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KARL POPPER'S CLAIM TO A REALISTIC EPISTEMOLOGY:
A PHILOSOPHICAL ANALYSIS AND CRITIQUE

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A Dissertation Presented to the
School of Graduate Studies and Research

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ABSTRACT

KARL POPPER'S CLAIM TO A REALISTIC EPISTEMOLOGY: A PHILOSOPHICAL ANALYSIS AND CRITIQUE

Karl Popper claims that he is a "metaphysical realist".¹ He accepts the belief in a commonsense realism, while he, at the same time, rejects a commonsense theory of knowledge, whereby knowledge is validated by individual belief based on experience. He is caught in a tension between his belief that facts are the products of men-made theories and his need for 'real' facts that can falsify theories.

The primary aim of this dissertation is to demonstrate that Popper's claim to realistic knowledge, as well as his claim to 'objective' knowledge, that can participate somehow in knowledge of an extra-mental reality, is untenable. This means, of course, that his falsification theory, as well as his attempts to provide a criterion for scientific progress and a principle of demarcation for science, cannot be logically maintained, since such a methodology depends on the existence of 'real' facts.

1. OK, pp.23-24, LSD, p. 59, UQ, p. 51.

Thus, Popper's attempt to provide an epistemology that avoids both essential or precise knowledge, including experience, and that avoids a conventional explanation of science, which is the highest form of human knowlege, is unsuccessful. In other words, his fallible view of knowledge - his complete scepticism - cannot accommodate either his realism or his logically dependant falsification theory. He is unable to provide any middle ground between some essential theory of knowledge and some functional or instrumental explanation.

This dissertation will also conclude that Popper's position reduces to conventionalism and ultimately to relativism, and that, in his philosophy, there is a confusion between the nature and status of scientific knowledge, on the one hand, and philosophical knowledge or metaphysics, on the other.

In addition this dissertation will provide, within the text and in the Appendices, a detailed analysis and exploration of the various facets of Popper's anti-essentialism.

DEDICATION

To my mother Muriel (MacEwan) who never
lost faith.

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PREFACE

Karl Popper believes that science should consist in bold conjectures that solve vital problems for the scientist. As a philosopher, both Popper's strengths and weaknesses stem from this same boldness of decision in adopting positions, which, regardless of their inherent difficulty, he believes he must support. He is not a philosopher who will avoid difficulties in order to create an archetechtonic, coherent philosophical structure. In fact, Popper will risk contradiction and incoherence in order to meet the demands of problems which he knows he must, in all honesty, acknowledge. This is basically the reason why Popper is eventually caught in a hopelessly untenable squeeze between his scepticism and his realistic belief. It is his daring attempt to find a solution to such difficult problems that makes his final position impossible, not any lack of philosophical ability, insight, or honesty.

By admitting that science is opinion or doxa,

resulting only in descriptive, quantitative knowledge.

Popper paves the way for a reconciliation between metaphysics and science. By clarifying the nature of scientific knowledge he has left a place for both metaphysics and religion to lay claim to the more non-descriptive aspects of human knowledge. This is a great advance over the Comtian notion, so prevalent in the past, that science is a rival to philosophy and that philosophy is a primitive and inexact form of human knowledge. However, in Chapter Eight, Section 1 of this thesis the difficulties of Popper's own concept of philosophy and metaphysics will be examined.

Moreover, in contrast to the Vienna Circle positivists, with whom he has been mistakenly classified, Popper refuses to blindly follow the intellectual trend of searching for a formula to eliminate metaphysics. Instead, he maintains, that metaphysics, like tradition itself, can be a source of valuable theory. In fact, because of his intuitions regarding reality he calls himself a "metaphysical realist".

Even though there are problems with Popper's understanding of philosophy and metaphysics and with his concept of the nature of the open society, this

in no way deters from the validity of his concern for a free society, nor does it deter from his opposition to the oppression and revolution which results from any utopian, social engineering. He fully realizes that historically any attempts to mould or remake the whole of a society have always resulted in tyranny.

It must also be acknowledged that Popper has achieved some measure of success, in spite of his problems, in exposing difficulties which are central to the scientific method and to the nature of scientific knowledge. He has shown the many faceted genius of one who has the motivation to analyze the controversial question of the nature of science and who, at the same time, has the requisite knowledge of both logic and science to enable him to achieve the highest levels in such a venture.

Unlike most philosophers, who have been influenced by the empiricist tradition, Popper is a pluralist who believes that man's greatest development occurred in the past with the evolution of tools and of

human language function. His respect for the past also enables him to give the greatest credit to Socrates and the pre-Socrates for the development of critical rationalism and even to Plato, Hegel and the Stoics whom he believes anticipated World Three objectivity.

In spite of Popper's greatness he has assumed the impossible task of attempting to reconcile both realism and scepticism by attempting to create a viable middle position between some form of essentialism, on the one hand, and some form of conventionalism, on the other. This thesis is concerned with the failure of that task.

The main objective of this thesis is to demonstrate that Popper's claim that his scientific methodology results in knowledge of an extramental reality i.e. his realism, as well as the seemingly related claim that linguistically expressed knowledge is 'objective' knowledge, cannot be rationally defended within the limits of his falsification theory. His complete scepticism, his rejection of any kind of essential knowledge including experience, and his refusal to accept conventionalism as an alternative,

does not leave him any room to develop a rationally defensible realistic philosophy.

In order to demonstrate such a thesis I have found it necessary to explain Popper's 'critical rationalism' in some detail. One reason for this is that since there are both empiricist and 'a priori' elements in his position, the interpretation of his philosophy itself is somewhat problematic. His rejection of a conventionalist interpretation of science is easily understood but his anti-essentialism covers such a wide range of views, ranging from belief based on perceptual experience to the social and political implications of essentialist philosophical positions, that it is therefore necessary, in the thesis, to explore, in some detail, the wide range of positions that Popper both implicitly and explicitly rejects as essentialism. To my knowledge, this has not yet been done by any other philosopher. In this thesis this analysis of Popper's concept of essentialism is developed in Chapter Two and in greater detail in Appendix II.

With regard to the difficulties of interpreting Popper's philosophy, it must be noted that he considers

himself to be both an empiricist and a rationalist, of some sort. Hooker however considers him to be an empiricist in all important aspects of his philosophy.¹ Some, though, like Juffras, consider him to be a rationalist disguised as an empiricist for the benefit of philosophers of science.² Such diverse views indicate some problem in interpreting Popper's philosophy.

When one reviews the periodical literature and doctoral theses dealing with Karl Popper's philosophy, it soon becomes evident that the sole concern of most authors is to explain the precise nature of Popper's scientific methodology. Often these philosophers of science attempt to refute this scientific methodology from either a more orthodox inductivist or a more conventionalist view of science. Their emphases reflect the perspectives and concerns of those inside the community of philosophers of science. Juffras maintains that this

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1. C. A. Hooker, "Philosophy and Meta-Philosophy of Science: Empiricism, Popperianism, and Realism", Synthese, No. 32, 1975, pp. 177-227.
 2. Angelo Juffras, "Popper and Dewey on Rationality", The Journal of Critical Analysis, Vol. IV, No. 3, Oct. 1972.

intermural perspective has kept Popper's concept of rationality from examination by other philosophers.¹ Few of these works attempt to understand either Popper's basic epistemology, the nature and implications of his anti-essentialism or the interrelationship of the various elements in his philosophy.

Popper's version of essentialism applies to a variety of positions from Plato's essences to empiricism and positivism; from historicism to qualitative precision. It is Popper's peculiarly broad concept of essentialism that provides one of the major frames of reference for this particular thesis.

My underlying philosophical viewpoint, which serves as a background for my particular concern with Popper's brand of scepticism, he would, of course also classify as essentialist. This viewpoint is based upon the Aristotelian-Thomistic epistemology which has been, at times, classified as a metaphysical realism and also as classical realism. In substance this philosophy defends the view that reality is something which is intelligible i.e. capable of being understood, as well as sensible i.e. capable of being sensed. In such a position the sense

1. Angelo Juffras, Ibid.

and intellectual "faculties" are in fact capacities of man to be informed by the universal and comprehensible aspects of reality as well as by the experiential elements.

This view resembles that of Hanna (See Bibliography) who argues against Popper that men must possess a knowledge of the essential aspects of reality - what he calls a knowledge of "form, quality, and relation" in order to make any claim to realistic knowledge, to truth or to objectivity. As Hanna implies (pp.269-270) one cannot talk about basic statements reflecting a reality unless the thing-in-itself can be understood. Without this kind of intellected 'grasp' of reality any judgement, principle or proposition has merely a formal or logical structure. If only appearances can be known then reality forever eludes us.

A 'metaphysical realism' such as this cannot accept that it is possible for an epistemologist to begin by casting doubts upon human knowledge and then attempt to justify it by using human knowledge itself. One cannot use knowledge to justify knowledge without begging the question. Knowledge must be accepted as existing in the way that it does. At this point it is the role of

the philosopher to examine and clarify the nature of knowledge.

As noted in the thesis Popper accuses many others of falling into the trap of the Liar's Paradox. Yet, he himself, falls into the same trap by implicitly claiming that it is true that all human knowledge is doubtful. He then makes the claim that some realistic truth can be known in a negative way via his falsification methodology. But it is an approach to truth (verisimilitude) which can never result in knowledge that can be known as true for certain.

Popper starts with a firm belief in the superior value of science as an enterprise. But, if Popper wishes to claim that a given scientific methodology can produce realistic knowledge then he should base his philosophy upon a solidly realistic metaphysics and not claim a realism which turns out to be nothing but a side effect of his philosophy of science.

Naturally, as Kekes (p. 250) notes, the principles justifying both science and a philosophy of science itself would have to be metaphysical rather than empirical because metaphysics

encompasses a more basic and comprehensive view of reality and because science is centered upon only one aspect of being, namely, the sense data of experience. Leith makes the point (p. 248) that Popper has acquired a growing realization of his implied metaphysical foundations.

Popper, of course, explicitly labels any such Aristotelian claim to derive the nature of reality as being essentialistic. In line with this, he rejects any notion of a 'concept' or any holistic, precise meaningful idea, since such a view would be derived from a 'methodological essentialism'. He, in fact, insists on a 'methodological nominalism' whose products would be imprecise words used as a shorthand to express scientific theories. Such words would, in themselves, reduce to non-qualitative description, while the theories themselves would be the result of answering functional or operational type questions rather than 'what is' essential kinds of questions. (Appendix II Section 1).

Moreover, since Popper seems to claim that scientific knowledge is quantitative rather than qualitative, it is difficult to understand how he can reconcile the precision of mathematics with the imprecision of all words used to

express a scientific theory. In addition, as noted in Part II of the thesis, Popper's explanations of World Three and especially of the potential, intelligible, and immaterial aspects of World Three, cannot fit the empirical restriction of his non-traditional nominalism where words are considered as playing no more role in expressing a theory than letters play in the meaning of a word.

In contrast, Aristotle and Aquinas, whose basic principles influence my own perspective in opposition to Popper's view, indicate that man has both a sensory and an intellectual contact with the extramental world - the intellectual elements being dependent, in the first instance, on the sensory. Reality is presented, becoming intentionally united with man's potential capacity to know, rather than being represented. This process is the result not just of an image being imprinted on a 'tabula rasa' but, man's active intelligence, can abstract and then can conceptualize the intelligible aspects of reality.

Philosophy then should not begin by casting a doubt on the human knowledge we actively live by, as Popper does. This starting point is self-defeating and impossible to realize. In the first perceptual judgements

that a person makes there is embedded implicitly a first fact, a first principle and a first condition.

For example, if one makes the judgement 'that animal is a horse', he can then philosophically come to realize that the first fact 'I exist' is implied; the first principle of identity and non-contradiction can be defended as implicit and the first condition 'Truth can be known' is also implicitly evident. Such a philosophical realization avoids begging any questions or any false starting points such as a methodic doubt.

If Popper had started with such a philosophical, metaphysically defended realism, since "metaphysical realist" is a term he applies to himself anyway because of his belief in a world operating in a non-chaotic manner, he could have been able to anchor his philosophy upon a more solid base, which he could justly and logically call a realism. His reverse procedure of trying to create an 'ad-hoc' evolutionary and 'a priori' metaphysics to fit his philosophy of science and his concern for a criterion of demarcation leads him only into contradiction with his attempt to retain the empirical aspects of his philosophy.

Because of his belief in the non-justifying capacity

of sources of knowledge, including experience, Popper must reject any kind of inductive contact with reality. He rejects not only the enumerative induction of the traditional Baconian scientific method but also any kind of inductive direct contact with a knowable reality such as that of Plato and Aristotle.

Of course, if Aristotle and Aquinas are correct in their view that the essential aspects or natures of reality can be known, then there is the possibility of metaphysical philosophical knowledge which is distinct from and more basic than empirical knowledge. Philosophical knowledge such as this, like the knowledge defended by many forms of rationalism, would neither depend on science for its starting point nor for its basic principles. However, unlike rationalism, it would provide metaphysical knowledge which is a knowledge of reality.

This thesis will not explore the methodological rules which provide the basis for the actual operation of Popper's deductive and sceptical theory of science. Such an approach would be unnecessary considering that the goal of this particular work is to examine Popper's attempt to create a sceptical philosophy, which is objective and

realistic and yet which attempts to avoid any kind of essential or conventional explanation. Nor will this thesis seek to explain, beyond what is necessary to understand Popper's philosophy, the changes of emphasis regarding the status of scientific theories and the operation of the scientific method brought about by Popper's attempts to avoid earlier criticisms.¹

Research into Karl Popper's philosophy is made more difficult because most of his books are collections of articles which were originally read at various gatherings. There is an immense amount of repetition occasioned by his attempts to convince different audiences. Yet every repetition must be carefully considered for changes of emphasis. A problem for previous thesis writers was the fact that their research was made before important articles and major works like the Popper-Eccles book were written. This particular book provides additional insight into Popper's concept of World Three and his anti-essentialism.

This thesis is divided into three parts with

1. See Ingmar Johansson, A Critique of Karl Popper's Methodology. Explains most of the methodology and the subsequent changes.

an introductory Chapter One preceeding Part One (Chapters Two and Three). It also includes an Appendix I with explanatory and critical notes which provides reactions to problems in the analyses mainly of Parts One and Two and an Appendix II which provides an in-depth analysis of the various facets of Popper's anti-essentialism. Appendix II will include the following: Section 1 - Popper's Concept of Essential Methodology, Section 2 - Anti-Essentialism, Authoritarianism and Society, Section 3 - Subjective Certainty and Belief and Section 4 - Recent Popperian Variations on Essentialism.

Chapter One will provide clarification of the main thesis problems. This clarification will provide a frame of reference for the criticism in Part Three. In addition, Chapter One will include reference to the sub-problems which are inherent in Popper's philosophy, and which flow from his desire to defend both scepticism and realism in the context of an attempt to find some defensible ground between essentialism and conventionalism.

Part One of the thesis (Chapters Two and Three),

together with Appendix II then, will seek to analyze and explain the nature and scope of Popper's anti-essentialism, as well as his anti-conventionalism.

Part Two (Chapters Four, Five and Six) will provide a complete review of Popper's philosophy from the 'a priori' Kantian influence underlying his critical rationalism, to his deductive, falsification methodology, his objective World Three and his evolutionary ontology.

Part Three (Chapters Seven and Eight) will provide the main critical section of the thesis, although the Notes on Parts One and Two in Appendix I will provide some criticism as well as clarification. In addition Section 1b of Chapter Seven will include a sampling of how a number of philosophers and theses writers explain, justify or reject Popper's solution to the basic problem of observational basic statements which is so crucial to his falsification theory and which provides the essential foundation for his whole philosophy.

Coded Works

<u>LSD</u>	- <u>The Logic of Scientific Discovery</u>	(Popper)
<u>OSI and II</u>	- <u>The Open Society and Its Enemies</u>	(Popper)
<u>POH</u>	- <u>The Poverty of Historicism</u>	(Popper)
<u>CR</u>	- <u>Conjectures and Refutations</u>	(Popper)
<u>OK</u>	- <u>Objective Knowledge</u>	(Popper)
<u>UQ</u>	- <u>Unended Quest</u> (Autobiography)	(Popper)
<u>SIB</u>	- <u>The Self and Its Brain</u>	(Popper-Eccles)
<u>PKP</u>	- <u>The Philosophy of Karl Popper</u>	(Schilpp, editor)
Hallen	- PH.D. thesis	(See Bibliography)
Hanna	- PH.D. thesis	(See Bibliography)
Heizer	- PH.D. thesis	(See Bibliography)
Leith	- PH.D. thesis	(See Bibliography)
Wintersteiner	- PH.D. thesis	(See Bibliography)
Vogt	- PH.D. thesis	(See Bibliography)

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Chapter One

Karl Popper's Attempt to Defend a Realist

Epistemology: Statement of the Problem

Karl Popper is a non-justificationalist in the sense that he does not believe that human knowledge can be justified or verified in any way, either by experience or by reason. In fact, Popper does not believe that knowledge can be supported by any sort of positive justification. Since he is sceptical about any kind of human knowledge he describes himself as a fallibilist. Because of this scepticism Popper repudiates all philosophical views that justify knowledge, or its sources, as being certain or precise. He rejects any position which he believes is essentialistic.¹

Neither observation nor reason are authorities. Intellectual intuition and imagination are most important, but they are not reliable.... They are indispensable as the main sources of our theories; but most of our theories are false anyway....²

The first, the false idea is that we must justify our knowledge or our theories by positive reasons.... This idea implies that we must appeal to some ultimate or authoritative

1. See Part One, Chapter Two as well as Appendix II for an elaboration of Popper's anti-essentialism.

2. CR, p. 28.

source of true knowledge....whether
it is human-like observation or
reason, or superhuman (and
therefore supernatural).¹

What is strange, however, in the light of these quotations is the fact that Popper insists that he is an epistemological realist, that scientific knowledge can be both objective and empirical, despite his rejection of induction, and that any arbitrary, relative, functional or conventional explanations of knowledge should be rejected as well as any essentialism.

As a result of this rejection of the justificatory powers of both experience and reason, Popper repudiates, because of their essentialism, most philosophers before Bolzano and Frege. Moreover, he also rejects the social and political authoritarianism that he believes is always inherent in the acceptance of any certitude and intellectual authority, for Popper believes that the claim to intellectual certitude and authority leads always to an illegitimate claim to moral authority.² Conversely, the open mind of those who accept a critical

1. Ibid.

2. Elaborated in Appendix II, Section 2.

rationalism, such as Popper advocates, would help foster the establishment of a liberal, open society.

On the one hand Popper's anti-essentialism includes the rejection of any classical notion of a knowledge of essences, the rejection of any precise meaning or definition founded upon an Aristotelian essentialistic methodology, the rejection of any belief in the authority of reason to derive clear and distinct ideas and the rejection of any absolute laws of historical development. Included in this rejection is the notion that science should be based on final, ultimate essential knowledge - that science has a definite stopping point, such as was accepted by the followers of Newton, with regard to gravity, and by Descartes with regard to matter and extension.¹

On the other hand, as can be noted from the above quotation, Popper rejects experience as a basis for the verification of knowledge. This aspect of his anti-essentialism Popper classifies as "subjectivism", which includes all positions such as classical empiricism, positivism, idealism and sense data

1. See Part One, Chapter Two for an elaboration of Popper's anti-essentialism with references; See also Appendix II for a detailed analysis of the various elements.

phenomenal views.¹ Any attempt to defend essentialism of this sort as a justification for knowledge Popper calls "psychologism", which he describes as an attempt to derive justified knowledge from the beliefs and convictions, whether experientially or rationally based, of individual consciousness. For Popper such a view is an attempt to confuse "subjective" knowledge with "objective" knowledge or in terms of Popperian pluralist terminology, it confuses World Two reality with World Three content. In a word, the epistemological aspects of essentialism, for Popper, mean any ultimate or final source or criterion of certitude, which results in some truth or authority, being based on beliefs, motivated by consciousness and rooted in either observational experience or reason.²

Of course any attempt to base knowledge of reality on ideas or concepts that convey a qualitative, holistic or exactly definable meaning, is an aspect of this essentialism.³ In addition, Popper's rejection of induction is obviously an integral part of his anti-essentialism even though he gives a variety of arguments

1. These aspects of essentialism are demonstrated in Part One, Chapter Two and in Appendix II Section 3.

2. See Part One Chapter Two and Appendix II Section 1.

3. Of course Popper's view of essentialism is very broad and fits his own prejudices and presuppositions.

to bolster this rejection.¹

One might wonder how Popper can reject most philosophers, both modern and classical, including Wittgenstein and the positivists, when, at the same time, he accepts so much of Kant and when he resurrects Plato, the Stoics and even Hegel to justify certain aspects of his World Three.² The answer is that although Popper attacks the essentialism of all these philosophers, including Kant, he is quite willing to accept the influence of certain aspects of their philosophy. For instance, he rejects the 'a priori' certitude of Kantian philosophy but accepts, among other notions, the view that all meaning is imposed on the chaotic phenomena of reality.³ He resurrected Plato, the Stoics and Hegel because they accepted the objectivity of linguistic content analogous to the objectivity of his World Three content.⁴ Another example of Popper's tendency for turning an early

-
1. Popper's rejection of induction is considered in Part Two, Chapter Six.
 2. Popper's interpretation of Kant does not necessarily correspond to Kant's own view.
 3. See Part Two, Chapter Four for Kant's influence upon Popper.
 4. See Part Two, Chapter Six.

rejection into a philosophical accommodation, is the case of Darwin. After repudiating Darwinian philosophy he later accepted Darwinism as a necessary "metaphysical research program" in order to provide a model for his evolutionary World Three ontology.¹ In fact, Popper shows a marked tendency to accept any philosophical element or model that he can functionally utilize in his theory.

Popper's anti-essentialism makes him a sceptic about the possibility of any true or certain knowledge of reality. This fallibilism is not something logically insinuated from his anti-essentialism but is something which is explicitly defended by him. His anti-essentialism means, that he cannot accept that any kind of human knowledge, including science, can be precise, certain or true.²

The usual alternative for a philosopher of science who rejects experience as a criterion of certitude, together with the methodology of inductive verification, is to adopt some conventional or pragmatic

1. Part Two, Chapter Six Section 2 deals with Popper's Darwinian basis for an evolutionary ontology.

2. See Part One, Chapter Two for references.

viewpoint regarding scientific knowledge. A philosopher, like Popper, who considers empiricism and positivism to be essentialistic in a 'subjective' sense, would seem to be restricted to some sort of instrumental explanation of scientific knowledge as the only other alternative. Yet Popper refuses to accept any pragmatic, relativist, conventional or functional explanation of scientific knowledge as well.

If any philosopher rejects the notion of exact knowledge of reality, he also rejects the possibility of speculative knowledge, which can be considered either true or false, because of its relationship to reality. If a philosopher believes that knowledge should be considered only as a practical, functional tool, he would be accepting an instrumental explanation of knowledge, which in Ryle's terminology would be a reduction of all knowledge to 'knowing how' rather than 'knowing that'.

Certainly Popper accepts that applied science and technology is knowledge of this type but what he rejects is the instrumentalist or conventionalist view

that all human knowledge including all scientific knowledge must be explained in practical or functional terms only.¹

Popper rejects a completely instrumental-conventional view of knowledge mainly because he believes that science must be corroborated in order to progress. He cannot accept science as a self-contained system, such as it is for Duhem, Quine and Kuhn, since science, for Popper, must have, at least, an indirect reference to an extramental reality, through a regulative concept like truth, as well as through the operation of his falsifiable method, which can provide for the survival of better and better hypotheses, theories and propositions. Popper clings to a concept of knowledge that is empirical and realistic but which is, at the same time, indirect and deductively derived.

Another of Popper's concerns is to avoid complete relativism. He realizes full well that since conventional knowledge is justified only by some

1. Popper's anti-conventionalism is considered in Part One Chapter Three.

practical or workable application that it borders on a completely relativistic view of knowledge.

Knowledge reduced to conventionalism can be measured only in terms of the functions it performs and the needs that it satisfies, in some particular frame of reference.

Once any philosopher, including Popper, is forced into acknowledging the need to relate knowledge to truth and reality, he seems forced into considering some essential status for knowledge - some precise meaning and criterion for truth. But since Popper insists on avoiding both essentialism and conventionalism he is attempting to create a philosophical explanation, which treats knowledge as sceptical and fallible, yet, which is still somehow related to the truth of an extramental reality. For his philosophy to be viable, both Popper the sceptic and Popper the realist must somehow be accommodated. It would seem that Popper has set an impossible task for himself by trying to avoid any certain knowledge, including that derived by induction, while he, at the same time, refuses to accept an instrumental interpretation which is at least coherent. But Popper insists on having it both ways. He wants

- knowledge including science (the most important kind of knowledge for Popper) to be both realistic and, at the same time, completely fallible.

It is because of the conflict between these seemingly incompatible elements that Popper ends up with hybrid dimensions in his philosophy. For some philosophers, Popper is a rationalist, for others, he is nothing more than an empiricist in a new guise. Certainly Popper considers himself to be an empiricist. Hooker is quite correct too in labelling much of Popper's philosophy empiricist.¹ One empirical aspect is that Popper considers science to be the epitome of human knowledge. He also accepts a methodological nominalism whose focus is quantitative, empirical and descriptive and which reduces to doxa or opinion rather than to episteme or essential knowledge.²

Popper's brand of nominalism - a term he later rejects because of its connection with inductivism - reduces to the role of imprecise words, which somehow

1. Hooker, op. cit., See Preface.

2. See Part One, Chapter Two, and Appendix II, Section 1 on anti-essentialist and essentialist methodology.

conveys the meaning of propositions. These verbal elements, although imprecise, because each word for Popper is like a theory in itself, still convey to a person's mind what Popper calls 'objective' knowledge in descriptive and quantitative form.¹ These verbal elements do not, for Popper, contain any of the essential or abstract concepts needed to provide the universality and necessity found in the metaphysical propositions defended by some traditional philosophers, because Popper's explanation of universals is grounded in a particularized and descriptive experience, which reduces the universal to a dispositional theory.²

Popper's concern that science should have generalized propositions is explained by the human need for a generalized understanding of the world and by the fact that a critical rational position demands that theories be chosen by conjecture to satisfy certain problem solving needs.³

1. Ibid.

2. LSD, pp. 94-95; CR, p. 118.

3. That Popper's critical rationalism is based on choice or decision is demonstrated in Part Two, Chapter Five, Section 1.

Yet he accepts Hume's arguments for the rejection of induction - an argument which is based on the inability of deriving general propositions from repeated, particular experiences, and by the realization that psychologically, even a general term like man or tree, is never the same as a perceptual awareness of this particular man or tree.¹

Moreover, despite his proclaimed realism, the only knowledge element defended by Popper as having any, even indirect, relationship with an extramental reality is a perceptual reaction to reality.² Popper explains this dimension as a decoding of reality, which can be only indirectly justified by the fact that we survive, or in the case of the falsification of propositions, that our theories survive. His explanation of perception is based ultimately on Kant's position that all meaning is imposed by the human mind.

However, even though Popper explains the nature of the universal as a theoretical disposition and explains the nature of scientific knowledge as doxa or descriptive

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1. See Part Two, Chapter Five for Popper's rejection of induction.
 2. For Popper's view of perception see Part Two Chapters Six and Seven.
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opinion, and even though he considers science to represent the highest and most perfect expression of human knowledge, there are certain non-empirical aspects of his philosophy, which would seem to support Juffras' view that Popper is basically a rationalist. Since Popper rejects induction, how then are his propositions derived? Popper's answer is that they are conjectures, which are chosen by decision because of certain logical and certain scientific needs.¹ He believes that since these propositions may be inspired by a variety of sources, including metaphysics, that their exact source is irrelevant with regard to any justification. Popper agrees with Kant that all meaning is imposed by man himself, even though he rejected the necessity that Kant accepted.² Popper also accepts the view that knowledge is innate. In fact, he has a rather unique ontology based on a Darwinian evolutionary view which attributes innate knowledge and problem-solving to organs and organisms. For Popper, evolutionary past development is the only ultimate source and starting point of human knowledge, while future human development is the result of an interplay of the scientific

1. See Part Two, Chapter Five.

2. See Part Two, Chapter Four.

community with World Three objective knowledge.¹

When one examines Popper's 'objective' World Three concept of knowledge, one is involved in a number of complications and ambiguities. To say that a philosophy is 'subjective' means that it reduces knowledge to the content of consciousness--an 'a priori' starting point. This is true for the rationalists following Plato. It is also true for dualist explanations of the intellectual knowledge of the mind or soul. However, it is evident that the term 'subjective' cannot be restricted to rationalist traditional positions, because Berkeley, who accepted the view that knowledge was empirical and descriptive, was a subjectivist, since he reduced empirical "ideas" or images to spirit or mind. Moreover, the term subjectivism can also be applied to anti-intellectualist philosophical positions such as the existentialism of Sartre, Camus, Marcel and Heidegger.

If this be so then, in what way can knowledge

1. See Part Two, Chapter Six.

be objective? Both empiricists and Aristotelians would defend their view of knowledge as objective, even if some of them explained knowledge as representational or indirectly derived, because they believe that knowledge is an expression of a knowable, extramental reality. It is objective because it can be explained as other than a modification of the self or mind. But we must realize that Popper cannot mean 'objective' in this sense. As we have already noted, we will find that Popper considers any philosophy 'subjective' that tries to defend personal awareness and individual certitude as providing a justification for knowledge, e.g. empiricism. For Popper, such individual knowledge may provide a person with motivation but it can never be defended as objective knowledge. In fact, this kind of certitude makes subjectivism for Popper a form of essentialism. Popper believes that for knowledge to be objective it would have to be expressed in symbolic, especially written, form, where it can be examined, provide a basis for argument, and be improved upon or falsified by the community of scientists. Objective knowledge for him is

symbolically expressed World Three knowledge.¹

For Popper, all idealists and empiricists are subjectivists, while only he himself, and, to some extent, Bolzano and Frege, defend knowledge as objective and yet fallible. Popper believes that Plato accepted knowledge as objective, too, but in essentialist and necessary terms, which he must reject. The problem here is that Popper is not concerned with knowledge as objective in the sense of some form of epistemological realism versus an 'a priori' explanation, but is concerned to divorce the question of knowledge from the question of its source or origin, a view which he rejects as essentialism. For Popper, no knowledge source can be authoritative.

Objectivity then, for Popper, is the opposite of knowledge justified by consciousness or subjectivity. Since the acceptance of the beliefs and convictions motivated by consciousness and derived through experience and reason constitute subjectivity and

1. See Part Two, Chapter Six for an elaboration of World Three objectivity.

essentialism, then objectivity can only refer to the verbalized content of theories, hypotheses, propositions etc. which can exist for anyone's consideration, acceptance or refutation

Yet, Popper needs some sort of relationship with reality in order to explain his falsifiable view of science. How can there be falsifiable knowledge, if real falsifying propositions cannot be derived by observation? It would seem that knowledge of an extramental reality can provide the only possible basis for scientific corroboration and progress, even in Popper's system. Moreover, Popper's concept of verisimilitude can have little realistic meaning, unless it can be related to the truth of propositions derived from reality in some way that is rationally defensible within a philosophical explanation. His basic statements, which are needed in order to falsify theories and hypotheses, and upon which his realism depends, are conventionally chosen and justified ultimately by the inter-subjective agreement of scientists. He believes that without this empirical dimension there can be no scientific progress at all. On this question of

basic statements Popper concludes that observational agreement would of necessity have to be reached, in order for science to survive:

this would amount to a failure of language as a means of universal communication; it would amount to a new Babel of Tongues¹: scientific discovery would be reduced to absurdity. In this new Babel, the soaring edifice of science would soon lie in ruins.

Popper attempts to justify his empiricism but in this thesis it will be maintained that he is unsuccessful. Whether Popper's objective view of knowledge is in fact epistemologically objective or whether it is in fact an 'a priori' position beginning and logically ending in a rationalistic mind as the source of all meaning, is a question to be demonstrated.

In his desire to avoid both essentialism and conventionalism, Popper attempts to create a via media which he labels a "modified essentialism".

This modified essentialism is only essentialistic

1. LSD, p. 104.

to the extent that scientific knowledge can be corroborated by falsification, is therefore empirical, and, as a result, can progress. This bow to essentialism is Popper's attempt to stave off complete conventionalism and relativism. Popper hopes that his deductive and falsification theory of science will provide a principle of demarcation that will distinguish science from pseudo-science and metaphysics and yet still avoid the essentialism of the inductive process. Popper calls himself an empiricist, because, for him, science must be empirical or else it cannot be considered as relating to a reality and hence it cannot progress. He also calls himself a critical rationalist, because this equates with his approach to knowledge as a problem-solving process - a fallible ongoing approach, which is the opposite of any kind of essentialism, whether essentialism is considered from the point of view, of method, the resulting absolute knowledge or the social and political effects of 'authority'.

For a philosophy to be correctly labeled 'realistic' it must refer to knowledge of an

extramental reality. As Anthony O'Hear puts it:

The ability to distinguish in principle between what really exists apart from me and what is merely mind dependant is basic to any coherent conceptualization of experience, because such an ability is required for any being who is able to see himself as existing in an objective world at all. Without it, he could never decide that his perceptions reflected anything other than his own current states of consciousness.¹

Popper, of course, while accepting the existence of an extramental reality, refuses to believe that we can have any certain knowledge of such a reality. In fact, any knowledge that we do have, that approaches extramental truth i.e. by verisimilitude, is derived indirectly and negatively by the process of falsification, although in his more recent writings Popper is forced to admit to "a-whiff of inductivism" for his acceptance of verisimilitude or nearness to the truth of reality.²

1. Anthony O'Hear, Karl Popper, p. 58.

2: PKP, pp. 1192-1193.

Knowledge, for many philosophers is called objective because it reveals a knowledge of an ontologically, extramental world. In this way an epistemological realism leads to ontological objectivity. Popper could perhaps accept this description with regard to his concept of 'objectivity' with the proviso that such knowledge is never precise or certain and contacts reality only in an indirect and negative way. Objectivity, for him, is achieved when theories, hypotheses, statements and doubts etc. are all expressed in the linguistic form of sentences and propositions. This gives World Three content an autonomy and immateriality of its own that rises above any materialistic function.¹ By means of World Three "Popper remains an objectivist, an implacable opponent of relativism and irrationalism".² Yet, in spite of this "implacable" opposition to relativism, we must remember that Popper wholeheartedly agrees with the relativist that there is no criterion of truth.³

1. Anthony O'Hear, op.cit., p. 174.

2. Ibid., p. 206.

3. See 1961 Addenda to Popper's The Open Society and Its Enemies.

The objectivity of World Three linguistic content is for him, related somehow to an ontological reality because the whole process of falsification presupposes, for the sake of scientific progress, the search for truth, as well as, at least, a negative approach to it. Popper believes also that he has been able to reinstate the correspondence theory of truth by means of Tarski's semantical approach. He accepts that by means of such correspondence he can view theories as realistically approaching truth or falsity in the process of falsification.¹ But, of course, none of this changes the fact that truth for Popper is "assumed as part of the game" of science since 'truth' is the metaphysical intuition, the "regulative idea", by which reality is approached.² Such an approach to truth and reality is necessary in order to make science an empirical enterprise which, for Popper, is a necessary condition for its validity. In the context of the three basic justifications for knowledge, which are known as

1. Popper's concept of truth is considered in Part Two, Chapter Five, Section 3(b).

2. For science as a game, LSD, pp. 53-54; See Part Two, Chapter Six, Section 3(b) on Truth and Verisimilitude.

Fries Trilemma - psychologism, dogmatism, and infinite regress -, it will be noted, that although Popper attempts to escape all three aspects, especially psychologism, which is the position accepted by Fries and other verificationists, he is ultimately impaled on all three horns especially that of dogmatism.

It will be maintained in this thesis that Popper is unjustified in labelling his epistemology a realistic one and that his concept of objectivity is in fact logically unrelated to any realistic use of that term. Moreover, the following theses and sub-theses will also be defended because of their involvement by implication in this major problem.

- A. that Popper's fallibilism is an unsuccessful explanation of the empirical element in science and so also represents an unsuccessful attempt to avoid a completely 'a priori' explanation of science and human knowledge.
- B. that the attempts to blend the 'a priori' and empirical aspects of his philosophy preclude any realistic explanation of 'objective' knowledge.

- C. that Popper is unsuccessful in his attempt to construct a via media between an essentialist and conventionalist view of knowledge, with the result, that his position reduces to conventionalism and leads to relativism and scepticism.
- D. that there is an unresolved tension in Popper's system between the scope, subject matter and methodology of philosophy (including metaphysics), on the one hand, and science on the other.
- E. that there are contradictions between Popper's methods of theorizing and his stated fallible philosophical position with regard to all human knowledge.

Theses A and B, of course, are merely implied aspects of the major thesis. If Popper's realism is untenable, then his epistemology reduces to a subjective, 'a priori' basis, since there would be no, even indirect or negative way, that Popper can consider his 'objective' World Three concept of knowledge as approaching the truth of an extramental reality.

Moreover, if the major thesis is correct,

then Popper's scientific system reduces to a conventionalist-instrumental theory of science (Thesis C). Of course, there is already a heavy dose of conventionalism in Popper's position, which will be substantiated later in the thesis.¹ The following quotation, however, serves, at this point, to illustrate these leanings. In addition, Popper^a explicitly maintains the conventional nature of the basic statements in his philosophy.²

I admit that my criterion of falsifiability does not lead to an unambiguous classification. Indeed it is impossible to decide, by analyzing its logical form, whether a system of statements is a conventional system of irrefutable implicit definitions, or whether it is a system which is empirical in any sense; that is, a refutable system. This however only goes to show that my criterion of demarcation cannot be applied immediately to a system of statements..... The question whether a given system should as such be regarded as a conventionalist or an empirical one is therefore misconceived. Only with reference to the method applied to a theoretical system is it at all possible to ask whether we are dealing with a conventionalist or an empirical theory. The only

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1. See criticism in Part Three, Chapter Eight, Section 3 on the reduction to conventionalism and relativism.
 2. LSD, p. 105, See quotation on page 133.

way to avoid conventionalism is by taking a decision; the decision not to apply its methods.¹

In Popper's theory, knowledge is considered as a problem-solving process of trial and error whether the involvement be on the level of the amoeba or the level of Einstein. But science is considered by Popper to be the pinnacle of human knowledge because science alone possesses a method for acquiring better and better theories. This is the process of conjecture, based on intelligent choice and severe testing.

Thesis D maintains that such a view of science places philosophy and metaphysics in a very confused category, to say the least. Popper may not be as explicit as Comte or the positivists in downgrading philosophy, especially since Popper sees metaphysics (as he defines it) as useful and even necessary with regard to the intuitions of truth and reality. But, in Popper's position philosophy is ambiguously understood and has a very secondary role to play in the evolutionary scheme of things especially with regard to knowledge progress.

1. Ibid., pp.81-82.

It will be noted in defense of thesis E that there are aspects of Popper's use of scientific facts and his own seeming certitude with regard to his metascientific data, that seem to contradict his position, that all human knowledge is fallible and that only science because of its falsifiability can be less fallible than other forms of knowledge.¹

In order for Popper to escape from a restrictive empirical reduction, he is forced to expand the outer limits of his linguistic World Three. Only in this way can his brand of critical rationalism develop beyond the restraints of the particular and the concrete. Popper's World Three seems to provide him with the flexibility needed to justify his pluralism, his rejection of induction, and his acceptance of immateriality.

1. See criticism in Part Three, Chapter Six, Section 2.

Part One

Karl Popper's Rejection of Essentialism
and Conventionalism

Chapter Two - The Scope of Popper's Anti-Essentialism

Chapter Three - Popper's Anti-Conventionalism

Summary and Re-Statement of the Problem

Chapter Two

The Scope of Popper's Anti-Essentialism

All Popper's explanations of essentialism have in common, at least implicitly, the epistemological view that criteria exist, which can provide a basis for justified truth, for precise meaning or for an absolute source of belief. Because essentialism for Popper is such a broad and multi-faceted concept, he finds it in a variety of guises. In fact, he believes, as we have noted, that it has been fostered by most of the traditional and modern philosophers.

In this chapter I shall show that Popper's concept of essentialism encompasses any precise, definable, certain or ultimate view of knowledge or meaning as well as the social and political implications of such beliefs. He rejects as essentialism any use of origins, or sources as justifying knowledge and the resulting beliefs or convictions which are considered as authoritative. He also repudiates any methodology that pretends to derive certain, precise and true knowledge or meaning. Included in this repudiation of any essential knowledge is the derivation of precise meaning in the form of definable concepts or exact laws of historical development. Any acceptance of holistic concepts which would amount

to episteme and which could be qualitatively defined, would of necessity have to be precise and would amount to essentialism as well.

Knowledge, for Popper, cannot be considered as either exact or authoritative. Because he believes that nobody can speak with either moral or intellectual authority, he accepts that society must as a result be open and liberal rather than authoritarian. This rejection of the possibility of certain truth, as well as the rejection of any precision to meaning, makes it impossible for Popper to accept that knowledge can be grounded upon any directly derived or intuited knowledge or that beliefs can be defended according to their source - whether this source be reason or experience.¹ As a result of the rejection of both reason and experience, and as a result of denying any essential or certain knowledge of reality, Popper repudiates even the notion that our knowledge should be justified or verified by positive, direct reasons.

Popper applies the term essentialism to the absolute realism of Plato's essential forms or ideas,

1. CR., p. 28; See quotation Chapter One p. 2.

as well as to Aristotle's abstracted essential concepts, because these concepts are accepted as constituting a precise, holistic and definable knowledge of reality.¹ In fact, any holistic or unified conceptual understanding of reality presupposes that reality can be accurately intuited and then expressed as a concept or term capable of precise definition. Any holistic epistemological basis for human knowledge would, because of its unified, precise meaning, be non-descriptive and non-particular - the opposite of Locke's ideas, which are images of sensed reality - and hence such holistic concepts or terms would provide knowledge, which is 'episteme' rather than 'doxa'. An epistemology of essential concepts would also presuppose an essential identity between concepts and meaning which Popper could never accept as compatible with his quantitative and descriptive scientific methodology.²

Popper believes that science utilizes a methodological nominalism rather than an Aristotelian methodological essentialism, in both the exact sciences

1. OS II, Chapter II, also UQ p.22, pp. 17-23, pp.28-30;
CR pp.18-20.

2. See Appendix II, Section 1.

and the social sciences, since only a methodological nominalism can result in descriptive, non-holistic and non-qualitative knowledge, which is doxa or opinion rather than episteme or certain knowledge.¹

Popper also applies the term essentialism to the holistic expression of the historicist belief in fixed historical laws of human development. Historicists maintain that absolute laws of historical development really exist and that these laws can, and should be, discovered in order to better prepare society for necessary evolutionary change. For Popper, historicism encompasses both Hegelian and Marxist dialectic, as well as, historical positions like those of Spengler and Toynbee, who believe that they can ascertain and explain the whole structure and development of history.²

Popper favours methodological individualism in the social sciences, where essential whole realities like 'the army', 'the nation', or 'the English people', are rejected as a basis for study. He favours an

1. Ibid.

2. OS II

explanatory, descriptive, and individual approach, which results in society being conceived as the product of individual activity alone.¹ For Popper, individuals give meaning and direction to society, a system which is analogous to his Kantian view that individual ideas give meaning to reality.

Essentialism for Popper also includes the verbalism of Wittgenstein's analytic movement with its Aristotelian based attempt to define the exact meaning of words.² Not only does Popper consider Wittgenstein's rejection of metaphysics to be misguided, since it obscures the nature of a principle of demarcation for science, and is, as far as Popper is concerned, a metaphysics itself, but he also rejects the essentialism which is inherent in a philosophy concerned with a search for precise meaning.³

Popper of course is not concerned with precise meaning but with the survival of better and better

1. POH, pp. 135-136.

2. OS II, p. 9, pp. 292-293 note 46, pp. 296-299 notes 51 and 52.

3. UQ, p. 30, also Appendix II, Section 1.

scientific theories.

In Section I Appendix II it is demonstrated that Popper does not accept the view that the methodology of science should concern itself with precise concepts, ideas or meaning of any kind. Science is concerned with theoretical conjectures and hypotheses that do not depend for their importance as problem solving tools on the precision of the verbal elements that convey the conjecture. Popper makes the point clear when he declares "Yet there simply is no such thing as an 'explication', or an 'explicated' or 'precise' concept."¹ He states that if greater clarity is needed that this must be done "ad hoc" or "piecemeal". Words are invented to serve certain purposes of the moment. They cannot solve problems. He calls this process "dialysis" rather than "analysis".²

In much the same context, Popper attacks the positivist attempt to eliminate metaphysics by an

1. Ibid.

2. Ibid., pp.30-31, See also Part Two, Chapter Six, Section 1 for an elaboration of Popper's view of language as imprecise thought.

appeal to a norm of meaningfulness:

...my position has repeatedly been described as a proposal to take falsifiability or refutability as the criterion of meaning (rather than of demarcation)... Even Carnap.. feels himself compelled to interpret it as a proposal to exclude metaphysical statements from some language or other. But it is a fact that... I always dismissed the problem of meaninglessness as a pseudo-problem; and I was always opposed to the idea that it may be identified with the problem of demarcation. This is my view still... One of the theories which I had criticized...was the assertion that metaphysics was meaningless, and consisted of nonsensical pseudo-propositions. This theory was supposed to bring about the overthrow of metaphysics, and to destroy it more radically and more effectively than any earlier anti-metaphysical philosophy. But as I pointed out in my criticism the theory was based on a naive and naturalistic view of the problem of meaningfulness; moreover its propagators in their anxiety to oust metaphysics, failed to notice that they were throwing all scientific theories in the same scrap heap as the meaningless metaphysical theories. All this I suggested was a consequence of trying to destroy metaphysics instead of looking for a criterion of demarcation.¹

1. CR, pp. 258-259.

Popper believes that the positivists utilize the Aristotelian methodology with its search for precise meaning, which they, in turn, apply to the acceptance and rejection of certain kinds of propositions. In footnotes to the above quotations Popper makes the connection between positivism and his concept of essentialism explicit:

Although I called the theory naturalistic I now also call it absolutistic and essentialistic... At present I should be inclined to call it an essentialistic theory in accordance with my book The Poverty of Historicism section 10 and my Open Society, especially Chapter II.¹

For Popper the acceptance of any intellectual or moral authority always leads to authoritarianism and obscurantism. Because of this, any authoritative view of essentially certain ethical principles like those involved in the acceptance of a 'natural law' view, or a belief in natural, normative values or fixed views of an absolute social good like 'the greatest happiness' principle leads to the belief that 'the good',

1. Ibid., p. 260 Note 18.

however it is conceived, should be imposed on individual citizens for their own welfare.¹ These authoritarian consequences of essentialistic belief in the authority of truth leads inevitably, Popper believes, to misery and restricted freedom for others. Associated with the acceptance of essential truth or certitude is the adoption of the conspiracy theory.² Popper's notion of this theory is that if anyone refuses to accept the truth in absolute terms, as it is defined by any given group, then such refusal would be labelled as conspiracy against the truth, attributable to such entities as the devil, The Communists, Fascists, etc.

The theory that truth is manifest - that it is there for everyone to see... this theory is the basis of almost every kind of fanaticism. For only the most depraved wickedness can refuse to see the manifest truth....

Yet the theory that truth is manifest not only breeds fanatics... but it may also lead, though perhaps less directly than does a pessimistic epistemology to authoritarianism.³

1. OS I.

2. OS I, pp. 237-238, OS II p. 304 Note 62.

3. CR, p. 8, See also Appendix II, Section 2 for the connection between essentialism and authoritarianism.

Obscurantism for Popper is the result of essentialism when supposed essential elements are considered as arbitrary ultimates, which impose an absolute stopping point hindering the ongoing development of science. Popper rejects this essentialistic influence on science, which he believes rests on the mistaken notion that science can provide episteme or certain knowledge. He considers Bacon and Descartes, as well as Galileo, Boyle and the followers of Newton, to be guilty of this search for final explanations.

In an article entitled, "Three Views Concerning Human Knowledge", Popper explicitly categorizes his own view as a via media between essentialism and instrumentalism. He identifies essentialism, in this context, with Galilean philosophy of science which consists of three theses:

1. The scientist aims at finding a true theory or description of the world which shall also be an explanation of the observable facts.
2. The scientist can succeed in finally establishing the truth of such theories beyond any reasonable doubt.

3. The best, the truly scientific theories describe the essences or the essential nature of things, the realities which lie behind the appearances.¹

Popper rejects theses two and three, identifying them with what he calls essentialism. Involved in this rejection is an agreement with the instrumentalist criticism of essentialism in science, that, "explanation is not an aim of the physical sciences, since physical science cannot discover 'the hidden essences of things'. The argument shows that what they (Berkeley, Mach, Duhem and Poincare) have in mind is what I call ultimate explanation".²

At the same time Popper is in agreement with what he calls "the spirit of essentialism" which accepts the fact that much remains hidden from us that may be discovered at a later date. Popper does not deny that essences may exist. He believes, however, that they are irrelevant to science since science is not concerned with a knowledge of essences or with explanation, but with description.³

1. Ibid., pp. 103-104.

2. Ibid., p. 104, content within brackets added. This quotation indicates Popper's conventionalist leanings.

3. See Appendix II, Section 1.

Popper believes that it was an essentialistic mentality that made people accept Descartes' view of matter and Newton's view of gravity as absolutes.¹ One of the problems with Kant's Copernican Revolution, according to Popper, was that Kant firmly believed in Newtonian science as true for all time. He believes that this is the reason why Kant accepted synthetic 'a priori' propositions which could provide the universality and necessity needed for an essential Newtonian science.² Popper rejects then, any kind of ultimate final explanation.

The essentialist doctrine I am contesting is solely the doctrine that science aims at ultimate explanation: that is to say, an explanation which (essentially or by its very nature) cannot be further explained, and which is in no need of any further explanation.

Thus my criticism of essentialism does not aim at establishing the non-existence of essences; it merely aims at showing the obscurantist character of the role played by the idea of essences in the Galilean philosophy of science (down to Maxwell, who was inclined to believe in them, but whose work destroyed this belief.) In other words, my criticism tries to show that whether essences exist

1. Ibid., p. 168.

2. Ibid., p. 184, See Chapter Four for Kant's Influence on Popper and Popper's personal re-interpretation of Kant.

or not, the belief in them does not help us in any way, and indeed is likely to hamper us, so that there is no reason why the scientist should assume their existence.¹

But what has the problem of an arbitrary, ultimate stopping point for science to do with the epistemological problem of intuited essences as conceived by either Plato or Aristotle, which Popper also rejects under the label essentialism?

The Platonic and Aristotelian traditions can be described as objectivist and rationalist (in contrast to the subjectivist sensualism or empiricism, which takes as its starting point sense impressions and tries to "construct" the physical world out of these). Almost all the forerunners...of Plato and Aristotle were rationalist in this sense: they tried to explain the phenomena of the world by postulating a hidden world, a world of hidden realities, behind the phenomenal world.²

But both groups, of course, are essentialistic in that they defend a definite source or criterion of certain knowledge.

1. Ibid., p. 105.

2. SIB, p. 171.

With regard to these hidden realities, which Popper claimed were merely postulated, he now makes the claim, "It has turned out that although there are such hidden realities, none of them is ultimate."¹

This brings up the problem of the philosophical knowledge of essences versus scientific description.²

One section of Appendix II is devoted to an explanation of the important problem of essentialism as it relates to what Popper calls the commonsense view of knowledge. This is the aspect of essentialism that Popper labels 'subjectivism'. In the quotation on page 329, Popper contrasts the hidden, objective realities of Aristotle, Plato and their forerunners with the subjectivist sensualism or empiricism, which takes as its starting point sense impressions and tries to "construct the physical world out of these."³ Because of this subjectivism Popper condemns all empiricism, positivism, phenomenism, etc. To Popper, such philosophers base their view of knowledge upon their personal convictions regarding inner knowledge and perceptual

1. Ibid., p. 193.

2. See Appendix I Note 1 for a reaction to the question of "hidden realities".

3. SIB, p. 171.

awareness.¹ This element of personal awareness and conviction is what Popper later in his works qualifies as psychological World Two. For Popper such a view can only represent knowledge as 'subjective' or individual and never knowledge which can be considered 'objective' for all to examine. He is thereby rejecting all philosophies that conceive of knowledge as "consisting of things or thing like entities in our bucket (such as ideas, impressions, sensa, sense data, elements, atomic experiences, or... molecular experiences...)." ² Therefore besides Descartes and the classical essentialists, Popper is rejecting the empirical tradition that bases its belief on the view "that all experience consists of information received through our senses." ³

The rejection of the essentialism inherent in subjective sources of knowledge is related to Popper's rejection of induction as an explanation of how knowledge is acquired, because he associates the term subjectivism mainly, but not exclusively, with

1. See Part Two, Chapter Five for an elaboration of Popper's view of objectivity.

2. OK, p. 62.

3. Ibid., p. 61.

empirical positions concerned with experience. For Popper, "traditional empiricist epistemology and the traditional historiography of science are both deeply influenced by the Baconian myth that all science starts from observation and then slowly and cautiously proceeds to theories."¹ Popper believes that the most common belief about what demarcates science from other methods, is the inductive approach. He states that "the most widely accepted answer to my problem 'that science is distinguished from pseudo-science - or from metaphysics' - by its empirical method, which is essentially inductive, proceeding from observation or experiment."²

Popper rejects this view that attempts to justify or verify a theory, hypothesis or law by repeated experiences of the same kind. As already noted in Chapter One, Popper rejects both the authority of observation and the authority of reason as a basis for either absolute knowledge or generalized knowledge of any kind.³ In his philosophical view we must begin with

1. CR, p. 137.

2. Ibid., p. 33.

3. See Part Two, Chapter Five, Section 2 on the problem of generalizations in Popper's view of science.

propositions, and theories which can be only chosen conjectures.¹ Moreover, since he accepts Hume's rejection of induction, Popper is forced either to propose a deductive approach to science in order to provide a principle of demarcation or to give up the search for such a principle. The latter decision, as we noted in Chapter One, would tend to force Popper into a conventionalist interpretation of science.

Popper identifies essentialism with any absolute knowledge or with any certitude, whether it be an absolute criterion or source of knowledge, a holistic law, an essential, holistic aspect of reality expressed by a concept, an authoritarian belief, a moral norm, etc. In the following quotation he identifies essentialism with anything that is fixed or unchanging:

Thus I agree with essentialism in its view that science is capable of real discoveries, and even in its view that in discovering new worlds, our intellect triumphs over our sense experience. But I do not fall into the mistake of Parmenides - of denying reality to all

1. See Part Two, Chapter Five for an elaboration of Popper's falsification theory.

that is colourful, varied, individual, indeterminate and indescribable in our world.¹

Popper even finds an essentialist strain within conventionalism illustrated by "the belief that events and occurrences or incidents (which are directly observable) must be in a sense more real than dispositions (which are not)"². One can conclude from this that any acceptance of a reality which can be precisely understood or precisely designated, whether because of its nature or source, constitutes essentialism.³

Popper admits that human constructs such as 'clock' or even 'the scientific method' could be said to have an essence because these depend on human choice and convention.⁴ In the case of the study of scientific methodology such essentialism can be judged functionally

1. CR, p. 117, See Appendix I Note 2.

2. Ibid., p. 118.

3. See Appendix I Note 3 regarding Popper's concentration on essentialism in a variety of philosophies. See UQ, p. 30 on precision: For a reference to the problem of precision, See Appendix I Note 8.

4. LSD, pp. 105-106, Note 17, Sections 7 and 8.

whether it "helps us", whether "we really need it", or whether it gives rise to "inconsistencies".¹ In other words, Popper is using the criteria of function or use as a measure, for whether essences dependent on human choice, should be considered by science or not.

In Chapter Three and Chapter Five (1) it will be shown that this instrumental approach to scientific methodology, which uses essential concepts when they advance science, is based on choice or decision - the foundation stone of Popper's concept of critical rationality. Popper chooses what science should be in order that he can provide a principle of demarcation which avoids induction. He then constructs a functional methodology in order to make this view of science workable in a non-inductive way, while still avoiding a completely conventional position.²

1. Ibid.

2. For a more detailed analysis of Popper's anti-essentialism see Appendix II.

Section 1 - Popper's Concept of Essentialist Methodology.

Section 2 - Anti-Essentialism, Authoritarianism and Society.

Section 3 - Subjective Certainty and Belief.

Section 4 - Recent Popperian Variations on Essentialism and Methodology.

Chapter Three

Popper's Anti-Conventionalism

As we have noted, Popper's 'modified essentialism' is opposed to both essentialism and conventionalism. We have also noted, that Popper rejects any essential or precise knowledge whether it be presented as an ultimate, a precise meaning, a valid source, or whether it is based on belief or positive inductive reasons.¹ We have also noted that the rejection of any kind of non-analytic certitude means that the philosopher in question, is rejecting the possibility of speculative true or false judgments about reality. In Chapter One we have mentioned that the usual alternative to such a rejection is to adopt an instrumental-conventional explanation of knowledge - as a functional, problem-solving and predictive instrument.

Popper, however, does not do this. Instead he attempts to support a middle position between essentialism and conventionalism, while adopting, what he believes are, certain facets of each. He rejects the instrumental reduction of universal statements to mere convention or to the status of a means for the derivation of singular statements. For philosophers, like Schlick, universal statements are not genuine

1. See Appendix II, for an elaboration of these arguments.

statements at all, but are merely pseudo-propositions, useful in deriving protocol sentences.¹ For Wittgenstein propositions must be reducible to atomic propositions, which convey meaning because they are pictures of reality.² Popper tends to equate instrumentalism with a conventionalism in science, because he is most concerned that his version of science will avoid both classical and modern conventionalist interpretations of science.

Closely related to operationalism is instrumentalism, i.e. the interpretation of scientific theories as practical instruments or tools for such purposes as the prediction of impending events. That theories may be used in this way cannot be doubted; but instrumentalism asserts that they can be best understood as instruments; and that this is mistaken, I have tried to show by a comparison of the different functions of the formulae of applied and pure science.³

Popper also partially equates instrumental theories of science with a verificationist and inductivist theory of meaning, since both positions tend to reduce theoretical propositions to some form of observable data or behavior.

1. LSD, pp. 36-37 and Notes, CR, p. 109.

2. Ibid.

3. CR, pp. 62-63.

Connected with, and closely parallel to, operationalism is the doctrine of behaviourism, i.e. the doctrine that, since all test-statements describe behavior, our theories too must be stated in terms of possible behavior. But the inference is as invalid as the phenomenalist doctrine, which asserts that since all test-statements are observational, theories too must be stated in terms of possible observations. All these doctrines are forms of the verifiability theory of meaning; that is to say, of inductivism.¹

By such dependance on inductive verification the general laws of science can be interpreted as denoting various matters of observable fact. These general laws then provide a shorthand means of packaging a number of singular observation statements. Popper stresses the fact that the conventional interpretation manages to take a complex situation involving the phenomena related to the symbolic world of language symbols, and reduce it to a matter of deriving singular statements from what must empirically be other singular statements.² Berkeley's strongest argument for conventionalism, according to Popper, is that which is based on his empiricism.

1. Ibid.

2. Ibid., p. 108 Note 23.

"Force of attraction must be a meaningless expression, since forces of attraction can never be observed."¹

According to Berkeley's nominalism "Newton's theory cannot have any informative or descriptive content."²

Popper seems to realize from the above that conventionalism is a direct result, at least in the case of Berkeley of an empirical and nominalistic position. If theories cannot have any informative or descriptive content with regard to the external world, then the next step is to treat science as a self-contained system or paradigm, which derives its justification from the practical function of explaining a paradigmatic system of data and hypothesis. Conventionalists interpret the work of scientists like Galileo, in the historical development of science, in the same way as they interpret Einstein and modern physics. Comparing essentialist science with conventionalist science, Popper states:

Both investigate physical systems and their movements. It is only the instrumentalist philosopher who asserts that what they discussed or 'really meant' to discuss, were not physical systems but only the results of possible observations, and that their

1. Ibid., p. 109.

2. Ibid.

so-called 'physical systems' which appeared to be their objects of study, were in reality only instruments for predicting observations.¹

Since, for conventionalists, there can be no theoretical or speculative knowledge of reality, which can involve truth, falsity or doubt, then all knowledge must reduce to practical knowledge or as Popper puts it, "One might even formulate it as the thesis that pure science is a misnomer, and that all science is applied."²

Popper's main attack on conventionalism is found in his essay, "Three Views Concerning Human Knowledge".³ One of the main differences, Popper notes, between speculative and instrumental knowledge, in the context of pure and applied science, is that theories, which are theoretical, are tested by attempts to refute them, while it would make no sense to attempt to falsify technological, computational rules. Such rules are justified solely by their practical applications and functions.

Popper will not accept science on conventional-

1. Ibid., p. 111.

2. Ibid.

3. In CR.

instrumental terms. He wishes to defend scientific theories as being able to progress because they can then be corroborated and because they can at least approach the truth of reality. He believes that they can be corroborated and that they can be shown to approach truth by using the falsification criterion, by applying certain logical criteria and by examining the nature and importance of the theories which are chosen.¹

A major problem, which will be demonstrated later in the thesis, is that Popper's falsification methodology is untenable, because he cannot derive a falsifying singular statement that is compatible with his epistemological position.² But, nevertheless, he cannot accept conventionalism, because it is, for him, as obscurantist a position as essentialism. His "modified essentialism" must be capable of providing a principle of demarcation for science together with a philosophy and methodology that defends scientific progress.

Instruments, even theories insofar
as they are instruments cannot be

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1. See Part Two Chapter Five on Corroboration and Verisimilitude.
 2. See Part Two Chapter Five for an elaboration of this position and Part Three Chapter Seven for a criticism.

refuted, as we have seen. The instrumentalist interpretation will, therefore, be unable to account for real tests, which are attempted refutations and will not get beyond the assertion that different theories have different ranges of application. But then it cannot possibly account for scientific progress... the point is that by neglecting falsification, and stressing application, instrumentalism proves to be as obscurantist a philosophy as essentialism. For it is only in considering how its various theories stand up to tests, that it can distinguish between better and worse theories and so find a criterion of progress.¹

Popper certainly accepts the fact that scientific theories must have their instrumental or practical side, otherwise, there could be no applied science, but what he rejects is the notion that scientific theories are "nothing but instruments".² In fact, Popper maintains, that he would sooner accept a "whiff of verificationism in his theory rather than a whiff of instrumentalism", if this would mean that he must restrict theories to be "mere instruments of exploration."³

1. CR, p. 113.

2. Ibid., p. 101.

3. Ibid., p. 248, Note 31.

Therefore, Popper rejects William James' identification of truth and usefulness because it is clear, to Popper, that truth must be interpreted in terms of a relationship to reality not in terms of some conventional system.¹ Popper realizes that with the rejection of speculative truth, an instrumental view of knowledge ultimately reduces to relativism, because usefulness and function change with the problems to be solved, with the systems to be elaborated, or with the perspective of the person involved.

If knowledge is relative to some internal, conventionalist, scientific paradigm, then it can just as easily be adapted to become a complete social, educational and political philosophy as developed by Williams James and John Dewey. Popper rejects relativism, yet his scepticism comes very close to it.

It must be admitted - that there is a kernel of truth in both scepticism and relativism. The kernel of truth is just that there exists no general criterion of truth. But this does not warrant the conclusion that the

1. SIB, pp. '80-81.

choice between competing theories
is arbitrary.¹

Popper is willing to accept some aspects of relativism especially its scepticism and rejection of a criterion of truth but he is not willing to accept that all propositions and hypotheses are measured solely by their application, their use, or their pragmatic function.²

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1. In the essay "Facts, Standards and Truth: A Further Criticism of Relativism" (1961), Popper discusses his agreement and disagreement with relativism. OS II, pp. 369-396.
 2. OS II, p. 324.

Summary and Re-Statement of the Problem

Popper's 'modified essentialism' includes the notion that there is some basis for certain theories being a better approximation to truth than others. But, as we have noted, he rejects any absolute criterion or any certitude for knowledge or even any precision as a basis for knowledge. With regard to conventionalism and relativism, Popper accepts the scepticism and the various instrumental applications of technological science but rejects the view that science is able to progress if it must be understood solely in conventionalist terms.

Popper's reduction of terms and propositions to a nominalistic, descriptive, particular kind of knowledge is similar to the particular ideas and sense data of empirical philosophers. In fact, Popper's interpretation of word meaning is even more imprecise, uncertain and hazy than the 'ideas' or images of classical empiricism. Moreover, his reduction of universals to objects with law-like tendencies is more typically an empirical reduction, especially when universal statements are considered to exclude events rather than to represent or

present their content of reality.¹

Popper also indicates his empirical heritage by restricting scientific knowledge to doxa or opinion and by his tendency to restrict knowledge to the quantifiable or measurable aspects of reality.² In fact, Popper equates any tendency to be concerned with the qualitative, as an aspect of essentialist methodology.³ His empiricism is evident too in his rejection of any social science use of general, qualitative or abstract terms. For Popper, society can be understood only in particular, individualized terms.⁴

However, on the other hand, Popper rejects induction. Because of this rejection, he has placed a barrier between an experiential knowledge of reality and the universal propositions, or theories which somehow approach the truth of reality. He is unconcerned about

1. See Appendix II, Section 1. Popper's Concept of Essentialist Methodology; On Universals LSD, p. 90 Note 2, p. 95.

2. Ibid.

3. Ibid.

4. See Appendix II, Section 2, Anti-Essentialism, Authoritarianism and Society.

the source of theories, etc., since, from this point of view, they are chosen by scientists for a variety of logical, explanatory and problem-solving reasons. He accepts Kant's view that meaning is imposed on reality by persons, since only phenomena can be derived from experience. Moreover, Popper accepts also an 'a priori' position in regard to the existence of innate knowledge. The mechanics and source of knowledge in Popper's theory are rationalistic and 'a priori', but the nature of the content and knowledge elements are typically empiricist.

Since essentialism hinders science because it proposes a hidden reality or arbitrary stopping point and since essentialism proposes an absolute, precise and authoritative basis for knowledge, which Popper must reject, then he must provide an explanation for an alternate position, that proposes and defends a permanently sceptical kind of knowledge, which can be essential and realistic enough to provide a basis for scientific progress and the verisimilitude of theories. All this must be done in such a way as to avoid falling into a completely conventional interpretation of science with its relativistic consequences. As Donald Campbell puts it:

For both Popper and the present writer, the goal of objectivity in science, is a noble one... Yet our evolutionary epistemology, with its basis in natural selection... may seem to commit us to pragmatism or utilitarianism. Simmel in 1895 presents the problem forcibly, as also do Mach and Poincaré.

As we move to the various aspects of Popper's critical rationality, in Part Two, we must remember that it is his rejection of any essentialist or conventional explanation of science, together with his rejection of induction, that is the reason why he is forced to elaborate a deductive, falsifiable explanation of science.

One of Popper's problems, of course, is that since he rejects both experience and reason as starting points for knowledge and since he rejects the sources of knowledge as irrelevant, then how can he provide any basis for knowledge? He attempts to do this by rooting his basis for knowledge in an innate, evolutionary ontology.² Yet how Popper will defend this innate knowledge as both objective and realistic and whether this is a viable position is the vital question for this thesis.

1. PKP, p. 447.

2. See Part Two, Chapter Six on Popper's World Three and the criticism in Part Three, Chapter Eight.

Part Two

Popper's Falsification Theory of Science
and His Fallibilist Epistemology

Introduction (Part Two)

Chapter Four - Popper's Kantian Concept of
Knowledge and Experience

Chapter Five - The Foundation of Popper's
Critical Rationalism and
Falsification Theory

Chapter Six - Eternal World Three: Popper's
World of Objective Knowledge

Introduction (Part Two)

Part One, with Appendix II, explains Popper's rejection of the notion that human knowledge can be absolute or certain in any way, that any knowledge can be ultimate, that any source of knowledge, involving experience, can be authoritative or that positive, precise or qualitative reasons should be offered to justify any knowledge. All of these concepts are nuances of Popper's anti-essentialism, which because of its scope and application, is somewhat difficult to define as a single concept.¹ It was also shown in this section, that Popper refuses to accept a completely instrumental or conventional explanation of science as a possible alternative.

Such rejections leave Popper with the challenge of providing an alternative philosophical view within the limits he has set by his anti-essentialism and anti-

1. Popper's early anti-essentialist attitudes are evident from comments made in his autobiography (UQ and in PKP). His continued opposition is noted in his latest work with Sir John Eccles (SIB See quotations in Part One Chapter Two and Appendix II).

conventionalism. Such a philosophy must accommodate a universal scepticism, while, at the same time, avoid falling into conventionalism and relativism. In addition, Popper must reject complete relativism in order to provide for a concept of science that can progress within an epistemological view that is, in some hopeful sense, both realistic and objective.

In Part Two, I will explore Popper's attempt to present a view of knowledge that is able to provide a criterion of demarcation for science without a dependence on induction. Such a position must explain a concept of scientific methodology that is both deductive and independent of any particular source of knowledge, but which, since it must avoid conventionalism and relativism as well, must be somehow related to truth and reality. Only by these means does Popper believe that he can provide a basis for scientific progress while remaining a sceptic.

In Chapter Five I will provide an analysis of Popper's falsification theory of science while, in Chapter Six I will provide an elaboration of Popper's linguistic view of World Three objective knowledge, which he rests on an evolutionary ontology that encompasses ultimately

innate, organic, genetic knowledge. Popper's adoption of this World Three position forces him to reinstate Plato and Hegel and to promote an Aristotelian view of potentiality and teleology. It will be noted in Chapter Four that Popper's view of the logical structure of knowledge and its objectivity is based on a Kantian view, as is his reduction of rationality to decision. (Chapter Five, Section 1).

Chapter Four

Popper's Kantian Concept of Knowledge
and Experience

Popper's Kantian epistemology is basic to the development of World Three, which is the apex of his philosophy. In Popper's philosophy, the nature of a proposition, and the nature of meaning, as basic elements in human knowledge, seem to encompass an odd admixture of Kantian 'a priorism' and empiricism.

Popper sees Kant as the great opponent of romanticism represented by philosophers like Fichte, while, on the contrary, Ayn Rand saw Kant as the very father of modern irrationalism, with its student revolts.¹ Popper glories in Kant as the last great exponent of the Enlightenment with his defense of "self liberation through knowledge"². He accepts the emphasis on action based on a critical rational approach in order to bring about the growth of knowledge needed to "liberate our minds from their spiritual enslavement: enslavement by prejudices, idols and avoidable errors."³

1. Karl Popper, "Emancipation Through Knowledge", in The Humanist Outlook, A.J. Ayer (ed.), p. 281

Ayn Rand, The New Left, pp. 27-30.

2. Karl Popper, op.cit., p. 282.

3. Ibid.

Philosophically, Popper accepts Kant's scepticism with regard to knowledge of the external world, which can be known only in an indirect, decoded way. His final explanation of the nature of knowledge indicates the influence of the Kantian critique, especially with regard to a so-called "objective" view of knowledge, based on a sceptical critique regarding our cognition of reality.

Looking at the quote from Weyl, which Popper accepts, we find this kind of subjective-objective dichotomy attributed to Kant:

'What is immediately experienced is subjective and absolute.....; the objective world on the other hand, which natural science seeks to precipitate in pure crystalline form.....is relative.' Born expresses himself in similar terms.....Fundamentally this view is Kant's theory of objectivity consistently developed.....Reininger also refers to this situation.....Metaphysics as science is impossible.....because although the absolute is indeed experienced, and for that reason can be intuitively felt, it yet refuses to be expressed in words.¹

Of course, this last point would be true, if a nominalistic interpretation of terms were correct and if

1. LSD, p. 111.

Kant were correct in his view, that the noumenon or essence was completely unknowable, in a world where a stream of phenomena provided the only extramental basis for knowledge. One of Popper's problems is to justify his own brand of linguistically based nominalism, while rejecting classical nominalism based on an inductive repetition of similarities. He must also try to justify a universal level of knowledge, which possesses no essential necessity as it did for Kant.

Like Kant, Popper is a pluralist who believes in "the variety of human experience and in the diversity of human aims."¹ He, along with Kant, also accepts the autonomous, free, individual person, together with the open society, which would "dare to be free and respect the freedom and autonomy of others".² Like Kant, he also accepts the fact that at the heart of critical rationality lies intuition and autonomous free choice or decision, because only by such an intuitive decision, can man, as a thing-in-itself, provide a basis for a critical, rational, scientific approach. Thus, Popper, following Kant, believes that the foundation for the growth

1. Karl Popper, "Emancipation Through Knowledge", The Humanist Outlook, ed. A.J. Ayer, p. 282.

2. Ibid.

of knowledge, through a rational attempt to eliminate error, i.e., Popper's falsification theory, rests on the notion that the basic quest for meaning in life is fundamentally ethical in nature. It is evident, that any form of essentialism would be contradictory to the view that rationality should be based on ethical decision or personal choice. Decision provides the basis for Popper's fallible view of all knowledge, including perceptually based knowledge. It provides also the basis for the search for a deductive approach to science, since all theory and all hypotheses are conventional choices.

For Popper the importance of Kant's solution to the problem of knowledge is "that the world as we know it is our interpretation of the observable facts in the light of theories that we ourselves invent."¹ While Popper regards this view as "essentially correct", he rejects the Kantian notion that this imposition of theories on the facts of nature is "invariably successful".² Kant accepted Newton's laws as necessarily 'a priori' true.

1. CR, p. 190.

2. Ibid.

This necessity and certitude Popper considers Kant's error, because, since Einstein, we should know that "very different theories and very different interpretations are also possible which may in fact be superior to Newton's position."¹ Because reason, for Popper, works by trial and error, "the better theory is the one that has the greater explanatory power: that explains more; that explains with greater precision; and that allows us to make better predictions".²

Popper's own critical rationalism departs then from the Kantian epistemology mainly over the question of scientific and philosophical certitude.³ Popper agrees with the epistemological idealist that "all knowledge and the growth of knowledge - the genesis of the mutation of our ideas - stem from ourselves and without these self-begotten ideas there could be no knowledge", but Popper believes that the idealist is wrong "in failing to see that without elimination of these mutations through our clashing with the environment there would not only be no incitement to new ideas but no knowledge of anything."⁴ Popper agrees, that man is

1. Ibid.

2. Ibid., p. 192.

3. Ibid., p. 26.

4. OK, p. 68, Note 31.

the source of all ideas, concepts and theories, but he also believes that the realist is correct inasmuch as ideas may be mistaken and theories may clash with reality.¹ This view also has its parallel in Popper's view of the open society, where since history and social development have no meaning, it is necessary for man to impose meaning and change society in a piecemeal fashion, in order to obtain the "rule of reason for justice, freedom, equality....."² It is man who gives the ends and meaning to historical development.

The above-mentioned acceptance of Kant, clearly indicates, the basic problem in Popper's philosophy and the main point of this dissertation. If man creates his own theories and concepts, how is it possible for there to be a realistic clash with a truly objective reality? Does Popper's philosophy supply a valid mechanism for this? Does he really succeed logically in avoiding both essentialism and conventionalism? In this matter Popper seems to move from optimism to pessimism with regard to our knowledge. Generally speaking, he is very optimistic with regard to our survival due to our decoding

1. Ibid.

2. CR, p. 117.

of reality. He is also optimistic about the success of the Enlightenment with its principles of the open society. However, he is a complete and utter sceptic with regard to our knowing any thing or any theory as true.

Thus Kant was right that it is our intellect which imposes its laws - its ideas, its rules - upon the inarticulate mass of our sensations and thereby brings order into them. Where he was wrong, is that he did not see that we rarely succeed with our imposition, that we try and err again and again and that the result - our knowledge of the world owes as much to the resisting reality as to our self-produced ideas.

One can now understand why Popper considers scientific knowledge to be superior to either common sense knowledge or metaphysics, because only scientific propositions can be shown to clash with reality. It is only in the context of falsifiable scientific propositions, the chosen theories and hypotheses, that we can truly have a growth of knowledge.

1. OK, p. 68, Note 31.

Popper owes much of his anti-inductivism to Kant, inasmuch as Kant realized that experience must be a matter of interpretation. Kant believed that everyone intuitively operates with abstract ideas like 'cause and effect', which in Popper's view, must be the result of interpretation through mental categories, since no concept like that could be derived from reality. He accepted Kant's view of the paradox of empirical science:

Newton's dynamics goes essentially beyond all observations. It is universal, exact and abstract; it arose historically out of myths and we can show by purely logical means that it is not derivable from observation statements.¹

Although thoroughly imbued with the Kantian model of knowledge, while rejecting the essential and necessary aspects of a rationalist view of thought, Popper is closer to the positivists in his conventionalist treatment of science, his own brand of nominalism and his concern for a criterion of demarcation. Even Popper's explanation of the universal indicates that he

1. Ibid.

rejects any precise or necessary content, for Popper, in spite of his Kantian paradigms of knowledge vis-à-vis the external world, is also an empiricist, whose main concern is science. As Popper explains it:

At that time I looked upon myself as an unorthodox Kantian, and as a realist. I conceded to idealism that our theories are actively produced by our minds rather than impressed upon us by reality, and that they transcend our "experience", yet I stressed that a falsification may be a head on clash with reality. I also interpreted Kant's doctrines of the impossibility of knowing things-in-themselves as corresponding to the for ever hypothetical character of our theories. I also regarded myself as Kantian in ethics and used to think in those days that my criticism of the Vienna Circle was simply the result of having read Kant, and of having understood some of his main points.¹

In the next chapter we will look at how this Kantian world of logic, theory and proposition became a basis for Popper's World Three 'objectivity', for Popper gives Kant the credit for being the first to realize that the objectivity of scientific statements is based on the structure of hypotheses and universal statements

1. UQ, pp. 82-83.

in the construction of a theoretical scientific explanation. In this context science is a system of statements rather than a system of concepts.¹ Such views would tend to bring Popper closer to a conventional view of science since he mentions that only statements can justify statements.²

1. LSD, p. 35.

2. Ibid., p. 43.

Chapter Five

The Foundations of Popper's Critical Rationalism and Falsification Theory

1. Rationality as Decision

In this first section I will argue that Popper's aim is to provide an account of the conflict between those who choose a rational approach over irrationality and to explain which of the approaches to rationality he considers can provide the only defensible basis for a critical rationalism.

After reviewing what he considers to be the destruction of reason by those who believed in it, like Hegel and Marx, Popper asserts that "the conflict between rationalism and irrationalism has become the most important intellectual and perhaps even moral issue of our time".¹ Popper is talking here about a rational approach, not about the epistemological problem of rationalism versus empiricism. He does admit though that the traditional use of "rational" as opposed to "empirical" characterizes one of the most interesting problems of philosophy.² He makes clear that the words 'reason'

1. OS II, p. 224.

2. Ibid., pp. 352, Note 1.

and 'rationalism' for him, includes empiricism with its critical science and its observational and experimental method. Rationalism for Popper also includes "an attitude that seeks to solve as many problems as possible by an appeal to reason, i.e. to clear thought and experience, rather than by an appeal to emotions and passions."¹

Popper admits that his explanation is "not very satisfactory, since we cannot possess reason or passion like an organic part, or even as a faculty like the power of speech"². Because of this, he believes that we must explain rationalism "in terms of practical attitudes and behavior".³ Here, the effects of Popper's rejection of essentialism with its precise use of meanings and definitions is evident because Popper cannot attempt a definition of 'rationalism' but must depend on a set of descriptions of personal behavior.

1. Ibid., p. 224.

2. Ibid., pp. 224-225.

3. Ibid.

It is fundamentally an attitude of admitting that 'I may be wrong and you may be right, and, by an effort, we may get nearer to the truth'.... It is often possible to argue about the various demands and proposals, and to reach - perhaps by arbitration - a compromise, which, because of its equity, is acceptable to most, if not all. In short, the rationalist attitude, or, as I may perhaps label it, the 'attitude' of reasonableness; is very similar to the scientific attitude, to the belief, that in the search for truth we need cooperation, and that, with the help of argument, we can in time attain something like objectivity.¹

It is interesting to note, that in this question, Popper describes knowledge in conventional terms as a matter of practical arbitration and democratic equity, as when groups or opposing nations work out a compromise agreement which is acceptable to the majority. By means of cooperation and openness we will, according to this

1. Ibid.

view, be able to achieve "something like objectivity."¹ This last point is most significant in our search for the meaning of Popper's 'objective realism', for this interplay on the social level, which he believes can achieve "something like objectivity", has its parallel on the intellectual level, where objectivity on a Third World Level is the result of the criticism of some theories and the survival of others.

Popper rejects the Platonic view of reason as a faculty because he believes we can "never excel others in our reasonableness in a way that would establish a claim to authority."² He concludes, that "authoritarianism and rationalism...cannot be reconciled, since argument, which includes criticism, and the art of listening to criticism, is the basis of reasonableness."³ If we accept Plato's view of mind then we have the authority of intuited truth. No one can claim intellectual authority because no one can be certain that he has acquired essential or true knowledge. He must always consider that his knowledge is tentative and accept the possibility

1. Ibid.

2. Ibid., p. 226

3. Ibid.

that the very next criticism might prove that he is wrong.

Popper contrasts his concept of true rationalism, which he identifies rightly or wrongly with Socrates, with both the false intuitional rationality of Plato and with irrationalism. He also distinguishes an uncritical or comprehensive rationalism, which he believes is logically inferior to irrationalism, from a proper critical rationalism, which is the position he himself adopts.

Popper believes that "a comprehensive irrationalism is logically tenable."¹ This is so, because in comparison with an uncritical or comprehensive rationalism, it can be logically defended from the starting point in an irrational decision to any of its derived conclusions. According to Popper, irrationalism maintains, that the roots of man's creativity lie deeper than reason in the instincts, emotions and impulses of man. Creativity, is then an irrational, mystical faculty. All that really matters goes beyond reason, for even scientists take up science because they value science. This is the

1. Ibid., p. 231.

emotional response to one's choice of a study. Irrationalists maintain that human nature is in the main irrational, since the roots of human action and choice lie deep in man's affective life. Even when argument is used as a tool, it is evident that very few people are capable of argument.

Uncritical, comprehensive rationalism cannot logically compete with irrationalism, because of the untenable view, that nothing will be accepted that is not rationally demonstrated, including a rationally defensible starting point. The reason for this, is that any rational starting point must itself be supported by argument and so on ad infinitum. Popper notes that this situation is analogous to the 'liar paradox' which asserts its own contradiction, much as is done by sceptics and relativists.

The first premise for uncritical rationalists asserts a position that contradicts its own existence, when they claim that what is in reality freely chosen, is in fact chosen because of rational demonstration. In other words, for Popper, a rational position cannot initially be rationally defended. Popper even makes the point, that Descartes' methodic doubt,

in the attempt to avoid pre-suppositions, is a form of this paradox, since the position itself is a non-rationally supported pre-supposition. Similarly, the Vienna Circle's principle of verification is self-contradictory, since the principle itself is not an observation statement, nor can it be classified as being merely analytical and hence, it must be classified as nonsense, according to its own criterion. As Popper puts it, "since all arguments must proceed from assumptions, it is plainly impossible to demand that all assumptions should be based on argument."¹ Uncritical rationalism is therefore rejected by Popper as being logically inconsistent since "uncritical rationalism can be defeated by its own chosen weapon, argument."²

Popper believes that some, like Whitehead, ended as irrationalists because they attempted to be comprehensive rationalists.³ But, for Popper, we are not bound to be irrationalists, since we are just as capable of choosing to be rational rather than irrational,

1. Ibid., p. 230.

2. Ibid.

3. Ibid., p. 231.

as long as we recognize that this first choice is an irrational choice, which he labels "a moral decision".¹

He is unable to conceive of a rationally defended starting point that is not logically inconsistent.² Therefore, he rests his case on a voluntaristic starting point reminiscent of Kant's notion of a free, moral choice or decision, which is the basis for the Kantian ethic in the Critique of Practical Reason.

Critical rationalism then is a "minimum concession to irrationalism".³ Popper rejects complete irrationalism because it can be arbitrarily connected with any kind of belief, some good, and some evil, while critical rationalism is closely connected with the unity of mankind in a liberal society, an openness to argument, and the ideal of the open society.⁴ His choice of critical rationality is not based ultimately on logic, but rather on the possible effects on society of choosing

1. Ibid., p. 232.

2. Ibid., pp. 230-231.

3. Ibid., p. 232.

4. Ibid., pp. 231-239.

one position over another.¹ The possible effects themselves, can in turn be indicated by argument and by imagination.² This last point Popper illustrates with an example from Shaw's St. Joan, where the chaplain when he sees Joan burning, repudiates the effects which his words have caused.³ But the arguments used to derive effects or consequences, do not make the decision rational. Rationality is a choice.

Irrationalism for Popper reinforces emotional reactions to others which helps create the friend-foe division of mankind, while rationalism is closely associated with an egalitarian or impartial attitude. A proposition like 'Equality before the law' is based on a moral decision, which is not dependent on the truth of the proposition that 'all men are born equal', which Popper, in fact, believes is false.⁴ Finally, irrationalism leads to considering the person of the thinker rather than the product or thought. It tends to reduce thought to various factors like race, nationality,

1. Ibid.

2. Ibid.

3. Ibid., p. 232.

4. Ibid., p. 234.

class or the spiritual elect rather than to objective consideration of "the other fellow's point of view."¹

Plato's view that truth is intuitionally derived is rejected by Popper because it is a false pseudo-rationalism.² Popper also uses labels like "mysticism" for a variety of views including Plato's intuitionism. In some places he seems to equate mysticism with irrational philosophy; in other places he seems to equate it with a religious view; and in still other places, he equates it with Aristotelian and Platonic intuitionism.³ Of course, the common element in all these is the belief in something, which has not been, or cannot be, demonstrated by means of a rational proof.

Outside of the original moral decision to choose rationality, all arguments must be reinforced by a rational demonstration of consequences. Popper's anti-essentialism, of course, prevents him from any consideration of the intellectual intuitionist position

1. Ibid., p. 235.

2. Ibid., p. 227.

3. Ibid.; Ch. 24; p. 353, Note 4; p. 289, Note 33; p. 309, Note 36; p. 353, Note 4.

in either its rationalist or realist form:

This authoritarian intellectualism, this belief in the possession of an infallible instrument of discovery, or an infallible method, this failure to distinguish between a man's intellectual powers and his indebtedness to others for all he can possibly know or understand, this pseudo-rationalism, is often called 'rationalism' but it is diametrically opposed to what we call by this name.

Popper makes this argument even more explicit by distinguishing a person's intellectual gifts from their reasonable attitudes. A clever person may not be open to others, which would make him in fact irrational. Any belief in certitude would constitute essentialism.

According to our view, however, we not only owe our reason to others, but we can never excel others in our reasonableness in a way that would establish a claim to authority; authoritarianism and rationalism in our sense, cannot be reconciled since argument, which includes criticism, and the art of listening to criticism, is the basis of reasonableness. Thus

1. Ibid., p. 227.

rationalism, in our sense, is diametrically opposed to all those modern Platonic dreams of a brave, new world Reason, like science, grows by way of mutual criticism; the only possible way of planning its growth is to develop these institutions that safeguard the freedom of this criticism, that is to say, the freedom of thought.¹

It should be noted, that in Popper's concept of critical rationality, it is the process rather than the product that is important. Being rational resides in being open to the argument and criticism of others, not in the kind of knowledge or in the content of rational demonstration itself, which can never reach a level where it would be authoritative. The growth of criticism and rationality depend on freedom, a liberal interpersonal rational community and an open society with open institutions.

An important aspect of Popper's concept of rationality is the relationship between rationality and science, whereby both are dependant on moral decision but in different ways:

For in science, too we do not accept an abstract theory because it is convincing in itself; we rather

1. Ibid., pp.226-227.

decide to accept or reject it after we have investigated those concrete and practical consequences which can be more directly tested by experiment. But there is a fundamental difference. In the case of a scientific theory, our decision depends upon the results of experiments. If these confirm the theory we may accept it until we find a better one. If they contradict the theory, we reject it. But in the case of a moral theory, we can only confront its consequences with our conscience. And while the verdict of experiments does not depend upon ourselves, the verdict of our conscience does!¹

What will become more evident is that the initial bold choice of theories is inspired by interest and concern for certain problems. The choice of critical rationalism, which includes science as its most perfect form, is a moral choice, which is voluntaristically rather than intellectually based. Popper admits the existence of non-scientific modes of thinking, like philosophy, but it is science, of course, which constitutes the most perfect expression of beauty and of rationality.²

.... it is impossible to prove the rightness of any ethical principle, or

1. Ibid., p. 233.

2. See Part Three Chapter Eight, Section 1 for Popper's view of philosophy.

even to argue in its favour in just the manner in which we argue in favour of a scientific statement. Ethics is not a science. But although there is no rational scientific basis of ethics, there is an ethical basis of science, and of rationalism.¹

Popper believes that his opponents cannot understand rationalism in its true light or realize that science is the most valid expression of rationalism. The opposition "is incapable of appreciating the moral forces inherent in modern science."² This Popperian connection between science and rationality must be further explored in the following sections together with its relationship to objective reality. So far, we should note, that much of Popper's social ethics and his philosophy of science is inspired by choice and motivated by rationally demonstrated practical consequences. In the case of science, it is dependant on the results of experimentation and falsification as to which theories will be chosen. Popper categorically rejects any rationally defended starting point for a system. This is

1. Ibid., p. 238.

2. Ibid., p. 241.

his basis for a critical rationality resting on decision.

2. Falsifiability: The Deductive Scientific
Methodology

Because Popper rejects inductive knowledge, he has the problem of explaining his realism, which, from a scientific point of view, means that he must explain how science is empirical and how it can progress. In order to do this; of course, he must devise an alternative, deductive explanation of science. We have already noted that Karl Popper rejects the commonsense theory of knowledge as being "subjective" and psychologistic. He also calls this theory of knowledge, the "bucket theory" of the mind, which when considered as a source of verified knowledge constitutes a form of essentialism.¹

There are a number of reasons why Popper accepts only a critical and fallibilistic view of knowledge. Some of the intellectual and ethical reasons for rejecting any aspect of essential knowledge have already

1. OK, Chapter 2.

been elaborated in Part One. However, another related reason includes his early conviction that Einstein's replacement of Newton, in the development of modern physics, best represented the true nature of science, scientific progress and scientific method.¹ It also includes his adoption of a Kantian critique of knowledge and his acceptance of Hume's argument for the repudiation of induction.

With regard to this last point, Popper believes that Hume was correct in maintaining that we are never justified in drawing the conclusion that future instances, of which we have no experience, will resemble those of which we have already had experience. Hence we have no logically valid reason for inferring or generalizing beyond the objects which we have experienced. Because of this, it is impossible to pass from experience to universal hypotheses, theories or laws.² No number of particular experiences can add up to a universal generalization.

1. Especially since Marx, Freud and Adler had tailored the facts to fit their respective theories. This for Popper, is the nature of verificationism. See. UQ p. 38 and CR p. 34.

2. LSD., pp.27-28; CR., pp.42-46.

In the context of this problem, Popper often refers to Fries' trilemma, where the alternatives for justifying knowledge are considered to be either dogmatism, psychologism or an infinite regress.¹ Fries, together with most philosophers, opts for psychologism, which Popper calls subjectivism, and which is "the doctrine that statements can be justified not only by statements but by perceptual experience".² If, on the other hand, as Popper believes, statements must be, and can only be justified by other statements, then we are led into an infinite regress. Without an essential starting point, there can be no basic foundation statement.³

In opting for psychologism, most philosophers are opting for personal experience and belief as a basis for all knowledge, which in turn means the acceptance of induction and the inductive/verification of scientific theory or law. For Popper, the adoption of this approach amounts to the acceptance of a confusion between psychology, which can never provide a basis for justification, and

1. LSD., p. 93, p. 105.

2. Ibid., p. 93.

3. Popper's position with regard to Fries' trilemma will be considered in the critical section - Part Three, Chapter Eight, p. 286.

logic, which is crucial to science since it provides the necessary basis for the development of the methodological rules of science.

Popper's main epistemological concern then is with the development of a non-inductive methodology for science which will provide a principle of demarcation between science on the one hand and pseudo-science, as well as metaphysics, on the other. However, unlike the positivists, Popper believes that metaphysics as well as non-scientific knowledge, like tradition, play an important role as sources of scientific hypotheses, although he does not believe that such sources of knowledge provide any justification or authority. He also identifies the central problem of epistemology to be the growth of human knowledge, which is best realized in and by the growth of science.¹

The central problem of epistemology has always been and still is the problem of the growth of knowledge. And the growth of knowledge can be studied best by studying the growth of scientific knowledge.²

1. LSD, 1958 Preface, p. 15.

2. Ibid.

Yet, this should not be taken to mean that by growth in science Popper means that in some way or another scientific truth will be discovered. Science progresses by means of guesses or conjectures on the basis of a falsification process of refutation or criticism. Since Popper has rejected any kind of essential knowledge or certain truth, science can only be 'doxa' - an enlightened or effective opinion, which is chosen in the first instance for its relevance and importance in problem solving and retained as long as it has survived attempts to falsify it by severe testing.

Science is not a system of certain or well-established statements, nor is it a system which steadily advances towards a state of finality. Our science is not knowledge (episteme); it can never claim to have attained truth or even a substitute for it, such as probability.¹

Popper identifies the problem of induction as Hume's problem; while the related problem of demarcation he labels Kant's problem, because it was the central problem of Kant's metaphysics.² In order to prevent the

1. Ibid., p. 278.

2. Ibid., p. 34.

infinite regress of justifying one inductively inferred principle by another inductive principle of a more basic order 'ad infinitum', Kant attempted, by means of his 'a priori' justification for certain synthetic statements, to make the principle of induction (universal causation) 'a priori' valid. Popper, of course, along with most empiricists influenced by Kant, rejects this category.¹

Popper notes that any attempt to justify inductive inference must lead to dogmatism since any attempt to justify individual, "subjective" experience would have to be dogmatic. He must reject this psychologistic World Two knowledge, not only because it is dogmatic and essentialistic, but also because it is illogical and irrational, inasmuch as it is unable to provide a rational explanation for science and the scientific enterprise,² nor can it provide a principle of demarcation between science and

1. Ibid., p. 29.

2. As noted in section 1 of this chapter, Popper's critical rationalism" begins with a bow to irrationalism by the initial grounding of rationality in choice and decision. Individual 'subjective' conviction can never provide an objective basis for knowledge in Popper's theory.

pseudo-science.

The generalized and theoretical world of logical problems and scientific theory transcends personal experience, for any personally experienced fact can be made to fit any particular theory, whether it is scientific or not. Popper noted this point, at an early stage, when the followers of Marx, Freud and Adler used the same facts in order to justify their diverse theories.¹ In his mind, such a procedure contrasted sharply with the science of Newton and Einstein, which was falsifiable because of its predictions.² Verificationists, using induction as an explanation of valid knowledge, concentrate then on any observations which might tend to support their theory. In other words, they concentrate on the strength of a theory rather than its weaknesses. But, Popper rejects this "commonsense theory of knowledge" even though he does accept the "commonsense realism" of a knowable, organized world.

Almost everything is wrong in the

1. UQ, p. 38, p. 43, CR, p. 34.

2. Ibid.

commonsense theory of knowledge. But perhaps the central mistake is the assumption that we are engaged in what Dewey called the quest for certainty. It is this which leads to the singling out of data or elements, or sense data or sense impressions or immediate experience, as a secure basis of all knowledge. But far from being this, these data or elements do not exist at all. They are the inventions of hopeful philosophers, who have managed to bequeath them to the psychologists.¹

However, Popper is a realist who believes in objective knowledge related to a real world in some way or another. Since he rejects all philosophy before Bolzano and Frege as being misguided, he must provide an alternate basis for his own position, which can reconcile his objective realism with his scepticism. If he is serious about his realism, Popper should explain how knowledge is acquired. He should also elaborate what would be the status of any end product of knowledge, within the context of the rejection of the two main contenders - essentialism and instrumentalism - which logically seem to be the only possible contenders. Popper does explain

1. OK, p. 63.

his World Three ontology but he does little to explain how knowledge is acquired, since the sources of knowledge are irrelevant to him as a basis for justification.¹ Whether this leaves Popper as an 'a priori' rationalist will be considered in the criticism of Part Three.

All knowledge, for Popper, begins on the theoretical-logical level with theories and hypotheses, rather than on the experiential level with universal concepts or essentially defined meanings. Nor does he fall back on any direct knowledge of reality for, as noted, he specifically rejects any intuition of this kind, or any direct knowledge, even of the self. All knowledge must involve interpretation and decoding of some kind.² In this way, Popper rejects the 'tabula rasa' theory of Locke and others as "absurd".³ However, Popper does depend on intuited, metaphysical knowledge with regard to his pre-suppositions concerning a systematic

1. See "On the Sources of Knowledge and of Ignorance" in CR 3-30 and "Epistemology Without a Knowing Subject" in OK pp.106-150.

2. CR, p. 154; OK, p. 36.

3. OK, p. 70, p. 73.

universe, and the concept of 'truth' upon which any claim to realism and ultimately any empirical science must depend'.¹

Popper accepts, as an axiom, based on choice, the priority of the logico-theoretical world of general theories and hypotheses.² This world of theories and hypotheses is prior to observational experience in the operation of the scientific method. Popper sees no need to explain the origin of these theories, since their source is irrelevant to their application or justification.³ As Popper understands the situation, these hypotheses and theories may be rooted in imagination, tradition, metaphysics or even astrology. They are chosen for their explanatory power and problem-solving capacity.

Popper realizes full well that only universalized or general knowledge can provide a basis for scientific theory, hypotheses or law, although, with regards to law,

1. Ibid., p. 203; UQ, p. 51.

2. LSD, p. 45.

3. See especially "Sources of Knowledge and Ignorance" in CR, pp.3-30. and "Epistemology Without a Knowing Subject" in OK, pp.106-150.

Popper, given his fallibilism, could never provide his concept of law with the same status as a verificationist would. . Such a generalized level of knowledge originates as a result of the active, creative capacity of man in his trial and error attempts to solve problems and because man is motivated by the need for a greater and greater level of generalization.¹ This theoretical level of knowledge is derived by conjecture and choice. It is this general, logical level of knowledge, which provides the core and the starting point for Popper's deductive, falsifiable system of science:

We may distinguish, within a theoretical system, statements belonging to various levels of universality. The statements on the highest level of universality are the axioms: statements on the lower level can be deduced from them. Higher level empirical statements have always the character of hypotheses relative to the lower level statements deducible from them: they can be falsified by the falsification of these less universal statements. But in any hypothetical, deductive system, these less universal statements are themselves still strictly universal statements... . Thus they too must have the character of hypotheses... . I shall say even of some singular statements that they are hypothetical

1. LSD, p. 59; OK pp.23-24.

seeing that conclusions may be derived from them... such that the falsification of these conclusions may falsify the singular statements in question.¹

Popper's universals then are not universals derived by induction from an intelligible reality but universalized, theoretical propositions that express a general scientific understanding of reality. Such a scientific proposition, Popper realizes must however be universal, since it must be proposed as generally true for any place and time. He also believes that propositions should also be synthetic judgments about the real world and not just tautological, analytic statements.² In other words they must, in some sense, be empirical. They cannot contain individual proper names, because then, such names would not logically have universal application.³

Popper's deductive approach to scientific method supports the theoretical and conventional nature of all propositions, which, he maintains, cannot be justified by

1. LSD, pp. 75-76.

2. Ibid., p. 19.

3. Ibid., p. 66.

their origins.¹ His re-definition of what constitutes the empirical in the absence of any valid inductive verification and his rejection of the basis for traditional nominalism, begins with the logical fact that every scientific theory or law forbids certain existential happenings or situations with regard to extramental reality. If one theory forbids more concerning the world of experience than another, then it also says more indirectly about the world of experience "for it rules out a larger class of basic statements...". Thus, it can be said that the amount of empirical information conveyed by a theory, or its empirical content increases with its degree of falsifiability."² For Popper a theory cannot even begin to be empirical or scientific unless it is in the first place a falsifiable kind of theory.³ Theories, which are non-falsifiable fit Popper's definition of what is metaphysical.⁴ The falsifiability rule is the foundational rule upon which all Popper's other methodological rules are based. All the other rules are designed so as not

1. CR, pp.24-25, POH, p. 135.

2. LSD, p. 113.

3. CR, p. 117, LSD, p. 86.

4. LSD, p. 46, p. 69, p. 50, p. 55, p. 70 note 1, p.107, p. 111, note 4, p. 220, p. 266, p. 428, OK, p. 40 note 9; UQ, p. 227; note 242, CR p. 192, p. 255.

to protect any scientific theory from falsification, including any ad hoc protection by the use of conventionalist stratagems.¹

There are, of course, formal logical rules which must be considered, such as the elimination of contradictory statements or statements with contradictory existential consequences, for, if such were the case, opposite or conflicting conclusions would make falsification impossible. But Popper does not consider his system as a logical system, but as a series of methodological conventions - conventions which provide an authentic scientific methodology. The knowledge produced in this way is entitled to be called scientific or empirical because it is criticizable and therefore, in his terms, rational. Moreover, this methodology also produces knowledge, which more clearly parallels the actual historical development of science. (It is the falsifiability of a system or theory, not its verification, that provides Popper with a basis for his criterion of demarcation.)² Thus, it is a matter of choice and decision whether a scientist accepts certain methodological conventions

1. LSD, p. 54.

2. CR, p. 37; LSD, pp. 40-41.

that can best fit a deductive, falsification system for science and which can, at the same time avoid a purely conventionalist methodology.¹ Whether such deductively produced results are entitled to be labeled true knowledge depends on the validity of Popper's intuited metaphysical realism and his concept of verisimilitude.

For Popper, the scientific method is accurately described as a system of conjectures and refutations or attempted refutations. This provides the empirical basis for scientific knowledge, which is a part of a more general system of trial and error human problem-solving, that has enabled persons and organisms to survive throughout the ages. Testing then lies at the heart of man's critical rationality, and for Popper, a person is never more rational than when he is scientific.

As a series of methodological conventions, Popper considers the rules for the operation of science as analogous to the conventions of chess. It is a matter of decision what is to be a genuine statement, what is a pseudo-statement and whether metaphysics should be excluded and at what point.

1. LSD, p. 80.

- (1) The game of science is, in principle, without end. He who decides one day that scientific statements do not call for any further test and that they can be regarded as finally verified, retires from the game.
- (2) Once a hypothesis has been proposed and tested, and has proved its mettle, it may not be allowed to drop out without 'good reason'. A 'good reason' may be, for instance: replacement of the hypothesis by another which is better testable or the falsification of one of the consequences of the hypothesis.¹

Because science is in reality a conventional game, the universal hypotheses and theories, which are chosen, are not the result of repetitive observation but are a response in compliance with the inborn need for regularity and law, which provides the driving force in the search for greater and greater levels of universality.²

The operation of Popper's falsification methodology not only depends on universal theories and hypotheses but also on an observational proposition, which he labels a basic statement. These basic statements are statements of singular facts "asserting that an observable event is

1. Ibid., pp.53-54.

2. OK, pp.23-24; LSD, p. 59.

occurring in a certain individual region of space and time."¹ They cannot be deduced from universal principles because "nothing observable follows from any pure all-statement."² Singular statements of this basic kind can only be derived from a universal law or theory with the help of other singular statements which Popper calls the "initial conditions".³

A universal statement cannot be verified by any finite number of observations, but a universal can be falsified by one singular statement, which falsifies the generality of the universal statement. Thus the universal statement 'all ravens are black' is falsified by the singular statement 'there is a family of white ravens in the New York Zoo'.⁴ Now since universal statements, theories or hypotheses always rule out certain basic statements or predictions, any acceptance or justification of such a basic statement or prediction will falsify the theory. This is the logical form "modus tollens" based upon the "asymmetry" existing between verifiability and falsifiability. The truth of one singular

1. LSD, p. 103.

2. Ibid., p. 101, note 1.

3. Examples in OK, p. 262; LSD, pp. 59-60.

4. LSD, p. 87, note 1.

statement can falsify a universal theory, but cannot verify one. Popper admits that "ad hoc" changes could be made to avoid falsification, but this he methodologically rejects, because the aim of science "is not to save the lives of untenable systems but, on the contrary, to select the one, which is by comparison the fittest, by exposing them all to the fiercest struggle for survival."¹

Popper does not believe that a theory can be falsified by just any existential statement but only by those with a certain logical form which makes falsification possible. Max Deutscher labels the distinction which Popper makes as one between "pure" and "impure" existential statements.² A pure existential statement of the form 'there exists a Latin phrase that can cure cancer' or even 'there exists a lion' are, according to Popper, metaphysical,³ since they cannot be falsified. Basic statements, in order to be scientific, must in their turn be falsifiable as well. Thus, only

1. Ibid., p. 42.

2. Max Deutscher, "Popper's Problem of an Empirical Basis" Australasian Journal of Philosophy, Vol. 42, No. 3, p. 278.

3. LSD, p. 69; See also note 4, note 106, for more references to Popper's concept of the metaphysical.

"impure" existential statements, signifying an observable event at 'p' and time 't' can be acceptable as a falsifying basic statement.¹

Besides these formal, logical requirements for basic statements, there is also a material requirement concerning the event at 'p' and 't' which is that "This event must be an observable event; that is to say, basic statements must be testable, inter-subjectively, by 'observation'".² No other question in Popper's 'Falsifiability Criterion' is as severely debated, in a variety of theses and articles, as the problem of the existence, nature and function of facts, observations and basic statements. Clearly this is the core question of Popper's epistemology, the Achilles heel of his objectivity and realism, which will be fully considered in Chapter Seven.

We have noted that Popper has attempted to develop a deductive, falsifiable process to replace induction. This he is able to do by accepting theoretical knowledge as a starting point, with basic statements

1. CR, pp. 195-196, LSD, p. 69, p. 90.

2. LSD, p. 102.

hopefully playing the role as falsifiers. It was also noted, that the existence of such basic statements constitutes a fundamental problem since they are inter-subjectively chosen, not derived from experience.¹ Given the fact that Popper has ostensibly created a deductive system of science based on the falsifiability of scientific theories, it immediately becomes evident that this creates a problem about the choice of scientific theories, which involves the further question of the basis for scientific growth. When induction from experience is rejected, which theories will be accepted as superior or more valid than others, and on what basis?

3. Fallibility and Scientific Progress

a. Scientific Growth and Corroboration

Basic statements cannot provide sufficient grounds for the falsification of a theory except that "they corroborate a falsifying hypothesis at the same time".² "In most cases, we have, before falsifying a hypothesis, another one up our sleeves: for the falsifying

1. This question is covered fully in Part Three, Chapter Seven, Section 1.

2. LSD, p. 87.

experiment is usually a crucial experiment designed to decide between the two".¹ Basic statements then play two different roles in Popper's system:

On the one hand, we have used the system of all logically, possible basic statements in order to obtain with its help the logical characterization for which we were looking - that of the form of empirical statements. On the other hand, the accepted basic statements are the basis for the corroboration of hypotheses.²

Each time a scientist fails to falsify a theory, the theory should be regarded as corroborated. The more falsifiable a theory is for Popper, the more it "denies to the world". Negatively, this tells us something about what can or cannot be said about the world. In this way, we indirectly learn something about the world. This Popper calls the "empirical content" of a theory", a theory is empirical if the class of its potential falsifiers is not empty".³ Since the process involves a conflict of one theory with another, and since logically the relevant classes of basic statements are infinite, any

1. Ibid., note 1.

2. Ibid.

3. Ibid., p. 112.

comparison of theories, in terms of degrees of corroboration, must involve a comparison of the extension of the "subclass relations" of their potential falsifiers. The theory which is more falsifiable to start with is the more empirical and hence the more scientific. The two classes of falsifiers can be compared only if one class includes the other.¹ Only then can one theory be declared more empirical than another, and, if the falsifiers fail to falsify, more corroborated than another.

Other conventions also affect the degree of corroboration, such as increased universality and restricted applicability or precision. As he did with causality, Popper re-defines a number of verificationist concepts like 'simplicity' in order to fit his notion of what is more testable and more falsifiable. Popper rejects verificationist attempts to reduce scientific theory to degrees of probability, when it becomes impossible to defend inductively derived knowledge as valid or true. What Popper rejects, besides the inductivist implications of probability, is the application of the mathematics of probability as a measure of preference, though he does not reject the commonsense notion, which is the basis for human

1. Ibid., p. 112.

actions.¹ With regard to probability theory, Popper believes that the least probable theory is the more falsifiable because theories with a high degree of probability have few falsifiers and say little about reality.² Theories with the highest empirical content then have the lowest inductive probability. In this way, Popper rejects attempts by verificationists to bolster their position by appeal to a theory of probability.³

Popper is concerned with "the growth of knowledge" not with a secure way to justify knowledge claims.⁴ Scientific growth can only be realized by the severity of the tests devised, by bold myth-making and conjecture and by the importance, relevance and interest of the problems to be solved. Even though our expectations and our theories may historically precede our problems, "science starts only with problems" for it is the quality and specific relevance of problems which make our hypotheses or theories bold as well as interesting.⁵ They crop up

1. OK, p. 80.

2. LSD, Chapter Eight, CR, p. 228 f; p. 388 f.

3. Ibid.

4. OK, p. 37.

5. CR, p. 222.

especially when we are disappointed with our expectations or when there are contradictions and other difficulties.¹ Theories are chosen then because of their problem-solving power.

Yet perhaps even this picture of science as a procedure whose rationality consists in the fact that we learn from our mistakes - is not quite good enough. It may still suggest that science progresses from theory to theory and that it consists of a sequence of better and better deductive systems. Yet what I really wish to suggest is that science should be visualized as progressing from problems to problems of ever increasing depth... Moreover it is only through a problem that we become conscious of holding a theory. It is the problem which challenges us to learn; to advance our knowledge; to experiment; and to observe.²

For Popper, growth is absolutely essential for science. In his view, growth is not accomplished by the "accumulation of observations" but by "the repeated overthrow of scientific theories and their replacement by better and more satisfying ones."³ But the choice of the

1. Ibid.

2. Ibid.

3. CR, p. 215.

theories and hypotheses depends on the problem to be solved. Popper notes that "...we prefer an interesting, daring and highly informative theory to a trivial one."¹ But before a theory is actually tested, it must be known to be better than another theory because of its "potential progressiveness", its testability, its "corroborability".²

It is important to note that Popper has a "criterion of progress" even before a theory has ever undergone an actual empirical test or before it can be possibly falsified.³ The degree of corroboration consigned to a hypothesis is not itself a hypothesis, because this would mean reverting to induction. It is rather a rational choice based upon logical factors and problem-solving significance. Degree of corroboration is simply a measure of the testability of a theory in terms of the severity of tests that can be applied. Popper shows that Newton's theory has been surpassed because "we can compare intuitively the contents of these two theories, and Einstein's has the greater content.... This makes Einstein's theory potentially or virtually the better theory. Even before any testing, we can say: if true it

1. Ibid., p. 217.

2. Ibid., p. 217 and note 2.

3. Ibid.

has the greater explanatory power. Furthermore, it challenges us to undertake a greater variety of tests."¹

In other words, the explanatory power of a theory can be ascertained by a strictly logical analysis. It is evident that the question of corroboration and the growth of scientific knowledge is a crucial one for Popper because, if the directly ascertained truth of verified knowledge cannot provide a basis for deciding which theory is better than another, then he must follow up his deductive approach by some system or explanation of scientific growth, even though he remains a sceptic -- with regard to the acquisition of any ultimately true knowledge of reality.

Popper has attempted to supply a criterion by outlining a system of growth based on his falsification theory, which reflects his particular version of what is empirical. But Popper makes it clear that corroboration is a "report of past performance" but "says nothing whatever about the future performance, or about the reliability of a theory", so doubt can never be eradicated.²

1. OK, p. 53.

2. Ibid., p. 18.

b. Verisimilitude: Popper's Need for Truth and Reality

If, as Popper indicates, only statements can justify statements, then corroboration, in Popper's system, could just as well be reduced to a conventional system of theories. Popper's system could be labelled a conventional system much the same as the conventionalism of Kuhn, in spite of their controversy and in spite of the fact that Popper's falsification methodology depends on a system of basic statements which supposedly help to provide an empirical element. Popper's total system, including the falsifying basic statements, could be considered as an 'a priori' system, since the basic statements are propositions agreed upon inter-subjectively by a group of scientists, who are motivated by their own subjective observational World Two experiences and beliefs.

But, Popper is as dedicated to realism as he is opposed to the commonsense theory of knowledge. Because of this, he is not content to rest his conventional explanations upon corroboration alone. Popper believes that science needs to realize how various theories might relate to the concept of an absolute truth of reality, even though, no theory can ever be known to be absolutely

true. He believes that realism is correct, even though he admits that his belief is metaphysical.¹

Popper admits that in 1934 when he wrote his Logik der Forschung, he believed that "our main concern in science and in philosophy is or ought to be search for truth, by way of bold conjectures and the critical search for what is false in our various competing theories".² But he admits that his concept of truth at this time was an intuitionist one:

Yet I was uneasy about the notion of truth; and there is a whole section in that book in which I tried to defend the notion of truth as commonsensical and harmless by saying that, if we want, we can avoid its use in the methodology of science by speaking of deducibility and similar logical relations instead.³

Popper notes that the difficulties of explaining the correspondence theory of truth frightened him, as did the fact that he could not effectively speak about truth without possessing a criterion of truth.

1. OK, pp.23-24, LSD, p. 59, p. 438, UQ, p. 51.

2. OK, p. 319.

3. Ibid.

"But I was unable to defend my view that the absence of a criterion of truth could not be used as an argument against the logical legitimacy of the notion of truth."¹

In the 1961 addenda to the Open Society and Its Enemies, Popper, not only criticizes relativism, but also elaborates his view that no criterion of truth is needed to understand or use the concept of truth. Here, he states that "an assertion, proposition, statement, or belief is true if, and only if, it corresponds to the facts".² The further question of the meaning of "correspondence to the facts" is given in an answer that Popper considers "trivial".³ He believes that everyone already knows what truth means including the judge in a court of law.⁴ It means, in effect, that conditions are given for the truth of a certain statement, which he distinguishes from "possessing a means of deciding - a criterion for deciding whether a given statement is true or false".⁵

1. Ibid., p. 320.

2. OS II, p. 369.

3. Ibid., p. 320.

4. Ibid.

5. Ibid.

It is evident that Popper is striking out at the positivists for their insistence that criteria are necessary in order to interpret the correct meaning of any proposition. He gives us the examples of "tuberculosis", "bad meat" and "lying" to demonstrate that we can apply terms correctly even though at any given time we may not have the means at our disposal to actually state in a particular instance that 'this meat is bad' or 'this person has tuberculosis' or 'this man is lying'.¹ Truth, he believes, is in the same category, for we know its meaning even in the absence of strict criteria for proving that it applies to this proposition or that.² In the same article, Popper explains that his concept of verisimilitude is similarly justified.

In all this, the idea of the growth of knowledge - of getting nearer to the truth - is decisive. Intuitively, the idea is as clear as the idea of truth itself. A statement is true if it corresponds to the facts. It is nearer to the truth than another statement if it corresponds to the facts more closely than the other statement. It may therefore be mentioned here that, combining true analyses of Tarski, I

1. Ibid., p. 372.

2. Ibid.

have recently been able to give a 'definition' of the idea of approaching to truth in the purely logical terms of Tarski's theory. (I simply combined the ideas of truth and of content, obtaining the idea of the truth-content of a statement *a*, i.e. the class of all truth statements following *a*, and its falsity content, which can be defined roughly, as its content minus its truth content). We can then say that a statement *a* gets nearer to the truth than a statement *b* if, and only if its truth content has increased without an increase in its falsity content...¹

In Chapter 10 of the Conjectures and Refutations -

Popper notes that one can speak about science and the criterion of its progress "without even mentioning truth".² "Indeed", he declares, "it is even possible to argue, in favour of the intuitive satisfactoriness of the criterion of progress in science without even speaking about the truth of its theories."³ Here, Popper again indicates his conventionalist leanings. Popper, the conventionalist, does not need (nor does he possess) either truth or certitude

1. Ibid., p. 376, See Appendix I Note 8 on Popper's attitude to precision.

2. CR, p. 223.

3. Ibid.

because his system of growth and corroboration does not in itself require verisimilitude. It is Popper, the realist who attempts to spell out some system which will rationalize his intuitional belief in truth and, at the same time, rationalize the concepts of error and criticism. Before he discovered Tarski's theory of truth, Popper found it "safer" and "more economical" to avoid the use of the controversial word.¹ Now he believes that he has discovered a way to correctly use the term.

Popper's concept of verisimilitude or closeness to the truth does not contradict the logical understanding that a proposition must be either true or false with no third possibility.² What it does is to allow Popper to bring a measure of realism to scientific progress, as well as to augment his intuitive acceptance of truth as correspondence with factual reality. It allows him to use the terms 'error' and 'criterion', without being solely dependent on an implicit intuitional hope in a true reality.

1. Ibid.

2. OS II, p. 377.

Popper contrasts Tarski's "objective" and metalogical theory of truth with the subjective one which conceives "of knowledge only as a special kind of mental state, or as a disposition, or as a special kind of belief..."¹ The subjectivists "try to define truth in terms of the sources or origins of our beliefs, or in terms of our operations of verification, or of some set of rules of acceptance, or simply in terms of the quality of our subjective convictions".² The "objective" theory of truth allows one to make assertions such as "a theory may be true even though nobody believes it, and even though we have no reason for accepting it, or for believing that it is true and another theory may be false, although we have comparatively good reasons for accepting it."³

Tarski's system reduces to the use of a metalanguage in order to avoid the semantical contradictions involved in proclaiming such-and-such as true, with its infinite series of justifications, as well as to avoid any reduction

1. CR. p. 225.

2. Ibid.

3. Ibid.

to psychologistic perceptual observation. By raising the statement to a metalinguistic level, one can, in terms of a Kantian-like version of objectivity, clearly and logically define 'correspondence to the truth' without falling into the above-mentioned errors or without postulating positivistic 'protocol sentences'.

Or to put it more explicitly, we can say that an alleged fact, such as the moon's consisting of green cheese, is a real fact if, and only if the statement which describes it - in this case the statement 'The moon is made of green cheese' - is true; otherwise the alleged fact is not a real fact (or if you prefer to say so, it is not a fact at all).¹

Popper has carried Tarski's theory one step further, by adding the term 'fact' to the term 'true' using the same method.

And just as Tarski allows us to replace the term 'truth' by 'the set of true statements (or sentences)', so we can replace the term 'reality' by 'the set of real facts'.²

In other words if 'truth' can be defined as

1. OK, p. 329.

2. Ibid.

'correspondence with the facts', 'reality can be defined as 'correspondence to the truth'.¹ We will note in the critical sections of this thesis whether Popper's defense of knowledge as objective and real can fit the notion of 'fact' and 'truth', given his admission that knowledge is doxa or opinion and given his version of nominalism, even if his falsification theory were valid.

Popper needs ~~the~~ concept of truth to reinforce the belief that his philosophy is realistic, empirical (in some sense of the word) and objective. Other than that, his intuitive dogmatic faith in commonsense realism alone, would not be enough to save his philosophy from conventionalism and 'a priorism'. He realizes logically that "the very idea of error - and of fallibility - involves the idea of an objective truth as the standard of which we may fall short. (It is in this sense that the idea of truth is a regulative idea), for without it criticism would be meaningless."²

The idea of truth for Popper is a necessary one which provides the basis for his evolutionary, 'objective', World Three knowledge - a knowledge which is 'objective' in some speculative and theoretical sense,

1. Ibid.

2. CR, p. 229, See Appendix I Note 9 regarding the conventionalism of Popper's argument for verisimilitude.

not just conventionally or technologically useful, as strictly conventional knowledge would be. As a realist he must "accept the idea that the task of science is the search for truth...even though...we may never get them (true propositions) or know them as true if we get them."¹ Unless there is such a thing as truth or a rational process of continuous approximation to the truth, no one can learn from his mistakes. With the concept of verisimilitude, Popper hopes to bolster the empirical dimension of a critical rationality, whose starting point or origin is 'a priori' logical theory, derived through choice.

Bold truths, which should interest the scientist because they have greater explanatory power, can never be known for certain, but, as we have noted, one theory may have a greater explanatory power than another. This could give a better falsified theory a greater degree of verisimilitude, even though it is false. As Popper explains it, "what we demand of a theory t_2 in order that it should be better (or nearer to the truth) than t_1 , is (a) that it contains t_1 as an approximation in a way that explains the success of t_1 and

1. Ibid.

(b) that it explains all those cases where t_1 fails at least better than did t_1 ".¹ Thus, the scientific aspect of a theory for Popper has nothing to do with the truth-falsity content as accepted by verificationists, but with the nearness or farness from the intuitively based notion of what the absolute truth would be. Hence, Popper is working with the semantical concept of truth because he cannot speak about falsifiability without it.

A theory is corroborated if it has withstood severe testing at any given time. This is a negative evaluation of scientific growth, while the concept of verisimilitude is a positive one, based on greater truth content than falsity content. As a negativist Popper is interested only in a truth that is relevant to the solution of important scientific problems. "There can be no doubt... that negativists (like myself) must prefer an attempt to solve an interesting problem by a bold conjecture, even if it soon turns out to be false, to a recital of a sequence of true but uninteresting assertions."²

1. PKP, p. 1012.

2. CR, p. 230.

In Popper's view, increase in truth content, since it is strictly a function of the logical increase in explanatory content, cannot, by itself, add to the increase of verisimilitude, for any proposition with greater content and greater universality possesses automatically more truth-content. "The only field left for scientific debate and especially to empirical testing - is whether or not the falsity content has also increased."¹ Popper's methodology is one of subtracting falsity content from truth-content, with an added intuitive notion of truth likeness, or nearness to the truth. Without the falsity content there is no empirical element and without the falsification process there can be no falsity content.

We can never make absolutely certain that our theory is not lost. All we can do is to search for the falsity content of our best theory. We do so by trying to refute our theory; that is, by trying to test it severely in the light of all our objective knowledge and all our ingenuity. It is, of course, always possible that the theory may be false even if it passes all these tests... But if it passes all these tests then we may have good reason to conjecture that our theory

1. OK, p. 84.

which we know has a greater truth content than its predecessor may have no greater falsity content.¹

If, at any given time, we then fail to refute a theory, we can claim that our conjecture has a better approximation to the truth or verisimilitude than the old theory which failed certain tests. Popper maintains his scepticism but still clings to the need for a realistic and empirical science.

I say that what has to be given up is the quest for justification in the sense of the justification of the claim that a theory is true. All theories are hypotheses: all may be overthrown. On the other hand, I was very far from suggesting that we give up the search for truth: our critical discussions of theories are dominated by the idea of finding a true (and powerful) explanatory theory; and we do justify our preferences by an appeal to the idea of truth: truth plays the role of a regulative idea. We test for truth, by eliminating falsehood.²

4. The Scope of Popper's Fallibilism and The Problem of His Realism

Despite the fact that the basic factors in

1. Ibid.

2. Ibid., pp. 29-30.

Popper's critical rationality have been examined and explained, it is necessary in this section to explicitly examine the extent and application of fallible knowledge inherent in Popper's concept of cognition, which is the result of his falsification theory. Popper makes it explicit that observation does not provide a justification for any proposition or theory, including basic statements. To what extent then does conventionalism enter into the acceptance of the various relevant propositions or statements that comprise the falsification methodology?

From a logical point of view, the testing of a theory depends upon basic statements whose acceptance or rejection, in its turn, depends upon our decisions. Thus it is decisions which settle the fate of theories. To this extent my answer to the question, 'how do we select a theory?' resembles that given by the conventionalist: and like him I saw that this choice is in part determined by considerations of utility. But in spite of this, there is a vast difference between my views and his. For I hold that what characterizes the empirical method is just this: that the convention or decision does not immediately determine our acceptance of universal statements but that on the contrary it enters into our acceptance, of the singular statements that is the basic statements.

1. LSD, p. 108.

In other words, only basic statements are decided by intersubjective agreement. Theories are 'a priori' decisions chosen in order to solve problems. They become pertinent in the context of scientific background knowledge, where their explanatory truth content, their interest and their universality are the criteria for the bold choices and conjectures. It is at this point, that the empirical dimension of severe testing becomes a necessary part of Popper's deductive, falsifiable scientific explanation.

On the one hand, Popper differs from the conventionalists in holding that only singular basic statements are decided by agreement while, on the other hand, he differs from the positivists "in holding that basic statements are not justifiable by our immediate experience but are, from the logical point of view, accepted by an act, by a free decision."¹ Basic statements then are not accepted as a result of a directly rational criterion but are chosen on the basis of what Popper has decided methodologically is necessary to provide an empirical element for his non-inductive approach. From

1. Ibid., p. 109.

a psychologistic World Two point of view the choice may be based on "a purposeful and well-adopted reaction."¹

Popper attempts to distinguish between a "justification" and a "decision" by appealing to the analogy of trial by jury where the jury "accepts by agreement, a statement about a factual occurrence - a basic statement, as it were".² The verdict is the result of agreement plus the universal statements of the system, i.e. the law. "The analogy between this procedure and that by which we decide basic statements is clear. It throws light, for example, upon their relativity, and the way in which they depend upon questions raised by the theory."³ Popper declares that "their acceptance is part of the application of a theoretical system; and it is only this application which makes any further applications of the theoretical system possible."⁴

Popper follows these observations with a much

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1. Ibid., and pp.81-82; See quotation p. 133 for complete text referring to the conventionalism of basic statements.
 2. Ibid.
 3. Ibid., p. 110.
 4. Ibid., p. 111; See Appendix I Note 10.

quoted statement on the status of scientific knowledge. In it his scepticism and conventionalism are explicit and evident:

The empirical basis of objective science has thus nothing 'absolute' about it. Science does not rest upon rock-bottom. The bold structure of its theories rises, as it were, above a swamp. It is like a building erected on piles. The piles are driven down from above into the swamp, but not down to any natural or 'given' base; and when we cease our attempts to drive our piles into a deeper layer, it is not because we have reached firm ground. We simply stop when we are satisfied that they are firm enough to carry the structure at least for the time being.¹

In a footnote on the same page Popper makes an even more explicit admission when he quotes Weyl (without any objection) that the only absolutes are connected with subjectivity, i.e. with the psychological World Two, while "whoever longs for objectivity cannot avoid the problem of relativism."² Popper even goes so far as to deny that science represents a body of knowledge

1. Ibid.

2. Ibid., Note 4.

at all. A philosopher might not be surprised by such a viewpoint coming from a conventionalist but it is difficult to comprehend the rationality of such a mixture coming from a realist, who also accepts some form of empiricism for science.

I think that we shall have to get accustomed to the idea that we must not look upon science as a 'body of knowledge', but rather as a system of hypotheses: that is to say, as a system of guesses or anticipations which in principle cannot be justified, but with which we work as long as they stand up to tests, and of which we are never justified in saying that we know that they are 'true' or 'more or less certain' or even 'probable'.¹

Compare this quotation to one like the following where Popper attempts to answer the question how one can justify the method of trial and error.

Reply: the method of trial and error is a method of eliminating false theories by observation statements; and the justification for this is the purely logical relationship of deducibility which allows us to assert falsity of universal statements if we accept the truth of singular ones.²

1. Ibid.

2. CR, p. 56.

Of course, when one considers Popper's whole system the emphasis in the last sentence must fall on the word "accept", i.e. inter-subjective agreement; rather on the word "truth".

In the next chapter, I will examine Popper's three worlds especially his World Three because this explanation represents the finished product of his 'objective' realistic systematization of knowledge. By means of his World Three, Popper more fully develops and integrates his evolutionary ontology, his pluralism, and his indeterminism. He makes his ontology clearer by means of his explanation of the interactions of World Two subjectivity with World One and World Three, including the resulting social and technological development, as well as by his application of his doctrine of World Three to mind-body relationships. The whole system, however, rests upon the epistemological elements that have been already explored. His World Three of "objective" knowledge must stand or fall with the critical rationalism of his falsification theory. Popper hopes that he is providing some bases for observation and experimentation, which he in turn hopes will provide some basis for scientific progress. Without the validity of the falsification process however, World Three is

reduced to inexplicable, 'a priori', subjective, verbal elements. World-Three thus represents the culmination of Popper's attempt to avoid absolute or essential knowledge without falling completely into a conventionalist frame of reference.

Chapter Six

Eternal World Three: Popper's World
of Objective Knowledge

3. Linguistic 'Objectivity': Language as Imprecise Thought

In his article "Epistemology without a Knowing Subject", Popper classifies his pluralistic view of reality into three worlds: World One, the world of physical objects and physical states; World Two which is the subjective world of personal belief - "of states of consciousness or of mental states, or perhaps of behavioural dispositions to act" and World Three which is the world of objective thought.¹

Popper believes that traditional epistemology has mistakenly studied knowledge in the subjective World Two, instead of realizing that scientific knowledge belongs only to the reality of World Three, which consists of 'objective' theories, 'objective' hypotheses, 'objective' problems and 'objective' arguments.² He rejects the tendency in philosophy and the social sciences to study the behavior of men and animals, rather than the World Three products of this behavior.³ This, of

1. OK, p. 106.

2. Ibid., p. 108.

3. Ibid., p. 114.

course, is psychologism for Popper.

The second world of being aware and informed - the world of 'I know' and 'I am thinking' may be the cause of World Three content, but valid science, for Popper must begin with the World Three effects of World Two, which alone can raise the problems and which alone can be considered as objective knowledge.¹

Thus what I call 'the third world' has admittedly much in common with Plato's theory of Forms or Ideas, and therefore also with Hegel's Objective Spirit... It has more in common still with Bolzano's theory of a universe of propositions in themselves and of theories in themselves, though it differs from Bolzano's also. My third world resembles most closely the universe of Frege's objective contents of thought.²

Like Frege, who distinguishes between the subjective act of thinking and the objective content of thought, Popper believes, that when a content is written in books or journals, or stored in libraries, then the content,

1. Ibid., pp. 114-115.

2. Ibid., p. 106.

including the theories, problems and arguments, etc., have an objective existence of their own, because they are constituted as knowledge content expressed in linguistic form. He sees World Three as independent of minds, even though created by them. Like our children, they can even teach and uplift their creators.¹ It is this existence of an autonomous, largely independent World Three that enables Popper to solve the problem of the mind-body relationship, without falling into a monism, based on either matter (World One) or mind (World Two). Now with a category of meaning-in-itself (World Three), Popper can accept a clearly pluralistic universe which involves immateriality.²

Popper credits Plato with the discovery of World Three, because Plato realized that the intelligible objects of thought, are as objective as physical bodies.³ Popper, not only accepts that "we operate with these objects almost as if they were physical objects", but also, that every subjective act of understanding, is largely anchored in World Three since

1. UQ, p. 195.

2. Anthony O'Hear, op.cit., p. 194.

3. OK, p. 154.

"all important remarks which can be made about such an act consists in pointing out its relations to third world objects".¹

As far as the interrelationships among the three worlds is concerned, the second world of personal mind and personal, 'subjective' knowing mediates between the world of objects and the third world, because it is only by means of 'subjective' knowing that World One concrete objects can be expressed in World Three linguistic form and conversely it is only through World Two understanding that World Three theories can affect World One reality through the application of technology.²

Popper states explicitly that "the idea of autonomy is central to my theory of the third world."

We can thus say that there is a kind of Platonic (or Bolzanoesque) third world of books in themselves, theories in themselves, problems in themselves, problem situations in themselves, arguments in themselves, and so on.

1. Ibid., p. 163.

2. Ibid., p. 155.

And I assert that even though this third world is a human product, there are many theories in themselves which have never been produced or understood and may never be produced or understood by men.¹

This last point clearly illustrates the fact that Popper is equating the scope of World Three not only with actual linguistically expressed meaning, but also with what is potentially expressible and understandable. In this way, Popper equates the Aristotelian domain of the 'intelligible' with any possible linguistic content of World Three. But, of course, Popper's interpretation of intelligible understanding is not that of a first level intuitive contact with an intelligible reality, but involves knowledge expressed linguistically. In this context, thinking is a process of conjecture and refutation, utilizing World Three objects to solve problems.²

In arguing for World Three autonomy, Popper relies on this fact, that there are hidden, potential intelligible dimensions in all theories, arguments, problems, etc., -

1. Ibid., p. 116.

2. Ibid., pp. 164-166..

dimensions which are often not realized by their creators. This, of course, is how knowledge grows and increases. Men, with their World Two "subjective" minds, discover novel aspects, as well as deeper and deeper levels of understanding in the autonomous world of symbolically expressed meaning. In their turn, these men can add to the content of World Three.

Popper gives an example of these aspects of World Three in the sequence of natural and prime numbers which, although it is a human creation in the first instance, creates, in the final analysis, its own autonomous problems.¹ This autonomy is only partial, in that additional creations are added from what is potentially intelligible to actualize "new unintended facts; new unexpected problems"; and often also new refutations."² The formula expressing this growth is the familiar $P_1 - TT - EE - P_2$ of the falsifiable process of conjectures and refutations, where we learn from our mistakes to create new hypotheses moving from problem 1 through tentative theories and error elimination to arrive

1. Ibid., p. 118.

2. Ibid., p. 119.

at problem 2.

Popper also adds other examples from science to illustrate this World Three autonomy.¹ In a hypothetical experiment used to illustrate this point, Popper declares that in one instance, all machines, tools and subjective knowledge, are destroyed, but libraries are left intact, while in another instance, the libraries as well are destroyed. From this Popper concludes, that as a result, in the first experiment, progress would occur because of World Three knowledge content in the books, while, in the second case, it would be a very long time before the previous status could again be reached.² Popper also considers examples where mistakes made by two mathematicians can be corrected by "the logical structure of world three, which shows that their alleged theorem contradicts the objectively true statement $5 + 7 = 12$, and that it must be objectively false. The two mathematicians are kicked; not by other people, but by the laws of arithmetic itself."³

1. Ibid., pp. 170-180.

2. Ibid., pp. 107-108.

3. Karl Popper, "Indeterminism is Not Enough: A Philosophical Essay", Encounter (London), Vol. 40, No. 4, April 1973, p. 92.

Taking a closer look at the linguistic aspect of World Three, we find, that Popper seems to equate language and thought.¹ He looks upon the development of language as an exosomatic tool, which just happened to evolve, and which, because it has evolved, creates a whole new set of problems in a new world of human development. It also can create a knowledge of itself.

Popper believes that as long as the thought or word is not formulated it is more or less part of ourselves:

Only if it is formulated in language does it become an object which is different from ourselves and towards which we can then adopt a critical attitude. So the very small difference between thinking (in the sense of acting on the assumption) "today is Saturday" makes a tremendous difference from the point of view of the possibility of criticism. Although there is often not much of a gap between thinking and speaking, from the point of view of criticism (and of sharpening our thought) the difference can be very great. Of course, once language is established, we can actually formulate a thought in our minds and criticize it; but that is, once language itself has been established

1. See Appendix I Note 11 for comment on Popper's equation of language and thought.

objectively, so to speak, as a social institution after the possibility of objectivization has been established. Only after that can we really have a critical attitude towards the products of our minds.¹

It is evident from this quotation, that thinking is impossible without language, but yet, paradoxically, language, and the thoughts expressed by it, are both created by World Two minds. Of course, we must remember, that, in Popper's system, the essence of what is rational is that which is equated with the criticizable and what is chosen for that very reason. He does admit to earlier pre-linguistic stages for World Three, but if he is to be consistent, he must equate any personal ideas with the psychological world of subjective disposition, because any understanding, even of ourselves, is dependant on the rational, linguistically expressed World Three where, "human language makes it possible for us to be not only subjects, centers of action, but also objects of our own critical thought, of our own critical judgment."²

For Popper, rationality is an effect of language not vice-versa. As rational human beings we are products

1. SIB, p. 451.

2. Ibid., p. 144.

of World Three, which, in turn, is the product of countless minds. In fact, as a further bulwark against certitude, authority and essentialism, Popper believes, that we owe our humanity, our rationality and our very selves to the evolution of language and to other men.¹ As we have indicated, Popper admits that the self is close to being a unified essence. Since this essence or self is totally dependant on language and others, Popper tends to reverse the usual scientifically or technologically influenced view of progress, as one of greater and greater developing perfection. Thus, for Popper, the greatest achievements lie in the past when tools and language were acquired.² This view also fits the great importance which he gives to the pre-Socratics in the development of a critical rationalism.

Popper's scepticism operates at this level of language. He accepts the view that "the relationship between a theory (or a statement) and the words used in its formulation is in several ways analogous to that between written words and the letters used in writing them down."³ In

1. Ibid.

2. Ibid., p. 153.

3. UQ, p. 22.

keeping then with what Popper originally called his nominalistic methodology, he considers words as arbitrary and as fallible in the creation of theory meaning, as letters are in creating word meaning.¹ Popper ~~rejects~~ ostensive definitions and Aristotelian essential meanings for a nominalistic view that treats words as fallible, imprecise elements of meaning, which operate in much the same way as theories or hypotheses do in their approach to truth.

Letters play a merely technical or pragmatic role in the formation of words. In my opinion, words also play a merely technical or pragmatic role in the formulation of theories. Thus both letters and words are mere means to ends.²

Popper adds to Karl Biehler's signal, expressive and descriptive functions of language, what he himself considers to be a more important dimension - the argumentative function. It is the argumentative and the descriptive functions which are the truly human levels of language use. The evolution of these levels, especially the level of argumentation, have been essential to the rational

1. Ibid., and pp. 17-23, pp.28-30; CR, pp. 18-20; also see Appendix II section 1.

2. UQ, p. 22.

function of language - the development of science and critical thinking. Popper believes that the enemies of the argumentative function of language are the romantics, who are concerned with self-expression rather than demonstration; behaviourists, physicalists and materialists, who attempt to subsume the higher functions of language to the lower, trying by argument to establish the non-existence of argument; and some mind-body theories: like epiphenomenalism, psycho-physical parallelism and the two language solutions, whose very demonstrations, for Popper, involve a contradiction like the liar's paradox.¹ However, it should be noted that Popper relates all this World Three content to the categories of language usage, rather than to the category of the truth or falsity of argument as most realists would. Hence, for him, it is the functions of language which lie at the heart of critical rationality and objective content. it is only by means of the constant interaction of World Three with a World Two mind, that a self is created. But even greater than the rationality of our subjective mind for Popper "is the relation between ourselves and our work and what can be gained for us from this relation."²

1. CR, pp. 134-135; p. 295.

2. OK, p. 147.

We must note at this point, that Popper has some difficulty in explaining the kind of existence which World Three potential objects would have, especially when they are not directly part of a conscious mind.

Popper categorizes and distinguishes 3.1 which is World Three as stored in libraries and the human mind, from 3.2, which is World Three as grasped or understood by some individuals, and from 3.3 which are the possible solutions and potentially intelligible dimensions discoverable or implied in other already discovered theories.¹ Of this 3.3. Popper states, "I assert that this shadowy world - let us call it 3.3 - exists. Proof: it interacts via world two with world one."² In this way, "the really driving factor may have been the intuitive interest in the autonomous world 3.3 problem, a problem not yet existing in world 3.1 or 3.2, only suspected by the mind (the mind but hardly the brain) of lurking somewhere in world three."³

In that sense the world 3 object is a real ideal object which exists, but

1. PKP, p. 1050-1051.

2. Ibid., p. 1052.

3. Ibid.

exists nowhere and whose existence is somehow the potentiality of its being reinterpreted by human minds.....

In a sense, world 3 is a kind of Platonic world of ideas, a world which exists nowhere but which does have an existence and which does interact especially with human minds - on the basis, of course, of human activity.¹

It is at this point that Popper resurrects Plato, Hegel and the Stoics and where he calls himself again, with perhaps more justification; "a modified essentialist". It is also where he gives new emphasis to Aristotle's importance by stressing what is in effect the basic Aristotelian category of the reality of potentiality. By his explanations of World Three, Popper also seems to be moving further and further away from his earlier stress on empiricism and even from his stress on a demarcation for science, by his acceptance of an immaterial mind and by his acceptance of mind-body interaction, which epitomizes his rejection of any materialistic reduction.²

1. SIB, pp. 449-450.

2. in SIB.

Popper gives the Stoics credit for first distinguishing the three world aspects of language usage - the word as object, the word as personally understood and the word as objective content.¹ He accepts the fact that since his World Three contains the genius of all the fine arts, as well as the sciences, together with all possibly true meaning, doubtful meaning and even false meaning, that this content is more compatible with the position of the Stoics rather than Plato's world of true essences.²

The logical world of theories and hypotheses - the "objective", theoretical world of Kantian propositions, which is Popper's starting point, provides the basis for scientific, evolutionary growth. Now Popper has given it the status of a body of linguistic meanings, which are fallible, but which possess infinite depths of intelligibility. In this way, he has moved closer to Kant and the rationalist tradition, and farther away from an empiricism, which nevertheless is still rooted in his nominalism and in his concern to develop a science that is truly empirical.

1. OK, p. 157.

2. See Appendix I Note 12 for comment on the existence of falsity outside a World Two mind.

It is evident that by accepting an intelligible World Three, Popper must accept an essential unified knowledge of intelligibles, which means a non empirical type of knowledge. Currie seems to understand this when he compares Popper to the Platonist regarding a correct or incorrect grasp of the Pythagorean theorem:¹

But this reply would not be open to Popper, exactly because his third world is man made - its content actually depends upon whether anybody actually articulated the proposition expressing the Pythagorean theorem. If anybody ever did, then there simply is no third world Pythagorean theorem which these people failed to grasp.²

In the next section, we will look at Popper's attempt to anchor his World Three in an ontology based on evolution, but it becomes more and more evident, that Popper lacks the ontological basis, that can account for the kind of knowledge inherent in World Three, especially with regard to the reality of potential intelligibles which presupposes an immaterial, autonomous reality for what is intelligible.

1. See Appendix I Note 13 for comment on the difficulty of reconciling Popper's World Three theory with his empiricism.

2. Gregory Currie, "Popper's Evolutionary Epistemology: A Critique", Synthese, No. 37, 1978, p. 427.

2. Popper's Ontological Anchor: Evolutionary Foundations of World Three

Karl Popper admits, that he has always been fascinated by Darwinism but unimpressed by most of the evolutionary philosophers.¹ He admits, that even though he previously had contemptuously rejected evolutionary philosophers, that, since he has made this a dimension of his philosophical explanation in a fallibilistic system, he is forced "to eat humble pie".² Actually, Popper is forced to find some explanation for his Kantian & logical world of hypotheses, propositions and theories. Since he has rejected inductive knowledge, as well as cast doubts on any kind of perceptual experience, he sees an evolutionary explanation as the only ontological anchor for his World Three.

One of the first points to be noted, is that Popper considers Darwin's theory of evolution based on natural selection as a metaphysical, and therefore non-falsifiable theory.³ But we must remember, that Popper has already

1. UQ, p. 167.

2. OK, p. 241.

3. UQ, p. 168; POH, p. 108.

admitted the possibility of metaphysics as a fertile source of scientific theory. In regard to Darwinism, he believes that it is an application of what he calls "situational logic."¹ By this he means that when you add the rare condition of self-reproducing variable bodies as a special framework to the Darwinian view of survival of "entities of limited variability", then the idea of trial and error elimination "becomes not merely applicable but almost logically necessary".² Thus, he considers Darwinism as a "Metaphysical Research Program" or a framework for the development of scientific and testable hypotheses, which one can then attempt to falsify.³

Popper admits, that the origin of life cannot be explained by evolutionary theory and that the probability of an atom becoming part of life is "indistinguishable from zero".⁴ Yet, in spite of this fact, Popper believes, that even though there are no Darwinian laws of evolution, and even though Darwinian

1. UQ, p. 168; OK, p. 70.

2. Ibid.

3. UQ, p. 167; p. 227; Note 242.

4. SIB, p. 28; OK, p. 292.

theory has only indicated with regard to causal explanations that they are not logically impossible, the true value of Darwinism lies in its showing that "it is in principle possible to reduce teleology to causation by explaining in purely physical terms, the existence of design and purpose in the world."¹ In other words, nature and the natural, i.e. physical causes, can simulate the purpose and design of a Creator.²

What Popper wants is a model which can be modified to fit the indeterminist and pluralist nature of evolving World Three. Darwin's model is a model of natural selection, which becomes for Popper, a problem-solving, trial and error, growth model. He contrasts this with a Lamarckian procedure, which is one of instruction from the environment, of repetitive or cumulative process, of organ decline through use and disuse and of passing on acquired characteristics. Lamarkianism, he associates with the irrationality of induction, as well as Hume's reply to "the psychological problem of induction" because, no doubt, it involves direct knowledge and association.³

1. OK, p. 267.

2. Ibid.

3. PKP, p. 1023; OK, pp. 96-97; SIB, p. 459.

But Popper believes the correct Darwinian approach simulates the Lamarckian one, so that, the strictly trial and error reality, reflects what seems to be a teleological one. He believes that this trial and error basis for the rational, began as a pre-conscious, organic level process, where survival was the key. It evolved to the point where first lower language functions developed, then higher functions, like metaphysical thought and myth evolved, and finally, the process arrived at the conjecture and refutation level of a valid scientific methodology. On these last two levels criticism "will be regulated by the idea of truth, or of getting nearer to the truth, rather than by the idea of helping us to survive."¹

We must remember Popper's point that criticism presupposes the regulative idea of truth because criticism has meaning only with regard to the elimination of error. The only other possibility is, of course, to utilize criticism in a purely instrumental-conventional context. Popper is motivated to search for true theories even though some level of verisimilitude is the only possible fallible result. "It is, I believe, this idea of

1. OK, p. 264.

truth as correspondence with the facts which makes rational criticism possible."¹ But we have also noted, that this can only be possible within the framework of Popper's falsification theory, and that it stands or falls with it.

Despite the fact that Popper is sceptical about the explanation of life emerging from inorganic matter, he believes, that the interaction with World Three products is the basis for any present day evolution. Both he and Sir John Eccles stress the fact that it is the development of self-consciousness with its intellectual, scientific, artistic and cultural dimensions that is the basis and major concern for all present day evolution.² It is the growth of World Three products together with their fantastic influence on human minds which is all important today.

.....we can hardly deny that there must have been a time when abstract and non-physical entities, such as reasons and arguments and scientific knowledge, and abstract rules, such as

1. Ibid., pp. 263-264.

2. SIB, Dialogue XI and XII.

rules for building railways or bulldozers or sputniks or say, rules of grammar or counterpoint, did not exist or at any rate had no effect upon the physical universe. It is difficult to understand how the physical universe could produce abstract entities such as rules, and then could come under the influence of these rules, so that these rules in their turn could exert very palpable effects upon the physical universe.

Going back into the past, to the beginnings of knowledge in Popper's hypothetical, evolutionary, natural development, we find that he speaks of "unconscious" and "innate" knowledge. In Popper's system, we not only do not acquire knowledge by induction, but, in fact, there is no such thing as pure observation. The epistemological sources of knowledge cannot be a test of either its validity or truth, because Popper has rejected the commonsense theory of knowledge. "There can never be anything like a completely safe observation", since all observation, "involves interpretation in the light of theories.....and it is therefore uncertain."² Since theories and hypotheses must precede any attempted refutation, all observations "are interpretations in the light of theories" and hence

1. OK, p. 225.

2. CR, p. 41, note 8.

"there does not exist anything like pure observational knowledge untainted by expectations or theories."¹

But this means that, for logical reasons, there must always be a point of view - such as a system of expectations, anticipations, assumptions, or interests - before there can be any repetition; which point of view, consequently cannot be merely the result of repetition.²

In comparing this problem of the dependance of present theory on prior theory and expectation, to the question 'which came first the chicken or the egg', Popper replies:

'An earlier kind of egg', to the former, 'An earlier kind of hypotheses'. It is quite true that any particular hypotheses we choose will have been preceded by observations - the observations, for example, which it is designed to explain. But these observations, in their turn, presupposed the adoption of a frame of reference: a frame of expectations: a frame of theories..... There is no danger here of an infinite regress. Going back to more and more primitive theories and myths, we shall in the end find unconscious, inborn expectations.

The theory of inborn ideas is absurd, I think; but every organism has inborn

1. Ibid., p. 38, note 3, p. 155.

2. Ibid., p. 44-45.

reactions or responses..... These responses we may describe as 'expectations' without implying that these 'expectations' are conscious. The newborn baby 'expects'.....to be fed.....

Thus we are born with 'expectations', with 'knowledge' which, although not valid a priori is psychologically or genetically a priori i.e. prior to all observational experience. One of the most important of these expectations is the expectation of finding a regularity.

Popper does not hesitate to call these innate expectations "inborn knowledge", which explains his support for Konrad Lorenz's theory of 'imprinting'.² He not only applies this view of "unconscious knowledge" to persons but also to organs as well. He declares that "there is no sense organ in which anticipatory theories are not genetically incorporated."³ What the organ or organism can react to or can absorb as relevant or irrelevant "depends completely upon the innate structure (the 'program') of the organism".⁴

1. Ibid., p. 47.

2. Ibid.

3. OK, p. 72.

4. Ibid.

When discussing the function of a cat's eye, Popper makes the point that the eye reacts "in distinct ways to a number of ~~typical~~ situations for which there are mechanisms prepared and built into its structure: these correspond to the biologically most important situations between which it has to distinguish."¹

Popper then concludes: "Thus the disposition to distinguish between these situations is built into the sense organ, and with it the theory that these, and only these, are the relevant situations for whose distinction the eye is to be used."² In fact, for Popper, the nervous system interprets experience "a thousandfold" before it becomes conscious experience.³

In his latest work Popper is even more explicit about causality or teleology, when he states regarding the eye that it "can be understood only from the point of view that it solves like a theory, certain problems, problems of adaptation to a changing environment. Our organs are problem solvers. In fact all organisms are highly active problem solvers.....reflex

1. Ibid.

2. Ibid.

3. SIB, p. 431, See Appendix I Note 14 for comment on Popper's use of "finality".

theory.....should be abandoned. Organisms are problem solvers and explorers of their world."¹

Popper counters all naïve realism with the view that all knowledge is indirect, since we must decode the signals from reality which in themselves are meaningless, like Kant's phenomena. We must even learn that we are a self, which continually exists and learn that we and others have bodies.² Everything then that we learn about reality is a matter of "interpretation" based on the hereditary decoding skills.³ Popper believes that although our decoding processes are uncertain, we have enough certainty "for most practical purposes".⁴ Also, we, in fact, must even learn to see, since "visual perception is more like a process of painting a picture."⁵ Popper uses the example of learning to see by trial and error as an analogy to that of understanding World Three objects.⁶ In both instances even though we seem to

1. SIB, p. 138, See Appendix I Note 15 on Popper's Kantian 'a prioriism' and his detailed explorations of World Three evolutionary development.

2. OK, p. 36, See Appendix I Note 16 for a problem with World Two - World Three interaction.

3. Ibid., pp. 36-37.

4. Ibid.

5. SIB, p. 45.

6. Ibid.

experience both these elements as if they were direct; they are, in fact, interpretations, which are the result of decoding.¹ Yet, Popper distinguishes between sense perception, which he labels a natural learning process, which is mostly unconscious, and World Three conscious processes of understanding, of learning, of interpreting language, which he believes "is not natural but cultural and social."² Once again Popper seems to subsume the content of propositions and concepts to the conventional symbols of language in order to make a sharper distinction between the World Two causal dimensions of World Three and World Three "objective" content.

Thus we learn, not by direct vision or contemplation; but by practice, by active participation; how to make World 3 objects, how to understand them, and how to "see" them. This includes the "sensing" of open problems, even of problems not yet formulated..... In this process, published theories-embodied theories-may play a role. But the not yet explored logical relations between existing theories may also play a role. Both these theories and their logical relations are World 3 objects, and in general it makes no difference

1. Ibid.

2. Ibid.

neither to their character as World 3 objects, nor to our World 2 grasp of them, whether or not these objects are embodied.¹

In some statements Popper seems to make a much more clear-cut break between World Two individual subjectivity and World Three than his explanations of their interactions would seem to support.

Putting our ideas into words, or better writing them down, makes an important difference. For in this way they become criticisable. Before this, they were part of ourselves. We may have had doubts but we could not criticize them in the way in which we criticize a linguistically formulated proposition or better still a written report. Thus there is at least one important sense of 'knowledge' the sense of linguistically formulated theories submitted to criticism. It is what I call 'knowledge in the objective sense'. Scientific knowledge belongs to it. It is this knowledge which is stored in our libraries rather than our heads.²

Before being symbolically formulated, individual psychological understanding has no objectivity

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1. Ibid., p. 46, See Appendix I Note 17 on the difficulties of maintaining World Two - World Three interaction.
 2. "Conversations with Philosophers: Sir Karl Popper Talks to Bryan Magee", The Listener (London), Vol. 85, No. 21, Jan. 7, 1971, p. 10.

and is non criticizable.¹ Yet, at one point, Popper explicitly attempts to distinguish subjective understanding "from the ... outcome of these activities, from their result: the 'final state' (for the time being) of understanding, the interpretation."² He goes on to declare that "although this may be a subjective state of understanding, it may also be a third world object, especially a theory..... Regarded as a third-world object, the interpretation will always be a theory; for example a historical explanation, supported by a chain of arguments....."³ Subjective understanding can only be understood through theory:

But even the subjective act or the dispositional state of 'understanding' can be understood, in its turn, only through its connections with third-world objects. For I assert the following three theses concerning the subjective act of understanding:

- (1) that every subjective act of understanding is largely anchored in the third world;
- (2) that almost all important remarks which can be made about such an act consist in pointing out its relations to third-world objects;

1. SIB, p. 108:

2. OK, p. 163.

3. Ibid.

- (3) that such an act consists in the main of operations with third-world objects: we operate with these objects almost as if they were physical objects.¹

Knowledge has its primitive roots in the encoded genes, which provide the basis of one's conscious self.

Both we ourselves and the third world grow through mutual struggle and selection. This it seems, holds at the level of the enzyme and the gene: the genetic code may be conjectured to operate by selection or rejection, rather than by instruction or command. And it seems to hold good at all levels, up to the articulate and critical language of our theories.²

Popper effectively rejects any possibility of direct sense perception, by making knowledge, whether inherited or acquired, a modification of earlier knowledge. Unconscious, inherited knowledge is much greater for him than knowledge acquired indirectly through the senses.³ This corpus of inherited and acquired knowledge, being a continuous modification of previous knowledge,

1. Ibid.

2. OK, p. 149.

3. Ibid., p. 121.

back to innate, instinctive knowledge, provides the background knowledge, which is so important in the falsification process of scientific knowledge growth.¹

Popper speculates that consciousness emerges out of the four biological functions of pain, pleasure, expectation and attention, which leads to the unity of self as a genetically based essence.² This mind is an evolutionary product of the brain, just as World Three is an emergent product of the mind by "mutual interaction with it".³ This final state is Popper's immaterial ghost in the machine.⁴

In the evolutionary scheme of things, Popper believes that animal consciousness has developed out of non-consciousness.⁵ The greatest progress however was achieved in human development when the organism developed exosomatic tools outside the organic structure itself-tools such as instruments and especially language.

1: CR, p. 238, See Appendix I Note 18 for problems regarding Popper's reduction of potential, intelligible meanings to 'objective' content.

2. SIB, p. 127.

3. Ibid., p. 554.

4. Ibid., p. 464.

5. Ibid., p. 560.

These made the difference between animal and human evolution?¹ Popper, in many instances, compares Einstein and the amoeba, to illustrate the similar problem-solving nature of their tasks. The only difference between the two, he maintains, is that the amoeba dislikes to err while Einstein searches consciously to falsify his theories.² He maintains, that now at the human level, man can kill his theories by falsification, rather than by dying himself. Since his theories stand in his stead, what one has now is the survival of the fittest theory rather than the fittest organism.³

In an article entitled "Indeterminism is Not Enough: A Philosophical Essay" and in the article "Of Clouds and Clocks", Popper explains, that even though he has rejected the older materialistic determinism and reductionism, his acceptance of indeterminism is a necessary, but not a sufficient condition for human freedom.⁴ What must be added to this, he believes, is the notion that the physical world is open to the influence of World Three, through the application of World Two.

1. OK, p. 238.

2. Ibid., p. 70.

3. CR, p. 52; OK, p. 244.

4. "Of Clouds and Clocks" in OK. "Indeterminism is Not Enough: A Philosophical Essay", Encounter (London), Vol. 40, No. 4, April, 1973.

Thus Popper's fallibility regarding knowledge applies on the level of ontological reality. Reality is pluralist in nature and cloud-like rather than clock-like in its susceptibility to change and influence. Popper labels himself "first of all an indeterminist; secondly, a realist, thirdly a rationalist."¹

Yet, although Popper often labels himself and his enemies, we must recall, that he still rejects the notion of precision with regard to meaning, together with all 'What is?' questions. In reply to Paul Bernays on the question of concepts, Popper replies:

It is a great step from this attitude (precise meanings) to model theory and nonstandard models; and in the development the original idea that concepts are words with definite meanings loses most of its significance. Thus I am not entirely happy with Bernay's emphasis on concepts, and I feel that his analysis.... may perhaps be reformulated with advantage if we speak of languages and the degree of their articulation, instead of speaking of concepts.²

Here Popper's reduction is to linguistic function -

1. CR, p. 194.

2. PKP, p. 1088.

a point that again reflects both Popper's early nominalism and his conventionalism. Moreover, amidst the Kantian imposition of meaning, which in Popper's system becomes linguistic convention, he still must try to maintain a particularized empirical view of the various items of knowledge i.e., words and propositions considered as doxa¹.

3. Popper's Critical Rationalism: A Summary and Outline

Scientific knowledge, for Popper, is always derived deductively through the logical process of "modus tollens". The process begins with conventional theories or hypotheses, chosen by decision, for their interest, their problem-solving ability, their universality, and above all, for their falsifiability, since only theories that are falsifiable can be considered scientific.

In its evolutionary beginnings, knowledge is synonymous with an organism's trial and error efforts to adjust to environmental situations. The amoeba reacts first one way, then another, either learning from any

1. See Appendix I Note 19 for comment on Popper's World Three and the possibility of truth. Quote from Derek Kelly.

mistakes that have been made or perishing. Developed man, although part of the same evolutionary process, has an additional capacity to verbalize his theories, with the resulting advantage of being able to exercise and criticize these fallible, verbalized, theoretical entities.

Popper's approach is one of critical rationality. It is ultimately rooted in a decision or choice to be rational rather than irrational. A critical rational approach is one of continuous approximation to truth, which in Popper's view, is growth based on the logical and empirical aspects of a theory or proposition. The empirical aspects of a conjectured theory rest on the corroboration of a theory, at any given point of time. A theory is unfalsified, which has withstood additional severe testing, and whose predictions remained unfalsified.

Popper's system is expressed in the formula $P1 - TT - EE - P2$ from problem 1 to problem 2, by means of tentative theories and error elimination. A scientific theory whether true or false, must not only solve old problems but suggest new ones as well. The falsification process based on 'modus tollens', depends on the logic

of a universal theory being falsified, by a particular basic statement, which contradicts predictions logically deduced from the theory. These basic statements are justified conventionally by 'inter-subjective agreement' among scientists, who are motivated by their subjective observations and essentialist convictions. All perception is a process of making sense out of chaotic messages, based on a process of decoding reality.

Theories can only be considered as theories about a reality in relation to a notion of the truth of reality. Logically, one cannot speak about error and criticism unless one can speak of truth. It is possible to understand the concept of truth, in spite of the fact that no criterion of truth can be known. Theories can be considered as having verisimilitude or approximation to the truth, when the falsity content of a theory, measured by its status in regard to the falsifiable process, is considered in conjunction with the truth content, or the logical explanatory power of a theory. Even though man must be regulated by a search for truth it is man himself that imposes all meaning upon the chaotic data of reality.

In order for Popper to consider himself a realist, it is necessary for him to explain how knowledge can embody cognition of a real world, rather than merely knowledge of a functional, conventional system. However, because he has rejected any kind of certain true or essential knowledge of reality, he must explain how his sceptical, fallible knowledge is still knowledge of some reality, which can be measured in terms of a hierarchy of better and better theories.

Popper explains the 'objectivity' of his knowledge in terms of the linguistically expressed content of what he calls World Three, a reality, which includes the content of all meaningful realities, including potential meaning. Yet, all actual World Three content is created by World Two minds, which develops because of World Three, and mediates between World One and World Three. This knowledge, he roots in an evolutionary ontology, which is ultimately explicable in terms of innate pre-dispositions and genetically founded problem-solving ability. All knowledge is indirectly a product of revising or falsifying previous knowledge, which on the conscious level, begins with meaning

imposed on reality in order to explain it. This imposed meaning includes scientific theories chosen for their interest and explanatory power with regard to problems.

Popper's own problems, of course, begin with his attempt to find a sceptical explanation of knowledge, which is neither a complete relativism or a conventionalism. Kelly states the problems of this Popperian balancing act in this way:

The chasm between his hope in truth and his sceptical epistemology, seems as vast as the chasm between his claims for realism and his seeming idealism, or between his nominal Platonism and his seeming Aristotelianism. At any rate, the worlds of actuality, existence, and possibility seem as they now stand, to be inadequate.¹

The Aristotelianism, which Kelly mentions, refers to Popper's growing dependance on the ontological reality of World Three teleological operations of organs and organisms, including man. Most of this teleological problem-solving operation is unconsciously based,

1. Derek A. Kelly, "Popper's Ontology: An Exposition and Critique", Southern Journal of Philosophy, No. 13, Spring, 1975, p. 81.

including the pre-dispositions involved in decoding, chaotic perceptual messages. It also refers to Popper's growing acceptance of the reality of the potential, intelligible world, which provides the foundation for the autonomy of World Three reality.

Outline

1. All acquired knowledge is ultimately rooted in inherited or innate knowledge.
2. This inherited or innate knowledge is mainly unconscious; yet it operates on a trial and error problem solving basis because of genetic pre-dispositions for survival.
3. All meaning, value and social significance, as well as the rational approach itself depends on the ethical choice of human decision.
4. All meaning is bestowed on the phenomena of reality as well as on history and social institutions as a result of man's theories, values and hypotheses.
5. Both pre-scientific and scientific conscious knowledge is dependent on knowledge being expressed in language.
6. This World Three knowledge is created by human minds (World Two) and develops by interaction with them.
7. World Three knowledge possesses a potential basis of intelligible reality, which is greater than actually created World Three. This is the basis for its autonomy.
8. The basis for rationality and the foundation for any growth is a critical problem solving approach.

9. Knowledge is scientific and empirical when it is 'falsifiable' by basic observation statements.
10. Scientific theories and hypotheses may originate in myth, tradition or metaphysics.
11. The origins of scientific theories and hypotheses are irrelevant to their empirical justification.
12. The scientific method operates deductively based on the falsification of universals by singulars (modus tollens).
13. The growth of scientific knowledge or scientific corroboration depends on relevance, logical consistency and the severity of falsifying tests.
14. Theories that are better corroborated and whose truth content is greater than its falsity content have a greater verisimilitude.
15. Any observation is always indirect, since it can have decoded meaning only by and through pre-existing knowledge and expectations.
16. The teleological problem-solving operation of organs and organisms, is based on unconscious pre-dispositions, but the process reaches consciousness in human critical rationality.
17. Observation can inspire problems, and expressed as basic statements can falsify a theory or hypotheses.
18. Basic statements can be justified only by

the inter-subjective agreement of scientists who are motivated by their experiential convictions.

19. All knowledge is fallible, including observational basic statements.
20. Propositions can be falsified only by other propositions. Only statements can justify statements.

Part Three

Criticism of Popper's Realism: A Conclusion

Chapter Seven - The Impossibility of a Popperian
Realism: Popper's Quasi-Empiricism

Chapter Eight - The Irrationality of Popper's Anti-
Essentialism

Chapter Seven

The Impossibility of a Popperian Realism:

Popper's Quasi-Empiricism

1. Facts, Observation and Basic Statements:

The Crisis of Popperian Empiricism

a) The Crisis

From the time of his first publications, Popper was concerned to develop the logical and empirical elements in a deductive approach that would demarcate science from pseudo-science and metaphysics.¹ In The Logic of Scientific Discovery there is a great deal of emphasis on the theoretical and logical elements necessary to by-pass induction, so that there can be a concentration on the universalized, hypothetical propositions which alone can provide a scientific starting point. However, it is evident that Popper's application of 'modus tollens' demands the use of "basic statements" which are somehow dependant on observation. At the same time, he rejects the notion that science can be verified by sense experience, because he believes that such experience stands or falls with

1. LSD, p. 93.

the problems of inductive logic.¹

In The Logic of Scientific Discovery and throughout the Conjectures and Refutations, Popper explains that the process of falsification involves going to the facts of observation and experimentation. Even though he clearly states that "statements can be logically justified only by statements" and though he categorically rejects inductive knowledge as justified by any observation, the first impression one gets on a casual reading is that Popper is simply defending a negative approach to truth and disproof in science.² In Popper's words, "....e.g. in a negative sense it must be possible for an empirical scientific system to be refuted by experience."³

However, it becomes evident from further reading, as well as from a consideration of the distinctions which Popper makes with regard to his system, that it simply is not the case that his scientific methodology is merely a negative approach to scientific validity. Directly following a statement concerning observation, Popper

1. LSD, p. 93.

2. Ibid., p. 43.

3. Ibid., p. 41.

attempts to refute the charge of lapsing back into psychologism by stating that, even though "observable event" can be interpreted in a psychologistic sense, the sense in which he is using it could mean its replacement by a phrase like "an event involving position and movement of macroscopic physical bodies."¹

Because of such explanations, one gets the impression that the question of observation is being treated as a strictly logical, as well as a conventional requirement, especially since Popper has already derived the infinite class of basic statements by means of an appeal to their logical impure form and made observation dependant on the decisions of intersubjective agreement.

With regard to the logically derived infinite class of basic statements, Popper declares that "the system of all basic statements will contain many statements which are mutually incompatible".² Yet it is the scientific community that must come to an agreement concerning the specific falsifiers which may corroborate or falsify a given hypothesis. All of this logical analysis and subjective

1. Ibid., p. 103.

2. Ibid., p. 84.

agreement looks even more arbitrary, more ad hoc and less empirical when we note that Popper considers science to be a system of chosen hypotheses restricted by a scheme of conventional rules, which are also chosen. It is not a system of concepts derived from reality, nor is it a system of verified statements which can be justified by anything except other statements.¹

Or we may lay it down that every basic statement must either be itself a statement about relative positions of physical bodies or that it must be equivalent to some basic statement of this 'mechanistic' or 'materialistic' kind.

.....

I have no intention of defining the term, 'observable' or 'observable event', though I am quite ready to elucidate it by means of either psychologicistic or mechanistic examples. I think that it should be introduced as an undefined term which becomes sufficiently precise in use: as a primitive concept whose use the epistemologist has to learn, much as he has to learn the use of the term 'symbol', or as the physicist has to learn the use of the term 'mass-point'.²

1. Ibid., p. 75, p. 43.

2. Ibid., p. 103.

Popper realizes though, that since even the most basic observation statements use 'universal names', that these observation statements go beyond the bounds of perceptual, psychologicistic, personal sense experience. In Popper's example "Here is a glass of water", he indicates that the words 'glass' and 'water' are in fact universal terms, which, of course, he explains as "physical bodies" which exhibit certain law-like behaviour".¹ These universal terms have nothing in common with personalized, perceptual experience, which, for Popper, can only be an indirect decoding and interpretation of phenomena. In rejecting an Aristotelian universalized intellectual grasp of the intelligible relationships, substances and qualities of reality Popper is rejecting any knowledge of the essential aspects of an extramental world, which can be understood as well as experienced.

Throughout The Logic of Scientific Discovery, Popper is concerned to discover the logical form for the existential basic statements, which can be used in 'modus tollens' to falsify theories and hypotheses, as well as to indicate the nature of falsifiable theories. This form also specifies what can be empirical and scientific.²

1. Ibid., p. 95, See complete-quote pp.316-317.

2. Ibid., pp. 100-101.

He also declares categorically that "basic statements are accepted as the result of a decision or agreement; and to that extent are conventions."¹ In line with conventionalist practice, he reduces scientific procedure to a set of methodological rules, but attempts to offset this fact by restricting the conventions based on decision to the basic statements themselves not the universalized theories or hypotheses. Convention does not apply to the choice or acceptance of universal theories or hypotheses because they are chosen for their problem-solving capacity, their relevance and their interest.²

From a logical point of view, the testing of a theory depends upon basic statements whose acceptance or rejection, in its turn, depends upon our decisions. Thus, it is decisions which settle the fate of theories. To this extent my answer to the question, 'how do we select a theory?' resembles that given by the conventionalists; and like him I saw that this choice is in part determined by considerations of utility, but in spite of this, there is a vast difference between my views and his, for I hold that what characterizes the empirical

1: Ibid., p. 106.

2. See quotation p. 133 for conventionalism in Popper's system.

method is just this: that the convention or decision does not immediately determine our acceptance of universal statements but that, on the contrary, it enters into our acceptance of the singular statements--that is, the basic statements.¹

Of course, this means that propositions reflecting a perceptual judgment must be chosen as a result of conventional agreement founded upon the motivation of World Two experience, based on observation, while universal propositions must be ultimately justified by 'a priori' innatism and evolutionary linguistic and non-linguistic organic development. While conventionalists are concerned with simplicity, Popper maintains that he is concerned with the severity of tests and test results, which are ultimately equated with "an agreement about basic statements", for he has maintained from the beginning that all scientific propositions including basic statements must be falsifiable.²

In spite of all this, when one begins to read through the Conjectures and Refutations, it is

1. Ibid., pp. 108-109.

2. Ibid.

difficult, at first, to believe that Popper's falsifiability is not just an indirect or negative approach to scientific methodology, especially when he uses terms like "object", "observation", "experimentation" and "existential statement" throughout the text. He also makes the point that problems or conjectures may come about as the result of a single observation.¹ If you add to this the fact that Popper talks of scientific growth being dependant on its empirical element; that tests are observational; that truth is correspondance with the facts and that he is a realist searching for objective knowledge, then the illusion is complete and the confusion is compounded.²

However, even though Popper insists on science being in some way empirical in order to avoid complete conventionalism, it becomes more and more evident when reading the Conjectures and Refutations, especially when one comes to the section on "Truth, Rationality and the Growth of Knowledge" that Popper is concerned mainly with the logical, theoretical world of hypotheses which is not justified by observation. One

1. CR, p. 53, p. 128.

2. Ibid., p. 223.

gradually begins to realize that his system is not just a falsifiable, negative approach to science but rests on a fundamentally different epistemology based on a rationalist Kantian model. At the same time he is maintaining a position that separate items of knowledge are reduced to doxa or opinion expressed as nominalistic verbal symbols which are uncertain, imprecise and dispositional in nature.

In this article, Popper maintains that "continued growth is essential to the rational and empirical character of scientific knowledge".¹ Even before a theory is tested, Popper believes that we know by meta-scientific knowledge what a good scientific theory would be like.²

It characterizes as preferable the theory which tells us more; that is to say, the theory which contains the greater amount of empirical information or content; which is logically stronger; which has the greater explanatory and predictive power; and which can therefore be more severely tested by comparing predicted facts with observations.³

1. Ibid., p. 215.

2. Ibid., p. 217.

3. Ibid.

Popper then admits that the rationality of science lies in the "rational choice of the new theory", not in its deductive developments. He also maintains that it is his "criterion of progress" which saves his position from "admittedly some minor conventional and arbitrary aspects."¹

Popper wishes to stress the fact that science starts with problems, because, it is only through problems that we become conscious of holding a theory.² These problems may arise "when we are disappointed in our expectations, or when our theories involve us in difficulties or in contradictions: these may arise either within a theory, or between two different theories, or as a result of a clash between our theories and our observations".³

As previously noted, Juffras maintains that Popper is a rationalist, who by slight of hand has managed to pass himself off as an empiricist. Popper's views, Juffras maintains, "are not a variant of empiricism,

1. Ibid., p. 219.

2. Ibid., p. 222.

3. Ibid.

as they seem to suggest.....but their seeming to be empirical shields them from the critical eyes of empiricists, who might want to scrutinize such rationalist attitudes in Popper's philosophy. To evade such criticism would in Popper's terms be irrational".¹

Juffras does not seem to realize that, in fact, there is a strange admixture of rationalism and empiricism in Popper, nor does he realize that Popper's basic position is that of an inconsistent empiricist, who is also, at the same time, an 'a priori' innatist. On the other hand, Hooker makes the point that "for many it may come as something of a shock to see Popper's views classed as a variant of empiricism".² Hooker concludes his study by maintaining "that Popper must hold almost the entire meta-philosophy in common with empiricism and much of the philosophy besides."³

Juffras does point out Popper's concern for logical validity and he stresses the problematic nature

1. Juffras, op.cit., p. 102.

2. Hooker, op.cit., p. 194.

3. Ibid.

of Popper's falsifiability:

With the help of other statements (previously accepted) a "guess" or "theory" implies certain observable consequences. The relation between a hypothesis and observable consequences is statable as a conditional statement. Since Popper believes that to test a hypothesis is to try and refute it, continuous empirical testing locates false consequents of conditional statements. Thus, errors are to be eliminated by argument (modus tollens), essentially a rationalist procedure with demonstrative force. Thus testing the validity of an assertion is a search for a logically integrated system of knowledge.¹

Popper defines the "logical content" of a theory 'a' as "the class of all statements which follow logically from a", while he defines the "empirical content"...as the class of all basic statements which contradict a".² Of the three requirements that Popper lists for the growth of science two are logical, formal requirements, that can be derived by logical analysis alone. The first refers to

1. Juffras, op.cit., p. 99.

2. CR, p. 232.

a choice of theories that can explain or unify certain facts in a meaningful way, while the second states that the new theory should be independently testable, with new testable consequences involving predictions of new phenomena not so far observed.¹ These two requirements are indispensable with regard to any choice of theories at all. The third requirement, which alone is empirical, requires that a theory should actually pass some new and severe tests. Popper admits that this is fulfilled as a "material requirement - a requirement of empirical success."² What might seem strange to those who think of Popper as an empiricist is the explicit admission that this empirical requirement is not indispensable in the same sense as are the two logical requirements.³

It is very evident that Popper's major concern is for the logical, theoretical content of theories, for it must be remembered, that theories are chosen for their explanatory power in relation to certain problems in the first place and that even false theories

1. Ibid., p. 240.

2. Ibid., p. 242.

3. Ibid.

can suggest valuable problems, consequences and predictions. Popper's major orientation is also evident, when, after a historical analysis of the value of refuted theories he declares "that our third requirement is not indispensable: even a theory which fails to meet it can make an important contribution to science."¹ Yet he notes:

.....I contend that further progress in science would become impossible if we did not reasonably often manage to meet the third requirement; thus, if the progress of science is to continue, and its rationality not to decline, we need not only successful refutations, but also positive successes. We must, that is, manage reasonably often to produce theories that entail new predictions, especially predictions of new effects, new testable consequences suggested by the new theory and never thought of before.²

At this point, it is worthwhile to examine the views of a number of critics and disciples, regarding this most fundamental, foundational problem in Popper's philosophy, for it is evident, that

1. Ibid., p. 243.

2. Ibid.

his system of statements justifying statements; his concept of words as being theories with regard to their meaning; his reduction of perceptual knowledge to World Two elements, resulting from indirect decoding procedures; and his Kantian imposition of all meaning upon a chaotic mass of phenomena; cannot support the realistic kind of observation that the empirical dimensions of his falsifiable system demands. The reference in the above quotation to positive successes would seem to assume, at the very least, the necessity of some inductive verification.

b) Reaction and Criticism

Ernest Gellner concludes his examination of Popper by exclaiming:

Popper is wrong in repudiating or disassociating himself from the empiricist metaphysic and, from positivism, for his vision presupposes that picture, or something very much like it. He is mistaken in supposing that the 'critical attitude' can be self-sufficient and formulated without presupposing something like those rejected elements. The rejection of 'induction' is also misguided.

.....

The idea of criticism, without the empiricist metaphysic, cannot really characterize or define this difference.¹

A number of other critics have aimed their attack on the vulnerability of Popper's falsification theory. Like Gellner, these writers see no rationality in the claim that even though we have no valid experiential knowledge, we can, however, falsify theories by means of basic, observation statements.

Ruth Heizer maintains that Popper cannot falsify without maintaining the validity of induction in order to ground the validity of basic statements. She notes that what Popper does is to shift the problem of induction from the level of theory to the level of basic statements. Popper's position cannot support any appeal to facts.² His acceptance of basic statements as falsifiers reduces to the dogmatic horn of Fries' trilemma. On this point even Popper has to admit in reply to Agassi's criticism of the empirical requirements: "I

1. Ernest Gellner, Legitimation of Belief, p. 175.

2. Heizer, p. 96.

admit that there may be a whiff of verificationism here".¹

Yet, he stresses that this is better than a "whiff of instrumentalism."²

Gail Wintersteiner distinguishes between Popper 1, who concentrates on falsificationism, and Popper 2, who is concerned with corroboration, progress and verisimilitude. After noting the problem, she discusses Popper's attempts to justify inter-subjective agreement by his admission that where we stop, in order to choose a basic statement may be dogmatic, but this is because we must make a decision as to the point, where we believe a theory has been satisfactorily tested.³ If we failed to reach agreement on basic statements, she notes, this could amount to a failure of language as universal communication.⁴

Lillian Vogt placed the problem in the context of the contradiction involved in Popper's attempts to derive universal, ampliative laws from a deductive system, when all deduction is clearly non-ampliative,

1. CR, p. 248 note 31.

2. Ibid.

3. Wintersteiner, p. 16.

4. Ibid.

since no conclusion can go beyond the content of the premises. She discusses Popper's view, that all observation and language is theory impregnated, yet it is causally based on our experiences.¹ Basic statements for Popper, she believes, refer to physical objects as facts but do not describe them. Unless there is some agreement that 'the cat is on the mat' then there can be no fact.² In this way, Vogt adds another dimension to Popper's stress on language. Not only does Popper seem to equate language and thought but, for Vogt, he also equates language and fact. The basic linguistic statement describes a fact only if there is intersubjective agreement. Of course, this makes decision and choice more basic even than language. The area of conjecture then must extend from the level of theory to the realm of fact, since facts can only be interpreted in the light of theories.³

What then is a 'fact' in the Popperian system? With regard to Popper's analogy of objective knowledge being like honey produced by the bees, Vogt observes,

1. Vogt, p. 61; CR. p. 387.

2. Vogt, p. 63.

3. Ibid., p. 140.

that honey is nectar "altered" by the bees. Vogt believes that "the major lacuna in the Popperian system is the way in which the facts with which reality clashes are 'known'."¹ Vogt sees that Popper's only solution is to rest his case for facts on the inter-translatable-ability of language resting on a conventionalist foundation. If something is not translatable it deals with different facts or is irrational.²

Caught in tension between his realization that facts are the product of man-made theories and his belief in "real facts" he both wishes theories to be fact correcting and wishes facts to test theories. There is no basis in Popper for resolving this tension.³

Of course, this is the tension created by Popper's attempts to derive a via media between science as 'essential' knowledge and science as a strictly instrumental-conventional paradigm. It is also the tension between Popper the empiricist and Popper the Kantian rationalist; between Popper the philosopher of empirical science and

1. Ibid., OK, p. 286.

2. Ibid., p. 140.

3. Ibid., p. 164.

Popper the pluralistic and evolutionary indeterminist (and anti-materialist); and even more basically between the Popper who considers science as the epitome of rationality and Popper the philosopher and metaphysician.

Vogt makes the point that Popper, contrary to past philosophy, attempts to objectify knowledge by considering it an "exosomatic artifact" but because he lacks a solid basis, "his move makes it more subjective".¹ Vogt implies that Popper's system reduces to conventionality providing yet another attempt at "saving the phenomena".² Like Heizer, Vogt believes that Popper's falsifiability involves the adoption of "a principle of induction (under a different name)."³

Johansson, in the chapter "Acceptance Rules for Basic Statements", first considers the question of "reproducible effect" noting that "Popper considers "reproducible effect" and a low-level empirical hypothesis to be on a par, but he sometimes also writes as if low-level empirical hypotheses are purely universal

1. Ibid., p. 164.

2. Ibid., pp. 165-167.

3. Ibid., p. 167.

statements, i.e. laws or theories."¹ Popper, as we have noted, is aware of the gap. He is also aware of the difference between the level of universality involved in a basic statement as compared with scientific theory, for he has often stated that scientists should be concerned with deriving greater and greater levels of universality for their theories.

However, the problem still remains. If Popper is concerned to consider all experience as absolute and completely 'subjective', while on the other hand, he considers all statements and propositions to be objective and fallible, how will he be able to rest his critical rational view of science upon a process of falsifiability? If "statements can be logically justified only by statements", and if epistemology is identified as the study of logical connections, then it would follow that Popper cannot avoid conventionalism. He, in fact, has no more basis for a falsification that can be labeled objective in a realistic sense than have instrumentalists like Duhem, Kuhn or Feyerabend.

This confusion is interesting
because Feyerabend and Lakatos

1. Johansson, op.cit., p. 69.

state, in polemic with Popper, that one should not reject a theory before one has got another one. And if Popper not only demands reproducible effects, but also a falsifying hypothesis which is a universal statement, then he demands another theory, even if merely a low-level one.¹

Johansson also quotes Agassi in this regard:

Yet as the rejection of a hypothesis is based on the acceptance of an observation report and the acceptance of the observation report is based on the hypothesis that it is repeatable, it follows that we reject a hypothesis not on the basis of solid facts but on the basis of another hypothesis.²

Johansson notes that Popper cannot really assign any special importance to observation since he assigns no methodological rule to observability only to "the general requirement that basic statements should be observable".³ Popper admits the causal action of World Two creativity in the production of World Three content but objectivity is achieved not because of observation

1. Johansson, p. 69.

2. Ibid.

3. Ibid., p. 70.

but when language gives the content an 'objective',
exosomatic existence.

Johansson attempts to use the Popper-Tarski argument of truth correspondance as a way to demonstrate that basic statements can be supported by experience as when a language can express aspects of both basic statements and experience. "And such a language exists", he states, "for one can write: 'snow is white' is supported by my observation that snow is white."¹ But Johansson is mainly concerned with methodological questions. He never refers to Popper's anti-essentialism, or his epistemology, nor does he take into account that Tarski's approach is a logical, semantical justification of the concept of truth, not an epistemological explanation of how truth is measured or validated. Popper accepts it as a regulative principle, but the belief in truth was implicit in Popper even before he read Tarski.² Johansson attempts to use this linguistic "proof" as providing a necessary and sufficient connection between basic statements and experience without even explaining how the universal elements in propositions can be equated

1. Ibid, p. 71.

2. See Chapter Five, Section 3.

with personal experience. Popper may not have the solution but he certainly identifies the problem of induction in the context of an empiricism rooted in Locke and Hume and further reinforced by Kant. Johansson concludes with the remark that "Popper never says how singular statements are established because Popper is very unclear as to the role of experience."¹

Victor Kraft, in his article, agrees that both Popper and the members of the Vienna Circle are empiricists.² Yet, Kraft makes an illuminating judgment when he asserts that the empirical element in Popper fades into the background because of Popper's concern to demonstrate the rationality of knowledge.³ Kraft might also have added that Popper's concern to interpret present knowledge as a critical process of handling prior knowledge, which is ultimately genetically innate; his concern for genetically coded, unconscious, organic, problem solving; his pluralism, indeterminism and anti-materialism and his stress on

1. Johansson, p. 73.

2. Victor Kraft, "Popper and the Vienna Circle" in PKP; p. 188.

3. Ibid.

the cultural force of World Three, places him even further beyond the realm of the empirical. Dealing directly with the problem, Kraft observes that "Popper too requires 'observability' of the facts which form the contents of basic sentences."¹ Since observability is not supposed to mean something psychological, "perceptions may be psychological but 'observability' is not."² Any clarification of the term is left undone because Popper introduces it as a basic indefinable concept which is supposed to be made sufficiently precise by linguistic use.³

Kraft also notes that the 'observability' of basic statements, which we know rests on intersubjective-testing, must, in the Popperian system, be about physical objects (World One). Both Popper and the positivists have agreed that corroboration cannot be achieved with regard to statements concerning psychical data or personal experience "because they are inaccessible to other persons and...only statements concerning bodily processes are

1. Ibid., p. 195.

2. Ibid.

3. Ibid.

intersubjectively confirmable."¹ Moreover, Kraft notes, that in spite of this, Popper rejected the idea of excluding statements about mental states from science and fought against the reduction of science to physicalist language at the Congress of Copenhagen in 1936.² Kraft, quoting Popper, clarifies the problem of basic statements in the following section:

For Popper it was a necessary consequence that the basic sentences are only hypothetical, for they are statements about objective facts which always include theories. Therefore, they can only have a hypothetical validity. 'Any basic statement can again in its turn be subjected to tests using as a touchstone any of the basic statements which can be deduced from it' LSD p. 104 Sec. 29 and it can of course be rejected. Therefore, there are no statements about facts which are indubitably true. There is no such thing as final verification and therefore no absolute foundation for the knowledge of nature.³

And so we are back to the question whether a hypothetical, doubtful statement about facts can falsify anything,

1. Ibid., p. 194.

2. Ibid.

3. Ibid., p. 193.

remembering that, for Popper, it is the decision of scientists that must decide when testing should be terminated and when intersubjective agreement is reached.

Ackermann, along with many other authors of articles and theses, does not seem to see or merely ignores the basic problem. He criticizes the factual content of basic statements by asserting that "basic statements may sound like the simple observation statements of positivism, but basic statements can, for example, be about theoretical individuals as simple observation statements cannot."¹ Ackermann's reference to LSD pp. 100-101 do not seem to support this statement, for, the theoretical aspects of basic statements without the factual content could not really act as a falsifier in 'modus tollens' deduction.² Ackermann also states that "the class of basic statements appropriate to some area of science could be revised in the light of new apparatus or better theory - thus the Kantian interplay of theory and observation is preserved in Popper's handling of basic statements."³ This for Ackermann

1. Robert John Ackermann, The Philosophy of Karl Popper, p. 183 note 6.

2. Ibid.

3. Ibid., p. 19.

reduces to the fact that "Popper does allow an 'a posteriori' evaluation of theories" in his system.¹

Musgrave, who supports Popper's philosophy completely, explains the problem in this way:

Popper's empirical basis does not, then, consist of statements whose truth is established by experience. It consists rather of those easily testable experimental statements about whose truth or falsehood the community of scientists happen to agree at some time. A scientist may be caused to accept such a statement by his perceptual experiences. But, though experiences may motivate decisions, they cannot establish the truth of the accepted statements.²

Musgrave follows this statement with a reference from Popper to the effect that there can be no more justification based on experience than there is by thumping the table.³

Like Pierce, Popper makes an appeal to the acceptance of the scientific community for the ultimate meaning of basic statements but, unlike Pierce, he does not

1. Ibid., p. 20.

2. Alan Musgrave, "The Objectivism of Popper's Epistemology", in PKP, p. 568.

3. Ibid.

accept the commonsense theory of knowledge. Pierce also considers rationality in basic diagrammatic or relationship terms, while for Popper rationality involves problem solving based on criticism of previous knowledge.¹

Harris considers Popper's philosophy as a challenge to "hard line Empiricism" and "enumerative induction".² Moreover, he indicates his dissatisfaction on the same point when he exclaims, "But Sir Karl was still held by the spell of Empiricism sufficiently to seek a criterion of demarcation between science and metaphysics in empirical falsifiability which entangled him in some of the very difficulties which his reforms sought to remedy."³ What Harris calls the "king-pin" of Popper's system is the validity of *modus tollens*. This exposed the problem that "the single instance had to be intersubjectively observable and the falsifier in the last resort must be a 'basic statement'".⁴ Harris, like others mentioned, interprets the need for

1. Ibid., pp.1065-1066.

2. Errol E. Harris, "Epicyclic Popperism" British Journal of Philosophical Science, No. 23, Fall, 1972, p. 55.

3. Ibid., p. 55.

4. Ibid.

repeated observations¹ as a "surreptitious and veiled" readmission of induction resulting from Popper's failure to free himself from the "weakness of Empiricism".¹

At the end of an article entitled "Objectivity as Intersubjective Agreement", Eugene Freeman concludes with the following:

1. It is evident that intersubjective agreement does not per se furnish objectivity, in the classical realist sense in which objectivity is a guarantee of agreement with what is the case in the external world, since there are examples of paradoxical visual experiences which are objective and non-veridical
2. Nevertheless, agreement on the results of intersubjective testing is a sine qua non of objectivity, rather than, as Peirce and Popper have it, its essence.

The role of agreement in intersubjective testing....implies no more than 'not yet falsified'.²

One could conclude from this that if intersubjective agreement means no more than "not yet falsified", then modus tollens is unworkable and Popper's whole philosophy reverts to conventionalism.

1. Ibid., pp. 55-56.

2. Eugene Freeman, "Objectivity as Intersubjective Agreement", Monist, No. 57, April, 1973, pp.174-175.

In an excellent article entitled "Popper's Problem of an Empirical Basis", Max Deutscher effectively criticizes Popper's falsification system, which rejects repeated observations to establish low-level generalizations. In order to make falsifiability work, the truth value of the basic statements must be known even with regard to the negation of basic statements derived from the theory itself. In this regard, the point that was previously noted in this chapter is noted by Deutscher:

A casual reading of The Logic of Scientific Discovery can produce the impression that Popper simply holds the commonsense view that by observation we come to know the truth-value of those basic statements which we need in the testing of theories. Popper does not in fact hold this view. He leaves no logical room for the role played by observation in science.¹

Deutscher notes that "a theory is falsified only if we discover that it is false. It is not falsified merely if it is false. To say that no basic statement is verifiable is to say that no general statement is falsifiable."² Deutscher finds Popper's real position to be untenable

1. Max Deutscher, op.cit., p. 278.

2. Ibid.

because agreement about the falsity of a statement can in no way be equated with a refutation.¹ In other words, truth values cannot be assigned either to theories or to their potential falsifiers since Popper does not have a criterion to ascertain truth values.

It was previously noted that Popper accepts the notion of truth because without it neither error, nor falsification, nor criticism, have any meaning. Popper's scientific realism depends completely on this notion, because if there is no realistic truth or validity, Popper's attempt to avoid essentialism and conventionalism has been a failure.

It seems that Popper's notion of a severe test reduces to that of deducing the negation of basic statements from theories or from basic statements. We must send on its way any lingering idea that the reason why it is important to deduce such statements is that we can thus find out whether a theory is false. Popper does not explain why we should be more likely to know a basic statement rather than a theory was true. Popper has not merely failed to define "observable"; he dismisses completely the relevance of perceptual experience and puts nothing in its place.²

1. Ibid., pp. 280-281.

2. Ibid., p. 281.

Further in his article, Deutscher examines the reasons for Popper's position, as well as his own belief that Popper though rejecting a sense datum view of knowledge, is still, in fact, tied to it.¹ At this point Deutscher believes that it is clear that Popper has few options open to him. "If we hold that only a statement can justify our assent to statements, then we are driven to accept one of three untenable positions. Either we fall into scepticism, or we must embrace a coherence theory of truth, or we adopt some form of conventionalism."²

Professor Salmon made the criticism that either all steps in Popper's system are analytic with the result that there can be no synthetic scientific predictions or some steps must be synthetic and therefore ampliative and inductive.³ Popper answers the objection by first stating that the competing hypothesis h^2 "is as is generally admitted, synthetic."⁴ Presumably, this is because they are falsifiable, scientific hypotheses. Popper notes that non-tautological predictions are derived from h^2 rather

1. Ibid., pp. 286-287.

2. Ibid., p. 282.

3. In OK, p. 84.

4. Ibid.

than from the inequality between h^1 and h^2 at any given time.¹ The latter case, since the inequality is logical or analytically based on the theoretical decision, would prevent any new synthetic predictions. Popper believes that the preferential choice of h^2 over h^1 is answered by reference to dt which is the state of the discussion at any given time.² This state of the discussion is also synthetic.³ Popper explains further in terms of his anti-psychologism.

The motives which led to our choice of h^2 cannot alter the synthetic character of h^2 . The motives in contrast to ordinary psychological motives are rationally justifiable preferences. This is why logic and analytic propositions play a role in them. If you like, you can call the motives 'analytic'. But these analytic motives for choosing h^2 never make h^2 true, to say nothing of analytic; they are at best logically inconclusive reasons for conjecturing that it is the most truthlike of the hypotheses competing at the time t .⁴

1. Ibid.

2. Ibid.

3. Ibid.

4. Ibid.

Here, it is evident that Popper equates the "inconclusive" verisimilitude of one hypothesis over another as being based strictly on explanatory and logical considerations. Presumably, to achieve conclusive verisimilitude it would have to undergo severe tests to falsify it. But, Salmons' criticism implies that to be synthetic, a proposition must be based on facts, justified by observation and derived by inductive contact with reality, not just a proposition using factually based words. Popper's reply does not in any way solve the epistemological disagreement between them.

Popper, of course, is explicit about the conventional nature of the basic statement since he maintains that basic statements rather than theoretical /conjectures and hypotheses are strictly conventional.¹ He is also very explicit about the theoretical nature of all perception.² In regard to this problem Anthony O'Hear makes the following point:

but Popper seems far more concerned to emphasize the uncertainty of our basic statements and the gap between

1. See quotation on p. 133.

2. OK, pp. 71-72.

them and the motivating experiences than to provide an account of what their acceptability consists in or to explain in what sense (if any) they are better based than the propositions of the theories they are used to test.¹

O'Hear also rejects Popper's view that our observations are theoretical as well as the view that these perceptions are arrived at by a process of decoding.²

Of course, any explanation of perception that depends on the concept of a decoding process involves a philosopher in an infinite regress of decodings.

In regard to this question of observation and reality O'Hear concludes:

For Popper we can never at any level get out of our theoretical structures to attain reality itself. All we have are successions of frameworks. Theoryless reality is a myth. In this, as in his speaking of science as a game, he shares a point of view with the later Wittgenstein.³

1. Anthony O'Hear, op. cit., p. 75.

2. Ibid., p. 179; on decoding pp. 185-186.

3. Ibid., p. 206.

Because Popper rejects any kind of holistic, speculative knowledge as essentialism, how can he be justified in the acceptance of greater and greater levels of universality based on logical generality? Scientific cognition deals with factual, descriptive knowledge even when it is impregnated with theoretical expectations, which it must always be. How then can one distinguish the levels of basic statement from any other statement? Levels of universality, even in Popper's view, reflect a disposition to law-like behavior or regularity, which cannot, it seems, be reduced merely to description or doxa. On the one hand, Popper accepts all basic statements as theoretical, while, on the other hand, he reduces all knowledge to imprecise, nominalistic verbal elements. In the next chapter, the problem of Popper's subjective 'objectivity' will be examined in some detail.

2. Methodology and Contradiction in Popper's Sceptical Philosophy

Karl Popper believes that science is human knowledge "writ large" - a critical approach that achieves the high point of human rationality. One can never

escape from scepticism since all knowledge, including science, which is the greatest form of knowledge, is uncertain and fallible. He believes that complete proof can be offered only in logic and mathematics, which are analytical, whereas only science can be falsified and so conflict with reality. Yet, even with regard to his complete scepticism, Popper attempts to walk another fine line - the line between epistemological optimism and scepticism.

He attempts to escape from the self-defeating effects of total scepticism by means of Kantian-like decision, whereby he chooses critical rationalism over irrationality and by means of instrumental conventions. A number of other crucial aspects of his philosophy are also based on human decision, such as the criteria of a free and open society, the meaning of human history, human development and human institutions, the methodological rules of science and the acceptance of intuitions regarding the truth, and meaningful organization of the real world. Popper believes that all these decisions are, at least, partially successful, because of certain concrete, practical effects such as man's survival, and the success of applied science and technology, which

are the effects of World Three products on the cultural and technological development of man - the area where problem solving and critical rationality bring about progress and survival.

Despite Popper's scepticism, whenever he attempts to argue for his philosophical position, he uses arguments that seem to conflict with his view that all knowledge is only tentative and fallible. Throughout his work Popper utilizes scientific "facts" and beliefs as hard evidence to support his philosophical position, as well as to refute his opponents. To use such scientific data, which in the first analysis can only be justified in Popper's philosophy by personal decision or instrumental practicality, in order to prove one's own view of science, is a fallacy refuted by many philosophers, including Gilbert Ryle. It is the fallacy of disproving the validity of sense knowledge or perception by using arguments which must assume the validity of the senses. In Popper's case, the question can be asked, 'How is it possible to use scientific

1. OS II, p. 293, note 47.

data as if it were valid in order to prove the validity of a system of science, which indicates that all knowledge, including science, is tentative, indirectly known and fallible? By assuming that such scientific data are facts, when his epistemology really cannot permit it, Popper undermines all of the arguments where he uses such data. He uses facts to prove certain aspects of his position, while, at the same time, his philosophy tends to make the facts suspect.

In his earlier attack on Plato, Popper attempted to play the psychological game of attributing motives to Plato's position, even while he is ignoring both Plato's epistemology and ethics.

I think that we must face the fact that behind the sovereignty of the philosopher King stands the quest for power.¹

Popper also uses so-called anthropological evidence in his attack on Plato, when he attributes Plato's view of society to an unconscious desire to return to the lost innocence of a tribal closed society.²

1. OS I, p. 155, on this question see also Robert Jordan "The Revolt Against Philosophy: The Spell of Popper." in The Return to Reason, ed. John Wild.

2. Ibid., p. 181; pp. 170-173.

It is....the yearning for the lost unity and shelter of tribalism which expresses itself in these mystical elements within a fundamentally rational approach.¹

The above quote follows Popper's explanation of man being more than just a rational animal, which he believes accounts for the mystical dimension, even in rational undertakings like science. Yet, it is impossible to comprehend how Popper can have knowledge of 'unconscious' natures and 'mystical' tendencies, except through unfalsifiable and therefore unscientific World Three contents, which have affected his personal view. Given the fact that Popper's criterion of demarcation eliminates pseudo-science like psychoanalysis and Adlerian psychology, because they are based on induction, then his own use of any facts based on inductive knowledge or philosophical theory must be just as tentative.

In attempting to downgrade observation still more, Popper maintains:

....all these criteria are clearly spurious. The biologist will admit that our sense organs are successful more often than not, and he may even explain their efficiency by Darwinian arguments. But he will deny that they

1. OS II, p. 288.

are always or necessarily successful and that they can be relied on as a criteria of truth. Their 'directness' or 'immediacy' is only apparent: It is only another aspect of the miraculous smoothness and efficiency with which they work; yet in fact, they work in a highly indirect way using many intricate mechanisms of control built into the system.

Here the biologist, apparently without the aid of Popper's epistemology, has provided himself with very precise knowledge which enables him to prove that knowledge is both indirect and imprecise. It gives him accurate knowledge of the "intricate mechanisms of control" and the "miraculous smoothness and efficiency" of their operation. Judged by Popper's system, such biological statements, in order to be scientific, would have to be falsifiable, withstanding severe tests in the process, even to achieve a level of fallible knowledge possessing a high degree of verisimilitude. Yet, Popper uses such "scientific" knowledge to support his epistemology, and does not indicate the falsifiable status of these theories and hypotheses or their degree of corroboration.

In this regard, we must remember that Popper, in

his philosophy, has stressed the point that perceptual experience is unreliable and cannot be used as a source of verifiable knowledge.

As long as we are critically inclined, it does not matter much where or how we start. But starting from here (...Russell's naive realism) we come through physics and biology to the result that our observations are highly complex and not always reliable though astonishingly excellent decodings of the signals which reach us from the environment. They must therefore not be elevated to a starting point in the sense of a standard of truth.¹

By what knowledge does Popper know that our observations are "highly complex", that the decodings are "astonishingly excellent", that they reach us from our environment or, that they are not always reliable? If such data is imprecise, then Popper cannot use it as an argument; if it is precise, then why does he say that such information cannot be elevated to a starting point as a standard of truth? But, with regard to theoretical choice, Popper feels that he is on the safer ground of evolutionary survival.

1. Ibid., p. 72.

Starting from scientific realism it is fairly clear that if our actions and reactions were badly adjusted to our environment, we should not survive. Since 'belief' is closely connected with expectation and with readiness to act, we can say that many of our more practical beliefs are likely to be true as long as we survive. They become the more dogmatic part of common sense which though not by any means reliable, true or certain is always a good starting point.¹

This, however, is an unreliable argument, for we could perhaps survive with any number of competing epistemological beliefs. In fact, historically we have done so, especially with regard to the belief in the validity of induction, which Popper considers invalid; how then is it possible for survival to be a criterion of even possible truth? Here, of course, Popper is displaying the instrumental and practical aspects of his theory, for the truth he considers in this context is the pragmatic truth of function and workability. This view, however, even if true, would do nothing to bolster his own philosophical position, which is speculatively, rather than practically defended.

It is also difficult to understand how Popper

1. Ibid., p. 69.

can utilize the Darwinian theory of evolution in order to provide an ontological foundation for his world of theoretical knowledge, since he admits that it is an unscientific; 'metaphysical research project' used to suggest possible hypotheses in what amounts to a trial and error conventionally based philosophy.

Admittedly, Popper can acquire theories from any source, even from myth, but his whole system of implanted knowledge and organic trial and error problem solving is unscientific, both from an inductive and deductive point of view. Popper uses this evolutionary paradigm in order to provide a valid explanation for his Third World. But, he, in fact, protects it from criticism by labelling it unfalsifiable, i.e. metaphysical. To use metaphysics as a substitute for scientific explanation, would be in contradiction to Popper's system which makes science the only empirical kind of knowledge. As Popper has declared on many occasions, "in the case of any particular theory proposed, it is the wealth of its content, and thus its degree of testability, which decides its interest, and the results of actual tests which decide its fate."¹ Moreover, on the basis of

1. Ibid., p. 197.

his Darwinian vision Popper states that:

sense organs incorporate the equivalent of primitive and uncritically accepted theories, which are less widely tested than scientific theories. Moreover, there is no theory free language to describe the data, because myths (that is primitive theories) arise together with language.¹

If there is no theory free language to describe data, then for certain, there is no such thing as a scientific fact. Popper continues, in his own philosophy to describe a precise level of factual knowledge, which seems hardly tentative or fallible. He declares that "there are no living things, neither animals nor plants, without problems and their tentative solutions, which are equivalent to theories."²

It is clear from all this that the kind of universality which Popper defends as incompatible with induction has merely a logical, theoretical identity necessary for the expression of general, scientific theory. Popper has attempted to explain away any belief

1. Ibid., p. 146.

2. Ibid.

in an inductively derived universal as being based on the terminology of mysticism which "...have...been borrowed from the realm....of sexual love."¹ "Mysticism attempts to rationalize the irrational."² Here is Popper's empiricism, naked and simple. Even indirect decoded observation can only be considered in terms of what is particular and perceptual. There can be no intelligible basis for universals or relationships in reality. But when Popper is attempting to explain the coherence or organicity of a scientific theory, he remarks:

It is this latter ingredient which, although it is intuitively fairly clear, is not difficult to analyze, and which the essentialists were trying to describe when they spoke of essence in contra-distinction to a mere accumulation of accidental properties.... I do not think that we can do much more than to refer here to an intuitive idea, nor that we need do much more.³

How then can one distinguish between Popper's intuitional understanding of a concept like coherence,

1. OS II, p. 246.

2. Ibid.

3. OK. p. 197.

which cannot be reduced in a nominalistic fashion to a "mere accumulation of accidental properties", from the essentialist explanation that a concept is an intelligible whole meaning by which we can first understand, and later define, such a concept as coherence, - a process which Popper labels "mystical"? One could label any non empirical starting-point as "mystical", but then how does Popper justify going beyond empirical experience to the so-called intuitional level? This underlines the fact that the elements of knowledge in Popper's philosophy are still nominalistic and empirical, even though, by following Kant he has divorced himself from experience to the point, that he can concentrate on a logical level of theory and hypotheses rooted in an irrational choice. This attempt by Popper to combine these diverse elements forces him into the dilemma of a falsification theory where instrumental functional criteria provide more and more the basis for his choice of philosophical theory.

Popper, especially in his last two publications, makes great use of scientific data, which, within his system, it would be impossible to justify. We have already noted that the eye, and other organs, are problem solvers in the evolutionary process. We have also noted,

Popper's view that most of the knowledge acquired through the senses is unconscious.¹ If hypotheses are basically chosen on the theoretical level, in the first place, and if they reduce to doxa or opinion dependant ultimately on innate pre-dispositions, then it seems that it would not only be impossible to use scientific data as a basis for argument, but also one would have an unbridgable gulf between theory and factual observation, even if facts could be ascertained.

Another problem arising within Popper's system itself is the one raised by Hallen that Popper in fact departs from his scientific notion of the necessity for bold hypotheses when he develops a scientific methodology for the social sciences. When Popper applies his method to the social sciences, he advocates, along with methodological individualism, a piecemeal engineering, rather than sweeping utopian changes in society.² He also utilizes a situation logic with the expectation that the social scientist will be concerned with the concrete situation rather than "outside influences, such as psychological motives."³

1. SIB, pp. 121-122.

2. Hallen, pp. 120-124; also Chapter Two (2) in this thesis.

3. Ibid., p. 124.

Of course, as has just been demonstrated, Popper himself does not hesitate to appeal to psychology or the unconscious when he wishes to justify a point.

The contradiction in his social science view comes about because Popper wishes to protect society from sweeping changes, which could destroy the freedom, which he wishes for the open society. It is only by means of bold, interesting and relevant hypotheses and theories that science can have any real growth in Popper's system.¹ But, when it comes to the social sciences, he advocates caution and piecemeal engineering rather than bold changes, while still maintaining that social science should utilize only the proper falsifiable methodology, which avoids essentialist, historicist, influences.² Hallen elaborates on the difficulties involved in bringing about societal changes within the confines of Popper's system, since equality and freedom would be seriously threatened by the dominance of the social scientists, who alone have the "proper" answers and the "proper" ways to change

1. Ibid., p. 58.

2. POH, See Chapter Two in this thesis.

society.¹ Hallen also considers that Popper's view amounts to a quasi-inductivism.²

Popper, of course, could reply to Hallen that the decision to accept the open society, is just as basic and strong, as the decision to accept rationality as such. In this way, the choice of the open society would be beyond the falsification process itself.

By using Popper's own criteria it would be possible to label the view, that the source of rationality must rest on theory choice rather than induction, as being a kind of convention. Popper's ultimate justification for this search for general law or theory is that man has an inborn pre-disposition or need for a cognitional regularity expressed by the search for greater and greater universality in theories. As in Konrad Lorenz's theory of imprinting the process of theory formation involves a necessary dogmatic interpretation as the first stage, with criticism and development being the final or scientific stage. But, as has been indicated, Popper

1. Hallen, p. 134.

2. Ibid., p. 154.

just does not have the kind of epistemology available to explain the source of scientific theory as being dependant on realities like inborn needs and pre-dispositions.

The question of whether Popper really has any coherent explanation for universal knowledge, will be considered in the final chapter. Moreover, another even more basic source of contradiction, which involves the very nature of the philosophizing done by Popper in the context of his own system, will be dealt with in the next chapter.

Chapter Eight

The Irrationality of Popper's

Anti-Essentialism

1. The Demarcation of Philosophy, Science and Metaphysics: A Critique of Popper's Position

Since Popper does not give a systematic exposé of the nature of philosophy, it is difficult to understand exactly what might constitute his view of the boundaries and limits of a philosophical approach. Popper's main intellectual pre-occupation is to philosophize about the scientific enterprise, which is epitomized for him by the developments in modern physics. Because of this, we have noted Juffras' assertion that Popper's special concern for philosophy of science and his special terminology has screened his philosophy from other philosophers.

Karl Popper's philosophy of science has been the basis of a theory of rationality, the proponents of which have - strangely - ignored other theories of rationality. Popper's theory has been subject to what is mostly an intermural controversy by those who in general share his views. An example of such an intermural controversy is Esposito's essay in this issue. It cannot be understood by an audience which is familiar neither with the controversy nor with the special meanings given

to Popper's terms. Thus Popper's views have been screened from the general run of philosophers who may not be abreast of the issues in the philosophy of science....¹

However, it is not just the intermural aspects of philosophy of science which make it difficult to classify and understand Popper's position, but also his attempts to have the best of a number of worlds. The problem lies in his desire to integrate empirical and rationalist elements in a monumental attempt to avoid conventionalism while rejecting every kind of certitude or essentialism. His belief in an ordered commonsense world is his "metaphysical realism". Even though he is tied to the empirical tradition by his rejection of essentialism, by his nominalistic inexact meaning of words and by his concern for science and demarcation, in rejecting induction, he rejects the very basis of traditional empiricism or positivism.

By rejecting inductive knowledge, Popper is forced to embrace a Kantian 'a priori' view, which equates "objectivity" with the reality of verbal propositions as

1. Juffras, op.cit., p. 96.

linguistically expressed content. He even goes so far as to call himself a modified Cartesian, all the while admitting that he is closer to essentialism than to classical nominalism.¹ As Kelly maintains, such a mixture of contrary elements do not constitute a philosophy.² What then is Popper's view of his philosophy?

In articles entitled, "How I See Philosophy", and in the "Conversations....with Bryan Magee", Popper spends a great deal of time declaring what he believes philosophy is not.³ And what it is not for certain is any kind of language philosophy or "intellectual therapy".⁴ He declares, "To my mind Wittgenstein (in his later work) did not show the fly the way out of the bottle. Rather, I see in the fly, unable to escape from the bottle, a striking self-portrait of Wittgenstein."⁵

1. UQ, p. 21; OK, p. 195.

2. Kelly, op.cit., p. 81, quoted on p.178.

3. Karl Popper, "How I See Philosophy", The Owl of Minerva: Philosophers on Philosophy, Charles J. Bontempo and S. Jack Odell (editors).

4. Ibid., p. 47.

5. Ibid.

In his notes to the second volume of the Open Society, Popper makes a telling refutation of both positivism and Wittgensteinian analysis. In addition, Popper rejects philosophy that reduces to aesthetics, one that provides a basis for intellectual systems or one that expresses the spirit of the times.¹

From a more positive point of view, Popper considers a philosophical problem to be based on the starting point of "the dubious and often pernicious views of uncritical common sense."² In both uncritical commonsense philosophy and academic philosophy "problems of the theory of knowledge form the very heart of philosophy."³ For Popper, philosophers must be seekers after truth, not clever pedants:

I am all for intellectual boldness.
We cannot be intellectual cowards
and seekers for truth at the
same time. A seeker for truth has
to dare to be wise - he has to dare
to be a revolutionary in the field
of thought.⁴

1. Ibid.

2. Ibid., p. 48.

3. Ibid., p. 50.

4. Ibid., p. 46.

Popper spends a great deal of time in these articles apologizing for being a philosopher because of the many false theories which philosophers have proposed and because of the prejudices they have engendered, like the conspiracy theory or views that reduce to self interest or that make discussion impossible except between those who agree on fundamentals.¹ The rest of the time in these articles is spent explaining his own critical views of human knowledge.

There is nothing said about philosophical method, precisely because Popper rejects the view that philosophy possesses a method distinct from that of science. This is made very clear when in the 1958 Preface to The Logic of Scientific Discovery, he declares that "Philosophers are as free as others to use any method in searching for truth", because, "there is no method peculiar to philosophy."² He also states that "a philosopher may use any method as long as he has an interesting problem and sincerity."³ He believes then that there are philosophical problems which are nonfalsifiable, but not that there is a philosophical

1. Ibid., pp. 49-50.

2. LSD. Preface, p. 15.

3. Ibid., p. 16.

method. - But, what is even more important, he does not believe that philosophical approaches deal with a specific kind of problem or with general principles which answer specific kinds of questions. He maintains only that philosophical statements cannot be falsified as scientific propositions can.

Following from his statements about science being knowledge, "writ large", we find Popper maintaining that "as I see philosophy, it ought never to be, and indeed it never can be, divorced from science."¹ He further maintains that "it is the critical inquiry into the sciences, their findings and their methods which remain a characteristic of philosophical inquiry, even after the sciences have broken away from it."²

However, if science possesses falsifiable content, what does it mean to philosophize about the sciences? If philosophy is reduced to an 'a priori' logic in a Kantian frame of reference, then how can it have roots in commonsense belief, tradition or prejudice,

1. Karl Popper, "How I See Philosophy", p. 53.

2. Ibid.

as Popper maintains is possible, for all knowledge? And what status can such knowledge have ~~if~~, in the final analysis, it is strictly analytical? We know that Popper believes that all meaning and understanding are imposed on reality, even on observation. It is also evident that Popper accepts the Kantian division of knowledge into analytic and synthetic propositions. But, as previously noted, Popper rejects the Kantian notion of an 'a priori' essential necessity as well as any basis for synthetic 'a priori' propositions.

Popper still hopes to maintain some empirical basis for his synthetic basic statements. Without believing in this indirect contact with perceived reality, Popper cannot consider that his viewpoint has an empirical dimension, nor can he maintain his realism. This would undermine his deductive, falsification methodology, since there would be no basis for scientific growth and corroboration; his verisimilitude would lack a falsity content; and his World Three content would reduce merely to a subjective rationalist version of verbalized knowledge. Popper's World Three would indeed also lack the essential dimensions that give a rationalist version of knowledge, including that of

Kant, some categorical precision with regard to essential, qualitative, universal meaning.

Popper's nominalistic attack on precise meaning and truth is carried to the point where he states "precision and exactness are not intellectual values in themselves".¹ This hardly seems to fit his dimension of truth approximation, since verisimilitude is dependant on falsity content, which, in turn, is dependant on observational basic statements. If words have no precision, since Popper considers them merely theories or hypothetical approximation of meaning - a shorthand used to function in the derivation of scientific theories and hypotheses - then, how can there be enough precision in any theory to make predictions exact enough to be falsified? Moreover, how can observational knowledge, which is indirect and fallible, provide a precise basis to falsify any prediction? In any event, we must remember that 'intersubjective agreement' is merely a convention and as such is not truly perceptual at all. It provides merely the basis for motivation and for belief.

1. Ibid., p. 47.

Given these problems of Popperian science, as well as his view that philosophy is the handmaiden of science, what is the status of Popper's own philosophy? Surely Popper cannot maintain that his philosophical propositions, by which he is able to state exactly what science is or should be, can have a lesser status than fallible science. It does not seem that Popper treats his own philosophical view of science as falsifiable, nor does he attempt to falsify it, but makes every attempt to defend it as the valid position. This is most evident in the tone of some of his "Replies to His Critics" especially in his reply to Lakatos and Wild.¹

Just as the positivist 'Principle of Verification' contradicts the very purpose of logical positivism by introducing metaphysics, so too, Popper's philosophical proposition stating that all knowledge, including science, must be tentative, imprecise and doubtful, involves him in a version of the 'Liars' Paradox'. What he is implicitly saying is that it is true that all knowledge is tentative or fallible. Popper can no more correctly imply that this is a valid view, than

1. In PKP.

can the sceptic give valid reasons for his scepticism. What it amounts to is an underlying belief that some knowledge is more fallible than other knowledge, without being able to give any foundation for this belief.

The closest that Popper comes to specifying the nature of philosophical knowledge is in his reference to the 'metaphysical'. Popper admits that science rests on metaphysics with regard to the regularity of nature, the existence of causality, the regulative notion of absolute truth and the belief in a real, non-subjective world-his metaphysical realism.¹ He also identifies positions such as idealism, determinism, irrationalism, voluntarism and nihilism as metaphysical.² Yet, as previously noted, the most specific examples that Popper gives of what constitutes the metaphysical, is the example with regard to open ended pure existential statements such as 'a dragon exists somewhere'. This illustrates that Popper's definition of the metaphysical is that it is a non falsifiable proposition and therefore non-scientific.

1. LSD, pp. 247-248.

2. CR, pp. 194-195.

But, surely, there is more to the underlying metaphysical presuppositions of science, even if they are intuitionist, than a negative specification that they are not scientific. Leith makes the point that Popper has become increasingly aware of his own metaphysics and that this accounts for his upgrading of Darwinian evolution to the status of an ontology.¹

One does not then avoid metaphysics by applying the suggestions of the Popperian method. But one is likely to end up with an incoherent metaphysics, or a lack of awareness of the degree to which it pervades one's theorizing.... Indeed, Popper has become increasingly aware of the rationale of his own metaphysical ideas. This is apparent in his hints, now developed in his unpublished Postscript, of the possibility that events may be determined in themselves and his connected mention of propensities in things.²

Leith mentions in a footnote, that Popper has indicated to him in personal conversation that he (Popper) has an increasing awareness of the metaphysical underpinnings of his philosophy.³

1. Leith, p. 399.

2. Ibid.

3. Ibid., note 2.

Popper may realize the necessity of metaphysical belief in the development of any philosophy of science, but the status of this metaphysics seems to remain for him just a non-scientific form of knowledge, which would therefore be less rational than science. However, this would mean that his own philosophizing about science, which is clearly metaphysical and non-scientific, at least in Popper's definition, would have less validity and rationality than modern physics, which is Popper's paradigm example of science. Metaphysics for Popper, is part of the pre-scientific phase of human knowledge since it cannot be criticized, and therefore has no positive consequence for 'objective' scientific knowledge except as a possible source of scientific theory.

Popper tends to treat his own philosophy as an essential explanation, while maintaining that much of science is a convention ultimately justified by decision and function. This decision is based on the criteria that the most criticizable propositions are the most scientific and most rational, given their superior explanatory, problem-solving power. His distinctions, far from clarifying the demarcation between science and metaphysics, have compounded the problem.

But, even if this is so, Popper's insight is superior to those positivists, who maintained that they were able to completely by-pass metaphysics.

He does not seem, however, to realize that science cannot be self justifying unless it reduces to faith or the dogmatism of a completely conventional system. As John Kekes puts it:

The acceptance of scientific enquiry as a paradigm of rationality requires a demonstration of the assumptions upon which scientific enquiry rests. But such demonstration cannot come from within science, since it would already presuppose what requires to be proven, namely, the assumptions of science.¹

This question of Popper's use of philosophy to explain science will be carried over into the following sections where Popper's epistemology and its implications will be examined more explicitly.

2. Subjective and Objective Rationality: Epistemological Implications of Popper's Philosophy.

In Popper's model of knowledge, the logical

1. John Kekes, "Fallibilism and Rationality" American Philosophical Quarterly, Vol. 9, No. 4, Oct. 1972, p. 306.

form and the epistemological starting point for conscious knowledge is Kantian, while the material elements of meaning, language and the status of knowledge indicate an empirical epistemology. Even though Popper rejects materialism and, in fact, expands the immaterial objectivity of World Three meaning, we have noted that the elements of meaning, for him, are tentative, imprecise and descriptive, since these elements are but nominalistically expressed useful tools in the development of theoretical meaning. Although Popper's main influences are derived from Kant and the empirical tradition, he has radically revised both the rationalist and the empirical dimensions in order to fit his sceptical compromise. He revises empiricism by rejecting inductive knowledge and by rejecting accurate observational data, while he revises rationalism by rejecting the essentialism, necessity and precision inherent in the intellectual categories expressed by universal and abstract concepts.

Like Kant, Popper believes in a real world external to men's minds; he accepts knowledge as 'objective' even if it never attains the 'thing-in-itself'; and he makes decision more basic than rationality since

rationality is founded on it. But, unlike Kant, Popper treats universals as mere dispositions without content, leading ultimately to some sort of 'doxa' or opinion expressing theory, rather than a concept providing essential meaning.

Since Popper rejects the essential content of universals by which the various categories of qualities, forms and relations can be known of a real, extramental world, he cannot be dealing at all with an objective knowledge of reality. Knowledge is real and objective only inasmuch as such knowledge can be related to and derived from a world which is independent of its being known. Popper's 'objectivity' is the objectivity of symbolized meaning, which is subjectively cut-off from any thing-in-itself. The chosen theories and the discoverable, potential intelligibles, which are linguistically expressed, constitute the whole of reality and the objectivity of Popperian knowledge. The reduction of this dimension of meaning to verbalized, World Three, fallible products simply cannot provide Popper with an objective knowledge that is synonymous with 'knowledge of an independent reality'. Therefore his realism is just

a matter of faith and his science a form of conventionalism.

All World Three contents are created by World Two human minds. Yet, Popper insists that the problems existing in World Three could have been suggested by World Two understanding of World Three content. The tentative solutions to these problems results from the choice of theory and hypotheses guided by certain chosen conventional, methodological rules, which constitute what science should be. But, if it is demonstrated that Popper cannot philosophically maintain his falsification process then his World Three content is reduced to subjectivity and his explanation of science collapses into a dogmatic conventional system.

Hanna notes that Popper's theory of observation involves him in a vicious circle.¹ Popper attempts to escape from this circle by first claiming that the origins of knowledge do not justify it or make it rational. His statement about observation being justified by an earlier kind of hypotheses, etc., attempts to

1. Hanna, pp. 44-45.

base knowledge ultimately upon innate pre-dispositions and unconscious organic problem solving.¹ However, as indicated in the last chapter, there is no kind of cognition by which Popper can, given his position, derive such a proposition. Also, there is no such evidence, that organs utilize knowledge and purposive activity, in order to solve a problem or attain an end. With regard to these conflicts Hanna comments on Popper's dilemma:

He avers that 'even the simplest observation statement involves interpretation in the light of theories, and it is therefore uncertain'..... What kind of statement is this, then about observation statements? Is it not an observation statement itself, or more precisely and equally as fatal to his theory, is it not a generalization based on observation statements? If not, how does he arrive at it? Is he privy to esoteric knowledge, or is there some a priori source of knowledge to which he has access? If he knows this a priori, then there must be some reason why he is aware of it while many other philosophers are not.²

Kant had assumed that the mind is structured

1. See page 146.

2. Ibid., p. 44.

in such a way that it imposes certain essential categories of meaning upon phenomena. Popper, although he accepts the model of 'a priori' imposition of meaning, does not really defend this rationalist position at all. In fact, he rejects the implied essentialism and necessity which is used in rationalist positions. How his creation of meaning without essential precision can be explained in a system based on a belief in theory, which rejects induction but yet still makes room for a falsification process somehow dependent on observation, is not coherently explained by Popper. If all knowledge is to be treated sceptically and if Popper's basis for scientific growth is untenable, then all that remains is an arbitrary 'a priori' philosophical explanation of knowledge fueled by Popper's prejudices regarding science. Popper needs true, factual statements for his falsification process, on which everything else depends. All that he is left with is intersubjective agreement with the emphasis on the subjective.

This naturally leaves Popper without an empirical basis for science, without a principle of demarcation and without either a true-false category for verisimilitude or a category for corroborated scientific growth.

Moreover, what can be said of such World Three content as art, metaphysics, false propositions, doubtful beliefs, etc.? Popper considers all of this when verbalized to be 'objective' since they are linguistic products of minds. These World Three objects are objective to Popper because these objects represent a reality in themselves that can influence human progress. They influence progress because they can become cognitional objects for a community of minds and because they are supposedly removed from the subjective feelings and dispositions of the persons who created them. All of these objects, including all observation statements, have a logical, theoretical form. Each represents an interpretation based on previous theory, which depends on the evolutionary pattern of Popper's system.

Since Popper considers all the objects of World Three, including basic statements, as 'objective', based on a strictly a priori explanation, which reduces all knowledge to statements chosen in the light of previous statements, back to a starting point in innate knowledge, then why does he attempt to maintain the necessity for a realistic and empirically based science? The answer is, of course, that Popper refuses

to accept a conventionally based science. His critical rationalism depends upon a science that can be corroborated, that approaches truth and that can grow in the sense, that some scientific theories can be shown to be superior to others, in an indirect relationship with a reality he metaphysically accepts. The necessity for testing then, together with Popper's intuitional beliefs, constitutes the basis for his realism. It also represents his attempt to avoid complete relativism. Objectivity in this system is not then synonymous with this attempted realism but is justified only as 'a priori' actually known and knowable linguistic content. When we consider these points, we are able to consider Popper's 'objective' content as being strictly 'subjective' since it is strictly 'a priori' created. Moreover, it is impossible for him to justify the intelligible, immaterial aspects of a very precise World Three meaning while maintaining a view that restricts knowledge to its empirical elements. He must either restrict the nature and extent of the former or completely reject the latter. In other words he should admit that he has moved beyond the confines of what he called in the Open Society a "methodological nominalism". Yet, his

comments in his autobiography and his latest work with Sir John Eccles indicate that he has not yet really given up his previous position.¹

Popper is unjustified in attempting to place an iron curtain between the reality of World Two knowledge, which he restricts to its motivational and causal functions, and the World Three objects, which are the effects of these World Two minds. When certain propositions are discovered or when they are understood by an individual mind, all the intelligible meanings, as well as the possibility of its being true or false, will also be present to that mind, (Popper's 3,2). However, Popper believes that when knowledge is present to a mind, it is a strictly subjective disposition or personal quality of that mind with the result that World Three objects can have objective status only when they are linguistically expressed especially in written form. Because of this, these written theories, etc. can have objective meaning only when they have existence separate from the minds that created them. Any denial of this would force Popper to admit that World Three intelligibles are only actually existent and intelligible when they are

1. See quotation on pp. 336-337.

understood by minds.

This brings us to the problem of what existence World Three meanings actually possess other than as marks or symbols on a piece of paper and the even more difficult problem for Popper of the kind of ontological existence possessed by the potential intelligibles, which provided Popper with the arguments needed to prove the existence of this third category of reality. It is evident that World Three possibles, which are potentially intelligible to a mind, must have some ontological existence separate from World Two minds, since they are inherent in problems, etc. and are discovered at a given time and place.

If we return to Popper's empirical and nominalistic explanation of knowledge as dispositional, functional and descriptive, we are led to the view that if such knowledge were image-like, as in classical empiricism, then the designation that it must be personal and individual when possessed by a mind would make some logical sense. But, Popper rejects the traditional nominalism of the classical empiricists, which was based on association and induction. He substitutes for it, a description of knowledge as

being logical and general since it is expressed in theoretical propositions that are imposed on a reality. This knowledge is ultimately grounded on the evolutionary, innate, unconscious, problem solving of genetically controlled organs. It must also be kept in mind that Popper is more concerned with the process of knowing rather than any content, since rationality for him does not reside in knowledge content but in the critical process of problem solving. One of Popper's difficulties is that he must retain a nominalistic, imprecise view of knowledge content in order to avoid essentialism. He also needs some kind of empirical dimension in order to avoid conventionalism and, as we have noted, to provide a basis for his scientific realism. In addition, he needs the Kantian quasi-Platonic autonomous world of "objective" knowledge in order to provide some ontological reality for his theoretical knowledge, which goes beyond the conventions expressed by his scientific methodological rules and by the intersubjective agreement of the community of scientists.

Even if one could agree with Popper's anti-inductively based and anti-associational view of knowledge as doxa or opinion, he would be forced to note

that Popper has stretched any kind of empirical, nominalistic view of knowledge well beyond the breaking point, when, it is evident, that by some form of unexplained cognition the existence of potential, intelligible World Three contents can be known. Such a cognition by its very nature would have to be essentialistic, holistic and precise. The mathematical meanings which Popper uses as examples of World Three are in fact logical, abstract and precise. Popper even goes beyond this usage to accept a level of cognition which explains unconscious knowledge and the problem-solving, teleological movements of animal organs and organisms. Such knowledge would have to be intellectual, abstract and precise rather than empirical, descriptive and quantitative. If meanings were reduced to nominalistic linguistic descriptions or images, then Popper could not explain the autonomy of World Three contents over World One objects, unless somehow precise meaning was equated with the conventional symbols themselves. Popper's version of nominalism reduces to imprecise description with regard to words and propositions. Moreover, it shares with classical nominalism the denial of universal and essential knowledge, for words, according to Popper, are merely

functional "useful instruments of description" resulting in knowledge as opinion.¹

However, Popper's version of nominalism cannot explain the precision of meaning, the intelligibility and the universality of many World Three objects, any better than the image association theory could. Moreover, it is difficult to reconcile Popper's universal and general propositions, which have only a logical, 'a priori' existence, with his scientific method, which is restricted to individualistic, anti-holistic and anti-essential elements. The fact that Popper himself sees the problem in the context of deriving the universal general proposition from the particular by induction, in no way mitigates this confusion of two kinds of cognition. How can Popper's abstract mathematical sequences, with their abstract essential meanings, fit the imprecision and fallibility of his epistemological reductions to nominalist, factual explanation? How can an epistemology that denies the existence of concepts with precise content or meaning and which identifies rationality with a critical process, accept the meaningful contents of World Three as if they were objects in themselves? If

1: POH, p. 29; see complete quote in Appendix Two, p. 313.

Popper attempts to restrict World Three content to the logical, analytic domain then he would either be denying that World Three is scientific and empirical or he would be equating the scientific with the 'a priori' analytical. But this latter position would nullify even Popper's brand of empiricism, as well as contradicting his stated view that scientific problems and theories are the most important "objects" in World Three. Besides, any complete reduction to the logical analytical world would not seem compatible with Popper's stated pluralism.

Knowledge to be realistic and objective must at least involve an intentional relationship between the knower and the known, whereby they are somehow joined, while they still retain their separate identities. Popper's meanings do not fit this requirement. Nor is he entitled to equate organic finality with problem solving, which must involve cognition and conscious purpose. As Crittenden states, "why not say that the movement of tides, or the expansion and contraction of metals with changes of temperature, are trial and error processes?"¹ Here again Popper wants to have it both ways, with his belief in an organic, genetically

1. P.J. Crittenden, "Evolutionary Epistemology: A Question of Justification", Philosophical Studies (Ireland) No. 25, 1977, p. 236.

based problem solving, rooted in an evolutionary process, that only simulates purpose. Popper would have to seriously believe that the pre-dispositioned need for the regularity of a greater and greater universality of explanation, which motivates the process of theory choice in human critical rationalism, is in itself the non-purposive product of blind evolution, that just happens to make trial and error an adaptive survival operation.

Popper does not explain human knowledge in a systematic way by building up a step by step explanation of the cognitive levels from concepts, to judgment and reasoning. Rather, he tries to explain knowledge as the result of the development of the argumentative and critical dimensions of language. These dimensions of language resulted in,

critical knowledge, as opposed
to the uncritical and, as it were,
accidental adaptations of the
animal's 'knowledge'.¹

Since one is not permitted in Popper's anti-essential methodology to ask the question, 'What is Knowledge?',

1. CR, p. 383.

we are left with functional explanations, that never really explain what it is that functions. Moreover, although criticism is for Popper, a process which provides the basis for rationality, unless he can explain and justify the foundational elements of this critical activity, his rationality becomes a hollow shell. It reduces simply to arbitrary subjectivism, where one attempts to mould an idea of knowledge into whatever one wants it to be, irrespective of any claim to reality or objectivity. Actually, Popper attempts to devise an objective and real dimension in order to suit what he considers are the needs of science.

Popper does not provide any basis for his evolutionary ontology other than its functional use as a "metaphysical research programme". This is, of course, together with the rest of Popper's philosophy, unfalsifiable in itself. The World Three possibilities then, which are potentially intelligible, do not fit either his ontology, which is conventionally chosen, or his epistemology, which is strictly on the descriptive level of 'doxa'. All present, past and future World Three objects are produced by man and thus can only be 'a priori' products of minds. In addition,

since Popper cannot explain metaphysical knowledge (which would include ontology) except in negative terms, he has no frame of reference within which to explain such potential intelligibles.

Some philosophers believe that Popper re-introduces induction by accepting falsifying observations, but Popper cannot logically do this, because, as we have noted, there is no such thing as pure observation in his system i.e. basic statements are theories. He accepts that statements cannot be justified except by other statements. Popper must logically accept complete subjectivism and conventionalism. His attempts to justify science on his own terms are irrational because he has failed to provide reasons why one scientific theory should be accepted, rather than another. His last hold on science and experimentation, as well as his realism, is by means of the falsification process. If scientific prediction is not dependent on background knowledge, which is based on inductive observation, then how can the effects of experimentation be predicted, since environmental changes must be specified in terms of an observed reality, e.g. pressure on a mountain top or at sea level, etc. Moreover, where would the

branches of biology be without observable predictions?

In his use of the history of science, which Popper uses for justification, he hardly ever departs from the Newton to Einstein development of modern physics as his paradigm example for perfect science.

Popper's analogy of the searchlight for his position illuminates the fact that man invents and chooses new theories and hypotheses in order to solve important problems that are the prime sources of knowledge.¹ However, any hope that he has of attempting to call this process, empirical or realistic is doomed, because even his system of falsification is 'a priori'. Nor can it be called scientific realism, for Popper is left with only a conventional view of science. A rationality that is unconnected with reality and that does not reflect any meaningful, precise content of this reality is merely a subjective, logico-mathematical game. Maxwell concludes his analysis of Popper's view with a telling comment:

....he has failed to provide us
with any reason for holding that

1. OK, Appendix "The Bucket and the Searchlight", pp.350-361.

Popperian rules give us a better hope of realizing the aims of scientific inquiry than any other set of rules. Nor is it easy to see how this failure can be made good within a general Popperian framework. Consequently, Popper has failed to solve his fundamental problem - the problem of demarcation. He has also failed to exhibit science as a rational enterprise.¹

In other words, there is no way of testing a theory that makes rational sense at all, or that can result in labelling one theory as superior to another. Popper's reduction of the epistemological elements to 'doxa' or 'opinion' applies, in fact, to his total philosophy.

Popper has indeed rejected both Baconian and Aristotelian induction for a nominalistic view of meaning, which is 'a priori', hypothetical and conventional. As one Aristotelian notes:

The denial of universals carries with it the denial of everything transcending experience. The denial of everything transcending experience means inevitably - though ways are found to hedge on this - the denial of truth. With the

1. Nicholas Maxwell, "A Critique of Popper's Views on Scientific Method", Philosophy of Science, June 1972, p. 137.

denial of objective truth, there is no escape from the relativism of man, the measure of all things.¹

Popper not only denies this possibility of transcendence by universal knowledge of reality, but he also makes any knowledge of experience itself impossible. Popper arrives at many of his positions because he sees no alternative and because he has an inherent social and ethical bias against any kind of authority or certitude.² It is impossible for him to consider himself as even "a modified essentialist", since he cannot provide a rationally defensible basis for it. He insists on reducing essences to occult realities standing behind experience - a somehow ghostly level of appearances, where those who search for certitude seek an ultimate explanation, which can only terminate scientific inquiry. After noting this confusion regarding essences and universals, Hanna concludes:

If we can never apprehend anything but appearances, then 'reality'

1. Richard M. Weaver, Ideas Have Consequences, p. 4.

2. See Appendix II, Section 2; also comments in his autobiography.

forever eludes us, and without a cognitive grasp of reality, knowledge is impossible. How else is knowledge to be understood if it is not the cognition of particulars and universals, or essences (i.e. qualities, forms and relations).¹

Other justificationalists take the same stand that meaning depends on a grasp of reality conceptualized as universal and not on any nominalistic, particular, recognized similarity based on appearances.

Hence there can be no appeal to similarity as the source of the class concept. To recognize similarity, it is necessary to have recognized in the similar object a common note, which is the universal class concept. Nor can we accept the old materialist supposition that a class is a vague individual.... The class is the clearest thing we have. There is nothing vague about it.

.....

The direct universal is only the universal giving meaning to a concrete individual, for without the class reference, the concrete empirical is meaningless.²

1. Hanna, pp. 52-53.

2. Gustave Weigel and Arthur Madden, Knowledge, Its Values and Limits, p. 23.

If all defensible rationality is ultimately a matter of decision, then the content of all concepts and theories is arbitrary, unrealistic and hypothetical. Such meaning is subjective with regard to reality and instrumental with regard to function. To call theoretical elements 'objective' merely because they roughly fit Kantian formal requirements, and then to equate these objective contents with an extension of reality, which is as 'a priori' as the elements in any idealistic philosophy, is to underline the subjectivity of such elements. Hence Popper is in agreement with one central postulate of the idealistic tradition, namely, that appearance and reality differ. But he adds that only appearances can be known. We must be forever sceptical about reality. As a result, he also agrees that the theories we construct in an attempt to explain the world, are inventions of the mind.¹

Popper's concept of absolute truth as a necessary regulative concept, which provides a motivational aim for science, is based on nothing but a semantical formula, together with Popper's particular decision to accept it as metaphysically necessary, since he believes

1. Kelly, op. cit., p. 72.

in commonsense reality. His definition of truth as 'correspondance with the facts' may be correct in a realist context, but, as Popper uses it, it is just a device or a semantical convention, not a criterion of truth.

....this is a purely formal observation about the idea of truth. In order to give it content, specific claims must be advanced and allowed to stand in for the true and the real. Neither science nor common life can be conducted with abstract formulas.¹

Thus, Popper's intuition is not enough to reinforce the notion of truth, which he must at least presuppose in order to postulate a realistic science. Because of his anti-essentialism, Popper deliberately rejects any criterion of truth. Yet, how can he hope to substitute 'intersubjective agreement' and theory creation for truth and then still maintain that his philosophy is both objective and realistic, as well as completely fallible? Even Popper's theoretical world should be explained as nothing more than a logical and mathematical world of conventional creations.

1. David Bloor, "Popper's Mystification of Objective Knowledge", Science Studies, No. 4, 1974, p. 74.

Popper's anti-essentialism is understandable as a sentiment, but his case against the possibility of essential knowledge fails because of his confusion about what constitutes essential knowledge. This is epitomized by his inability to distinguish the diverse philosophical positions labeled essentialist. His rejection also fails because he is unable to account for certain aspects of his own epistemological position, which, in fact, requires an essentialist level of meaning. As Hanna explains it, "the only explanation of the limitedness of error.....is to be found in the fact that things have a determinate nature."¹ Such a nature can only be derived from a universal whose meaning reflects this nature. Popper's own arbitrary appeal to a "metaphysical" theory of evolution in order to justify his view of knowledge, cannot really be an epistemological explanation, since it does not explain the nature of knowledge. Popper's rejection of essentialism also fails because he has been unable to distinguish the nature and status of his own philosophical enterprise from that of science. Yet, because of his belief that he has clearly demonstrated a criterion of demarcation, Popper unwittingly attempts to provide a

1. Hanna, p. 41.

place for essentialism, since the concept needed to explain and justify demarcation, like other World Three meanings, would presuppose a very definite, holistic and non-nominalistic idea of knowledge, in order to capture the necessary meaning and precision to make such a concept of demarcation definite and meaningful.

It was indicated in the last chapter that Popper must accept his own philosophy as valid, because of the ad hoc conventions and the metaphysical dimensions he adopts in order to mould a complete system. His belief in his criterion of demarcation, which is philosophical, is certainly as strong, and as valid, as his belief in the content of modern physics, which his philosophy is calculated to support. It is inconceivable that Popper can consider his defense of the open society, his rejection of authority, his reduction of rationality to ethical decision - in fact, his whole philosophy of science as being less important, less valid or less objective than the data of modern physics. Yet, it is science that he explicitly attempts to glorify as being more objective and more rational than any other form of knowledge. There is an unreconcilable tension in Popper's philosophy between science and philosophy, between essential claims and conventional-instrumental

methodology and between his empirical and rationalist elements. Popper permits his realistic beliefs to influence aspects of his philosophy, which have no defense in his system.¹

3. Implications of Popper's Scepticism: The Reduction to Conventionalism and Relativism

In the Chapters from Two to Six, it was noted that Popper rejected any word usage or methodology that connoted an essential view of knowledge. Words were only "useful instruments of description" used to further the explanatory and descriptive functions of science, in the search for bold hypotheses.² He rejected the use of definition in favour of a "methodological nominalism" which best fitted the functional and conventional questions which science could legitimately ask.

At one point, Popper utilizes a diagram to illustrate this position. One side of the diagram

1. Note Popper's acceptance of Churchill's argument in OK, p. 43. Any acceptance of such an argument would presuppose a realistic position.

2. POH, p. 29.

illustrates the view that knowledge, beginning with terms or concepts, leads to an infinite regress, when one attempts to establish meaning. This side of the diagram Popper rejects as "unimportant" and essentialist. He, in fact, favours the other side, which begins with propositions or theories and ends with an endless search for truth.¹ Popper rejects the essentialist attempt to connect meaning and factual truth, which underlies the appeal for justification in the essentialist view of the origin of knowledge.²

My thesis is that the left side of this table is unimportant as compared to the right side: what should interest us are theories, truth, argument. If so many philosophers and scientists still think that concepts and conceptual systems (and problems of their meaning or the meaning of words) are comparable in importance to theories and theoretical systems (and problems of their truth or the truth of statements), then they are still suffering from Plato's main error. For concepts are partly means of formulating theories; partly means of summing up theories. In any case, their significance is mainly instrumental, and they may always be replaced by other concepts.³

1. OK, pp. 123-124; CR, pp. 19-20.

2. CR, pp. 19-20.

3. OK, pp. 123-124.

Thus, from the very basic use of words, Popper's nominalistic explanations permit only an instrumental or functional basis for knowledge.

When we consider the act of decision by which Popper chooses rationality, one is immediately struck by the inherent instrumentalism, in this very choice. Popper is not led to rationality, by rational reasons, but because such a choice will "affect our whole attitude towards other men and towards the problems of social life."¹ Such a consequence ethics is instrumentally or functionally based on the weighing of effects and the seeking of practical ends. In fact, most, if not all, ethical systems inspired by scientific empirical attitudes are teleologically oriented in this way. This is very evident in the utilitarian and pragmatic ethical norms based on the rejection of any essential principles of moral action, which alone could provide a basis for justice and natural rights.

It is evident that Popper adopts the same outlook, when he declares that "whenever we are faced with a moral decision of a more abstract kind, it is

1. OS II, p. 232.

most helpful to analyze carefully the consequences which are likely to result from the alternatives between which we have to choose."¹ This is why there can be no source of moral obligation in Popper - no basis for a rational ethical ground, for without essential knowledge there can be no source of obligation. He bases the notion of critical rationality, on choice, on the search for freedom and on the necessity of piecemeal social engineering in the open society. He does this, not just because the open society can be protected by necessary rational reform but also because the very concept of critical rationality implies, for Popper, the necessity of an open society.

Popper's whole system of falsification, bolstered by a battery of methodological rules, is mainly a conventional enterprise.² Of course, Popper still considers his system to be a "modified essentialism", in that, the enterprise is motivated by the search for truth, as well as by the search for greater and more universal levels of explanation, in what he maintains is

1. Ibid.

2. See quotation Chapter One pp.26-27 for Popper's attempt to restrict conventionalism in his system.

an objective and realistic approach. His system differs from conventionalism, because of his belief in the necessity of deliberately attempting to falsify theories. Moreover, he has adopted some essentialist frames of reference in order to save himself from conventionalism: these items, of course, include the notion of corroboration based on the compatibility of a theory with 'observation', and the notion of nearness to truth or verisimilitude.¹

The only way to avoid complete conventionalism is to try and falsify theories rather than to create 'ad hoc' conventionalist stratagems in order to save the system. But since Popper's appeal to falsification and truth cannot be defended within his total system, where statements can be justified only by statements, he is left with only an instrumentalist-conventionalist system or paradigm of explanatory theories.² The survival of one paradigm over another becomes a function of logic, mathematics, and scientific decision. Popper has no logical or rational choice other than to abandon his "modified essentialism" in favor of a conventionalist

1. LSD, pp. 81-82, refers to conventional versus empirical statements in Popper.

2. Ibid., p. 43, reference to statements being justified only by statements. Also refers to empirical nature of basic statements.

position. Given his basic presuppositions, he must remain forever a sceptic with regard to truth and reality.

In addition to his underlying conventionalism much of Popper's interpretation of the scientific enterprise is instrumental and functional. Throughout his works, passage after passage is explicitly instrumental in tone, from the creation of bold theory in order to solve an important problem, to his concern for the logical content and truth content, in order to ground his realism so that scientific growth will be possible. The very model of science that he stresses, e.g. modern physics, best lends itself to conventional interpretation. Popper rarely stresses the operations of biology, zoology, botany or herpetology, when he wishes to exemplify typical science, for their data does not lend itself to falsification, but on the contrary, tends to reinforce the view that factual data is derived by induction. In the following quote, Popper illustrates the pragmatic aspects of a scientist's task:

Although in general they do not
claim to know, in developing their

research programmes they act on the basis of guesses about what is and what is not fruitful, and what line of research promises further results in the third world of objective knowledge. In other words, scientists act on the basis of a guess or, if you like, of a subjective belief (for we may so call the subjective basis of an action) concerning what is promising of impending growth in the third world of objective knowledge.

As has been demonstrated, Popper's notion of corroboration by means of "intersubjective agreement", is a basically functional and non-realistic system. It reduces to the pooled opinions of scientists to accept such-and-such as observational in order to justify experimentation as a truly empirical, observational operation. Basic statements are part of this functional process, justified by decision and motivated but not justified by subjective experience. As Maxwell concludes:

If refutation has nothing to do with the desired detection of falsehood, and 'corroboration' has nothing to do with the desired detection of truth, then it seems

1. OK, p. 111.

we have abandoned what I have called the "epistemological" realm altogether. Scientific investigation becomes simply an intricate game, the only purpose of which is to play the game in accordance with the rules.¹

There are also numerous other conventional aspects within Popper's philosophy including the philosophy itself. For instance, he rejects the notion that all the traditional disciplines or studies (including philosophy) have any essential basis or method. He reduces the existence of intellectual disciplines to administrative matters of convenience.² Language is considered not in terms of basic meaning but in terms of disposition and function. Theories and expectations built into organs provide a functional basis for trial and error operation, which are measured instrumentally by their survival value.³ Problem-solving, whether conscious or unconscious, whether for the amoeba or Einstein, is measured by either organic survival or theory survival. Whether tradition is "pernicious

1. Nicholas Maxwell, op. cit., p. 46.

2. CR, p. 67.

3. OK, p. 146.

or valuable" is considered functionally in terms of its effects on the individual and society.¹ "Social reasonableness" in society is measured in practical, applied terms.²

Popper denies that we can know exactly what the mind is because no answer can be given to a 'what is' question.³ It can only be known in terms of its behavior or function. The evolutionary development of World Three knowledge is considered in terms of its effects on World Two minds and its effects on World One by the consequences of technology. Even Popper's arguments against conventionalism, with regard to the need for scientific growth, as well as his argument that the verification of some predictions is needed for growth, are strictly instrumental. Finally, even Popper's evaluation of the question of survival after death mentioned in discussion with Sir John Eccles is based on practical, functional arguments.⁴

Popper's whole approach to the development of

1. OS II, p. 225.

2. Ibid.

3. OK, p. 250.

4. SIB, p. 556.

his own philosophy can be explained by its boldness but it must also be considered as an conventional, ad hoc, piecing together of incompatible elements. Popper, for example, accepts an evolutionary ontology, because it fits his need for a foundation, to take the place of the inductively known world, which he cannot directly know. In this matter he is undeterred by any logical or empirical difficulty, as long as he can mold it to suit his needs in order to avoid conventionalism and essentialism, while still remaining a sceptic and a realist.

Popper's interpretation of objectivity is consistently pragmatic. He holds that a claim to objectivity is established sufficiently for the needs of empirical science when it is grounded in intersubjective agreement, without making any claim that the subjectivity of intersubjective agreement has been transmuted into or replaced by objectivity in the classical realistic sense.¹

All that is logically left of Popper's philosophy is a subjectively based conventionalism which must ultimately depend on a subjectively based perceptual and intellectual scepticism. Knowledge functions for

1. Eugene Freeman, op. cit., p. 168.

various practical and conventional purposes, including functioning as a paradigmatic system, but because of this very fact, it is relativistic knowledge, justified only in terms of its conventional purposes and practical effects. In the final analysis, such knowledge must be contradictory like all scepticism, since all attempts to justify it as essentially true or false, founders on its first principle or premise. Popper's whole enterprise, despite his obvious brilliance and the many-faceted genius of his approach to such basic problems of reality, is ambiguous, contradictory and untenable, even though his philosophy itself reflects the daring and boldness of a search for bold and interesting explanations of reality. Perhaps Popper's greatest insight has to do with the dangers of any utopian, holistic attempts to revamp society, since as he noted, such attempts tend to threaten the freedom of so many citizens. But, on the other hand, his attempt to break out of the restraints of classical empiricism, failed primarily because of his prejudices against any kind of certitude or essential knowledge.¹

Popper logically must grasp mainly the dogmatic

1. See Appendix II, Section 2; also autobiography.

horn of Fries' trilemma, although he does impale himself on the other horns as well. He falls into infinite regress inasmuch as knowledge can only be meaningful as a modification of previous knowledge, i.e. statements can only be justified by previous statements. His attempt to prevent this regress by the unconscious need for universal meaning or by the modification of innate pre-disposition, is a non-epistemological justification, dogmatically propounded. In a similar manner, Popper falls into psychologism by default and implication, since his World Three is meaningless unless understood and developed by human minds. Since his attempt to make World Three autonomous is successful within his system and since he cannot maintain his realism, Popper's World Three elements can only be understood as 'a priori' intellectual creations of the mind. Given Popper's epistemology, this amounts to psychologism.

In the field of philosophy of science, the only position, which Popper can logically maintain, is a conventionalist philosophy of science. In fact, even as his philosophy stands, we have noted that most of his arguments used to defend science, as well as his ethics of decision, are by nature instrumental and

pragmatic. Throughout his philosophy, Popper is very partial to instrumental, practical, consequent, functional explanations, because his concept of knowledge is basically empiricist, except for its source and origin, and except for his later adoption of pluralism and immateriality in his World Three. The only instrumentalism, which he wished to avoid, was a strictly conventionalist view of science. However, he has not succeeded in this task.

Moreover, even Popper's attacks on relativism and behaviorism are only partial and limited attacks since he must still defend a sceptical relativism, which is inherent in his fallibilism. The only relativism, which Popper refutes, is an absolute relativism, which refuses to accept the fact that there can be a better or best theory in a critical rational view of science. However, when this aspect of Popper's philosophy is shown to be untenable, his scepticism must reduce to relativism, which is the inevitable result of any non-essentialist 'a priori' subjectivism.

From another perspective, Popper possesses logically a process view of knowledge rather than a product view. This too must reduce to relativism, since

truth and realism cannot be maintained in the context of a strictly functional view of knowledge. As we have noted in the previous chapter, even Popper's World Three realities cannot really be supported by non-substantive, sceptical, descriptive and functional elements of meaning, since meaning, understanding and theory are not descriptions, nor are they merely a function of a subjective system.

Popper has been unable to escape from the restraints of classical empiricism and hence becomes immersed in subjectivity.¹ Roger Rosenkrantz, commenting on David Miller's view of Popper's verisimilitude, makes the point that without truth or verisimilitude, Popper is caught between the Scylla of essentialism and the Charybdis of instrumentalism.² However, any attempts to return to an Aristotelian basis for philosophy of science, like that proposed by Harré, are met by a re-affirmation of Hume and Kant.³

1. See Joseph Agassi, "Subjectivism: From Infantile Disease to Chronic Illness", Synthese, Vol. 30, Nos. 1 & 2, Feb.-March, 1975, pp.3-18.

2. Roger D. Rosenkrantz: "Truthlikeness: Comment on David Miller", Synthese, Vol. 30, Nos. 1 & 2 Feb.-March, 1975, pp. 193-197.

3. David Miller, "Back to Aristotle", British Journal of Philosophical Science, No. 23, 1972, pp. 69-78.

APPENDIX I

Explanatory and Critical Notes

Note 1: If Popper means by hidden realities, realities not directly experienced through sense contact with reality, then such a term would apply to all meanings, such as the universals, the principles of causality and contradiction, etc.. Meanings for Aristotelian essentialists are intelligible aspects of experience, which can be intellectually understood by a person.

If these concepts and principles can be expressed as knowable, intelligible aspects of reality, then such knowledge can provide the basis, as in Plato and Aristotle, for a non-empirical philosophical metaphysics. Such a philosophical knowledge of reality, essentialistic as it may be, could hardly interfere with an experimental, empirical examination of reality. An empirical analysis of human beings to the very atoms of their bodily structure would merely constitute another kind of human knowledge. If essences could be philosophically known, there would still be no need for science, as a specific methodology, to stop at any given aspect of reality. Popper

has not demonstrated that a scientific approach necessarily negates any other approach. Although he is willing to by-pass the question of the existence of essences, he still considers that science is the most basic form of human knowledge. By his concern for science Popper does not disprove the possibility of philosophical essential knowledge, since the search for scientific description and exact measurement does not necessarily conflict with the philosophical question of whether the essential natures and relationships of reality can be understood by direct intuition and expressed by precise meaning.

Note 2: One would also gather from this quotation that any acceptance of essences is incompatible with variety and change in the world, although long before, Aristotle had explained both accidental and essential change.

Note 3: I have noted that Popper uses the term 'essentialism' to apply to the essential knowledge of classical philosophy as well as to apply to viewpoints that have little to do with epistemological

essentialism in the strict sense. His application of the term essentialism is much broader than its usual meaning. In order to concentrate on what he considers similar in all forms of essentialism, Popper must ignore a host of crucial, epistemological differences. This is his prerogative, but it is evident that many of the dissimilarities which Popper ignores are essential to a systematic and valid defence of a philosophy which is designated both realistic and objective.

Note 4: Note, that Popper distinguishes here between pure mathematics and logic, on the one hand, and empirical science on the other, but in no place, when he is dealing with essentialism, does he distinguish between philosophy and science, even though he must be aware that Aristotle is not dealing with empirical science, when he, (Aristotle), uses the term science in regard to essentialist methodology. Besides, if pure mathematics and logic are related more to philosophy than to the empirical sciences, then why can there be no possibility of a metaphysical knowledge of reality? The answer

is that Popper thinks of knowledge of reality in empirical terms only, even if he rejects classical empiricism. In the quotation, Popper states that the analytic judgments of mathematics and logic "give us no information about the world". In Chapter Eight, Section 1, we will note that this dichotomy between the empirical and the analytic severely limits Popper's attempts to explain metaphysics, or his own concept of philosophy.

Note 5: It is noteworthy that the examples Popper gives for the imprecision of terms are quantitative, such as how high must a 'sand hill' be to be called a 'dune' or how fast must the 'air' be moving to be called 'a wind'. But how would Popper use this argument to explain terms like 'man', 'animal', 'plant', 'tiger', 'metal', etc. where a quantitative description is not enough? One might wonder, at this point, how Popper can reconcile this nominalistic approach with his stated realism and his objective view of knowledge, given the fact that he also rejects an inductive contact with an extramental reality. If terms are imprecise and mainly

quantitative in the first place, then what can be known of extramental reality? How can imprecise terms and theories be objective? Universal terms are, for Popper, only conventional symbols which involve a disposition.

Note 6: Popper declares that "like Plato Aristotle believed that we obtain all knowledge ultimately by an intuitive grasp of the essences of things.¹ But Popper does not clearly distinguish sense from intellectual knowledge, nor science from philosophy. He also does not distinguish the rationalistic philosophy of Plato from the realism of Aristotle. In fact, Popper states "that despite some alterations, Aristotle's version of Plato's essentialism shows only unimportant differences."² In another place he states, "Aristotle's view is less radical and less inspired than Plato's, but in the end, it amounts to the same."³ If Popper cannot distinguish the realism of Aristotle from the

1. OS II, p. 10.

2. Ibid., p. 6.

3. Ibid., p. 11.

rationalism of Plato, nor appreciate the significance or importance of a realistic form of philosophy, then one would deduce that anti-essentialism rather than realism is his main concern. Of course, the reason why Popper cannot take distinctions between Plato's and Aristotle's position seriously is because he is concerned with the common denominator in essentialism, which is any belief in absolute, ultimate knowledge derived from a certain or absolute criterion of knowledge. By concentrating on what is common in Plato, Aristotle, Newton, Galileo, Bacon, Descartes, the Positivists and Wittgenstein, Popper is, in effect, declaring that the most important and basic question which unites these diverse philosophies is their essentialist content or methodology, Popper ignores questions of whether a philosopher's starting point is experiential, 'a priori' or linguistic and whether they are concerned with empirical images or rational concepts because, he is unconcerned with any traditional epistemological starting point and with the epistemological issues associated with these starting points.

Popper is unconcerned with traditional epistemological questions even though as we have already noted his ultimate position reflects nuances and elements of both rationalism and empiricism.

Note 7: It will be noted throughout the thesis that Popper frequently seems to take refuge in a functional explanation which is hardly conducive to explaining a non-conventional view of science, for if most elements in Popper's philosophy are conventional, then what is his basis for being a realist? His functional explanations can interestingly be contrasted with statements like: "Yet the system called 'empirical science' is intended to represent only one world: the 'real world' or 'the world of our experience';¹ "The actual procedure of science is to operate with conjectures: to jump to conclusions - often after one single observation";² "repeated observations and experiments function in science as tests of

1. LSD, p. 39.

2. CR. p. 53.

our conjectures or hypotheses: i.e. as attempted refutations."¹ It is evident that there is, at the very least, a paradoxical situation existing in Popper's falsification theory of science between an appeal to reality and a conventional decision.

Note 8: One might wonder, at this point, how Popper's so precise use of terms in this argument is compatible with his denial of precision to words and statements, or compatible with his nominalistic, empirical type knowledge which reduces to doxa or opinion, and which treats words merely as an imprecise means to describe fallible theoretical knowledge. It might also be questioned how Popper acquires these precise meanings, which he admits have no criteria; for if his argument is merely semantical, how can it provide any relevant basis for a valid and realistic verisimilitude?

Note 9: It is evident that this whole procedure of justifying verisimilitude as truth approximation

1. Ibid.

is extremely conventional in its functional or methodological sense, even to the use of the concept of truth as necessary to make Popper's falsification methodology more functional and realistic, by regulating the idea of closer approximation to the truth. To accept a concept of truth because without it you cannot talk of error or criticism is strictly an instrumental-conventionalist kind of justification. "Ultimately", Popper declares, "the idea of verisimilitude is most important in cases where we know that we have to work with theories which are at best approximation - that is to say, theories of which we actually know that they cannot be true. (This is often the case in the social sciences)"¹.

While Popper is speaking of better or worse approximations to the truth, he can convince himself that his system does not reduce to a conventionalist or instrumental one. Verisimilitude gives Popper the chance to foster his realism.

1. CR, p. 235.

even though his approach is 'a priori', deductive, and instrumental. In fact, even though Popper rejects conventionalism, his arguments for his position are functional, including his use of Tarski's semantical position:

Note 10: A more instrumental or conventionalist justification for intersubjective agreement on basic statements than these quotations would be hard to find.

Note 11: Popper does not seem to accept the argument that the thought, idea or concept must precede language, since language reduces to arbitrary conventional symbols in a variety of languages. William Alston, in his rejection of the ideational theory of meaning (Locke's images) notes that when one gives a speech he does not work with images.¹ Carrying the argument one step further, unless the speech is memorized by rote, the ideas or thoughts which are understood are conveyed to the audience in a variety of words, that could change with

1. William Alston, The Philosophy of Language, pp. 22-25.

the audience or occasion. If the meaning were the same as the symbol or word, then to know the symbol would be identical to knowing the meaning. Popper equates the two to the point where he must agree with Gilbert Ryle that thinking is talking to oneself.¹

Note 12: What existence falsity and doubt can have outside a subjective mind and judgment, would be a point difficult for Popper to explain, for the potential objectivity of a concept or theory cannot in itself contain objective falsity or doubt. It makes the words meaningless, since falsity and doubt are qualities of human knowledge not potential intelligible meanings in themselves.

Note 13: Certainly, it seems impossible for Popper to remain an empiricist and a nominalist, while accepting the possibility of acquiring a rational immaterial knowledge of potential

1. Gilbert Ryle, The Concept of Mind, p. 35, pp. 143-144.

intelligible relationships, inherent in theories and linguistically expressed meanings. His World Three simply takes him too far beyond empiricism. It does not seem that Popper can reconcile the two worlds of empirical realism and Kantian rationalism, which he attempts to integrate.

Note 14 These arguments for the repudiation of 'the bucket theory of the mind' contrasts sharply with the Aristotelian-Thomistic interpretation of the same data. Because organs like the eye, heart or liver function in a purposeful way, yet, do not possess intelligence themselves to take means to an end, then, they must be directed to their end by some intelligence. This is the beginning of one of the 'five ways' to prove the existence of God. Popper seems to recognize this final causality but interprets it instead as ingrained genetic 'knowledge' directed by an evolutionary process.

Note 15: One might wonder just how this "explanation" of

the world can fit Popper's Kantian view that man imposes his categories, theories and concepts upon an unknown phenomenal world.

Note 16: How can World Three objects play such a role in stimulating human minds if they become subjective. World Two while present to the mind? There seems to be some confusion in this regard, because from one point of view this content can be equated with the dispositions of psychological World Two and from another point of view the disposition, which is subjective, can be considered separately from the content itself which can be labelled 3.2. When considering the importance of World Three interaction, Popper talks of the effects of content (3.2), but when he is concerned with repudiating subjective knowledge he stresses the independent reality of World Three before it is linguistically expressed (3.3).

Note 17: It is difficult to see how Popper can maintain his split given such a close causal interaction between World Two and World Three. The 3.3

reality, with all its potential, is greater than any number of World Two individuals, only if it represents an objective reality, which is being understood in a piecemeal and accumulated fashion. Popper really cannot explain why all these unknown but knowable relations exist, given his limited epistemology and ontology. To declare that World Two knowledge takes the form of dispositions to grasp objective World Three objects explains very little.¹ To declare that World Three theory is necessary to "understand" the World Two 'act of understanding' would scarcely be denied by anyone. If, as he declares regarding World Three objects, that "It is only by formulating them in language, by making them World 3 objects, that they can become objects of inspection, of consideration and of rational criticism", then how can there be a 3.2 reality at all?² What is the causal relationship between World Two and World Three, when the product as personally understood is separated from the product as linguistically

1. SIB, p. 132.

2. Ibid., p. 138, for Popper's Explanation.

experienced?

Note 18: Few would deny that World Three has an "objective" content as intelligible meaning, which implies an infinite number of potential relationships, but whether this context is objective in the realistic sense, or subjective in the rationalist sense is one question, and whether Popper can explain such intelligible content, using language in such a nominalistic, empirical way is another question. If words are so imprecise, and descriptive in nature, then, how can Popper ever justify knowledge of an immaterial intelligible potential, which notion itself involves, one would think, clear meanings and relationships?

Note 19: Kelly raises the issue that Popper's pluralistic three world ontology does not leave any room for truth. Truth must exist, even though unknowable, for truth is that by which all verisimilitude is measured, and which makes error and criticism meaningful. Yet, if all the items in World Three are constantly "subject to change, growth and modification"

then there is no place for truth.¹ Since Popper's World Three as well as World Two have evolved from World One, what status can truth have?

The possibility of the attainment of truth points to the (possible) attainment of non-temporal, timeless statements. But if this is so, then truth is not a resident of any one of Popper's worlds. Truth cannot reside in the first world for the first world does not contain statements which can be true (or false). Truth cannot reside in the second world, for truth is an objective and not a subjective content. And truth cannot reside in the third world - for the residents of the third world are one and all subject to growth and modification.²

In addition, if Popper restricts reality to the three worlds, what reality do they reflect? How can Popper be a sceptic and still precisely outline a correct ontology of reality?

1. Derek A. Kelly, op.cit., p. 81.

2. Ibid.

APPENDIX II

Detailed Analysis of Popper's Anti-Essentialism

- Section 1 - Popper's Concept of Essentialist Methodology.
- Section 2 - Anti-Essentialism, Authoritarianism and Society.
- Section 3 - Subjective Certainty and Belief.
- Section 4 - Recent Popperian Variations on Essentialism and Methodology.

1. Popper's Concept of Essentialist Methodology

Popper is not concerned to argue the merits or weaknesses of ontological essentialism, but he takes a strong stand in support of methodological nominalism as the proper approach for the sciences. In this way, he attempts to demonstrate that essentialistic methodology is incompatible with a scientific method, which must result in descriptive knowledge as doxa or opinion.

For Popper, an essentialist methodology is equated with the Aristotelian method of attempting to derive "the essential nature of a thing by means of definition."¹ All positions including analysis, that search for precision, use this method, according to Popper.

Intuitive knowledge consists in grasping the indivisible form or essence or essential nature of a thing...it is the originative source of all science since it grasps the original basic premises of all demonstrations.²

1. OS II, pp. 9-21.

2. Ibid., p. 10.

....a basic premise is, according to him (Aristotle), nothing but a statement describing the essence of a thing. But such a statement is just what he calls a definition. Thus all basic premises of proofs are definitions.¹

On the other hand, methodological nominalism is not concerned with essential explanation as such, since essentialism considers knowledge as certain or 'episteme'. Because methodological nominalists regard knowledge as descriptive 'doxa' or opinion, they "regard words merely as useful instruments of description."²

....Antisthenes attacked essentialist definitions as useless, as merely substituting a long story for a short one; and ...Antisthenes very wisely admitted that although it is useless to define, it is possible to describe or explain a thing by referring to the similarity it bears to a thing already known.³

In this quotation it is clear that "explain"

1. Ibid.

2. POH. p. 29.

3. OS II, p. 300.

is being used as a synonym for 'describe' since it refers to the perceptually based "similarity of things". This similarity, with association, provides the basis for classical nominalism, which Popper rejects, together with induction. In commenting on the status of knowledge resulting from methodological nominalism, Popper states explicitly:

The realization that natural science is not indubitable episteme has led to the view that it is techne (technique art, technology); but the proper view, I believe, is that it consists of doxai (opinions, conjectures...)¹

.....all theories are, and remain hypotheses: they are conjectures (doxa) as opposed to indubitable knowledge (episteme).²

In contrasting scientific knowledge with what knowledge is claimed to be as the result of a methodological essentialism, Popper declares:

.....in science there is no knowledge

1. CR, p. 103 Note 12.

2. Ibid., p.104.

in the sense in which Plato and Aristotle understand the word, in the sense which implies finality; in science we never have sufficient reason for the belief that we have attained the truth. What we usually call scientific knowledge is as a rule, not knowledge in this sense, but rather information regarding the various competing hypotheses and the way in which they have stood up to various tests; it is using the language of Plato and Aristotle, information concerning the latest and the best tested, scientific opinion. This....means....that we have no proofs in science (excepting, of course, pure mathematics and logic). In the empirical sciences which alone can furnish us with information about the world we live in, proofs do not occur, if we mean by 'proof' an argument which establishes once and forever the truth of a theory. (What may occur, however, are refutations of scientific theories). On the other hand, pure mathematics and logic which permit of proofs, give us no information about the world, but only develop the means of describing it.¹

In addition, Popper makes the point that essentialist methodology demands an answer to a 'what is' kind of question, which is an illegitimate kind of question for a scientist using a nominalist,

1. OS II, pp. 12-13, See Appendix I, Note 4.

scientific methodology to attempt to answer.

....The scientific view of the definition 'a puppy is a young dog' would be that it is an answer to the question 'What shall we call a young dog?' rather than as an answer to the question 'What is a puppy' (Questions like 'What is life?', or what is gravity?' do not play any role in science)....

In modern science only nominalist definitions occur....shorthand symbols or labels....the scientific or nominalist definitions do not contain any knowledge whatsoever, not even any opinion; they do nothing but introduce new arbitrary shorthand labels; they cut a long story short.¹

Methodological nominalism is the proper method to be used by the sciences, not only for the exact sciences, where Popper believes that it is mainly used, but also for the social sciences, where Popper believes that it is not used as it should be. In fact, he believes that the social sciences are dominated by a methodological essentialism because social scientists insist on dealing with realities like 'the nation', 'the

1. Ibid., p. 14.

state', 'the social group', 'credit', 'the church', etc.

So one aspect of an essentialistic methodology is its concern for abstract wholes, and another related aspect is its emphasis on the qualitative character of social events and identities. Significantly, Popper declares, "The emphasis on the qualitative character of social events together with the emphasis on intuitive understanding (as opposed to mere description), indicates an attitude closely related to essentialism".¹ In this way Popper equates the descriptive approach of the sciences with a concern for the quantitative and associates essentialism with "the qualitative character of social events" and with an "emphasis on intuitive understanding."²

If essentialists ask 'what is questions', what kind of questions, according to Popper, should those using a methodological nominalism ask?

Methodological essentialists
are inclined to formulate scientific

1. POH, p. 31.

2. Ibid., p. 19.

questions in such terms as 'what is matter?' or 'what is force?' or 'what is justice?', and they believe that a penetrating answer to such questions, revealing the real or essential meaning of these terms and thereby, the real or true nature of the essences denoted by them, is at least a necessary prerequisite of scientific research, if not its main task. Methodological nominalists as opposed to this would put their problems in such terms as, 'how does this piece of matter behave?' or 'how does it move in the presence of other bodies?' For methodological nominalists hold that the task of science is only to describe how things behave, and suggest that this is to be done by freely introducing new terms whenever necessary, or by redefining old terms wherever convenient, while cheerfully neglecting their original meaning. For they regard words merely as useful instruments of description.¹

Since words are merely "useful instruments of description", Popper opposes any attempt to use the Aristotelian method of word definition in order to make meanings precise.² As we noted in Chapter Two of the thesis, one of the main targets of Popper's attack in this matter is Wittgenstein and his followers:

1. Ibid., p. 28.

2. Ibid., See Appendix I Note 5 for comment on the question of 'precision'.

What then is behind the demand for definitions? An old tradition reaching back far beyond Locke to Aristotelian essentialism; and as a result of it, a belief that if a man was unable to explain what a word meant...this showed that 'he had given no meaning to it' (Wittgenstein), and had therefore, been talking nonsense. But this Wittgensteinian belief, is nonsense, since all definitions must ultimately go back to undefined terms.¹

Popper states that this verbal and empty scholasticism haunts not only the middle ages but "a philosophy as recent as that of L. Wittgenstein."²

In the last statement of the above quotation, Popper notes that all definitions must ultimately rest on undefined terms. He believes that the essentialist method, since it substitutes a long story for a short one, by adding the defining terms, leads to an infinite regress of term definition. This in turn, according to Popper, leads to sterile verbalism. On the other hand, the nominalist approach uses words as a technical shorthand which convey fallible and

1. CR, p. 279.

2. Ibid.

imprecise opinion. Popper believes that "in science all the terms that are really needed must be undefined terms."¹ But in answer to the problem, "How then do the sciences make sure of the meanings of their terms?"² Popper notes that there have been several replies, none of which he thinks are satisfactory.³

In science, we take care that the statements we make should never depend upon the meaning of our terms. Even where the terms are defined, we never try to derive any information from the definition, or to base any argument upon it. This is why our terms make so little trouble. We do not overburden them.

We try to attach to them as little weight as possible. We do not take their meaning too seriously. We are always conscious that our terms are a little vague....⁴

In other words precision is not necessary

1. OS II, p. 18.

2. Ibid.

3. Ibid.

4. Ibid., p. 19.

for science. Any terms that are used are established conventionally for instrumental convenience.

Popper cannot accept the Aristotelian view that universal ideas express essential realities, which are known through intellectual concepts, expressing an intelligible reality.¹ Because "(empirically definable) terms do not exist at all....." Popper substitutes in their place, "undefinable universal names, which are established only by linguistic usage..."² This version of the universal is a nominalistic element without the classical nominalist acceptance of similarity and psychological association.

Since Popper rejects inductive knowledge, universals cannot be explained in terms of their relationship to any universal intelligible aspects of "reality".³

The statement, 'Here is a glass of water' cannot be verified by any observational experience.

1. For commentary on Popper's identification of Plato and Aristotle's Essentialism See Appendix I Note 6.

2. LSD, p. 84, Note 2.

3. For more on Popper's concept of language and meaning see Part Two, Chapter Six, Section 1.



The reason is that the universals which appear in it cannot be correlated with any specific sense experience. (An 'immediate experience' is only once, 'immediately given'; it is unique). By the word 'glass', for example, we denote physical bodies which exhibit a certain law-like behaviour, and the same holds for the word 'water'. Universals cannot be reduced to classes of experience; they cannot be 'constituted'.¹

It follows from the above that any kind of concept or idea, for Popper, is rather arbitrary in its use, "for concepts", in his view, "are partly means of formulating theories, partly means of summing up theories. In any case, their significance is mainly instrumental; and they may always be replaced by other concepts."² One of the problems that can be anticipated as we read Popper's explanations of his critical rationalism and falsification system, is whether he will be able to explain hypotheses and generalizations, especially in the context of his arguments for World Three objective knowledge, given the fact that all meaning rests on such imprecise verbal elements.

1. LSD, pp. 94-95.

2. OK, pp. 123-124.

It must be remembered, that Popper is not as concerned to develop a view of how knowledge is related to reality as he is to develop a philosophy of science, which will provide a principle demarcating science from pseudo-science. His concern for realism, his corroboration and verisimilitude, are chosen and developed, because these aspects are needed for a science that is able to avoid conventionalism and yet progress, because it is related somehow to truth and reality.¹

2. Anti-Essentialism, Authoritarianism and Society

Popper's concern for the open society, his acceptance of critical rationalism as the true heritage of the Enlightenment and his rejection of any authoritative source or kind of knowledge indicate that his philosophy of science is, to a great extent, influenced by a political and social liberalism that embodies his view of what the open society should be.

During the second World War, Popper wrote

1. See Appendix I Note 7 for comment on Popper's leanings towards conventionalism and the quotation in Chapter One. pp.27-28.

The Open Society and Its Enemies as his particular war effort. In this book he attempts to demonstrate that the philosophies of Aristotle, Plato, Hegel and Marx support an authoritarian view of society because they expound an essentialistic position regarding knowledge. These positions either accept knowledge as absolute, true or certain or they accept a fixed process of historical development. The 'open society' is, for Popper, a society where people as individuals must be free to pursue a trial and error process of improving social institutions so that they will better provide justice and freedom for the members of society.

Kant not only provided a model for Popper's critical rationalism but he also provided the ethical ideals, based on decision that influenced Popper's notion of the open society.¹

He (Kant) was a pluralist who believed in the variety of human experience, and in the diversity of human aims: and being a pluralist, he believed

1. See Chapter Five, Section 1 for the ethical aspects of rationality, Chapter Four for Kant's influence on Popper.

in an open society - a pluralist society that would live up to his own maxim: 'Dare to be free and respect the freedom and autonomy of others, for the dignity of man lies in his freedom, and in his respect for other people's autonomous and responsible beliefs, especially if these differ from his.'

Popper also associates his notion of liberalism with the epistemological optimism of Bacon and Descartes. He accepts their liberalism and their rationalistic outlook but rejects what they take to be infallible sources of true knowledge, represented by either observation or reason. In Bacon and Descartes' time, Popper believes, the authority of tradition was the barrier to chaos and the enemy of liberalism. Rationalism, on the other hand, has always claimed "the right of reason and of empirical science to criticize and to reject, any tradition, and any authority as being based on sheer unreason or prejudice or accident."² But at this point, Popper begins to part company with the liberal tradition. He does not see tradition itself as an enemy but something inevitable,

1. Karl Popper, "Emancipation Through Knowledge" The Humanist Outlook, A.J. Ayer (editor), p. 282.

2. Ibid.

sometimes important and often useful. What he would not accept, is the notion of tradition used as an authoritative guide, but then, he also rejects reason and observation as authoritative guides as well.

It is a disturbing fact, that even an abstract study like pure epistemology, is not as pure as one might think (and as Aristotle believed), but that its ideas may to a large extent, be motivated and unconsciously inspired by political hopes and Utopian dreams....as an epistemologist, I have only one interest to find out the truth about the problems of epistemology, whether or not this truth fits in with my political ideas....

It so happens that I am not only an empiricist and a rationalist of sorts, but also a liberal....just because I am a liberal, I feel that few things are more important for a liberal than to submit the various theories of liberalism to a searching critical examination.

Liberal belief cannot tolerate any belief in an absolute truth. If truth is evident, as Bacon and Descartes maintain, then ignorance must be the result

1. Ibid.

of powers who conspire to blind us with their prejudices. This results in 'the conspiracy theory' of ignorance with its search for scapegoats. For Popper, this mentality is a direct result of an essentialistic belief that truth can be somehow self-evident. Because of their essentialism, Bacon and Descartes found it necessary to appeal to the authority of some manifest truth.¹

In spite of their individualistic tendencies, they did not dare to appeal to our critical judgment - to your judgment, or to mine; perhaps because they felt that this might lead to subjectivism and to arbitrariness. Yet whatever the reason may have been, they certainly were unable to give up thinking in terms of authority, much as they wanted to do so. They could only replace one authority - that of Aristotle and the Bible - by another.²

Popper believes that authoritarianism is inherent in all essentialist views of knowledge.

Thus the empiricists question,
'How do you know? What is the source

1. Ibid., p. 25.

2. Ibid.

of your assertion?' are wrongly put....they are entirely misconceived: they are questions that beg for an authoritarian answer....these questions are clearly authoritarian in spirit. They can be compared with that traditional question of political theory. 'Who should rule?', which begs for an authoritarian answer such as, 'the best' or 'the wisest' or 'the people' or 'the majority'.¹

Popper rejects all arguments that would base truth on the source or origin of knowledge. He repudiates the two notions that we can justify our knowledge by positive reasons and that man must submit to a truth which is above human or individual authority. Regarding these two notions, Popper declares, "Taken together, these two ideas almost immediately yield the conclusion that the sources from which our knowledge derives, must be super-human; a conclusion which tends to encourage self-righteousness, and the use of force against those who refuse to see the divine truth."²

Popper's methodological nominalism, which translates into a methodological individualism for

1. Ibid., p. 29.

2. UQ, p. 17.

the social sciences, is related to his views regarding the open society. All social morality should be related to the purposes which individuals have decided for society. The only reality to be considered is that represented by individuals and by individual activity, not a reality of abstract wholes like 'the nation' or 'the army', which, as has been noted, is the result of methodological essentialism. For a society to be open it must foster a willingness to accept the autonomous freedom of others and the elimination of evil for all. Any belief that morality is uncreated by humanity would make morality natural and absolute and hence lead to authoritarianism. If, instead of the elimination of evil, the object of society would be to impose 'the good' or what would make people 'happy', such as a belief in essential morality, such a belief would again lead to authoritarianism. So, for Popper, any attempt to positively mould a 'good' society is to be avoided. This is analogous to Popper's epistemology where any positive reasons given for a scientific theory or generalization are to be avoided.

Popper had from an early age an entrenched antipathy to any form of essentialism, as well as towards

the authoritarian effects of this belief. He admits that at one time in Austria, he became incensed because certain exam questions were given in philosophy dealing with the question of 'the one and the many', without the students realizing what were the political implications of such philosophical questions.¹

J. Bronwaski recognizes this liberal, democratic dimension in Popper and others when he states:

It is the pride of the rationalist and empirical tradition in England, that it raises philosophers who combine intellectual power with liberality of spirit. Bertrand Russell has been an example....and Karl Popper preordained to be a recruit to this tradition..... For he insisted in his philosophy....that there is no final sanction which is not free to change and grow; and that a condition for its growth, is the challenge by independent minds.²

This tendency to evaluate epistemological positions in terms of their political and social effects

1. Ibid., p. 114.

2. PKP, p. 692.

constitutes just one of the many instrumental type practical arguments that Popper utilizes throughout his philosophy. His inclination to use instrumental arguments - arguing from the functional, pragmatic effects or consequences of knowledge - is understandable when one considers that modern physics is Popper's paradigm example of science and when one realizes that Popper's whole philosophy is based on an ethics of decision.¹

It is choice and consequence which is the basis of Popper's critical rationalism. Such a basis provides the greatest emphasis for functional arguments.

Popper's criterion of falsifiability for science is his answer to these authoritarian social and political effects of essentialistic thinking. His deductive approach provides an answer to the question, "How can we hope to detect and eliminate error?"² Popper believes that the concept of truth and of reality, for that matter, are common-sensical and valid because

1. See Chapter Five, Section 1, on rationality as decision.

2. CR. p. 25.

they can be applied, while he rejects any notion that certain, absolute or true knowledge can be derived.¹ Truth, as a certitude, can never be verified or justified in any way.

3. Subjective Certainty and Belief

We have noted in Chapter Two that a crucial facet of essentialism is what Popper calls "the commonsense theory of knowledge" or "subjectivism". He uses this term 'subjective' to apply to any epistemological position, which results in a personal belief or certitude based on an awareness of immediate knowledge or experience, that is consciously evident to an individual. He equates this method of justifying personal, individual awareness and conviction, as a criterion for knowledge, with psychologism. Popper also classifies this kind of knowledge and experience as a dimension of World Two reality, which is subjective in contrast to the objective verbalized knowledge that is World Three reality.²

1. See Popper's concept of verisimilitude, Chapter Five, Section 3b.

2. See Part Two, Chapter Six on Popper's three worlds.

Using subjective knowledge or experience as a basis for valid authority, is a form of essentialism, not because it deals with essences in a Platonic or Aristotelian way, but because such subjective experience is proposed as a justifiable source of absolute knowledge - a guarantee of certitude and self-evident belief.

Since Descartes, Hobbs, Locke and their school, which includes not only David Hume, but also Thomas Reid, the theory of human knowledge has been largely subjectivist: Knowledge has been regarded as a specially secure kind of human belief and scientific knowledge as a specially secure kind of human knowledge.¹

—Popper includes, in this category, the clear and distinct ideas of Descartes, but, for the most part, he applies the term 'subjective' to various empiricists and positivists.² However, this inclusion of Descartes again indicates that Popper is unconcerned with the different kind of knowledge that rationalism represents.

1. OK, Preface, See also quotation in Chapter One p.2.

2. Ibid.

The essays in this book break with a tradition that can be traced to Aristotle - the tradition of the commonsense theory of knowledge.... while I am prepared to uphold to the last the essential truth of commonsense realism, I regard the commonsense theory of knowledge as a subjectivist blunder. This blunder has dominated Western philosophy. I have made an attempt to eradicate it and to replace it by an objective theory of essentially conjectural knowledge. This may be a bold claim but I do not apologize for it.¹

Since Popper has committed himself to "an objective theory of essentially conjectural knowledge" the crucial question, already examined in Chapter One, remains 'what kind of philosophical position does Popper have in mind for achieving objectivity and exactly what meaning does he give to the term objective?'.²

According to Popper, "the bucket theory of knowledge encompasses the reality of a mind filled with things, or thing-like entities like ideas, sense impressions, sense data, atomic experiences, molecular experiences, etc."³

1. Ibid.

2. Ibid.

3. Ibid.

In this subjective view knowledge is in us. Such a view accepts as certain that knowledge is justified because it is derived from sense contact with reality.

More complex knowledge, for empiricists is knowledge based on association. To Popper, true belief, in this context, is belief in the unfailing association of ideas and elements which are "strengthened by the repetition" of experience.¹ With regard to the scope of subjectivism, Popper declares:

True belief is belief in an unfailing association. To sum up what I call the commonsense theory of knowledge is something very close to the empiricism of Locke, Berkeley and Hume, and not far removed from that of many modern positivists and empiricists.²

Popper believes that association started with Aristotle as a spiritual mechanism of the mind in Aristotle's subject-predicate logic but was turned by Locke and Hume into a psychological basis of association. As Popper puts it, "I found that association psychology - the psychology of Locke, Berkeley and Hume - was merely a translation of Aristotelian subject-predicate logic

1. Ibid., p. 114.

2. Ibid.

into psychological terms."¹ For Aristotle, in the judgment 'men are mortal' mortal is predicated of men because it is a quality that the intellect understands belongs to men. Locke and Hume change this into a psychological explanation, that we believe men are mortal because the ideas men and mortal have been habitually associated together.

For Popper, one of the greatest weaknesses of the subjectivist philosophers is their desire for certitude.² In connection with one of Popper's most basic problems - the problem of factual knowledge and observation, which is so fundamental to his falsification theory - Popper is willing to acknowledge, that the subjective certitudes involved with commonsense experience, can provide scientists with the motivation to accept certain experiences but never with a justification.³ Subjective knowledge is for Popper "a kind of disposition of which the organism sometimes may become conscious in the form of a belief or an opinion or a state of mind."⁴

1. UQ. p. 76, See also SIB. p. 194.

2. OK. p 63.

3. See Part Three Chapter Seven, Section 1.

4. OK, p. 75.

Popper is willing to admit that this subjective state of mind can constitute a 'belief' but denies that it can ever be an "item of knowledge" in the objective sense.¹

in order that a kind of belief, or a state of mind, should amount to more than mere belief, and should be capable of sustaining the claim that it amounts to an item of knowledge, we require that the believer should be in possession of sufficient reasons for establishing that the item of knowledge is true with certainty. As soon as we take objective knowledge into account, we must say that at best only a very small part of it can be given anything like sufficient reasons for certain truth: it is that small part (if any) which can be described as demonstrable knowledge and which comprises (if anything) the propositions of formal logic and of (finite) arithmetic.²

Any other aspect of objective knowledge, including knowledge derived through the natural sciences, is simply beyond the beliefs and certitude of subjective feeling. Moreover, according to Popper, we can only acquire objective scientific knowledge by means of a deductive

1. Ibid.

2. Ibid.

process. Scientific knowledge in Popper's system, is derived in the first place by choice, and then justified indirectly and negatively by means of a deductive process. The choice of a critical approach is then justified indirectly and negatively by attempted falsification of specially chosen propositions and hypotheses. Scientific knowledge does not derive its justification from positive data or inductive reasoning. Hence the subjective knowledge of a perceived reality can never provide a justification for objectivity.

The commonsense theory of knowledge is unaware of world 3 and it thus ignores the existence of knowledge in the objective sense.... Not only is it unaware of the distinction between objective and subjective knowledge, but it also accepts consciously or unconsciously, objective demonstrable knowledge as the paradigm for all knowledge, since it is really only here that we have fully 'sufficient reasons' for distinguishing 'true, certain knowledge' from 'mere opinion' or 'mere belief'.¹

From Popper's statements, it is evident that knowledge cannot be objective if it is based on the

1. Ibid., p. 74.

immediate experiences, beliefs and feelings of certitude, of any person, or number of individuals, but only when it becomes an object in its own right, expressed in symbolic (especially written) form.¹

Subjectivism should provide the subject matter for psychology, according to Popper, but not for science, which must deal with objective knowledge. Subjectivism, as a personal or individual belief, considered as a justification of knowledge is, for Popper, common to both Plato and Aristotle, as well as Descartes and the empiricists. Popper considers such subjective positions as being "alternatives to realism and includes such non-realist positions as positivism, idealism, phenomenalism, phenomenology", and so on.² One would judge from this statement that Popper must equate objective knowledge with philosophical realism. If this were so, then one would think that World Three objective knowledge should provide a knowledge of an extramental reality distinct from the subjective knowledge of human consciousness. This, however, does not seem to be the case, at least with regard to any direct or

1. See Part Two Chapter Six for an elaboration of World Three.

2. OK, p. 42.

positive knowledge.

Popper believes that the theory of subjective knowledge started with Aristotle and other Greeks, but became explicit with Descartes.¹ Thus, any view that there is only one kind of knowledge - the knowledge possessed by a knowing subject - is to be rejected as another facet of essentialism.

Popper's explanations exclude as essentialistic all philosophical positions before Bolzano and Frege and most scientific positions before Einstein, Heisenberg and a few others.² Yet, Popper does state that there is really no such thing as subjective knowledge. "I will call this kind of knowledge, subjective knowledge in spite of the fact that.... genuine or unadulterated or purely subjective knowledge does not exist."³ Popper's meaning here becomes more evident when we consider his explanation for World Three objective knowledge for, he believes, that all thought is a response to previous thought objectively

1. Ibid., p. 73.

2. Ibid.

3. Ibid.

stated and that all perception is a response to previous anticipations and problems.¹

4. Recent Popperian Variations on Essentialism and Methodology

We have noted that Popper in his Open Society and Its Enemies considered the differences between Plato and Aristotle to be insignificant.² However, in some of his more recent publications, he seems to find a need for certain Aristotelian concepts. In The Self and Its Brain, Popper quotes extensively from Aristotle and lists a substantial number of Aristotle's works in his bibliography. Although Popper seems to find a little more significance in the concept of essence, it is Aristotle's concepts of potentiality and teleology that he must use in order to bolster his World Three ontology.³

I may perhaps say here that while I remain opposed to "essentialism", to the raising of and attempts to answer "what is" questions, I nevertheless believe in something

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1. See Part Two, Chapter Six on Popper's World Three and the criticism in Part Three, Chapter Eight.
 2. See quotations in Appendix II, Note 6.
 3. See summary and outline to Part Two, pp.174-182.

that may be called the quasi-essential (or quasi-substantial) nature of the self....

Aristotelian essentialism strangely enough fits very well biological organism, that have an essence in the sense of a genetic program. It also fits man-made tools whose essence is their purpose.... These comments contain no concession to essentialism - to the asking of "what is" questions - although in biology and with respect to tools it is fruitful to ask teleological "what is it for" questions.¹

Previously we noted that Popper's "modified essentialism" did not mean acceptance of either "ultimate realities" or "essentialist definitions".² Popper needs his "modified essentialism" in order to avoid a conventionalist position, which would restrict scientific knowledge to function.³ Popper's "modified essentialism" is associated with his realism, since all progress and corroboration in science must take place, for him, within a realistic frame of reference.

1. SIB, p. 105.

2. OK, p. 195 Note 6.

3. See Chapter Three on Popper's anti-conventionalism.

by the term "essentialism" I understand a form of realism which I do not accept; essentialism in its Platonic version, is the belief that World Three consists mainly of concepts or ideal forms. In its Aristotelian version essentialism is the belief that the things of World One are what they are by virtue of the forms or essences, which are in them like the spirit of wine or the essence of vanilla. Aristotelian essentialism is, I believe, a mistaken philosophy, but it seems to be not so bad an approximation for vanilla....and for biology: modern genetics says that plants and animals are what they are by virtue of their genetic essences....

Throughout his writings Popper seems to epitomize his own philosophical view that words are just inexact means or problems which approach a meaning. Popper has also seemed to change his emphasis from nominalism to realism, with his concern for objective knowledge and with his attempts to use the concept verisimilitude to add a touch of epistemological realism to his "modified essentialism".

....long before I invented the term "essentialism" and "anti-essentialism", I had qualified the

term "nominalism" by the term "methodological" (I now think this name a little misleading.... Classical "nominalism", however, was a position which I never accepted).¹

In other words, Popper is no longer happy with his use of the term 'nominalism', even though it can be applied to the method which he still defends. He gradually has come to realize that his own realism stood closer to essentialism than the nominalism which he espoused as a method.²

Gomperez was right because a realist who believes in an "external world" necessarily believes in a cosmos rather than a chaos; that is in regularities. And though I felt more opposed to classical essentialism than to nominalism, I did not then realize that in substituting the problem of biological adaptation to regularities for the problem of the existence of similarities I stood closer to realism than to nominalism.³

One could judge from this that Popper is again equating realism and essentialism. Logically then,

1. UQ, p. 20.

2. Ibid.

3. Ibid.

he would be as realist as he is essentialist, the extent of his realism corresponding to the extent of his "modified essentialism". Conversely, Popper's version of realism is opposed to the empiricism and classical nominalism, which he categorically rejects as subjectivism. Hence, both objective knowledge and realism are somehow related to a modified essentialism, if not equated with it, in Popper's mind. However, because Popper cannot provide an epistemological explanation and demonstration for his realism, then, his beliefs, on his own criteria, logically reduce to nothing more than personal, subjective conviction.

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NOTE: This thesis was submitted before the July 28th 1982 publication of Popper's books. Quantum Theory and the Schism in Physics and The Open Universe. However there is nothing in the content of these books, most of which was contained in Popper's Unpublished Postscript that would change the argumentation of this thesis.