indeterminacy of Translation", Journal of Philosophy 67 (1970):179.

cally equivalent is to be understood as the claim that the theories agree on the distribution of truth-values over those propositions deemed observational".[168]

Such a formulation, however, appears to necessarily preclude the possibility of two scientists who subscribe to such incompatible theories from ever deciding upon a crucial test, all crucial test parameters would necessarily underdetermine the two theories in question. Indeed, as we have seen, the refusal to countenance the possibility of a crucial test is part and parcel of the radical incommensurability platform. Yet in such a refusal those who assert that two theories can be 'logically incompatible and empirically equivalent' appear to be turning a blind eye to actual scientific practice. Indeed, as one commentator has pointed out they may well be assuming that "the account of 'observation' [is] strictly applicable only to theories capable of explaining their own measuring devises".[169]

It would also appear that the notion of 'logically incompatible' is hard to defend given a strong underdetermination account of possibility coupled with a whole-hearted rejection of the observational/theoretical language distinction. To discern logical incompatabilites we must project two theoretical apparatuses; but, as many philosophers of science have aptly noted, "we have no such grasp of what the theoretical apparatus is over and above its place in the theory in question".[170] Ac-

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[168] William Newton-Smith, "The Underdetermination of Theory by Data", in Rationality in Science, ed. R. Hilpenen (Dordrecht, Holland: D. Reidel Publishing Co., 1980), p.95.

[169] Mark Wilson, "The Observational Uniqueness of Some Theories", Journal of Philosophy 77 (1980):220.

counts of internal coherency along with plausibility must also be, on a strong underdetermination account, necessarily underdetermined. Ironically enough, it is scientific realists who have often underlined the gist of this; i.e., that "actual judgements of relevance and confirmation in science are not independent of, indeed are heavily conditioned by, the very theories with respect to which the judgements of relevance and confirmation are made".[171]

In addition, although Quine is inclined to reject their inclusion, there is some question as to whether the notion of all possible strong underdetermination thesis - in its emphasis on all possible observations - can properly exclude counterfactual observation propositions.[172] Including such 'inaccessable facts', however, would seem to severely limit the number of theories in the history of science which have actually fulfilled such a criterion. On a related issue, it is also questionable whether or not theories which are allegedly observationally equivalent should be equally underdetermined by all possible amplifiable facts. In a critical review of the underdetermination thesis, Mark Wilson has examined whether its proponents should include this component. As Wilson notes, "the key point to notice is that both the observational and the amplifiable facts about a system S consist in counterfactuals about what would happen if a system S' external to S were allowed to interact with

[170] See, for example, Laurence Sklar, "Saving the Noumena", Philosophical Topics 13 (1982):106.

[171] As noted by C.A. Hooker, "On Global Theories", Philosophy of Science 42 (1975):165-166.

[172] Putnam, for example, argues that such an exclusion is not permissable. See Hilary Putnam, "The Refutation of Conventionalism", in Mind, Language, and Reality (Cambridge: Cambridge University Press, 1975), pp.179-183.

it".[173] If all possible amplifiable facts are included in the account of observational equivalence then the proponents of underdetermination have perhaps ventured afar from a concrete analysis of actual scientific practice. For, as Wilson concludes, "only certain types of physical theory are hospitable to this conception of possibility".[174]

Richard Boyd has also argued that many problems are generated for the proponents of the strong underdetermination thesis as a result of their implicit, and naive, acceptance of a principle which essentially holds that "if two theories have exactly the same deductive observational consequences, then any experimental evidence for or against one of them is evidence of the same force for or against the other".[175] In Boyd's opinion this principle is entirely unacceptable if the antecedent refers to the observational consequences of the theories by themselves without auxillary hypotheses employed in the deduction. That the principle simply just doesn't depict the intricacies of actual scientific theorizing is illustrated, Boyd argues, by the fact that its proponents would be led to claim "that the experimental evidence for classical mechanics is exactly as good as that for special relativity, if only both theories are stated abstactly enough".[176]

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[173] Mark Wilson, "The Observational Uniqueness of Some Theories", p.211.

[174] Ibid.

[175] Richard N. Boyd, "Realism, Underdetermination and a Causal Theory of Evidence", Nous 7 (1973):2.

[176] Ibid., p.3.

Although many of the above criticisms of the underdetermination thesis have been advanced by self-avowed scientific realists they certainly need not have been. What many of them do point to is that the proponents of underdetermination have largely been led to their radical conclusions because they have often failed to appreciate that alongside any understanding of 'theory' must go at least a rudimentary understanding of the relationships between, and the roles assumed by, auxillary hypothese, models, predicate calculi, rules of inter-theoretic reduction, et cetera. In fact, it would appear that such an understanding would also preclude many post-empiricists from so readily accepting that the indeterminacy of translation necessarily follows from any reformulated underdetermination thesis. For as many scientific realists are quick to point out, the advocates of indeterminacy, ontological relativity, and incommensurability have also "seriously over-emphasized and oversimplified the semantic disparaties between general theories because of [their] neglect of the complex roles of models and so-called auxiliary theories".[177]

All of this points to perhaps the most major presupposition on the part of proponents of underdetermination, radical meaning variance, and incommensurability; namely, that the history and contemporary state of science is marked by competing 'core theories'.[178] The very notion of a

[177] C.A. Hooker, "Systematic Realism", Sythese 26 (1974):465.

[178] At this point we must, in all fairness, appreciate the great divide that separates Quine's defence of underdetermination and indeterminacy and the Feyerabendian defence of radical incommensurability. We must also note that Quine's notion of 'logically incompatible and empirically equivalent theories' is still tied to a distinction in kind between observational and theoretical statements. Davidson's argument that indeterminacy and incommensurability actually pull against each other should also be kept in mind.

core theory, however, is something that is still open to much debate within a variety of philosophical and scientific circles. Indeed, one commentator has forcefully argued, for example, that "the notion that there is a firm body of doctrine called 'Newtonian particle mechanics' is a philosopher's fiction".[179]

The possibility that there is no such thing as 'core' theories definately stands to radically undermine the historical reconstructions relied on by several post-empiricists in their varied attempts to debunk the validity of much of philosophy of science. In addition to the pronounced supposition that such core theories are isolatible, however, what is particularly apparant in many post-empiricist critiques of positivism is the tendency to speak in terms of 'scientific' versus 'non-scientific' world-views. To a large extent, this is the result of a refusal to countenance either the analytic/synthetic distinction or an ontologically significant observation/theory distinction; i.e., at root it can be seen to be the result of the replacement of the latter-day positivist deductive account of scientific explanation with the renowned 'network model'.

This tendency to speak in terms of world-views can also be argued to be a result of the willingness of several post-empiricists (and even positivists such as Neurath) to contrast the epistemic achievements of science with those of religion and mythology. The inclination (which is actually rooted in positivism) to treat the latter as a unified monolith has led to the inclination to construe the former in a similar fashion. Thus in the work of Kuhn we find several contrasts between the Newtonian

[179] Mark Wilson, "The Observational Uniqueness of Some Theories", p.212.

and Einsteinian 'world-views;, and in Feyerabend we are quided through the labyrinths of 'Galilean science'.

It is, in fact, these kinds of interpretations that give such conceptual credence to the accounts provided by historians of science. And it is these very accounts which often constitute the 'resource base' for the doctrine of incommensurability - which provide an apparant coherency to the Kuhnian claim that every significant theoretical change in science is an indeterminable conceptual revolution. Such claims, of course, can usually be discerned within many of the relativistic and pluralistic components of post-empiricism. It is also often apparant that the tendency of several post-empiricists to grant validity to the inferential chain they see running from meaning variance through relativity of reference to ontological relativity is dialectically manifest in, and conditioned by, their belief that the 'fundamental intellectual entity in science is the theoretical world-view'.[180]

Such a generic interpretation of the scientific enterprise precipitates a variety of difficulties and dilemmas. Perhaps foremost amongst these is the blurring of the distinction between reducing a <u>theory</u> and reducing a <u>science</u>. The blurring of this distinction, which Sellars has constantly warned against,[181] almost necessitates that no clear reduction (either conceptual or nomological) will be found to ever occur in

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[180] A few scientific realists, it might be noted, have also, unfortunately, held such a bleief. In fact, these very words are from C.A. Hooker, "On Global Theories", p.153.

[181] For Sellars' criticism of the tendency to blur this distinction, see Wilfred Sellars, "Theoretical Explanation", in <u>Philosophical Perspectives</u> (Springfield, Ill.: Charles C. Thomas, 1967), especially pp.332-334.

science.

What remains very questionable, however, is whether the employment of 'world-views' as the pivotal ingredient in descriptions of science is at all appropriate. Indeed, it may well be that only an exuberant neo-Hegelian tendency in post-empiricist philosophy of science, rather than in-depth historical investigations, has fueled the belief that a theory is somehow constitutive of a 'science' or 'world-view' or 'global conceptual scheme'. As one commentator has succinctly argued:

> Theoretical systems, no matter how complete, are always at best modifications of our world-view. They are merely marginal changes to the comparatively vast system of expectations which our biological and cultural heritage provides.[182]

Viewing theoretical systems in this manner also reminds us that there are necessary and intrinsic operational limits to Feyerabend's proposed methodological pluralism; since "we must remember that methodologies are also modifications of our world-view, and not constitutive of it".[183]

All of this also helps us to see the import of the Sellarsian distinction between substantive and methodological correspondence[184] rules and the naturalists' distinction between constitutive and acquired methodologies. Simply because we argue that methodological rules are not analytic - as in positivism - we are not necessarily led to construe them as being simply the result of, and subject to the whim of, social convention.

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[182] J.N. Hattiangadi, "A Methodology Without Methodological Rules", in Language, Logic, and Method, ed. R.S. Cohen and M.W. Wartofsky (Dordrecht, Holland: D. Reidel Publishing, 1983), p.130.

[183] Ibid., p.135.

[184] Wilfred Sellars, "Theoretical Explanation", p.130.

On a naturalist account there is all the reason to believe that 'we do not know in advance how we know anything'.[185] Although this naturalist principle substantiates that the mandates of scientific investigation are a posterior from the standpoint of species history it does not, however, give credence to the view that they are not a prior from the standpoint of individuals or groups of individuals. What it does give credence to is that the epistemic mandates we prescribe slowly evolve, in dynamic interplay, with our scientific knowledge.

Ultimately, therefore, the naturalist congradulates post-empiricism for its varied attempts to escape the orthodox confines of positivist thought. At one and the same time, however, it sees its relativist, historicist, and neo-idealist flights of fancy as largely being a product of its newly found freedom. The naturalist, it might be said,[186] provides the post-empiricist rebellion with a 'home-base' - the only home-base all rebellions can be said to need. In doing so, the naturalist simply underlines the fact that the story we tell of science - the story we tell of anything - is irrevocably conditioned by our contemporary understanding of the human animal. And if our stories are not conditioned so in the present they will - if they are to become part of human understanding - be so conditioned in the future.

In conclusion, therefore, we might say that it is only from such a 'home-base' that the naturalist is now quite justified in telling us the following story:

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[185] As Hooker puts it in C.A. Hooker, "Philosophy, and Meta-Philosophy of Science: Empiricism, Popperianism, and Realism", p.209.

[186] In a flight of fancy.

We can see ourselves retrospectively as evolved apes even though our evolutionary ancestors could not similarly envision themselves prospectively as potential rational hominoids.[187]

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[187] Jay F. Rosenberg, One World and Our Knowledge of It (Dordrecht, Holland: D. Reidel Publishing, 1980), p.115.

Chapter VII

CONCLUSION: ON FORGING A DIALOGUE BETWEEN WORLD-MAKERS AND EPISTEMIC ENGINES

As was quite clear from the introduction, this thesis had a number of goals to achieve. Most pronounced amongst them, perhaps even serving to define all others, was to provide a look at how debates withing Anglo-American philosophy of science have influenced the conceptions of the human animal offered by social and political theorists. Correlatively, an attempt was made to discern how development within these debates could be employed by social and political theorists. Throughout, this study has both paid heed to contemporary developments and projected those developments into the future. It is only hoped that indulgence in the latter has not defied the standards of projectibility which have been (implicitly) drawn by present day discourse.

Setting one of the stages upon which future developments would unfold, this thesis began, we will recall, with a review of a number of arguments advanced by people who have been, or presently are, opposed to the scientific study of the human animal. Although they were diversely varied in rationale, many of these arguments were premised on the belief in a 'pre-scientific' awareness that both constituted and gave meaning to our experience of the world and interchange with each other. The indictment on much of modern science was that it had severed itself from this constituting world by applying only the categories of 'formal' knowledge to the 'content' of experience.

Propelled by the supposition that the bounds of such a 'technique' now extend beyond the ivory tower to every facet of social (and private) existence, many anti-science arguments blended straight-away into full-scale attacks on the modern world and the technologies which serve as its backbone. Indeed, in many instances the proponents of such arguments could be seen as offering the resources for radical political dissent.

Quite in spite of the fact that they were more often than not fueled by a fierce opposition to Comtean dictates, many of the anti-science, anti-technology arguments presupposed an image of science that was brazenly positivist in its depiction of the epistemic strategies pursued by the human animal. More often than not it was difficult to discern whether the attack being waged was directed against 'science' or against a positivist depiction of that enterprise and its epistemic products.

In a preliminary attempt to extirpate the obviously provocative baby from its contaminating bath-water, a look at the running epistemological assumptions of twentieth century positivism was provided in the second chapter. Therein it could be seen how a particular philosophy of science was able to avoid responding to questions that many opponents of the (scientific) rationalization of society deemed of fundamental importance. Not only were intuitional 'procedures', questions of metaphysics, and ethical pronouncements considered cognitively meaningless by the positivists. Befalling the same fate were also most of the alleged 'pseudo-explanations' of the human animal provided by social and political theorists and loosely phrased in the intentional idiom.

In order to get a closer look at the methodological presuppositions of the 'alternative' to the positivist-inspired explanations that many critics lauded, a discussion of the Verstehen tradition in the social sciences was provided in the third chapter. As we came to see, however, that tradition is certainly not constituted by a consensus on how best to proceed in offering interpretations of human action, divergent cultures, and the multitude of cultural entities which mediate human interchange. Within a tradition that is often lauded for providing the resources for assessing a pre-scientific realm of meaning what was discovered, on one possible reconstruction, was rampant dissension and factionalism.

Perhaps responsible for such factionalism is the fact that, in an increasing number of cases, those thinkers whose work is constitutive of the Verstehen tradition have invoked the metaphor of reading a text to give some coherency to the interpretational procedure which they advocate. Largely as a result of the employment of this metaphor, however, the process and products of interpretation are viewed less as reflecting knowledge of self and others (and the possibility thereof) as they are viewed as the (partly) unconscious interchange of biases rooted in one's own cultural and historical matrix.

Without too generically construing the import of what the Verstehen tradition has to offer, one would, nevertheless, not be unjustified in claiming that many of its previously fundamental notions have undergone, and are continually undergoing, drastic recategorization. Indeed, in light of the mounting influence of various enthnomethodological and deconstructionalist strains, many of those thinkers who had set out to

demonstrate how human understanding was possible, as well as how it could be enhanced, now champion the untlimate illegibility of action and human interchange.

Perhaps under-estimating the degree of internal strife that plagues the Verstehen tradition, several social and political theorists have recently claimed that post-empiricist developments in the philosophy of science lend support to some of the fundamental mandates of that tradition. In a similar vein, many of the descedents of the critics of positivist-inspired explanations in the social sciences have invoked post-empiricist developments to support their varied claims. In light of this alleged nourishing factor, an examination of post-empiricist philosophy of science and related post-empiricist developments was provided in chapter four.

It is, in fact, quite obvious that much of post-empiricist philosophy of science places a great emphasis on the role of values, metaphysical outlook, and social conditioning in the acquisition of scientific knowledge - a consideration of which positivism had largely brushed aside. Although many post-empiricist attacks on the mandates of positivism are quite specific and remain very much within the confines of what might be construed as 'analytic' philosophy, many of the attacks have been stimulated by investigations into the history of science and by the findings of gestalt psychologists. Combined, these attacks draw into fundamental criticism much of the prescriptive philosophy of science that fueled the positivist cause. Of all the major positivist claims and the plethora of more specific assumptions that have been attacked by post-empiricism the following are perhaps the most recallable:

1. the positivist reliance on the stable meanings of 'protocal' sentences.

2. the acceptance of a sharp observation/theory distinction.

3. the claim that theoretical statements could be exclusively reduced (and, therefore, 'eliminated') via analytic correspondence rules to those statements of the phenomenalistic (or physicalistic) base.

4. the sharp bifurcation that positivists drew between the contexts of scientific discovery and justification.

5. the positivist reliance on the analytic/synthetic distinction.

6. the criterion of cognitive meaningfulness that was employed in an attempt to exclude metaphysical statements from scientific discourse.

7. the belief that the products of scientific knowledge subsumed and extended the results of prior theory.

If rationally reconstructed in an acceptable way one can see that post-empiricist attacks actually constitute a new 'image' of science quite unlike the image provided by positivism. This new image sustains much of its apparant coherency as a result of the tendency of many post-empiricists to employ holistic notions when speaking of the scientific enterprise. Although many of these notions were originally intended to take account of the fact that science is a <u>social</u> enterprise, or to pay credence to the Duhemian network theory of belief and meaning, their contemporary usage often precipitates much confusion. In a very general sort of way, it could be argued that this confusion, indicative of much of the post-empiricist problematic, will continue to plague post-empiricist thought in the future. The nature of such confusion could, perhaps, be described by way of the following story.

Much of post-empiricst philosophy of science had its initial genesis in the troubles encountered in trying to justify the projectibility of

inductive inferences in scientific theorizing. This is very important to note in trying to come to terms with contemporary post-empiricist developments. Today, however, it appears that much of post-empiricist philosophy is becoming increasingly concerned with the projectibility of 'conceptual schemes' and 'world-versions' and tends to think that 'habit' or 'tradition' has something to do with the parameters of that projectibility. What were 'facts of the matter' some time ago are now 'normal discourse', 'paradigmatic thought', and 'forms of life'.

The ease with which we now talk about world-views (versions, traditions, et cetera), however, belies what might be some fundamental changes in Anglo-American post-empiricist thought. I think that we can attempt to get a look at the extent of these changes by noting that both those who talk about conceptual relativity and those who talk about cultural relativity are inclined to speak of traditions, discourses, and worlds. Not only do they use the same terms, they speak of them as if they were entities. There is rapidly becoming a conflation in post-empiricist thought of what was once distinct cultural and conceptual terminology.[1] Post-empiricist thought is increasingly equating that which is projected with that from which it is projected. This is post-empiricism in its teasing idealist guise. At the same time, however, post-empiricist thought is constantly reminding us that only certain things are projectible. This is post-empiricism in its teasing pragmatist guise. This credence which is being implicitly paid to both the tradition of German Idealism and to Kant is creating a tense problematic within post-

[1] Indeed, in elaborating on this point one may well concur with Putnam's claim that much of the relativist tendency within post-empiricism stems from "a scientific theory inspired by anthropology". See Hilary Putnam, Reason, Truth and History, p.126.

empiricist philosophy that will confound social and political theorists for some time. Indeed, it is a tension that requires much clarification by philosophers and social and political theorists alike.

Although the tendency towards holism in post-empiricist philosophy both reflects its attempts to escape positivist confines and belies much confusion, social and political theorists have often interpreted such a development as indicating that something far more fundamental is beginning to brew in the philosophy of science. Post-empiricist developments have often been invoked to substantiate that relativism and historicism have won the day. Among allegations on the part of social and political theorists is that science is now being seen as only one form of knowledge amongst many; that the epistemic products of science are now increasingly being viewed as social constructions; that scientific theory construction is now finally being admitted to possess an inextricable tacit, informal, and practical epistemic component; and that increasing importance is now being placed on science as a hermeneutic activity.

The employement in post-empiricist philosophy in general of terminology like traditions, conceptual schemes, paradigms, discourses, and 'world-views' has indeed contributed much to interpretations like the above. However, what social and political theorists do with these notions and how they perceive their <u>over-all</u> import is, however, another matter. The tantamount question at this point in the thesis became whether or not post-empiricist developments actually contributed, or could validly be seen <u>as</u> contributing, conceptual resources to those social and political theorists who championed epistemic and cultural relativism; who are calling for a return to traditional hermeneutics; or who

argued that the social construction of symbols and symbolic mediums was on par with postulational theory construction in the natural sciences.

The presentation of post-empiricist thought revealed that it was indeed becoming exuberantly radical vis a vis positivism, but that the pragmatist element implicit in so much of it (even in what might be seen as Feyerabend's epistemological anarchism and Goodman's linguistic idealism) prevents a whole-hearted turn towards relativism or traditional hermeneutics. Most conceptually damaging to the defenders of classical Verstehen is the almost unanimous attack, from within post-empiricism, on the supposed epistemic and ontic primacy of the intentional idiom. That post-empiricism cannot be so easily invoked to booster the claims of the varied anti-scientisms is also prevalent in the fact that their pragmatizing of theory extends across the linguistic spectrum. No demarcation criterion is offered for distinguishing talk of 'purpose rational action' (poiesis) from talk of technical expertise (techne). And further, no such criterion is provided, implicitly or otherwise, that will facilitate attempts to speak of an intersubjectivity engendered by discourse as fundamentally distinct from an intersubjectivity engendered by 'practical enlightment'. What was admitted, in a very optimistic way, was that post-empiricism can be seen as contributing to the proposal that the social sciences be viewed as one of the design sciences.

In spite of its optimistic intonation, however, this latter concession is forthcoming in a very truncated form. To the same extent that in the work of Feyerabend the philosophy of science has lost track of the structure and limits of experiment, so too will social and political theory which continues to be influenced by post-empiricist developments

increasingly be unable to determine the source, content, and limits of design. And for the social sciences, of course, these limits are primarily fixed by the structure and limits of resource allocation, valuational and economical. In short, one might say that social and political thought exclusively driven by the winds of post-empiricist philosophy will become increasingly less cognizant of the institutional infrastructures that mediate human interchange and facilitate (or hamper) ways of social world-making.

In order to determine whether such a scenario is necessarily the fate of social and political thought that countenances the failures of positivism, a therapeutic chapter seven was provided. Assessed therein was whether or not post-empiricist thought needed to go to such lengths to express its fundamental departure from the categorical distinctions of positivism. The variants of Scientific Realism countenanced in this chapter were those which might just as well be classified under the rubric of evolutionary naturalistic realism. Such variants are 'realist' simply due to the fact that they proclaim that our 'observational' and 'common-sensical' taxonomies (and corresponding ontologies) are no more 'purer' than the 'theoretical' ontologies of modern science. They are evolutionarily naturalistic because they resist First Philosophy and take up the Quinean dictate that 'epistemology is science self-applied'.

Apart from the import of their more specific assaults on the positivist image of science, there are some interesting parallels that can be discerned between evolutionary naturalistic realism (ENR) and the post-empiricist philosophy of science which is indebted to the 'linguistic turn' depicted throughout this thesis. In a conclusion of this nature

it would be appropriate to emphasize, in a protracted manner, the following parallels:

1. In both post-empiricism and scientific realism the conception of science offered is not restricted to the logic of science. In an attempt to give explication to the social component of the scientific enterprise and the social determination of its epistemic products, much of post-empiricism has increasingly turned to the sociology of science for conceptual resources. To the same end, the varied stories provided by historical reconstructions are also relied upon. Scientific realists, on the other hand, abiding by the Quinean dictate that 'epistemology is science self-applied', increasingly turn to research in the psychology (neurophysiology) of perception and cognitive neurobiology in order to substantiate that 'science' is a generic epistemic strategy pursued by the species - albeit, a strategy that is inextricably 'normal', driving both 'common-sensical' accounts of the world and those accounts offered by 'advanced physical theory'.

2. Implicit in their respective attempts to turn investigative attention away from an exclusive concern with the logic of science is the refusal, by both post-empiricists and scientific-realists, to seriously countenance a strict demarcation between science and 'other forms of knowing'. The rejection of such a line of demarcation can be conducted in a variety of ways. One can, for example, 'soften' our view of science by emphasizing that the tacit/implicit elements of cognition allegedly constitutive of 'non-scientific' ways of apprehending the world (art, et cetera) are ubiquitous even within science. The Polanyis and Kuhns from within post-empiricism are especially important in underlining this approach. In a similar fashion, one can soften our view of science by remaining radically nominalist and by arguing that the way art 'carves up' (symbolizes) the world is not dissimilar from how science carves it up. This approach is reflected quite strongly in the work of Goodman and its linguistic cousin permeates the work of Rorty. Further attempts to soften science are also prevalent in the work of Putnam and Feyerabend, wherein it is argued that scientific theory construction presupposes a not insubstantial amount of practical knowledge. An alternative strategy to employ in rejecting any demarcation, one that 'hardens' our view of what have traditionally been considered 'non-scientific' ways of knowing is one that emphasizes that even the taxonomies which result from common-sensical accounts of the world are necessarily theoretical in nature. Such a strategy, of course, is at the heart of the Sellarian claim that existence comes to us only through the descriptive categories of 'science'. It is a strategy fundamental to our scientific realists (evolutionary naturalists).

3. To a very large degree, both post-empiricists and scientific realists are emphatic in their insistence that we cannot underestimate the extent to which the world we inhabit is a world that re-

sults from categorical distinctions. Such a thesis has profound ramifications. Perhaps primary amongst them is that which assaults our Cartesian biases, which compels us to accept that 'the thing which thinks' is itself the result of an over-arching categorization. For thorough-going scientific realists the concept of a person is simply something that has been 'brought to life' by the categorical distinctions of the 'manifest image' - its replacement by a multiplicity of logical subjects in the 'scientific image' will be a conceptual development on par with de-personalization of the objects of the 'original image' (i.e., the attribution of intentions to the winds and high seas was once ubiquitous within 'common-sense' - there is no reason to believe that the attribution of similar intentions to 'persons' will forever remain ubiquitous). This claim reflects a fundamental thesis of many scientific realists; namely, that the terms (taxonomies) of our most advanced 'science' increasingly acquire 'first class semantical status'. There is, of course, a similar theme in much of post-empiricist philosophy. It can be discerned in many of the attacks launched against the presuppositions of the Verstehen theorists, and is reflected in many of the conceptual sympathies extended by several post-empiricist philosophers to the Foucaults and Derridas of Continental thought. Herein, we see an unrestrained attack on the presupposition that there is a 'subject to history' and that the human being is a 'universal category'. Indeed, in an increasing amount of their work several post-empiricists are implicitly paying credence to Foucault's claim that the human being is rapidly being replaced on the historical stage by the being of language. In addition, in the work of radical constructionalists like Goodman one can discern parallels to Derrida's mandate that in analyzing worlds-viewed (frames) we must, at some point, come to view 'ourselves' as constituting, and being constitutive of, nothing more than yet another frame. The import for social and political thought of this parallel between scientific realism and post-empiricism? A thorough-going sceptism must be championed when evalutating those 'theories' which rely on historical reconstructions and which gain their coherency from the invocation of the 'Ego', the 'natural kind human being', 'Man's universal essence', and the 'constituting consciousness'. Futuristic ramifications? An unrestrained attack on all metaphysics of 'presence'.

4. If we were to scan the horizon of twentieth century philosophy for some words to express a fourth parallel between post-empiricism and scientific realism we might, in a very cautious way, invoke the Sartrean claim that the human being 'possesses no essence but has the possibility of freedom'. This invocation, of course, would require taking these words out of their original context; in a very ironic way, however, they serve our purposes just fine. They serve to express the extent to which both post-empiricism and scientific realism countenance a 'dialectic' between tradition and innovation. Both post-empiricism and scientific realism, although acknowledging that our innovations must pay heed to the implicit standards of projectibility ordained by contemporary society (theory), nevertheless recognize that the

conjectural nature of knowledge requires a corresponding critical culture. Indeed, such a culture is presupposed by an evolutionary naturalist like Hooker when he argues that "the creation of social theory becomes a reflection of values and conceptualizations and, vice versa, the cultural evolution of a society become a (partial) function of theory developed".[2] This element of criticism ('freedom') is also countenanced by those post-empiricists who, in accepting the Barthesian claim, that 'a work takes precedence over its author', argue that our horizons of expectation are a necessary result of the fact that a multitude of interpretations have already been attempted and accepted. What both post-empiricists and scientific realists are in concensus about is that we can no longer regard the world as simply 'viewed'. One might say that both accept (ironically enough) the Heideggerian thesis that the human animal no longer possesses the 'option' of being a spectator - that we are necessarily agents in what we observe.[3] Indeed, scientific realists who argue that linguistic categories are necessarily inadequate to the task of representation are perhaps allowing conceptual space for the countenancing of linguistic idealism; i.e., there will always be an unbridgeable hiatus between incoming information and our linguistic formulations of that information. Kantian overtones aside (as well as critiques thereof) one might say that scientific realism is offering an explanation for why epistemic engines are necessarily (linguistic) world-making machines. The aforementioned hiatus may, in fact, account for the 'success' of metaphor - metaphors do not simply fill in 'indexical gaps' within a language, they extend and/or manipulate the 'loose ends' of our always incomplete software programmes. Although quite speculative, such a possibility may help to show that our capacity for world-making is limited (and enhanced) by fundamental 'design defects'.[4]

5. In both traditional post-empiricism and the kind of scientific realism countenanced herein a strong pragmatist component can be discerned. Such pragmatism can be seen as partly rooted in the willingness of both these philosophical perspectives to countenance the existence of covert intellectual activiety. This covert component can be invoked by both to pragmatically account for Wittgenstein's 'ability to go on' and Quine's 'analytic

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[2] C.A. Hooker, "Philosophy and Meta-Philosophy of Science: Empiricism, Popperianism and Realism", Synthese 32 (1975):221.

[3] In all fairness, one should consult Heidegger's own view on this matter. See Martin Heidegger, "The Age of the World Picture", in The Question Concerning Technology and Other Essays, trans. William Lovitt (New York: Garland Publishing, 1977).

[4] In light of this point one might also attempt to trace the variety of parallels that can be seen between the post-empiricist notions of 'framing' and 'world-versions' and what is involved for scientific realists in postulational theory construction.

hypotheses' - it signals a fusing of the traditional distinction between, 'knowledge about' and knowledge by acquaintance'. In post-empiricist thought the acknowledgement of this component fuels the claim that 'our skills are too complex to be described by theory'; in scientific realism it precipitates the claim that 'our brains are more complex than we are smart'. In both, it sponsors scepticism about the positivist claim that all of what we know can be propositionally justified publicly via propositions. Indeed, in much of post-empiricism and scientific realism the thesis that knowledge is 'justified true belief' is forcefully rebuked. Such a rebuke is a necessary consequence of the realist attack on the representational adequacy of sentential epistemologies. And it is reflected strongly in post-empiricism's emphasis on the role of habit and the Goodmanian thesis that "knowing or understanding is seen as ranging beyond the acquiring of true beliefs to the discovering and devising of fit of all sorts".[5]

Post-empiricism, we will recall, offers us a story about human beings as world-makers that unfolds within the parameters of a thorough-going (albeit, often implicit) philosophical pragmatism. Kuhn's normal science, Rorty's normal discourse, Feyerabend's traditions, and even neo-Quinean conceptual schemes - all of these notions invoke some element that, whilst remarkably removed from the positivists' criterion of cognitive meaningfulness, nevertheless constrains the projection of alternative worlds/discourses/conceptual schemes/hypotheses/paradigms. These elements are, moreover, imbued with an over-riding social (linguistic) component. For post-empiricist thought, the (linguistic) community is the stop-gate for idealism. We hear a remarkably similar story from scientific realism - the theme remains pretty much the same, only the plot is altered. For scientific realism the stop-gate for idealism is, and always has been, the particular neuro-physiological make-up of the human animal.

6. Both post-empiricism and scientific realism point to the need for a philosophy of engineering. In their emphasis on local and specific knowledge and their (varied) presentations of the thesis that much of our experience is influenced by 'needs', post-empiricists and scientific realists alike underline that what should increasingly enter into philosophy is a consideration of our practical (spatial) orientation to the world. In both one can discern an opposition to the Huxleyian dictate that 'order in science and art is okay but it should be avoided in politics'.[6] For both post-empiricism and scientific realism order in politics is inevitable.

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[5] Nelson Goodman, Ways of Worldmaking, p.138.

[6] Such a dictate fuels much of the discussion in Aldous Huxley, Brave New World Revisited (London: Granada Publishing, 1983). Its explicit formulation can be found on pages 40-41.

In spite of the similarities that one might speculatively suggest exist between post-empiricism and scientific realism there will always remain some fundamental points of contention between these two philosophical perspectives. Although it is arguably itself a 'post-empiricist' philosophy (vis a vis its attack on positivism), scientific realism indicts much of post-empiricism for having failed to adequately underline the distinction between the social and biological constitution of the human animal. Although this distinction is often unformalizable, the conceptual neglect of it has resulted in a lack of emphasis given by post-empiricism to the fact that as a species we are unwillingly compelled to operate under the mandates of certain forms of understanding because we have been ordained by nature with a specific neuro-physiological make-up.

The recognition of such a distinction by scientific realists has enabled them to move beyond post-empiricism's (perhaps overly) exuberant attempts to escape the confines of positivist thought. Transfered to their attack on both positivism and post-empiricism this recognition is exhibited in the distinction drawn by realists between 'acquired' and 'modified' epistemic capacities and structures. Through the application of this latter distinction to the observational/theoretical language dichotomy, the question of language in general, as well as the related topics of reference and meaning, the picture of science that emerged from the perspective of scientific realism served as a limiting contrast to the image of science provided by post-empiricism. Slowly fading into the background was the spectre of ontological relativity and incommensurability that has marked so much of more radical post-empiricist thought.

The image of science that scientific realism provides us with does not, of course, need to be regurgitated at this point. We might note, however, that to the extent that validity marks the realist construal of sentential epistemologies as based on only one of the species' tools for organizing information, the way is opened up to reasses the practical/theoretical knowledge distinction. Herein, one does not need to invoke notions like the 'matrix of shared meaning' or the 'constituting activity of the Lebenswelt' in order to account for the apparantness of 'practical knowledge'. Practical knowledge emerges as simply the whole storehouse of information that language is unable to formulate at this point (and perhaps at all points) in time. So although it could be said that the phenomenologists and the scientific realists are ironically in agreement (against much of positivism) that this 'medium' exists, the import of what the latter says invalidates the attempt to get at this underlying medium via a number of carefully employed 'epochs'.[7]

Perhaps the most fundamental claim of the kind of scientific realism countenanced herein, however, is that the ontological status of postulated theoretical entities is on par with the ontological status of the terms of ordinary 'common-sensical' language. The acceptance of such a claim can lead us, ipso facto, to the conclusion that our common-sensical notions of ourselves may form a theoretical matrix (folk psychology) whose usefulness has perhaps been outlived. Alongside an adequately developed eliminative materialism, the import of such conclusions, if widely accepted by social and political theorists, would precipitate a

[7] For an interesting look at how Sellarsian Scientific Realism and Husserlian phenomenology can be seen as being conceptually compatible on several points, see Gary Gutting, "Husserl and Scientific Realism", Philosophy and Phenomenological Research 39 (1978):42-56.

rapid decrease in the importiance presently assigned in their studies to the intential idiom. It would undoubtedly alter the face of the social sciences forever.

In helping us explore the biological determinants of 'culture' rather than simply the possible ways of social world-making, an evolutionary naturalistic philosophy of science and of epistemic engines may well be said to be to post-empiricism what normal discourse is to edifying philosophy. It would, however, make for some pretty interesting discourse itself. Given this, as well as the import of the claim running throughout this thesis - that a philosophical lag best depicts the relationship between the philosophy of science and theoretical innovations within the social sciences - it would be useful to try and discern the possible ramifications for social and political thought of the varied mandates of evolutionary naturalistic realism (ENR). We might, for example, emphasize the folowwing:

1. In a very fundamental way, ENR argues that the 'linguistic turn' - allegedly the province of the twentieth century - is all that philosophy has ever been. And herein it wishes to underline the fact that language never has been, and never will be, enough. Resisting the private and social comfort of the proverbial armchair, ENR underlines the importance of experiment in all cognitive endeavors. Indispensable to its critique of the saga of post-empiricist philosophy, as well as the social and political philosophy that crystallizes in its wake, has been ENR's postulate that epistemic engines process information in ways other than through language. It therefore necessarily provides conceptual support to those research programmes that seek to isolate, via experiment, those alternate ways. By way of a very literal metaphor, one might say that ENR champions the intimacy that results from opening the skull. And who today thinks that when we open the skull we find 'beliefs', 'spirit', 'mind', 'vital source', ... Lebenswelt? On this score ENR doesn't really have anything to offer the 'social' sciences. On this score what is problematic in the question 'Can the social sciences become scientific?' is not the term 'scientific' but rather the myth of the 'social'. In Aristotelian terms we might say that on this score there is no happy medium between animal-hood and God-hood.

2. As a corollary of the above, ENR, although accepting of the Quinean thesis that language extends the senses, and understanding of the fact that social and political theory will for some time revolve within the confines of the linguistic turn, has a definitive response to those who work within the 'hermeneutic dimension'. In spite of all its bluntness that response has a resounding echo the resonance of which cannot go unheeded; namely, 'everyone has a brain and central nervous system, not everyone writes or reads books'.

3. In the wake of its attack on the linguistic turn, ENR offers us a more enlightening view on the nature of rationality in general. Herein, it is irrevocably 'democratic' - for it seeks to extend 'rationality' to other species and to those human animals not possessed of linguistic capacities. ENR helps to exterpate the notion of rationality from the confines of traditional ('conscious') decision-making theory. Linguistic ways of social world-making emerge, under the mandates of ENR, as only one small part of cognition's 'exploration of possibility structures'.[8] In fact, as a result of this broadening of the notion of rationality (i.e., it development within a philosophy of epistemic engines), ENR emphasizes the possibility that on traditional accounts, the human being may well be an irrational animal.[9]

4. In an optimistically cynical sort of way one could also argue that the mandates of ENR seriously undermines studies which attempt to rspond to age-old questions like 'What is the nature of political man?' and 'Is man inherently good?', et cetera.[10] The resources relied upon by ENR in outlining its picture of the human animal and its epistemic stategies are indeed, as one

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[8] For a development of this notion, see C.A. Hooker, "Explanation and Culture: Science and Culture as Adaption", Humanities in Society 2 (1979):223-244.

[9] This implication of a thorough-going naturalistic philosophy, of course, offers a parallel to some of the logical paradoxes which Kenneth Arrow has argued plagues so many formulations of rational choice theory. See, for example, Kenneth J. Arrow, Social Choice and Individual Values (London: Yale University Press, 1973). For a notable collection of articles dealing with such issues see Brian Barry and Russell Hardin, eds., Rational Man and Irrational Society?: An Introduction and Sourcebook (Beverly Hills: Sage Publications, 1982). Another interesting article to consult, one wherein reflection is brought to bear on psychological findings and the learning (educational) process in general, is Stephen P. Stich, "Could Man Be An Irrational Animal?: Some Notes on the Epistemology of Rationality", Sythese 64 (1985):115-135.

[10] Much of post-empiricism, we will note, especially in its relativist and pragmatist guises, has also drawn into question the presuppositions of those who suppose that one might conclusively arrive at an answer to such questions.

commentator has noted in passing, "going to jack political philosophy off its classical assumptions".[11] Under the mandates of ENR the study of politics, one might say, will take us back beyond the 'early Greeks'. And by this I do not mean that ENR will give us the resources for exploring 'Oriental' times! ENR, we might recall, can be seen as quite sympathetic to the import of the Foucaultian mandate that we abolish 'Man' as a universal category.

Apart from de-emphasizing the supposed importance of the Great Questions which have plagued the history of social and political thought, ENR does, of course, fuel a scepticism about the positivist reliance on political behaviour. The resources mustered from evolutionary macro-biology and cognitive neurobiology not only assists in extirpating socio-political research from the labyrinth of language. They can also assist the social and political theorist in penetrating behind the wall of behaviour.

5. A social and political theory guided by the epistemic mandates of ENR would certainly precipitate an increased concern with biologically-related social issues.[12] This, of course, is no small package. Such issues, as any cursory reflection would reveal, include pollution, food supply, nutrition, population control, and 'drug abuse'. Ecological and niche theory in general could be applied to increase our understanding of violence, leadership, the relation between 'social' and 'physical' environments, and competition between individuals, parties, and nations.[13]

6. ENR, by helping us to see society and culture as a collective survival enterprise also assists us in viewing organismic, behavioural, and cultural properties as interacting. By henceforth showing that the survival needs of individuals, societies, and the species overlap, the picture of things provided by ENR may

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[11] See Glendon Schubert, "Politics as a Life Science: How and Why the Impact of Modern Biology Will Revolutionize the Study of Political Behaviour", in Biology and Politics, ed. Albert Somit (The Hague: Mouton Press, 1976), p.164.

[12] Nothing, of course, prevents philosophical idealists or even theologically-oriented political theorists from also examining such issues. What I am simply arguing at this point is that ENR, due to its epistemic mandates, could only increase concern with them.

[13] For a review of some of the developments on these matters within political science, see Glendon Schubert, "Psychobiological Politics", Canadian Journal of Political Science 16 (1983):535-576. Also see Thomas Wiegele, Biology and the Social Sciences: An Emerging Paradigm (Boulder, Colorado: Westview Press, 1982), especially parts 1,2,5, and 7. Of course, the earliest cogent request this century for such a political science was put forth by Wallas in 1908. See Graham Wallas, Human Nature in Politics (Lincoln: University of Nebraska Press, 1962).

well provoke concern for posterity; i.e., it may well increase the demand that we develop political theories which can adequately assess how public policy is functionally related to the problem of survival. However, even if cynicism continues to reign on these matters, ENR continues to underline that there are no universally applicable solutions. Value trade-offs are a necessary consequence of the fact that all policy must be context-sensitive. What we learn first and foremost from ENR on this score is that traditional formulations of the 'General Welfare' point to nothing but a dangerous myth.

Much of the above has, of course, been formulated in a very generic and cursory fashion. The degree of impact that ENR will have on social and political theory in the future will in large part depend on its having ready at hand some pretty definitive formulations of eliminative materialism, reductionism, and gene-culture co-evolution.[14] In fact, replete with a thorough-going eliminative materialist stance and its attack on sentential epistemologies, ENR may well not have anything to offer to any of the traditional fields in the social sciences. Follow-

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[14] It is the whole notion of gene-culture co-evolution that perhaps needs the most clarification before real benefits can be reaped from ENR. On most reductionist accounts, of course, the notion is rejected forthright. However, even in the view of Dawkins space is provided for developing a theory to account for how cultural transmissions (via 'memes') can give rise to a form of evolution. For Dawkins, the possibility does loom that we can 'turn against the tyranny of our selfish replicators'. In fact, his notion of 'meme-machines' can be seen as providing some conceptual; support to the Goodmanian 'world-makers' which have periodically entered our account of things. His views on this matter as developed in the last chapter of his book (The Selfish Gene), however, appears brazenly and bizarrely speculative - as well as quite incompatible with much of his larger thesis. The largely unjustified supposition that the notion of gene-culture co-evolution is a coherent one is also apparant throughout Charles J. Lumsden and Edward O. Wilson, Promethean Fire: Reflections on the Origin of Mind (Cambridge, Mass.: Harvard University Press, 1983), especially pages 19-20. It is quite clear that unsubstantiated speculation on such a matter may only lead one back onto the pitted road along which philosophical dualists have long stumbled. For a look at how much of social and political theory is destined to also so stumble, see Christopher Nichols, "Neurobiology and Social Theory: Some Common and Persistent Problems", Philosophy of the Social Sciences 13 (1983):207-234.

ing post-empiricist mandates, much of social and political theory has been lead to the exciting yet cozy worlds of literature and art. Lead by the mandates of ENR social and political theory may well anguishly, and finally, discover that it is resting on its death bed. It may well come to see the euphoria provided by post-empiricism as akin to the morphine that so often conceals one's last gasp.

Even in its emphasis on evolutionary theory ENR may not be providing support to those who argue that in biology "social theory at long last meets that part of science most relevant to it".[15] The primary proponents of such declarations - the sociobiologists - may themselves be in for some pretty forceful lashings from ENR. We will recall, for example, that ENR sponsors a thorough-going scepticism about the supposed epistemic and ontic primacy of the categorical descriptions of commonsense psychological 'wisdom'. Included therein is talk of beliefs, desires, intentions, feelings, et cetera. And what does almost every socio-biologist proud of their heritage seek to explain? A look at any of their writings will provide an answer to this question; namely, altruism, agressiveness, jealousy, resentment, passivity, et cetera. However, as Richard Burian has nicely pointed out (using the appropriate terminology of Richard Lewontin), what socio-biologists like Edward O. Wilson call 'general traits of the species' would most suitably fall under the rubric of 'barroom wisdom'. On Burian's construal, what the socio-biologists have failed to appreciate is that "there is little or no reason to suppose that the behaviors picked out by ... any available de-

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[15] Edward O. Wilson, <u>On Human Nature</u> (New York: Bantam Books, 1982), p.xii.

scriptive apparatus are under direct genetic control".[16] Burian gives an explicit expression to a mandate of ENR that must be heeded by all social and political theory; namely, "we cannot go out and describe the world in any old way we please and then sit back and demand that an explanatory and predictive theory be built on that description".[17]

Dubious about the methodological assumptions of much biologically-related social theory, ENR, in emphasizing that 'rationality' may be a limited rather than an absolute character of the species, can also be seen as sponsoring a scepticism about social and political theory which approaches environmentally-related issues in an optimistic way. It can, in short, be seen as underlining the possibility that "we may now have reached a point where we are no longer equipped, as a species, successfully to survive in the environment we have created for ourselves".[18]

This possibility, of course, is one that cannot go unnoticed by a philosophy of the human animal and its epistemic capacities that countenances evolutionary theory. Such a philosophy we have seen, is not per-

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[16] Richard M. Burian, "A Methodological Critique of Sociobiology", in The Sociobiology Debate: Readings on the Ethical and Scientific Issues Concerning Sociobiology, ed. Arthur L. Chaplan (New York: Harper & Row Publishers, 1978), p.381.

[17] Ibid. Burian, it might be added, is also after Wilson for the latter's supposition that behavioural 'traits' necessarily correspond to a genetic trait. For a look at a depiction of further epistemological problems inherent in sociobiology see the sixth chapter of Michael Ruse, Sociobiology: Sense or Nonsense? (Dordrecht, Holland: D. Reidel Publishing, 1985). There are, as could only be expected, numerous objections to sociobiology on ethical grounds. They do not, however, really concern us here. Nevertheless, for a tempered criticism on such grounds one might consult Peter Singer, The Expanding Circle: Ethics and Sociobiology (New York: Meridian Books, 1981).

[18] This possibility is framed accordingly by an otherwise optimistic political theorist. See Albert Somit, ed., Biology and Politics, p.9.

mitted the presupposition that 'knowledge' is adequate to the task of survival. Indeed, due to 'design defects', 'knowledge' may well have minimal survival value. To the same extent, ENR cannot forgo the possibility that human animals are nothing more than survival machines for biological replicators - albeit, machines that may well one day outlive their usefulness. ENR, in short, must inevitably reveal as only a prejudice the assumption that the decisive component in evolution is the good (or preservation) of the species. What may well be primarily decisive is the preservation of the gene.[19]

The entertainment of this latter possibility as well as of the thesis that our brains may well be more complex that 'we' (apropos theoretical-linguistic representations) are 'smart', does, however, paint some gloomy consequences for social and poltical theory. Cultures and socio-political worlds may well be constitutive of experiments which we as a species quite unwittingly undergo. What may be most problematic, in other words, is whether we can undergo such experiments and exercise

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[19] Although the subject of much heated and critical debate, decisive reading for a consideration of this matter is Richard Dawkins, The Selfish Gene (London: Granada Publishing, 1978). Giving expression to the possibility, here is some of Dawkins' eloquent prose: "The first survival machines probably consisted of nothing more than a protective coat. But making a living got steadily harder as new rivals arose with better and more effective survival machines ... Four thousand million years on, what was to be the fate of the ancient replicators? They did not die out, for they are past masters of the survival arts. But do not look for them floating loose in the sea; they gave up that cavalier freedom long ago. Now they swarm in huge colonies, safe inside gigantic lumbering robots, sealed off from the outside world, communicating with it by tortuous indirect routes, manipulating it by remote control. They are in you and in me; they created us, body and mind; and their preservation is the ultimate rationale for our existence. They have come a long way, these replicators. Now they go by the name of genes, and we are their survival machines". (p.21).

control over them.[20] The answer to the question 'How do we determine those aspects of the socio-political world to which we will apply biological (or any) knowledge?' may well be a resounding 'in large part we don't determine any such thing'.[21]

There is, in addition, another interesting aspect to all of this - something which the early critics of scientism and the influence of the philosophy of science would have found quite ironic. If the human animal, via its representational faculites, is systematically misperceiving reality, then a philosophy, like ENR, which argues such a thesis is actually lending conceptual resources to those social and political theorists who champion a scepticism towards Grand Theory. If our representational capacities are necessarily inadequate to their traditionally supposed task then ENR, if it remains true to its task, must sponsor, at most, a pragmatist stance on such Theory. ENR deals a death blow to those who argue that in a Brave New World central control will necessarily be exercised over our cultural and political experiments. In a similar fashion it undercuts the argumentation of those who suppose that such control is possible because the Alphas are in possession of a Theory that depicts the Real.[22] In accounting for how science survives given

[20] For a discussion of this matter, see C.A. Hooker, "Explanation and Culture: Science and Culture as Adaption", Humanities in Science 2 (1979):223-245.

[21] In short, it may be possible that a fundamental myth shapes Daniel Bell's claim that the 'post-industrial' society is necessarily marked by more 'conscious' decision-making.

[22] On the other hand, ENR can be seen as providing support to those who argue that Brave New World is a state of affairs wherein we would have moved beyond attempts to 'represent' - as opposed to create - the Real. On such an account, Brave New World would most certainly be a bonus. Ah, the dread and tragedy avoided if there were no more 'reflection'! Yet if one day such a Brave New World happened on the

no permanent epistemic foundations, ENR underlines that the nature of our 'symbolic expressions' will be subjected to the same radical alteration in the future as they have been in the past. At the same time, however, it underlines the fact that a critical culture is presupposed rather than destroyed by the on-going practice of science.

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scene 'we' would not be here to welcome or rebuke it. If Brave New World is the greatest gift possible, 'we' would not be here to receive it. Does one discern a parallel here to that philosopher who once claimed to have moved beyond nihilism? Nietzche thought he was paving the way for the 'grand politics' of this century. He was, however, only continuing the legacy; in his hope he was misguided. Rather than 'Dionysus versus the Crucified', his maxim should have been 'Neither Dionysus nor the Crucified' - only shapeless, yet shaping, creatures.

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