43364

NAME OF AUTHOR/*NOM DE L'AUTEUR* __Douglas Carr__

TITLE OF THESIS/*TITRE DE LA THÈSE* __Tolerant Empiricism: An Essay on the__
__Philosophy of the Vienna Circle__

UNIVERSITY/*UNIVERSITÉ* __University of Alberta__

DEGREE FOR WHICH THESIS WAS PRESENTED/
GRADE POUR LEQUEL CETTE THÈSE FUT PRÉSENTÉE __Master of Arts__

YEAR THIS DEGREE CONFERRED/*ANNÉE D'OBTENTION DE CE GRADE* __1979__

NAME OF SUPERVISOR/*NOM DU DIRECTEUR DE THÈSE* __Prof. John King-Farlow__

DATED/*DATÉ* __April 30, 1979__ SIGNED/*SIGNÉ* __Douglas Carr__

PERMANENT ADDRESS/*RÉSIDENCE FIXÉ* __c/o CBC Radio__
__700, blud St. Cyrille e.,__
__Québec, Qué, G1R 5A9__

NOTICE

AVIS

THIS DISSERTATION HAS BEEN MICROFILMED EXACTLY AS RECEIVED

LA THÈSE A ÉTÉ MICROFILMÉE TELLE QUE NOUS L'AVONS REÇUE

THE UNIVERSITY OF ALBERTA

Tolerant Empiricism: An Essay on the

Philosophy of the Vienna Circle

by

© Douglas Carr

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS

DEPARTMENT OF PHILOSOPHY

EDMONTON, ALBERTA

(Spring), 1979

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read,
and recommend to the Faculty of Graduate Studies and
Research, for acceptance, a thesis titled Tolerant
Empiricism: An Essay on the Philosophy of the Vienna
Circle submitted by Douglas Carr in partial
fulfilment of the requirements for the degree of
Master of Arts.

_____
Supervisor

_____

_____

_____

Date ___April 12, 1977_____

Abstract

This thesis attempts to examine the role of Rudolph Carnap's principle of tolerance, in the philosophy of the Vienna Circle. In the first part of this essay, historical investigation seems to indicate that the work of the Vienna Circle was intended by its members to be considered as a programme for political and social change. Great importance is attached to the work of Otto Neurath and the influence he had upon Carnap. It is argued that it is only in this context that the principle of tolerance can be properly understood. Consideration is also given to its function in Carnap's later 'semantic' period. The second part of this essay tries to show that two recent attacks on the principle of tolerance are misdirected in the light of the interpretation given to it above. Some criticisms are advanced which purport to demonstrate that the principle of tolerance raises what are perhaps insuperable difficulties for the logical empiricist. However, it is also urged that the programme of the Vienna Circle, in which the principle of tolerance plays such a key role, is a very laudable enterprise.

TABLE OF CONTENTS

INTRODUCTION

When will the Middle Ages end? We do not know. We see war,
the conflict of men against men, instead of a common fight
against common danger and the organisation of a better
civilisation.[1]

— Otto Neurath

(The philosophy of the Vienna Circle is) an objective,
undogmatical philosophy, which can not possibly have any
opponents, because it makes no assertions at all.[2]

— Friedrich Waismann

We witness the spirit of the scientific world-conception
(wissenschaftliches Weltauffassung) penetrating in growing
measure the forms of personal and public life, in education,
upbringing, architecture, and the shaping of economic and
social life according to rational principles. The scientific
world-conception serves life and life receives it.[3]

— Otto Neurath

The proud thesis that no question is in principle unsolvable
for science agrees very well with the humble insight that,
even after all questions have been answered, the problem
which life poses for us has not yet been solved.[4]

— Rudolph Carnap

Der Logische Syntax der Sprache was first published in 1934.
Relying on some of the results of the work of the brilliant mathematician,
Kurt Goedel, Rudolph Carnap attempted to show that a purely syntactic
interpretation could be given for a formal language L (in this case, the
language of Principia Mathematica). Carnap wished to formulate the syntax
of L entirely 'within' L (that is, solely by using the resources of
L). Although the whole book aroused great interest on the part of
logicians, linguists, and philosophers of many persuasions, one particular
part has intrigued commentators ever since. I refer to Chapter 17
entitled 'The Principle of Tolerance in Syntax'. Virtually every
commentator on Carnap's earlier thought mentions this principle with

something very nearly resembling awe, but few have seriously attempted to elucidate and assess it. I shall try to do this here. Indeed, it seems to me that ramified-versions of the principle of tolerance have been adopted, largely unconsciously by many members of the empiricist movement in philosophy. Any serious attempt to analyse the whole tradition would take up several tomes, so I here limit myself to the genesis and development of the principle of tolerance. This is to be found in the ▓▓▓ of a few central thinkers of the Vienna Circle school of philosophy.

The first of the two parts into ▓▓▓▓▓▓▓ essay is divided is an attempt to give an exegesis of the princip▓▓ ▓▓ tolerance. ▓▓▓ such an easy matter as it may appear to be. It is necessary to give some account of the history of the Vienna Circle. This approach seems indispensible. The principle of tolerance makes no sense unless it is understood in the context of the debate which was taking place amongst the Circle members about both the direction and the details of their philosophy. In particular, the role played by Otto Neurath in the deliberations of the Circle members is absolutely crucial to my interpretation of the principle of tolerance. I hope it will be made clear that the principle of tolerance springs from certain social and political convictions held by key people within the Circle.

Carnap himself became convinced later in his career that a logical semantics of language was possible, even necessary to the formal analysis of language. The effects of the principle of tolerance in his conception of semantics will therefore also be traced.

The second part of this essay leaves exposition behind and passes on to criticism. Based on the interpretation of the principle of tolerance

propounded in the first part, the two recent attacks on the principle of tolerance are shown to be wanting in a number of significant ways. Then, we shall pass on to a critique of the principle. Several criticisms are advanced which try to undermine the fundamental assumptions upon which it is based. Several internal inconsistencies will be brought to light.

It will be concluded that, although the principle of tolerance springs from laudable intentions, Carnap's form of 'tolerant' empiricism is essentially linked with a commitment to an unworkable enterprise.

PART I: The Principle of Tolerance: A Historical Re-Interpretation

CHAPTER ONE: Some Misunderstandings About the Nature of Logical Positivism

It may seem hubristic to commence by accusing others of ignoring those features of the philosophy of the Vienna Circle which I hold to be crucial to the understanding of that movement, before I have argued for my view. However, it does seem to me to be useful to take a brief look at the literature to try and get some perspective on the interpretation of logical positivism which I shall advance as the only one which can make sense of the principle of tolerance. I shall argue that the principle of tolerance plays a central role in the doctrine of the Vienna Circle, at least for some of the important Circle members. Of course, my assertion that it does play such a role presupposes exactly what I wish to show. I ask that the reader bear with me in the hope that this approach will have justified itself once the end of the first part has been reached.

An enormous quantity of material has been written about logical positivism and the various logical positivists. This is only natural considering the great influence they have had on the history of Western philosophy. The 'Continental' tradition has taken the work of this movement as the paradigm of the sort of philosophy to which they are emphatically opposed. I am not terribly familiar with the 'Continental' tradition, but I do not think that it is an unfair generalisation to say that there has been neither an attempt to distinguish the work of the Vienna Circle from that of other philosophers in the empiricist tradition, nor to try to understand and carefully articulate the goals that the Circle had set for itself. Indeed, the attack from the 'Continental' quarter perennially seems to focus on methodology to the exclusion of what the methodology was ultimately supposed to accomplish.

Surprisingly enough, there does not appear to be a significant improvement in the literature of the 'Analytic' tradition - the tradition which claims to embrace empiricism to a greater or lesser degree, and a fortiori the logical positivists, as members of its own entourage. Considerable energy has been expended amongst empiricists to distinguish their thought from that of the logical positivists, but little has been done to try to determine what the positivists were trying to do. The Vienna Circle is not considered to have contributed anything towards a more basic understanding of man and his world and the dilemmas that he must daily face as part of that world. Nor has logical positivism been thought to have even concerned itself with these issues. The interest of the 'Analytic' tradition has again always been on the methodology and 'theoretical' writings of the Vienna Circle. No serious examination of what Circle members took to be the basic thrust of their position has been forthcoming. The fundamental tenets of the philosophical position of the Vienna Circle have been ignored. In a way, the situation has its analogue in the attitude of the pagans in this bit from Whitehead.

> The Ancient world of paganism was tolerant as to creeds. Provded that your actions conformed, your speculations were unnoticed. Indeed, one mark of progress beyond purely instinctive social relations is an uneasy feeling as to the destructive effect of speculative thought. Creeds are at once the outcome of speculation and efforts to curb speculation. But they are always relevant to it.[5]

The attitude adopted in this essay is reflected in my wholehearted agreement with Whitehead on this matter.

Perhaps the most widely influential account of the history of 'Analytic' philosophy and its immediate historical antecedents is John Passmore's A Hundred Years of Philosophy. He treats logical positivism

at length.[6] His version of the debate between Circle members about the relationship of language to the world and the 'technical' (methodological) squabbles that naturally ensued therefrom, seems to me to be excellent. Although his emphasis is on the radical rejection of metaphysics which was a central tenet of logical positivist theory, he never attempts to show why this was considered to be so important. I shall argue that comprehension of the disputes interpolated by Passmore presupposes the very thing which he omits. Furthermore, he devotes but one very brief discussion to the principle of tolerance.[7] In this essay, it will be argued that the principle of tolerance, properly understood, provides the link between the 'technical' material rehearsed by Passmore and the woefully neglected grounds for the enactment of the debates themselves.

Julius Weinberg, in what is probably the standard text dealing exclusively with logical positivism,[8] performs the remarkable feat of explaining the doctrine of the Vienna Circle in general, and giving a detailed account of Carnap's _Logical Syntax of language_ in particular, without even mentioning the principle of tolerance once![9] The _raison d'etre_ for the movement of logical positivism is nowhere examined. The pivotal role played by Neurath in the deliberations of the Circle goes untold. No attempt is made to try and see the movement as many of its most influential members wanted it to be seen - precisely as a movement with a definite programme.

J.O. Urmson, in the meagre section on logical positivism in his book, _Philosophical Analysis and its Development Between the Wars_, is the _exemplar sine qua non_ of the tradition which I am deploring. The following is his version of the positivists' answer to this pair of cognate questions, "What language form ought we adopt?" and "What

protocols ought we use?");

> The well-nigh incredible answers in fact given are these.
> It is purely a matter of convention that we select sentences
> of this syntactic form as the basic protocol statements; and
> we accept those protocols which are accepted by the accredited
> scientists and reject those that are not.[10]

It ought not seem incredible to us that this answer is incredible
to him, given that he never even mentions the principle of tolerance
which was tailored exactly to answer the questions Urmson poses. The
force of the answer provided by the principle of tolerance is completely
dependent on the making explicit of the thrust of the positivists'
position, as they themselves saw it.

On a brighter note, Passmore, in his article, 'Logical Positivism',
in the _Encyclopedia of Philosophy_,[11] discusses briefly the esprit of the
Vienna Circle; does mention Neurath and his Marxism; and does link together
the doctrine of the physicalism and the principle of tolerance. This is
all good as far as it goes. However, even with the spatial restrictions
imposed upon him, it is strange that he does not see how all this fits
together to form a comprehensive picture of logical positivism.

This covers the major literature in English which purports to give
an account of logical positivism, with several exceptions which will be
duly noted throughout the rest of the text.[12] There are numerous
articles, of course, dealing with many aspects of logical positivism.
Seldom exegetical, they deal largely with 'technical' issues of positivist
theory. I do not wish to claim that they are all misguided. However,
by a careful examination of the history of logical positivism, and by
reading the positivists' own account of what the Vienna Circle was all
about, one can regard the 'technical' issues in a new and perhaps
more insightful light. Indeed, one gets the feeling reading about logical

positivism that it was solely a philosophy which attempted with single-
minded determination to destroy the speculative conception of philosophy
through the application of logic to traditional philosophical problems.
It follows from this that the interest in positivism would centre
around disputes over the details of this technique. The why and wherefore
of the matter gets forgotten in the flurry of the discussion. The principle
of tolerance is such a unique subject in the corpus of the Vienna Circle
doctrine because although it appears to be simply an artifact of technique
in the logical analysis of language, absolutely no sense whatever can be
made of it short of digging out the assumptions upon which it rests -
assumptions which colour the whole of logical positivism. The impression
that the Vienna Circle was composed of philosophers who were either
disinterested by, or uninclined to say anything about, some of the
political and social issues which face every human being, is no longer
tenable. I will argue that the principle of tolerance is the pivotal
notion which hooks up the much-emphasized 'technical' issues in Vienna
Circle doctrine with the 'practical' concerns with the world - which were
the basis of the entire philosophy. Let us pass from polemics to
exegesis.

CHAPTER TWO: The Beginnings of the Vienna Circle and the Aufbau

Today, in 1977, it is scarcely original to say that the philosophy of the Vienna Circle was not free of metaphysics. In fact, three members of that organization have even admitted to the change.[13] We recall F.H. Bradley's famous pronouncement that anyone who tries to refute metaphysics in himself a brother metaphysician. A.J. Ayer tried to meet this charge, but only very superficially, in his positivist classic, Language Truth and Logic.[14] Exhibiting the nature of these metaphysical presuppositions, however, is a lengthy and painstaking task. Another great labour, perhpas more difficult yet, would be a psycho-historical inquiry into the reasons for these presuppositions' acceptance in the first place. One may even question the value of such a project. The dangers of falling into the jargon of aprioristic psychology or faddish psychiatry are manifold. Consequently, I propose to eshew this line of attack and approach the subject in a considerable more modest fashion - historically, with an emphasis on what is known to have been said or written.

In 1922, Mortiz Schlick was called to the prestigious chair at Vienna in the philosophy of science, which had been especially created for Ernst Mach, the 'philosopher-scientist' who so ably criticized Newton's concept of absolute time. Mach died in 1901 and was succeeded in 1905 by Ludwig Boltzman, who had held it until 1906. The chair had remained empty since the war. Schlick had made a name for himself by writing the first philosophical critique of Einstein's special theory of Relativity, called Das Raumzeitlehre (1917). When Schlick arrived in Vienna, his two brightest students, Friedrich Waismann, who was then the equivalent of a post-doctoral fellow, and Herbert Feigl, a promising graduate student

at the time, urged him to start a seminar on the use of scientific
method in philosophy. This was duly set up for Thursday evenings at
Schlick's lodgings.

The discussion proved to be highly stimulating, and under Schlick's
leadership many problems in the philosophy of science were examined.
Most of the participants were not then professional philosophers. They
were generally mathematicians (like Kurt Goedel), or physicists (like
Gustav Bergmann). There was even a specialist in jurisprudence, Felix
Kaufmann. A turning point, however, was reached when the members of an
organization which had been known as Der Verein Ernst Mach began to
attend the seminar. This was a group which had been formed by the
sociologist Otto Neurath. Its most important members were Hans Hahn,
the mathematician, Phillip Frank, physicist and life-long friend of
Neurath (who never officially joined the Circle itself as he accepted a
post in Prague instead), and Viktor Kraft, the historian. Neurath
contributed much to the discussion in the new seminar through his most
harsh and vociferous criticism of metaphysics. It was he, prophetically
enough, as we shall see, who gave the new, enlarged group its name -
The Vienna Circle. Hans Hahn, however, was the one who set the discussions
off in the direction that was to prove to be the basis of the Circle's
mature views. A number of the members were somewhat familiar with Russell
and Whiteheads's Principia Mathematica (1910-13), but they had great
difficulty understanding it. Hahn, over a space of two years, patiently
lectured to his colleagues on the intricacies of the Principia logistic.
He also introduced them to the cryptic Logisch-Philosophische Abhandlung
(1921) of Ludwig Wittgenstein, which for the first time really gave them
a focus for their discussion; its translation into English as the

Tractatus Logico-Philosophicus helped to prepare anglophone philosophers for positivist ideas. Armed with their new facility in logistic, they set about trying to decipher the _Tractatus_, which although puzzling, seemed to embody the basic intuitions upon which the seminar gatherings were predicated - the application of scientific method to philosophy. In 1925, the same year that Hahn introduced Wittgenstein to Schlick and his pupils, Rudolph Carnap began to attend the meetings as often as he could.

     * Biographical material on Carnap (1891-1969) is somewhat scarce. In what follows below, I will recount some of Carnap's early life and talk about some parts of the _Aufbau_, his first major work. This discussion is intended to show that he definitely held what I shall call (somewhat nebulously, for the time being) 'humanitarian ideals', before he joined the Circle. The exegesis of some aspects of the _Aufbau_ is intended to lay the foundation for the discussion of the principle of tolerance itself. From here onwards, some familiarity with the technical issues of logical positivism is presupposed.

     We have from Carnap's autobiographical essay[15], at least two statements that illuminate the formation of what I call his 'humanitarian ideals' in the period before he joined the Vienna Circle. He mentions there how deeply his parents were committed to Protestantism. He adds that, although as a university student he quickly gave up the religious views into which he had been raised, he always had great respect both for his parents and for their beliefs. He was appalled by tales of the atrocities that had been committed in the name of one religion or another. As a consequence of this, he became firmly convinced that religious toleration ought to be practised by all societies.[16] This thesis later became much more comprehensive,

as we shall see.

It seems that, although Carnap led a somewhat austere and retiring life, he was never one to pass up a chance to discuss vital issues with his friends and colleagues who he truly respected. He talks about the many discussion groups in which he took part as a student. He tells us that he participated under duress in the First World War; it had commenced when Carnap was twenty-three and a candidate for a Ph.D. in physics at the University of Jena, where he also studied logic with Frege.[17] In one paragraph, he describes his socio-political views of the pre-Circle period, contrasting his attitudes of before and after the Great War.

> The outbreak of the war in 1914 was for me an incomprehensible
> catastrophe. Military service was contrary to my whole attitude,
> but I accepted it as a duty, believed to be necessary in order
> to save the fatherland. Before the war, I, like most of my
> friends, had been uninterested and ignorant in political matters.
> We had some general ideals, including a just, harmonious and
> rational organization within the nation and among nations.
> We realized that the existing political and economic order
> was not in accord with these ideals, and still less the customary
> method of settling conflicts of interest among nations by war.
> Thus the general trend of our political thinking was pacifist,
> anti-militarist, anti-monarchist, perhaps also socialist,
> but we did not think about the problem of how to implement
> these ideals by practical action. The war suddenly destroyed
> our illusion that everything was already on the right path of
> continuous progress.[18]

Although Carnap seemed to think that he and his friends of student days had nothing practical to propose, it is worth mentioning here that Carnap himself had already cultivated an interest in universal languages which was to hold his attention throughout his entire life. He eagerly learned Esperanto when it was first developed and spent many spare hours checking out other languages of this type. This was a practical step towards the fulfillment of his early socio-political ideals; and we shall see that it has a very suggestive parallel in his later work.

As a post-doctoral fellow at Jena, Carnap had heard through Hans Reichenbach about Schlick's seminar and had managed to get himself invited to attend under the auspices of Hahn. In the meantime, he had been working on his third book - Der Logische Aufbau der Welt (1928), now referred to by philosophers and intellectual historians as the Aufbau. Carnap's first publication had been his doctoral dissertation entitled Das Raum (1922) which offered a somewhat neo-Kantian analysis of the concept of space - Carnap's teacher in logic, Frege, had rejected Kant's view of arithmetic as synthetic a priori in status, but had remained closer to Kant on the status of geometry. Das Raum had been followed in 1926 by a short book on the concepts of physics called Physikalische Bergriffsbildung. The Aufbau, however was the first of Carnap's books to make a major impression on the philosophical world.

The book's project was one of rational reconstruction. The idea was at least as old as Leibniz, but it was only with the help of the logic of Russell and Whitehead that the task seemed feasible. Schlick had come up with the title, but Carnap himself approved the English translation which is somewhat misleading. The German work 'der Aufbau' (literally: 'construction') suggests structure only in the sense of 'that which is built up'. Indeed, Carnap had embarked on a Russellian programme of 'rational reconstruction', as expecially exemplified in Russell's Our Knowledge of the External World (1915). Carnap states the outline of the project of the Aufbau as follows:

> It is the main thesis of construction theory that all concepts can in this way be derived from a few fundamental concepts, and it is in this respect that it differs from most other ontologies (Gegenstandstheorie).[19]

We may immediately wonder, especially in lieu of the word Gegenstandstheorie, what the connection is with the furniture (if any)

of the world.

> ... there is only domain of objects (Gegenstaenden) and therefore only one science.[20]

A traditional metaphysical question may now force itself upon us, to wit: 'What is the nature of this object domain?' It is in his answer to this question that Carnap first lays down an important necessary condition for the adoption of what he will later call the principle of tolerance, and thus avoid the metaphysical question posed above.

> It makes no difference whether a given sign denotes the concept or the object, or whether a sentence holds for objects or concepts. There is at most a psychological difference, namely, a difference in mental imagery. Actually, we have not two conceptions, but only two different interpretative modes of speech...We can actually go further (without here giving any reasons) and state boldly that the object and its concepts are one and the same. This identification does not amount to a reification of the concept, but on the contrary a 'funtion-alization' of the object.[21]

Carnap <u>chooses</u> to build his construction system on an 'autopsychological' base, using what we might call cross-sections of experience, or <u>Gestalts</u> and the 'recollection of partial similarity' as the only primitiv, relation. Through the use of ingenious applications of the logistic of the <u>Principia</u>, he is also concerned to show how the world might be reconstructed 'from scratch'.[22] By this I mean that he could reconstruct the world without presupposing any of the features (physical or ontological) of the world in his system. He thought that he needed to make no 'speculative' assumptions about the world and its nature. Given a system base, by means of purely logical manipulations alone, he thought that he could derive the laws of physics and therefore the basic structure of the world. In this matter he was heavily influenced by such recent developments (at that time) as the discovery of non-Euclidean geometries and of alternative modes of axiomatizing a system of geometry.

It was not intended to be a metaphysical reconstruction, for any
number of 'bases' (ie. domains of objects) might do the trick. As for
the primitive relation, Carnap was optimistic that psychology would be
reduced in future to the physiology of the brain and that the 'recollection
of partial similarity' could some day be formulated in purely physiological
terms. The language in which he builds up the domain of objects and
his theory of construction is given a strictly extensional interpretation.
The concepts to which reference must be made in the system are to be
considered only in terms of their 'reference', and not their 'sense',
to use Frege's terminology. The 'senses' are mere epistemological
additions. On this view, they have no ontological bearing whatever and
are therefore to be proscribed by the philosopher who is trying to
reconstruct the world on a scientific basis.[23] The intuition which lies
behind this claim is that science is concerned with what the world is
'objectively' like. The 'reference' of a concept was thought to be
'objective'. The 'sense', however, was that which is imposed by observers
on the concept. It is more exactly a psychological feature added on to
the concept in virtue of our necessarily finite and subjective apprehensive
of any concept of any object. But, given the identification of concept
and object, we find that Carnap can claim to have steered clear of the
three major evils which can hound the rational reconstructionist -
metaphysics, psychology, and epistemology (taken by Carnap in its
perjorative sense to be a hodge-podge of the two). No judgement is made
as to the real nature of the world. Science has no need of such
assumptions. It just assumes a 'realistic' view of the world and is thus
able to carry on perfectly well without any metaphysics or psychology built
into it.[24] The language of the construction system itself carries no

ontological commitments at all. It is entirely free from metaphysics
or epistemology as it makes no difference what 'metaphysical' system
one might use as the base for the system. It makes no pronouncements
about reality.

> Let us emphasize again the neurality of the constructional
> language. This language is not intended to express any of the
> so-called epistemological, but in reality metaphysical doctrines
> (for example realism, idealism, solipsism), but only epistemological
> relations.[25]

As Carnap repeatedly insists, construction theory contradicts no
metaphysical school.

> The so-called schools of realism, idealism, and phenomenalism
> agree within the field of epistemology. Construction theory
> represents the foundation which they have in common. The
> diverge only in the field of metaphysics, that is to say
> (if they are meant to be epistemological schools of thought)
> only because of a transgression of their proper boundaries.[26]

In fact, with the world rationally reconstructed in this manner,
Carnap can even go as far as to say that,

> 'Materialism is a translation of spiritualism'. All philosophers
> are correct, but they express themselves with varying degrees
> of ineptness, and they cannot help this, since they use the
> available language and consequently speak in a hundred sub-
> languages, instead of inventing one pasigraphy.[27]

> Thus it follows that, if our suggested compromise is accepted,
> then non-rational intuition and religious faith (to the extent
> to which they are not only believing the truth of certain
> propostions, but are ineffable) cannot be called knowledge.

> It should be favourable to the peaceful relations between the
> various spheres of life, if we do not designate two such
> heterogenous spheres with the same name. It is only through
> this that contradiction and strife arise, which are not even
> possible as long as complete heterogeneity is clearly seen
> and emphasized.[28]

The last paragraph evokes the true spirit of the Aufbau. Carnap is
trying to teach us to use the construction system when we wish to answer
philosophical questions but to realise that it only takes us so far.

With regard to other philosophical questions, one must exercise an epoché.[29] One chooses the base which one finds most convenient to plug into the construction system. The realisation that there is no scientific way of deciding between the various metaphysical accounts of reality perhaps does not lead in turn to the state of ataraxia as it did for the ancient skeptics. However, this realisation spares us the needless conflict and wrangling that has characterised the course of philosophy. (On the other hand, it may be that we attain a limited ataraxia by so eschewing many sources of Angst about the unintelligible. This is actually not too far from Carnap's later doctrine as well known.) The sphere of metaphysical discourse is now shown to be irrelevant to a serious scientific enterprise, which Carnap conceives philosophy to be. Although the construction system is in itself only a sketch, the advance of science (which, of course, includes formal logic and mathematics) will allow philosophers to complete the Aufbau and so have the complete Weltbild which has so long been striven for by scientist and philosopher alike.

But what of the questions that traditionally have occupied philosophers that are not answered by the construction system and scientific philosophy and which are not of the epistemological-metaphysical type?

> The proud thesis that no question is in principle unsolvable
> for science agrees very well with the humble insight that, even
> after all questions have been answered, the problem which life
> poses for us has not yet been solved.[30]

Let us now close this chapter with some more history and a look at the character and works of the leader of the Vienna Circle - Moritz Schlick. The stage will then be completely set for the main act which is to follow in the next two chapters.

Hans Reichenbach, the leader of a similar group in Berlin, who also attended some of the Thursday evening sessions, applied for a position at Vienna when it became available in 1926. It was lar▓▓▓▓ to Hans Hahn's lobbying of Schlick that Carnap was chosen. Hahn ▓▓ociated Carnap's technical facility with the formal idiom and it turned out that his judgment was quite astute, to say the least. Schlick himself was perhaps uneasy at first. He was the oldest member of the group and certainly the most widely read in the realm of '**les arts et les belles lettres**'. His writings were almost exclusively in a natural idiom (as opposed to a formal one). He felt that the Circle had contributions to make in the humanities. His **Fragen der Ethik** (1930) is one of only three books by Circle members on questions of 'value'.[31] He tried to analyze moral statements as disguised imperatives. The justification for these imperatives, claimed Schlick, can only be on utilitarian grounds. Both of these points are supposed to be arrived at as a result of value-free, 'theoretical', 'cognitively meaningful' analysis. The first is discovered simply through the 'objective' analysis of our moral talk. The second is established by an examination of how people actually do act morally. The work is intended to be ojective in the sense that it purports to offer merely a descriptive, as opposed to a prescriptive analysis. However, in the last part of the book, Schlick has seemed to posterity to transgress the classic boundary between 'is' and 'ought'; he has appeared to be urging us to act in certain desirable ways, and yet not to realize that he is thereby forcing certain values upon us, cleverly disguised as facts. Indeed, shortly after the book's publication, this was the reaction of Friedrich Waismann, Schlick's closest associate, who urged that the **Fragen der Ethik** be read as a hymn; such in the spirit

of the closing passage of the book which is a parody of Kant's 'Hymn of Duty'. This was actually an effort to safeguard Schlick from the criticism of his colleagues by putting his essay beyond the realm of 'cognitive' discourse. It was somehow to be construed as 'poetry'.[32]

Schlick advocated a critical realism and thought (like Richard von Mises) that metaphysics, although asserting nothing, could be helpful both with 'life' and the correct formulation of non-cognitive 'expressions' as cognitive 'assertions'. His respect for tradition was great and he was well aware of the influence of metaphysics on history. He held that it is the philosopher's job to expose these situations.

> Le dogmatisme du metaphysicienne est donc chose secondaire.
> It est inevitable des que cette confusion fondamentale des
> problems logiques et les problems de fait s'est un fois
> produite. Comme logiciens nous sommes contents d'avoir
> decouvert le paralogisme; nous nous sommes debarasse d'une
> certaine sort d'inquietude, des lors plus d'angoisse nous
> manifesterons une comprehension historiques, leurs dogme-
> ne nous irritent plus; nous pouvons admirer en tout bonne
> en cherchant, tout en committant des erreurs, fait preuve
> d'une profonde volonte d'arriver a la verite.[33]

Nonetheless, Schlick insisted on a strict separation between cognitive and non-cognitive questions. With Reichenbach, he was most outspoken against the tendency of some of the Circle members to read political implications into the Vienna Circle's work in philosophy. He was opposed to a spirit of polemic: He did not approve of the Circle's pronouncements being construed as a programme for changing the world.

> C'est vraiment une drole idee que de vouloir conduire les
> hommes a la verite en leur faisant peur de certain mots.[34]

Schlick expressed great admiration for Socrates and his personal, individualistic, relentless search for the truth. He sets himself apart from those who want to destroy philosophy. He thought that wide reading and depth in cultural background would help the search for truth. I

believe that von Mises echoes his sentiments very well in this passage, in which he attacks the notion of science for science's sake, and suggests that the realm of science will be broadened to include other areas where pressing problems need solution.

> A basic contrast between natural sciences and the humanities, with respect to either method or subject matter, cannot be constructed. Any classification and subclassification of the sciences can serve only a practical and temporary purpose; it is neither logically binding nor final, but depends upon the external circumstances under which scientific work is done and upon the very often achieved by the clarification of questions that lie on the boundary of previously separated fields.[35]

It is clear that Schlick feels that valuable progress is to be made in the course of clarification. It is significant that he and Waismann (especially the latter) were the only positivists with whom Wittgenstein would regularly discuss his philosophy.[36] Wittgenstein's intensely personal mark was stamped on his own philosophy and his claim to have shown, in principle, the solution to all philosophical problems was extremely amenable to Schlick's own style. His apolitical stance and the notion that questions of value such as we have in politics, etc., belong in the realm of 'Das Mystische' seem to have been well adhered to in Schlick's work. The attribution of value is strictly a non-cognitive affair in Schlick. He wrote a tiny book and an essay in which he considered the meaning of life.[37] The second is a reworking and a condensation of the first. He argues in both that the meaning of life is to become like a child again. Clearly, however, these essays are meant as pure and unmitigated speculation. They adhere to the spirit of doing philosophy which have seen in Carnap in two grounds. They re-emphasise the importance of questions outside the cognitive realm, yet at the same time make no pretense of being assertions. They were

intended by Schlick to be taken as poetry.

Perhaps both the claim about the affinity of the philosophies of Schlick and Wittgenstein ought to be somewhere tempered because of one characteristic that they both do share. They are both somewhat ambivalent when it comes to issues non-cognitive. Wittgenstein's 'Das Mystische' may in fact not be strictly the realm of poetry and hymns. There may be simply a different mode of reasoning which applies there. On the other hand, Schlick may have been more of a moral intuitionist. In his unfinished posthumous work, Natur and Kultur, which was to have his Hauptwerk, he grapples with the old Greek problem about the ascendency of either nomos or physis. This book was supposed to bring together his ethical theory with a philosophy of nature. He was trying to show the importance of culture and art throughout history and demonstrate that culture was necessary for progress in civilisation.[36] It looks as if he thought that the cultured man would be the morally prosperous man, and that that sort of man would not only be stimulated by the culture of the society in which he lived, but that he, in his turn would benefit that society. Schlick also wrote a number of essays on the importance of leisure, in which he argued that it was a necessary condition for the development of culture.

Schlick's writings are much broader in scope and less univocal both in tone and in the drawing of conclusions than those of most of his colleagues who attended the seminar at his lodgings. This makes categorical assertions about him fairly difficult. However, I have discussed him at length without truly doing justice to the width and depth of his thought as he serves as an admirable foil for the less 'conservative' (I do not mean this in a perjorative sense) members of the

Circle, of whom I will be treating at much greater length.

Schlick, as the leader of the Vienna Circle, definitely did not, indeed could not, impose his style of philosophizing and his complete conception of philosophy on all the members of the Circle. Waismann, von Mises, Bergmann and Kraft all tended to join with Schlick in taking a more 'conservative' view of the Circle and what its philosophy was supposed to accomplish. Generally, their opinions on the issues discussed were far less 'radical' (again, in a non-pejorative sense). For this reason, I dub them, for the sake of convenience of reference, the 'right wing' of the Circle. They are to be constrasted with the 'left wing' of the Cirele, which I take to be composed primarily of the co-signees of the 'wissenschaftliches Weltauffassung' - the 'manifesto' of the Vienna Circle - Hahn, Carnap, and Neurath.[39] We shall now proceed to look at this wing of the Circle.

CHAPTER THREE: Carnap and Neurath: The Debate About Protocols

Logical positivists are generally characterized as physicists and mathematicians who are by and large ignorant of the humanities. Otto Neurath (1882-1945) was a sociologist by training. He knew Latin and Greek and, like Schlick, was extremely widely read, writing articles in French and English in addition to his native German. But he admitted that, while he was interested in history, he did not pay much attention to the history of philosophy, although he had done so in his youth. This was because he was totally antipathetic to the metaphysics of the tradition. He was quite convinced that devotion to metaphysics could easily lead men from obscurity to obscurantism. (Like Ayer, Neurath was strongly opposed to construing metaphysics as poetry because this seemed to impute some value to it). Instead he read classical economics, both social and political history and theory, and the classical works of science. Some of his earlier work was on the development of a system to study the economy of a nation at war.[40] He was involved in the famous Spartacus revolt in Berlin in 1919, albeit as one of the moderating influences. Having been arrested anyway, one of the witnesses at his trial was Max Weber. He was found guilty but was repatriated by his native Austria.

A lifelong concern of Neurath's was languages. His primary concern was with the creation of a language which would use 'pictorial' represent-ation to communicate widely the results of scientific investigation. He hated arcane, esoteric forms of expression. He attacked mystifying authors (like Spengler, in his view)[41] whose alleged attempts at intellectualization he equated with Platonic mystification and fascist tendencies to hide truth from the people. His work in representational

languages and development of media to bring science to the public, lead him to be called to take charge of the Gesellschafts und Wirtschaftsmuseum in Vienna in 1924.[42] The museum was to be a propaedeutic to the rational organization of society. It would literally show the various kinds of social processes at work in Viennese society and bring facts into relation with them for all to see. With his first wife, Hahn's sister Olga (also a Circle member), Neurath developed a language called 'Isotype' to do the job. It was a resounding success, though it was never as widely employed as Neurath himself wished.[43] During that same year, Neurath started up a group that met to discuss the application of rigourous scientific procedures to the study of politics and society. He lectured on Marx, and being very well versed in his thought, he made various Marxist teachings clear to a corpus of intellectuals, mostly scientists, who were interested in applying scientific procedure to the problems of society. Hahn, Kraft and Frank were all members of this group which was called Die Verein Ernst Mach - named after the great positivist philosopher-scientist.

Neurath, apparently, was a huge man with a balding head of red hair and a florid face.[44] He was most animated in discussion and an eloquent, if loquacious speaker. His personality and strong will were abundantly evident in his speech patterns. He had an unflagging capacity to take on enormous amounts of work. His boundless energy amazed his colleagues and awed his students. He was the natural leader of the group.

Hahn heard about Schlick's Thursday evening seminar and seems to be the first of Neurath's friends to attend it. Hahn brought back stories of the exciting discussion to the fellow members of Die Verein Ernst Mach. Frank left for a post in Prgaue at about this time but the

other members soon became permanent participants in the discussions at Schlick's home.

There were immediate personality conflicts between Schlick and Neurath, who were, with Hahn, the oldest members of the new group. Schlick's dignified and gentle style was diametrically opposed to Neurath's voluble and frequently harsh critique of opponents' positions. Three factors played an essential role here. First of all, Neurath had a nearly pathological disdain for metaphysics, which he was quick to voice. In fact, he used to shout, 'Metaphysics!' whenever he thought that someone in the discussion had transgressed the bounds of that which we can find out by means of empirical science. Finding himself so often tossing this out, he proposed to Schlick that he merely say 'M!' as it was shorter. Finally, in the interests of brevity and the smooth continuity of argumentation, he changed tactics once again and said 'Not M!' instead as, he adjured, he would have to speak less often if he pointed out this feature of the discussions instead.[45]

Secondly, his whole conception of how to philosophize was not only stylistically opposed to that of Schlick, but was incompatible with the essential tenets of Schlick's method. Probably as a result of his Marxism, he insisted that groups should get together to solve problems, that there should be, as it were, a division of labour amongst these groups which should be composed of experts from all walks of life. In the Vienna Circle, he found his dream. He thought that this group of intellectuals which represented such a wide variety of academic backgrounds could, by working together, each in his separate field using strict scientific method, produce a unified corpus of scientific knowledge. This leads on to the third point which gets us to the heart of Neurath's thought and

shows his influence on the thought of the Vienna Circle and in particular on Carnap.

The 'right wing' faction of the Circle, led by Schlick, considered that political discussions had nothing to do with the 'theoretical' (cognitive) aims of the group.

> Political tendencies, such as Neurath occasionally injected into publications and such as the 'Vienna Circle' was reproached for by Dingler in the preface to his Grundlagen der Geometrie (1933) had nothing to do with the aims of the Vienna Circle; which were purely philosophical. Reichenbach repudiated such tendencies (Erkenntnis v.4, p.75f) and likewise Professor Schlick emphatically disowned them in his conversations with me (Kraft).[46]

Hugo Dingler had said that the denial of an absolute ground for geometry, (with which the Vienna Circle of course concurred, as part of their rejection of metaphysics), lead to relativism of values and hence der Bolschiewismus, Reichenbach categorically denied this in a short article entitled 'In Eigner Sache', and sought to refute again the notion that geomtetry has an absolute foundation. Significantly, Reichenbach does not support his denial of Dingler's charge of political radicalism.[47]

The essence of Schlick's and Reichenbach's position was that the practical and theoretical aims of the Circle must be kept separate.[48] The practical aims were strictly non-cognitive (not 'theoretical', rather 'practical') and consequently were of no concern to a group of philosophers advocating scientific method in philosophy.

> Neurath often went far beyond these narrow limits and used 'pragmatic-political' arguments...(He) strongly criticized (the) neutralist attitude, which in his opinion gave aid and comfort to enemies of social progress.[49]

Once, he even took Hahn in hand for trying to purify parapsychology of its unscientific elements by attending a series of séances, claiming that this merely tended to "strengthen supernaturalism".[50]

Indeed, Neurath saw the clusters of beliefs and methods which he deemed metaphysical as _the_ embodiment of pseudo-rationality and as the major obstruction to social progress. Since what he took to be metaphsics had no possible relationship to the world, he concluded that a change in metaphysics meant no change in the world at all. Hence Neurath called metaphysics the most useless branch of supposed inquiry and a source of the kind of pseudo-rationality which was harmful to human reason. Thus Neurath was against 'armchair' philosophy for two reasons: it was unscientific (hence irrational, meaningless) and it could not provide any practical benefit to the world. We shall see below that the first reason is to be cashed out in terms of the second! Most of the positivists were in agreement with respect to the first thesis (to a greater or lesser degree), but the second was by no means agreed upon. Hahn and Carnap argued with him at great length, defending the right of the pure scientist, at the very least, to conduct his investigations,

> ... without regard for the question of whether people use
> or misuse the results...Neurath rejected these doubts and
> warnings. He would deride those purist philosophers who sit
> on their icy glaciers and are afraid that they might dirty
> their hands if they were to come down and tackle the practical
> problems of the world.[51]

To this end, Neurath definitely stressed the 'programmatic' aspect of the Vienna Circle. It was he who suggested the name and who tried to develop in his fellow group members a sense of unity of outlook. _Der Verein Ernst Mach_ became the publicizing arm of the Circle. It was through this society that the Vienna Circle tried to bring its views before the public and to propagate the benefits of the scientific attitude to those doing work in any academic discipline. Needless to say, the 'right wing' was not impressed.

These meetings of <u>Der Verein Ernst Mach</u> continued throughout the life of the Circle but they came to be supplanted by other activities which transformed the club into something more nearly representing a political party.[52]

Neurath's driving energy was reflected in the number and range of projects in which he was involved. He organized the series of International Congresses for the Unity of Science. These were supposed to be a forum for scientists and philosophers to get together with their colleagues from around the world to exchange information and ideas with regard to the project of unifying science. He initiated two series of books - one was with Schlick as collaborator - The <u>Schriften zur wissenschaftliches Weltauffassung</u> which became the rubric under which many of the Circle members published their books. The other was a series intended for the layman, which was published under the auspices of the <u>Verein Ernst Mach</u>. He was the founder of the journal <u>Enheitswissenschaft</u> - another <u>Verein</u> publication. Although he never became an editor, Neurath was also the driving force behind the creation of the principle organ of the Vienna Circle, <u>Erkenntnis</u>. He organized the series of public lectures given in Vienna, sponsored by the <u>Verein</u>; and last, but certainly not least, Neurath was the father of the <u>International Encyclopedia for the Unity of Science</u>. The latter was a project conceived on a grand scale. It was to be two introductory volumes and twenty regular volumes, each one on a different aspect of the Unity of Science, all of which were to be supplemented by five volumes of graphics - pictures, diagrams, charts, maps, etc., all done in Isotype. The first twenty-two volumes were originally to be published in three languages with arrangements made to add more. The five 'schematic' volumes would be trilingual, as natural language was only needed to explicate the symbolism and the organization

of each volume. People from all different cultures could take the final volumes in hand and with a bit of training, be able to see the foundations of all the knowledge in the universe. It would have been Neurath's crowning acheivement had the Encyclopedia been completed. As it was, Carnap and Charles Morris, the American pragmatist who was the Circle's spokesman in North American, took over after Neurath died. Only the introductory volumes were published.

The affinities with the Encyclopedie of Diderot, d'Alembert and other thinkers of the French Enlightenment are conspicuous; especially the notion of having a supplementary volume of illustrations and diagrams. The encyclopedic tradition always had a programmatic nature; the spirit of reform and rationality through the science which imbued the project was caught perfectly by Kant in his famous essay, 'Was ist Aufklaerung?'. The Vienna Circle has often been considered ahistorical. In Neurath's hands, it was not. The study of its precursors is beyond the scope of this essay, but it suffices to point out that Neurath, at least, was well aware of the tradition which preceeded him. He cites in addition to the Encyclopedistes,numerous precursors in each of a number of fields. In the realm of political and social philosophy for example, he singles out for praise, Epicurus, Leibniz, Hume, Bentham, Mill, and Comte, Spencer, Feuerbach, Marx, Mueller-Lyer, Popper-Lynkeus, the elder Carl Menger, and John Dewey all receive special mention.[53] Neurath's Encyclopedia itself contains two monographs which document those who are thought to precurse logical empirism. The first is entitled 'The R   ionalism and Empiricism' in which the scientific and rationalisti   logical positivism is shown to be the outcome of developments i   ñ   century mechanics - notably the work of Mach. The secon   ls

with the Vienna Circle itself and is called 'The Rise of Logical Empiricism'.[54]
It shows briefly why these various thinkers are taken to be the mentors
of the movement. Even the term 'positivism', as Comte defined it, has
import for the programmatic nature of the Vienna Circle. It goes without
saying that the strains of mysticism in Comte were rejected, thus making
Mach the logical Father of the movement as it was conceived by Neurath.
Usefulness in the improvement of individual and social existence was
part and parcel of the programme.

Another influence that might be briefly mentioned is that of the
church.

> It is certainly remarkable that the atmosphere in Vienna was
> not determined by the philosophy of the (sic) neighbouring
> Germany, 'Idealism', but by the empirical influences (sic)
> of England, France, and America. Neurath draws attention
> to the fact that this situation has not only originated
> from the labour of E. Mach, but has been strongly advanced
> by the antipathy and fear, that government and church felt
> for German Idealism,which they considered to be a result of
> the French Revolution. Empiricists were generally tolerated
> but not so Idealists because ecclesiastical circles did not
> understand that criticism from empirical quarters would be
> much more radical than that from the Idealists.[55]

The church of Vienna was, of course, the Roman Catholic one,
whereas, in Germany, the Protestant church was supreme. The Protestant
doctrine and Idealism seemed to be much more compatible, especially
because of the pan-Germanism that was so often associated with it.
The aristocratic, traditional Catholic church would not put up with that
sort of thinking. Neurath himself outlined the political and social
background that led up to the development of the Circle in the work
alluded to in the quotation above.[56] He felt that the study of society
could also be conducted rationally and scientifically, that is to say,
without invoking any sort of metaphysics, either in the methodology or the

results. He was convinced that a critical and undogmatic form of
Marxism would provide the necessary tools.

> Marxism endeavors to establish the connections between the
> social institutions and the behaviour of entire classes, so
> that it can account for the frequently changing verbal sequences
> which are supposed to 'explain the motivation' of the scientifically
> law-abiding actions which are conditioned in this way. [57]

This is the sort of analysis that is most amenable to the unity

of science and the advancement of society. A new discipline called

'felicitology' [58] was to replace value-theory of all descriptions and

jurisprudence. This in turn was taken to be a part of sociology. [59]

Indeed, Neurath thought that he could sociologically explain away objections

to his reformation of the discipline, which in turn was part and parcel

of the corpus of science, which again in turn was the sum of human

rational knowledge. Here is a substantial passage from Neurath which

should help clarify these intended connections.

> Only established schools of sociology, requiring social support,
> can master, by means of collective labour, the masses of material
> which must be adapted to stricter formulation of correlations.
> This presupposes that the powers which finance such work
> are favourable inclined towards social behaviourism.
>
> This is in general not the case today. Indeed there exists in
> the ruling classes an aversion to social, as well as individual,
> behaviourism which is much more than a matter of scientific
> doubt, which woudl be comprehensible in view of the imperfections
> of this doctrine. The opposition of the ruling classes, which
> usually finds support in the universities of capitalist countries,
> is explained sociologically above all, by the fact that empirical
> sociology, through its non-metaphysical attitude, reveals
> the meaninglessness of such expressions as 'categorical imperative',
> 'divine injunction','moral idea', 'super-personal state',
> etc. In doing this it undermines important doctines which are
> useful in the maintenance of the prevailing order. The pro-
> ponent of unified science does not defend one world-view
> (Weltanschauung) among other world-views. Hence the question
> of tolerance cannot be raised. They declare transcendental
> theology to be not false, but meaningless. Without disputing
> the fact that powerful inspiration, and cheering and depressing
> effects, can be associated with meaningless doctrines, they can
> in practice 'let seven be a holy number', since they do not

harass supporters of these doctrines. But they cannot allow
that these claims have any meaning at all, however 'hidden',
ie. that they can confirm or confute scientific statements.
Even if such reasoning by the pure scientist leaves metaphysics
and theology undisturbed, it doubtlessly shakes the reverence
for them which is frequently demanded.[60]

This leaves us with three points to pick up and expand so as to see
the continuity of Neurath's thought. The first is the notion of world-
view; the second is the unity of science, which leads us to the third -
the quarrel over the nature and scope of the principle of verification.

To address myself to the first point, I must briefly distinguish
between two words which denote two related but crucially different
concepts Weltanschauung and Weltauffassung. The root of the former is
the infinitive schauen (to show). The separable and prepositional
German prefix an makes it the infinitive anschauen (literally, to look
at) and Anschauung is the noun formed from the infinitive; it may require
various English nouns for translation depending on the connotation
one desires (eg. 'view', 'perception', 'contemplation', 'observation').
However, the addition of the noun Welt (world)[61] as a prefix changes
things radically. The translation always given is, of course, 'world-view'.
Grimm devotes a number of pages to this word but of the three basic
definitions, the following one is relevant here. It relies on some
previously given definitions, but for our purposes, some intuitions about
the word will suffice.

> 3) oft beziegt man sich welt. - wie einige der vorstehenden
> belgege schon erkennen lassen - weniger auf eine bestimmte .
> welt-aufsicht oder weltvorstellung als solche als auf die
> damit verbundene seelisch-geistisch grundhaltung und einstellung
> gegenueber welt und leben. (my underscoring).[62]

This is the sense in which the word was generally used in philosophy
after Kant. It carries the sense of being the absolute base upon which

one forms one's opinion, belief or knowledge of everything that there is to sense, intuit, think about or what have you. To Neurath, this smacked of metaphysics. As one can see from his sociological programme, he does not countenance absolutes of any sort, claiming that they are sociologically relative. Talk of any _seelischgeistisch grundhaltung_ to him was on a par with the categorical imperative - strictly speaking, meaningless. We cannot speak rationally (that is, scientifically) about it. So it is on pain of inconsistency, that Neurath may not claim to be pushing for a scienific '_Weltanschauung_'.

However, the case is different with '_Weltauffassung_'. In 1931, when the second volume of _Erkenntnis_ came out, it contained what reads as the manifesto of the Vienna Circle entitled 'Die Wissenschaffliches Weltauffassung: Der Wiener Kreis', co-signed by Neurath, Carnap and Hahn. It laid out the basic tenets of the philosophy of the Vienna Circle and urged that all philosophers and scientists take heed and adopt the _Weltauffassung_ put forth, in order that progress could be made in working out the urgent and seemingly intractible problems of the world. It ends on a note which is reminiscent of the conclusion of a more famous manifesto.

> We witness the spirit of the scientific world-conception (Weltauffassung) penetrating in growing measure the forms of personal and public life, in education, upbringing, architecture, and the shaping of economic and social life according to rational principles. The scientific world-conception (Weltauffassung) serves life and life receives it[63]

The root of _Weltauffassung_ is the infinitive _fassen_ (to hold or grasp). The separable prefix _auf_ changes the _Sinn_, but not the _Bedeutung_ in English. The translation is still 'to hold' or 'to grasp' but in the sense of grasping some abstract thing, eg. a concept, idea, history, and so forth. The substantive _Auffassung_ is assigned four categories

of definitions, but the first is most important - Verstehen (literally, understanding). Once again, one must select one's connotation if one is to give the English. I should think that 'apprehension' is the closest to what Neurath was after. Adding the prefix Welt, we translate the whole as 'World-Apprehension', or better yet, 'Mode of Apprehending the World' as being much more faithful to Neurath's use of the original rather than as 'world-outlook' or 'world-orientation' as I have always found it to be translated. Weltauffassung does not strike the native German speaker's intuitions as nearly such a exotic word as does the less pedestrian but more common Weltanschauung. Indeed, the former is rarely used in the vernacular.

In the 'wissenschaftliches Weltauffassung', Neurath was polemicising in order to get people to adopt exactly this 'new' standpoint. It was supposed to involve no metaphysics, just a new way of 'grasping' the world which could lead on to greater knowledge through science and the advancement of technology. This, in turn, would help us with the rational organisation and betterment of the world. One was encouraged to learn to apprehend the world scientifically. Like Marx, Neurath takes a defiant stand; showing how the programme of the Vienna Circle dissolves all the traditional philosophical problems and confusions which stood in the way of real progress and aims at moving on to the solution of those problems which have pressing urgency for people living in the world.

> This is what matters - not whether the ideals which a society proclaims are 'higher', but whether human life under that system is happier.[64]

This essay, unlike Schlick's writings, contains no talk of 'Truth'. Consequently, one's system has to be adopted to 'serve the various desires

and ends to propagate many life forms' under varying historical and social conditions.[65] It is metaphysical to claim that one lebensform is better than another. There is no possible scientific way of deciding which is better as science is value-free itself and logically cannot form the basis for any value-judgement whatever. This is only possible given certain goals and aims to begin with. These however are beyond the realm of science, too.

To understand this sort of claim, I must repeat Waismann's characterization of Schlick's view of his own philosophy. On this point Neurath would be in total agreement with his less radical colleagues.

> (The philosophy of the Vienna Circle is) an objective, undogmatical philosophy, which can not possibly have any opponents because it makes no assertions at all.[66]

Since it is based on the results of science and uses scientific methods, such a philosophy merely exposes pseudo-facts for what they are and exhibits facts of its own discovery. Therefore, the reasoning seems to go, in just the same way as one cannot dispute about the facts discovered by science, so one cannot argue with the philosophy of the Vienna Circle. On the other hand, Neurath, in conjunction with his critique of the 'neutral' philosophy of the right wing Circle, held that even a weltauffassung commits one to a policy for action. There is no ultimate solution to the problems of the world.[67] One's weltauffassung is actually only to be ascertained by the 'unity of action'[68] displayed by a group and this may be accounted for sociologically. One can see that his sociology and his Marxism determined his view of philosophy. His view was to influence many of those who followed the doings of the Vienna Circle, especially non-academics, as Neurath was almost inevitably the Circle's spokesman.

Indeed, it is at last not difficult to see why Schlick was at odds with Neurath. We can easily imagine Schlick taking great offense at statements by Neurath like:

> Intolerance in the field of world-outlook (Weltauffassung) is on the whole alien to the workers.[69]

Neurath's plan was to effect a complete restructuring of all human social and economic existence. Only through such vast changes, he believed, could world peace be achieved; changes which could involve the establishing of a central world government. Neurath was a federalist, however, and by no means in favour of a monolithic system. On the contrary, he stated that the combination of tradition and tolerance of _lebensformen_ were the necessary pre-conditions of this organization. The immunity of _lebensformen_ from rational justification leads Neurath to advocate their toleration.

> Well, in this small way (being tolerant), I can realize something of the way of life of a kinder, new society in which differing ways of life will be allowed side by side.[70]

Yet this position encouraged him to pursue his own pet project, the institution of a universal language, both for research and for instruction. The need for the latter was to be filled by Isotype, and for the former, by the Unity of Science. In tracing this part of Neurath's influence on Carnap, we enter a much more familiar phase of the debate within the logical empiricist movement.

There is no need here to expound the history of the arguments concerning the most basic elements of science. Nor do I think that there is any point here in pouring over documents from the _Tractatus_ up to Carnap's 'The Methodological Character of Theoretical Concepts'.[71]

Rather I want to elaborate Neurath's thesis of the Unity of Science,
and the debate between him and Carnap over the consequences for the
principle of verification.

We remember that Carnap had said that the base of the construction
system was metaphysically neutral so long as it was empirical; that it
could be phenomenalistic, physicalistic, or composed of 'Erlebnisse' -
these three being the primary categories of empirical base. Carnap's
point was that we start off with the metaphysically neutral data and
build from there. He felt at the time that it was not scientifically
possible, indeed that it would be metaphysical, to claim some sort of
theoretical priority for one or the other as there seemed to be no
scientific way of deciding between them. They all constituted possible
empirical bases. He selected the Erlebnisse for reasons of expediency.
By emphasizing this autopsychological base which was the product of
purely 'methodological' solipsism, he thought that he had established,
in principle, the program of rational reconstruction. One corrollary
to this approach is the 'Unity of Science', something that Neurath
had long advocated.[72] That is, if the world can be logically reconstructed
from one base, then the corpus of science, the rational knowledge about
the world, must also be so constructable. The whole of the corpus of
science must therefore be reducible by translation into terms of the
base, whatever it might be. Neurath had argued against Carnap that the
autopsychological base and the 'methodological solipsism' of the Aufbau
were baldly metaphysical as whoever uses them must assume that the only
way to know the external world is to start from one's private sensations.
Even as a working hypothesis, Neurath found that it was unacceptable.
Presumably, his view that science is a product of collective labour was

responsible for this. Instead, he claimed that science should have a physicalistic base (as opposed to a materialistic base. 'Materialistic' had too many metaphysical connotations). Physicalism provided the only inter-subjective base of the three. Science for Neurath was an affair of the public realm. The phenomenalistic base and *Erlebnisse* base are not compatible with this as the 'basic statements' which they generate are not very public at all. Furthermore, he insisted, the physicalistic base was more in harmony with current scientific practice than any of the others were. Therefore, Neurath persistently urged that physicalism be the language of science and that, in consonance with Carnap's views in the *Aufbau*,[73] that there ought to be a unified system of science. The languages of biology, chemistry, sociology (with all its branches, eg. psychology, felicitology and so forth) would be reduced to the language of physics - physicalism. It is important to note that he did not wish to reduce the 'softer' sciences to physics, rather he wanted to develop a language which could state all the propositions of all the sciences.

> The various protocol languages of the various sciences thus become sub-languages of the physical language. *The physical language is universal and intersubjective*. This is the thesis of physicalism.[74]

It is a mere accident that the physicalistic construction of the language of physics was the one that was deemed most suitable. A unity of method is therefore provided and problems can be tackled by scientists as a group because they have a language in which they can all communicate. This does not limit scientific method in the least, according to Carnap.

> *Every* method of inquiry is justified; disputes can only arise over the question of the purpose and fruitfulness of a given method, which is a question that our problem does not involve. We may apply any method we choose: we can not however interpret the obtained sentences as we choose. The meaning of a sentence, no matter how obtained, can unequivocally be obtained by a

logical analysis of the way it is derived and tested...But again we must conclude, both on the logical and epistemological grounds, that the singular as well as the general sentences must be interpreted physically.[75]

If science is to be given a physicalistic basis and is to be verifiable, it seems trivial that the basic statements must be in the physicalistic language. In the second volume of Erkenntnis (1931/2) Carnap, in a long article entitled 'Die Physikalische Sprach als der Universalsprache der Wissenschaft', and Neurath in 'Soziologie und Physikalismus', both argue for this thesis.[76] However, Neurath, ever the radical, soon went beyond this point and wrote the article for which he is chiefly remembered, 'Protokollsaetze'. In this monograph, he brands as metaphysical any attempt to get at ultimate truth (such an attempt seems to be part of Schlick's programme).[77] Indeed, even the notion that protocol statments must be verified by 'checking' them with the world is metaphysical because it assumes first of all the existence of the external world. In his view, an assumption is as irrelevant as it is absurdly gratuitous. It is certainly not an assumption required by science. Secondly, it pre-supposes some procedure by which we can clearly correlate sentences in a language with facts in the world. This, no doubt, conjured up for Neurath the dangerous (because so cleverly disguised) metaphysical propositions of the Tractatus. Indeed, Neurath thought the Tractatus' propositions were nearly all metaphysical. What possible scientific means do we have for establishing that the world is composed of the totality of facts and not things?[78] asked Neurath.[79] The very existence of the debate among the positivists about the nature of the verifying procedure was evidence that it was not (at the very least) straightforward.

> There is no way of taking conlusively established pure protocol
> sentences as the starting point of the sciences. No tabula
> rosa exists. We are like sailors who must rebuild their ship
> on the open sea, never able to dismantle it in dry-dock and
> to reconstruct it there out of the best materials. Only the
> metaphysical elements can allow to vanish without a trace.
> Vague linguistic conglomerations always remain in one way or
> another as components of the ship. If vagueness is diminished
> at one point, it may well be increased at another.[80]

The ship that we sailors must float upon is composed of 'Protokolsaetze'.
These must too be verified; not against 'facts', but against each other.
Thus 'all metaphysical elements disappear without a trace'. The character
of the protocol statement is laid out in great detail, but the essential
point here is that the kernel of the protocol is still necessarily
physicalistic.[81] Epistemically or ontologically primitive terms are
dispensed with and so a fortiori are Erlebnisse, sense data, and all the
other possible entities which might have, at one time, provided an
'ultimate' foundation for science. In principle, all our knowledge is
capable of revision in light of verification amongst various protocol
statements. Neurath assures us that Carnap will relpy to this article
and discuss "and correct his formulations of the issues".[82]

Carnap's reply was forthcoming in the same volume of Erkenntnis.
This reply, 'Ueber Protokollsaetze', marked a major turning point in
Carnap's thought.[83] Here Carnap, in essense, endorsed much of Neurath's
doctrine of protocols with one he (Carnap) had held in the Aufbau and
had given up (under Neurath's influence) in 'Die Physickalische Sprache...'.
He stated that the dispute between Neurath and himself that was discussed
in the latter article, and in 'Protokollsaetze' was an empty one. For,
Carnap claimed, he had been arguing for comparisons of protocol statements
with something outside of the structure of language, while Neurath had
been arguing for the comparison of protocols with the structure of language.

First Carnap admitted to Neurath that the Carnapian way of formulating issues was more liable to cause lapses into metaphysical discourse. Carnap then qualified this by commenting that he and Neurath merely preferred different methods for rationally reconstructing the language of science: Since their preferential differences could not be reconciled by persuasion based on empirical knowledge and discovery it ought to be laid aside. This implies that it does not matter which sort of statement is taken to be a protocol statement for purposes of verification, just so long as one's choice renders all empirical statements verifiable. The content and form of a protocol are irrelevant in the sense that it is only a question of practice - can we verify a sentence S against some other mere sentence or must we verify it against the world? The form of the protocol is a matter of convention as set up by scientists in order to deal with the particular situation in which research is being conducted. Consistency remains a virtue when the protocol statements are verified against each other; correspondence remains a virtue when they are verified against the world.

This move of Carnap's was foreshadowed in Popper's Logik der Forschung which was being written at the time.[84] Popper argues that one cannot stipulate before hand the form that will be taken by a 'basic statement' of science, or the exact point at which we consider it a sufficiently 'corroborated' statement which may be incorporated into a body of working science, is purely a matter of convention.[85]

At this juncture, it had seemed clear that the content of a particular protocol statement played no part in demarcating it from the other types of sentences.[86] The move to count form as also irrelevant was radical indeed. The possibility of having 'theoretical' grounds for

adopting any particular protocol statement or kind of protocols appears
to have been obscured or even ignored. For the justification of a
proposed protocol was thus taken to lie in the practice of science and
not in its body of theory.

It is absolutely essential to grasp the line of reasoning endorsed
by Carnap at that time if we are to understand his principle of tolerance.
Let me set out a parallel sort of argument which moves from the same
assumptions to a similar conclusion, yet which also leads to the next
point that I want to make. Neurath had argued that we ought to adopt
a physicalistic 'belief' when doing philosophy in order to remain as
close as possible to the model of science. Schlick and Carnap, after
many hours of discussion finally managed to convince him that such a
'belief' was unacceptable because it was quite metaphysical. Rather, they
insisted, he should look at a linguistic form instead and choose or reject
it on the basis of a 'practical decision'. That is, a sound decision
about the form of the language to be used in clarifying methods of verification
will depend upon the purpose for which one wishes to use it. Neurath
assented to this argument but then very neatly used it to turn the
tables once again in his own favour. Since all of science can be unified,
he contended, then we must look at the goal of science and let it
determine our form of language.[87] Carnap recounts that Neurath's comments
had this drift and these effects on his friends.

> The decisive criterion would be how well a certain language
> form, or a railroad, or a constitution could be expected to
> serve the community which intended to use it. His (Neurath's)
> emphasis on the interdependence of all decisions, including
> those in theoretical fields; and his warning against isolating
> the deliberation of any practical question, even that of the
> choice of a language form, made a strong impression upon my own
> thinking and that of my friends.[88]

Neurath, as we have seen above, argued that the physicalistic language was the only one which could fit the requirements. He had his way./ The most important point, however, is that Carnap had come to think at this juncture that both the form of language of sciences and the nature of protocol statements are a matter of choice. He held, in other words that there are no theoretical or cognitive reasons for deciding to use one linguistic form of protocol statement rather than another. The decision must be made on purely practical, pragmatic grounds, the full expression of which would be, stricly speaking, non-cognitive. One can only choose one's goals and they determine the choice of language form and protocol statements. Given a set of goals, it is rational to follow a certain programme. One can give theoretical reasons for one's adoption of a given language form in the pursuit of certain kinds of goals. However, the goals themselves are beyond theoretical justification. But this is not to say that the full expression of one's 'reasons' for choosing them would be cognitively meaningful, let alone congitively true. 'Preferential justifications' are, in principle, unanswerable to science as they are unverifiable. They have no empirical content. The attempt to express them in indicative sentences leads to metaphysical nonsense. Life, as Neurath constantly stresses, demands of us that we make choices. However, in the Carnapian-Neurathian version of logical empiricism, these remain outside the sphere of cognitive discourse. I think Reichenbach puts the position most clearly in these remarks:

> One common feature, however, can be stated for all goal activities. The decision for a goal is not an action comparable to the recognition of truth. There will be cognitive implications involved, for instance, the goal of making one's living may require the enduration of vocational drudgery. But the choice of the goal is not a logical act. It is the spontaneous affirmation of desires or volitions, which come upon us whith the compulsion of inescapable urges, or the animation of prospective satisfaction,

'or the smooth naturalness of unquestioned habits. There is
no point in asking the philosopher to justify valuations.
And he can not supply a scale of valuation order, distinguishing
between higher and lower values. Such a scale is in itself
non-cognitive. As a man of education and experience, he may
be able to give good advice for valuations, that is, he may
influence other persons to accept more or less his valuation
scale. But men of other professions may be just as good as
he in this educational function. If they are trained educators
or psychologists, they might be even better qualified.

The scientific philosopher does not regard problems of valuation
as irrelevant. They are as relevant for him as for any
other person. But he believes that they cannot be solved
by philosophical means. They belong in psychology, and their
logical analysis is to be given along with the logical analysis
of psychological concepts in general.[89]

Reichenbach's appeal to psychology, I fear, may lead to the confusion

of describing and justifying preferences. At any rate, for most positivists

at this period, it is the principle of verification which marks out those

sentences which have cognitive meaning from those which do not. Notice

that we have been discussing not what counts as the verification of a

sentence, but rather what counts as the 'basic-statements' or protocol

statements upon which a cognitively meaningful language is to be built.

The first question demands much more than can be contained within the

scope of this essay. The second however, provides the clue to the transition

to the talk about forms of language (Sprachformen). Once again, the

discussion will not centre around what counts as a form of language,

but rather about the relationship between a theory and a language form.

This leads us, at last, right into the next logical progression of

Carnap's thought: the principle of tolerance itself.

CHAPTER FOUR: The Logical Syntax of Language: The Ideological Basis

of the Principle

It is very difficult indeed to over-estimate the importance and
impact of Der Logische Syntax der Sprache when it first appeared in 1934.
Neurath heralds its approaching birth in 1932 in an article in Erkenntnis.[90]
The first draft was just completed in that year and Feigl tells of how
Circle members waited anxiously for Carnap to finish and then surrender
the next section of the draft to them for discussion.[91] The motivating
idea of the book was a novel as it was exciting -

> According to this view, the sentences of metaphysics are
> pseudo-sentences which on logical analysis are proved to
> be either empty phrases or phrases which violate the
> rules of syntax. Of the so-called philosophical problems,
> the only questions which have any meaning are those of the
> logic of science. To share this view is to substitute logical
> syntax for philosophy. The above mentioned anti-metaphysical
> attitude will not, however, appear in this book either as an
> assumption or a thesis. The inquiries which follow are of
> a formal nature and do not depend in any way upon what is
> usually known as philosophical doctrine.[92]

Several features are to be immediately noticed. Metaphysics is
again used as a term of multiple abuse for many traditional inquiries
in philosophy. Genuine philosophy is confined to studying the logic
of science. This study is to be advanced by means of a syntactic analysis
of the sentences of a given language using the tools of formal logic.
There is a heady optimism expressed about the envisaged logical syntax
which characterizes the language of science: when applied to suspected
statements of metaphysics it will show that they are syntactically
malformed and therefore meaningless. Humanity will thus be freed from
pointless inquiries. Carnap sets about this project by constructing
two syntactic meta-languaes which are designed to capture all the
inferences and statements of science. First, however, he justifies his

construction of an arbitrary formal language, against those who claimed that no such a thing can be done. The following two passages contain the original articulation of the principle of tolerance.

> In the foregoing we have discussed several examples of negative requirements (especially those of Brouwer, Kaufmann and Wittgenstein) by which certain forms of language - methods of expression and inference - would be excluded. Our attitude to requirements of this kind is given a general formulation in the Principle of Tolerance: It is not our business to set up prohibitions, but to arrive at conventions.[93]

Why can we not set up prohibitions?

> In logic there are no morals. Everyone is at liberty to build up his own logic, ie. his own form of language as he wishes. All that is required of him is that, if he wishes to discuss it, he must state his methods clearly, and give syntactic rules instead of philosophical arguments.[94]

The perfect model of this, cited by Carnap, is mathematics.[95] He thought that in practice mathematicians tacitly adhered to such a liberal principle. This way of viewing mathematics was later nicely exemplified by Karl Menger who claimed to have resolved the debate over two versions of intuitionism.[96] Weyl and Brouwer each had their own brand of what they called 'intuitionsim' as a theory of the foundation of mathematics. Menger argued that they were not contradicting each other. Rather, he thought that their debate was merely terminological. They both asserted the same thing. The choice of terminological depends solely on what ends one holds; what one wishes to do with one's language.[97]

Carnap's position on tolerance in the Logical Syntax of Language is similar, in important ways, to his pronouncements about the base of the construction system in the Aufbau and his resolution of the debate with Neurath in 'Ueber Protokollsaetze'. In both these places, Carnap argued that a choice must be made. In the Aufbau, it was on the basis

of convenience, simplicity, and the state of empirical science. In 'Ueber Protokollsaetze' it was on the basis of scientific practice - pragmatic expediency for scientists at work. In both earlier works. Carnap had attacked terminological pseudo-disputes which were to be removed by overtly making decisions on 'practical' grounds.

We can see here that the exclusion from logic of ethics is meant to be especially strict. The syntactic rules are open to rational discussion because they characterize method. The method presupposes a goal. The goal is non-cognitively determined, but once it is given, the method which will allow the achievement of it is open to rational inquiry. That is to say: syntactical rules may be given on the basis of formal logic which will characterize the method and will rigourously determine its character in the light of the goal. Indeed, the form of the language may be cognitively characterized, but the language used is a matter of choice based purely on various ends. The same principle is applied by Carnap to the selection of a syntactic meta-language that will admit no metaphysical statements or statements of a metaphysical position,[98] will be as rigourous as possible and will also be as simple and elegant as possible, then one can debate over the form of language which one employs. This does not exclude a priori the use of any language form one wishes. All of the forms may be cognitively adequate for the function. This can be checked by asking the person who constructed the language to exhibit clearly, in terms of logical syntax, how he did it. But we may choose to ignore his language on other grounds, non-cognitive grounds, for instance brevity, lack of ellipsis and clarity of notation. These are 'practical' grounds however, and not 'theoretical' ones. Suppose that someone claims that he prefers to use the Scheffer stroke when building

his form of language, instead of the standard sentinatial connectives.
Suppose that the reason he gives is that he feels he likes to always
work with as few logical primitives as possible and that, as far as he
is concerned, the fact that his form of language will thereby be rendered
extremely cumbersome to work with is no bother at all. Or suppose yet
further that someone purely and simple wants his language form to be
as cumbersome as possible. Then, if the language itself (as opposed to
the form of the language) is a logically and syntactically adequate,
and the form of the language is made explicit, Carnap can only exercise
toleration toward this language and urge on non-theoretical grounds that
it be dropped in favour of a more streamlined language. He cannot make
any judgement as to its worth. He can only appeal to the pragmatic
exigencies of the situation, insofar as he is appealing to those whose
goals are clearly the same as his own in that context. Carnap's goals -
such as axiomatic completeness for certain purposes, notational lucidity,
'simplicity' - can no more be justified as intrinsically good ones in
cognitive terms than can the construction of a language. The matter
rests on pure choice.

The same thing applies _mutatis mutandis_ to terms themselves.
"Inadmissability", said Carnap, "is not a concept of logical syntax".
We must just look to the consequences and convenience of the admission
of any given term.[99] There is also a similar attitude taken towards
protocal statments.

> Syntactical rules will have to determine the forms of protocol
> statments, but not actually which ones satisfy the form, only
> the physicist does this.

In the _Logical Syntax of Language_, as in 'Ueber Protokollsaetze',
Carnap holds that syntactic rules will insure that the protocol statements

are verifiable within the language form described by the syntax, but it still leaves the content open and the form is only relevant to that given language form. Another language form would require a different form of protocol statement if the protocols were to be verifiable. From this standpoint, it is but a small step to follow Carnap to the inevitable conclusion.

> Thus the test applies at the bottom, not a single hypothesis but to the whole system of physics as a system of hypotheses. (Duhem, Poincare)

> No rule of the physical language is definitive; all rules are laid down with the reservation that they may be altered as soon as it seems expedient to do so. This applies not only, to the P-rules, but also to the L-rules, including those of mathematics. In this respect, there are only differences in degree; certain rules are more difficult to renounce than others.[101]

> The construction of the physicalistic system is not effected in accordance with fixed rules, but by means of conventions.[102]

Thus we come a circle, for we see that although the principle of tolerance deals with language forms, even the protocol statements and the terms are not uniquely determined by anything. The form of language places certain restrictions on what is to count as either a term or a protocol statement but only in so far as logical syntax can capture the language so that "if he who constructs the language wishes to discuss it", we can have a theoretical discussion of the language form.

The whole labour of the philosopher takes on an entirely new tone for Carnap.

> ...I gained the insight that one cannot speak of "the correct language form" because various forms have various advantages in different respects. The latter insight led me to the principle of tolerance. Thus, in time, I came to recognise that our task is one of planning forms of languages.[103]

The notion of some metaphysically 'correct' way of speaking is abandoned and philosophy becomes a radically linguistically oriented subject.

The relativity of all philosophical theses in regard to language, that is, the need of reference to one or several particular language-systems, is a very essential point to keep in mind.[104]

This thesis goes without saying, once one adopts the principle of tolerance.[105] I was at pains to point out that this sort of thinking was going on in Carnap's earlier work. Hence the discussion of the system base in the Aufbau and the adoption of a construction language.

This neutral attitude in the Aufbau towards the various philosophical forms of language, based on the principle that everyone is free to use the language most suited to his purpose, has remained the same throughout my life. It was formulated as 'the principle of tolerance' in Logical Syntax and I still hold it today, eg., with respect to the contemporary controversy between nomialist or Platonic language.[106]

What difference underlies Carnap's assertion of metaphysical neutrality in the Aufbau and his insistence upon linguistic toleration in the Logical Syntax? The difference is not to be found in Carnap's doctrine, but in his reasons for stressing the doctrine. In the Aufbau, metaphysical statements were rejected because they transcended experience. By this phrase I mean that there was no possible way to verify metaphysical statements by means of experience. Carnap affirmed that any one of a number of bases could be used for his construction system, as long as those bases were empirical ones; that is, as long as they were rooted in experience. Carnap then came under the influence of Neurath. Even by the time he wrote 'Ueber Protokollsaetze', philosophical statements were rejected precisely because experience itself is transcendent.[107] This literally means that experience is beyond experience. In less cryptic terms - as rational beings, the connection between experience and rationality and its vehicle which is language, is something that is beyond the ken of science. Therefore, logical empiricism, as a scientific philosophy, must not even speculate about the relationship of language to

experience. This may be a question for psychologists or linguists. For the philosopher, what is to count as experience is completely determined by one's form of language. Philosophy, then is a relection upon language and neither upon the world, nor experience. In terms of the Logical Syntax,

...experience properly understood is 'experience'.[108]

One simply considers alternative language forms and chooses that ene that suits one's own goals. This is what the principle of tolerance is all about.

> Only after a thorough investigation of the various language
> forms has been carried through can a well-founded choice of
> one of the languages be made, be it as the total language of
> science or as a partial language for speicific purposes. This
> neutral attitude with respect to different language forms lead
> me to adopt the principle of tolerance in Logical Syntax.[109]

To end this part of my exposition, let me quote what is probably the best and most complete statement of Carnap's principle of tolerance. The statement pertains to both Carnap's views in the Aufbau and to the reasoning of his later article 'Ueber Protokollsaetze'. This is from Kraft.

> It makes no sense to ask for justification, or to question
> the legitimacy of, linguistic forms. For there is no authority
> that could pronounce a unique judgement. There are no questions
> of truth or falsehood here, but only questions of stipulation
> and convenience. All one can do is develop the consequences
> which a given stipulation, be it a prohibition or admission,
> commits him to, and on this basis he can make a rational choice,
> ie. a choice that will lead to his practical ends. One should
> not pronounce general prohibitions of sentence forms or methods
> of deduction (the way Brouwer did it with respect to the law
> of the excluded middle, and Wittgenstein did with respect to
> unrestrictedly universal statements), but should instead pay
> homage, in the logical analysis of language, to a principle of
> tolerance.[110]

I believe that Kraft's words express the basic tenets behind Neurath's epigram "Wie Schiffer sind wir...". We must recall how Neurath insisted that philosophers (like Schlick, as Neurath construed him) could not remain

on lofty pinnacles and must come down and attend to the problems of man and society. He insisted that the solution to these, insofar as they could be dealt with in a rational manner, was through science. The language of science was to be unified in physicalism. Now having looked at Neurath and having seen the principle of tolerance, I want to look at the goals - to look at those unspecified, non-cognitive aims, purposes or ends which determine one's form and language.

I have discussed Neurath's political and social views to some extent and now I want to turn to Carnap's. There is little material aside form his Autobiography in Schilpp and indeed Carnap is not generally recognized as holding any paritcular views on matters political and social. I have already spoken of our evidence concerning views which Carnap held before he wrote the Aufbau. There is no source material (at least none circulating) at this point in time, which would suggest that Carnap developed radically new views of his own concerning these kinds of matters after he wrote the Aufbau. Indeed, in the post-Aufbau period, Carnap's views about them seem to be largely derived from Neurath. Carnap's debt here is enormous. Neurath's influence with regard to Carnap's doctrine on 'theoretical' issues has already been shown. Now, it is time to exhibit the connection between these 'theoretical' concerns and the 'practical' ones - the goals, aims and purposes.

Carnap is consistently reported to have been a very kind, gentle, and rigorously honest man, to have stood out as a very methodical person, who planned his work meticulously. In conversation, we learn, he was always gracious, eminently reasonable and very thorough in any discussion of a given issue.[111] Neurath, on the other hand, as we have seen, was a flamboyant, exciting speaker, whose interests and whose arguments

ranged far and wide. His whole life was devoted to changing society.
He was an excellent polemicist, organizer, and popularizer. Apparently,
their personalities proved to be felicitously compatible and they were
fast friends. Even their philosophical capabilities were wonderfully
complementary. Carnap was the moderating influence - the clarifier of
questions who also stimulated the formation of sophisticated, technical
positions. Neurath was the most important instigator of what I would
broadly philosophical' ideas during the formulation and elaboration
of the philosophy of the Vienna Circle. Carnap even refers to Neurath's
work on a number of occasions, most notable in the Logical Syntax
where he devotes a long paragraph to his debt to his radical colleague.[112]
However, it is goals, ie. the practical aims that I want to emphasize
now, and here again I believe that the influence of Neurath was decisive.
As I have already indicated, our evidence concerning the extent of
Neurath's influence is limited. I will lay out what I have. Neurath's
faith in the possibility of harmoniously,rationally organizing society
in accordance with critical principles derived from physicalism and a
modest form of Marxism was never explicitly voiced by Carnap. Carnap
saw himself as a philosopher of science, mathematics, logic and language -
not as a partly political teacher like Neurath. But Carnap was not
devoid of political and social feelings, nor of ones that would make
Neurath's ideals appear congenial to him. As evidence I now offer two
long but important quotations. The first is certainly the earliest
known and perhaps the most eloquent expression by Carnap of his
ideals and attitude towards life.[114] This is from the preface to the
first edition of the Aufbau.

We do not deceive ourselves about the fact that movements
in metaphysical philosophy and religion which are critical
of such an (scientific) orientation have again become very
influential of late. Whence then our confidence that our call
for clarity, for a science that is free from metaphysics,
will be heard? It stems from the knowledge or, to put it
somewhat more carefully, from the belief that these opposing
powers belong to the past. We feel that there is an inner
kinship between the attitude on which our philosophical work
is founded and the intellectual attitude which presently
manifests itself in entirely different walks of life; we feel
this orientation in artistic movements, especially in architecture,
and in movements which strive for meaningful forms of personal
and collective life, in education and organization in general.
We feel all around us the same basic orientation, the same
style of thinking and doing. It is an orientation that demands
clarity everywhere, but which realizes that the fabric of life
can never be quite comprehended. It makes us pay very careful
attention to detail and at the same time recognizes the great
lines that run through the whole. It is an orientation which
acknowledges the bonds that tie men together, but at the
same time strives for free development of the individual.
Our work is carried by the faith that this attitude will win
the future.[115]

Wien, May 1928

We should note here how the attitude is related by Carnap to the

beliefs about goals which he expresses. He states his _Weltauffassung_

with regard to his ideals. The second quotation which I offer as

evidence is taken from his Autobiography. He states that politics, as

such, was never discussed during the meetings of the Vienna Circle.

Only 'theoretical' issues were mulled over. However, he gives the following

as the general view of the participants. In light of what I mentioned

earlier on, we may construe this as less true of the right wing faction

of the Circle, than of the left.

I think that nearly all of us shared the following three views
as a matter of course which hardly needed any discussion. The
first is the view that man has no super-natural protectors or
enemies and that therefore whatever can be done to improve
life is the task of man himself. Second, we had the conviction
that mankind is able to change the conditions of life in such
a way that many of the sufferings of today may be avoided
and the external and internal situation of life for the individual,
the community, and finally for humanity, will be essentially
improved. The third is the view that all deliberate action

presupposes knowledge of the world, that the scientific method is the best method of acquiring knowledge and that therefore, science must be regarded as one of the most valuable constituents for the improvement of life. In Vienna we had no names for these views: if we look for a brief designation in American terminology for the cominbation of these convictions the best seem to be 'scientific humanism'.[116]

These goals determined a particular _Weltauffassung_. The goals themselves are non-cognitive, yet the attitude which one takes towards them is a manifestation of the form of language which one will use to try and acheive those goals. The briefest, most explicit formulation of these ideals is as follows:

> This aim is a form of life in which the well-being and development of the individual is valued most highly, and not the power of the state.[117]

Carnap stresses the point that each individual should be free to realize his own potential and enrich his own life.[118] Mankind has...

> ...the task of finding ways of organizing society which will reconcile the personal and cultural freedom of the individual with the development of an efficient organization of state and economy.[119]

It appears that Carnap thinks that rational organization of society is the means to his goal, which is the physical and spiritual elevation of the individual. How did he propose that this be done? We have two clues. In his early days he said that he was "perhaps also a socialist"[120] and the evidence suggests that he remained one his life-long. This appears to be coupled with some of his early views which I outlined before. We also have some independent evidence to suggest this, too. Feigl has written:

> Carnap's work as well as his socialist-pacifist world-federation ideals (here he always acknowledged the incisive influence of his late friend Otto Neurath) will live on.[121]

The nature of this socialism is hard to determine. What could be decisive, however, is the following bit of information, especially

when one couples it with the other clue. In the preface to a collection

of Neurath's essays published in English translation as Empirical

Sociology, the 'book's editor, Maria Neurath, Otto's widow (and third

spouse), quotes a message sent to her by Carnap.

> If you want to find out what my political views were in the
> twenties and thirties, read Otto Neurath's books and articles
> of the time; his views were also mine.[122]

Neurath took himself to be a Marxist, as we have seen; although

he was clearly no Stalinist. But it may seem at least prima facie

to be hard to reconcile Carnap's stress on the primary value of individual

freedoms with the thesis that Carnap could accept any form of Marxism,

however critical and undogmatic. He sounds more like an independent

social democrat when we consider all these scattered bits of evidence

together. Certainly this seems to be his position when he writes his

Autobiography for Schlipp; he is a social democrat, possibly prepared to

use some proposals of Marx as tools for the attainment of the higher

libertarian ends. We might even speculate that the untimely death

of Neurath in 1945 was a blow to his more radical tendencies. Or we

might yet further conjecture that he and Neurath were closer to the

humanistic Marx of the Economic and Philosophical Manuscripts of 1844

and to the empirical Marx who envisaged different paths to socialism

in his last years. The only other piece of information we have along

these lines comes from Schinory. It concerns his political anti-

authoritarianism.

> He did not in any way encourage discipleship, which shows how
> deeply his opposition to authoritariansim in the political
> domain was grown in his character. Likewise, I think,
> his famous Principle of Tolerance in the Logical Syntax of
> Language was not only a device to deal with the Scheinprobleme,
> but an expression of his character.[123]

Thus we are brought back once again to the central importance of Carnap's principle of tolerance and I will now try and put all this chapter together. The bits and pieces which I have presented so far may all be fitted into place somewhat as follows. The philosophers of the Vienna Circle held that only science gives us rational knowledge; they further assumed that only by rational means might we reach our goals. Therefore, only by means of science could we reach the goals we set for ourselves. Metaphysics, being cognitively (at least) meaningless, does not help us, in fact it goes so far as to lead us astray as it only appears to be meaningful. So they urge that we adopt eine wissenschaftliches Weltauffassung. This stand entails four major premises: i) science is a collective activity; ii) science can be 'unified' through the construction of a language into which all scientific statements can be translated; iii) physicalism is the language as it is intersubjective; and iv) science, however, has boundaries. It tells us nothing about values or direct experience.

However, the 'practice of life' makes us choose ends. We must have values to live by. Some forms of language are more suitable to certain ends than others. Given a set of ends, we choose the form of language for science and logic which best serves the ends. Humans begin as primary speakers of Indo-European languages or of other natural languages whose surface grammar is deceptive. If we are to understand clearly either these ends or the language in which they are postulated as ends, we must express our thoughts in sentences which are well formed by the rules of logical syntax.

We can sometimes check whether the form of language is most suitable to the given set of ends. What is most important of all, however, is to

remember that we can give no theoretical justification for any form of language as the choice of ends rests on no theoretical (cognitive) base. Therefore, we must exercise tolerance with regard to all forms of language on pain of being inconsistent with the assertions that values and ideals are not capable of cognitive defense. Therefore we can not attack them upon theoretical grounds. In essence, I believe that this is the argument for the principle of tolerance.

So far in this chapter, what I have mainly tried to do is show that Carnap held some sort of humanitarian ideals throughout his entire life. Having given above the theoretical reasoning which lead to the establishment of the principle of tolerance, let me now relate these two strands together. I wish to show that Carnap's political and social (ie. practical) convictions and goals, also played a role in the genesis of this principle. Indeed, I feel that it is an extension of his political ideals of self-fulfillment and enrichment through a rational organization of life along socialist lines which would lead to a peaceful world-federation. It expresses in a systematically useful way his conviction that science offers us the only way to know the world, and links this conviction with Carnap's other ideals. The principle of tolerance unites theory and practice in the sense that the approach to his goals comes by means of science (cognitive knowledge). The choice of the physicalistic language was 'theoretically' parasitic upon Carnap's 'practical' goals. This is not to say that Carnap could have had any views at all and made the same kind of syntheses. If one held fascist political views of a particularly realpolitishche kind, one would have to choose amongst many forms of language as to which best suited one's ends as a fascist. Presumably, Carnap thought that the physicalistic language would not fit the fascist's

irrational outlook, for Carnap seems to have thought that Neurath had shown that it was the only language which would lead to a rational organization of the world.[124]

The second reason is closely connected to the first. Since metaphysics had long tried to usurp the throne of the sciences, it had also stood in the way of this rational organization of society. But because one can, by the principle of tolerance, use 'practical' criteria for the choice of language form; one can ignore metaphysical writings on politics and society; one can even attempt to expose them, in their incompatibility with the goals of the humanitarian. This was in large part, Neurath's life-long program. However, the ends themselves are incapable of being judged rationally. Whereof we cannot speak cognitively, thereon we cannot be silent as we must live; but we must be tolerant as we have no theoretical grounds for not doing so. It is possible that a different set of ends is better for a different society or a different world than ours. Therefore we must tolerate these ends, as if we do not, we may be cutting off another society's chance to enrich its citizens' lives. In fact, to be intolerant, for Carnap, would be tantamount to being irrational.[125] The suppressed premise in the reconstruction of his thought seems to be: It is irrational to make seemingly cognitive assertions about issues that are non-cognitive - issues concerning which it is logically impossible to make assertions. Clearly this is at least suggestive of the political views which we have ascribed to him. Because of his humanitarian ideals, Carnap has, in effect, set things up so that physicalism would seem to be cognitively justificable - once you grant him these ideals. Presumably he and Neurath thought that every rational person would do so.

There are many more factors which might be brought to light which could be used to tentatively support the kind of view of Carnap's humanitarian ideals and a fortiori their connection with the principle of tolerance. Let me reiterate here that his whole character and life were a model of restrained rationality and non-dogmatism. He was the inveterate synthesizer of doctrines within the Circle (as I hinted) and probably no one was better liked and more respected by all the Circle members than Carnap was.[126] He was disarmingly honest and extremely flexible.[127] To quote Maria Reichenbach:

> He really lived his principle of tolerance and took Kant's categorical imperative seriously.[128]

The Vienna of his time was the capital of the small country that had once been the centre of the putrified Hapsburg Empire. The road from monarchy to democratic socialism had been very short and the euphoria of most of its progressive citizens did not survive the Eurpoean effects of America's economic disaster in 1929. But it probably was enough to stimulate the thinkers of the time into examining their political convictions. Unfortunately, the Circle was at its highest, most productive plane, in 1933 when the autocrat Schussnigg came to power. In 1934, Hans Hahn died leaving a gap that was never to be filled. In a more sinister vein, this was the year that the Nazi's sympathizer and helper Dolfuss became the Austrian leader by means of a coup d'état. The year 1935 saw Carnap take up a position in Prague where he could talk with the Polish logicians, especially the young Alfred Tarski who was to show him that semantics was a necessary to the logical analysis of language as syntax. Carnap hoped that his move to Prague would place him in a strong democracy safely away from the oppressive atmosphere

which was developing in Vienna. Schlick, as is well known, was shot in 1936 by a deranged student as he entered the gates of the university. The report in some Austrian newspapers seemed to intimate that all logical positivists should be shot by their students. In that same year, Neurath had to flee to Holland as the Verein Ernst Mach had been outlawed. Erkenntnis also followed Neurath and was re-named The Journal of Unified Science, just before the Anschluss. Carnap emigrated to America in 1938, with the help of Feigl, the youngest Circle member, who in the meantime had been in touch with the pragmatist Charles Morris, who was then teaching at the University of Chicago. Waismann went to England. After the outright annexation of Austria by Germany, The Hague became the centre of activities where Neurath co-ordinated the Journal, the Encyclopedia, the Library, and the Congresses. In 1940, he had to flee from Holland, too, across the English Channel, in the back of a small row-boat manned by a member of the Dutch resistance.

This in effect, marked the time of the dissolution of the Vienna Circle. Hopes of reviving it after the war were essentially dashed when Neurath, the insuperable organizer, died in London at the close of 1945.

CHAPTER FIVE: 'Empiricism, Semantics and Ontology': The Influence
of Tarski and Quine

In 1936, Alfred Tarski of Warsaw University published his monumental
essay 'The Concept of Truth in Formalised Languages', which is usually
referred to as the 'Wahrheitsbegriff'.[129] Tarski visited Carnap in
Prague where they held many discussions. Tarski viewed his work as
favouring a correspondence theory of truth. Carnap became convinced,
as a result of these discussions, that a semantic analysis of language
along Tarski's lines was necessary to complement the study of syntax.
Thus he risked charges of backsliding into metaphysics: the 'coherence'
and 'pragmatic' accounts of truth needed supplementing with formal,
but stronger reference to an extra-linguistic reality.

Consistently or inconsistently, however, Carnap still clung to his
liberally pragmatic principle of tolerance. While teaching at the
University of Chicago in 1942, he wrote his Introduction to Semantics.
Perhaps because the principle of tolerance suggested too many non-cognitive
associations, he renamed it 'the principle of the conventionality of
language forms'.[130] All the explicity talk about 'practical justification'
and 'the practice of life' forcing one to choose one's form of language
disappeared. Instead, Carnap concentrated on the formulation of useful
conventions as the task of the analysis of language. He later even suggested
that there ought to be a third science to go along with pure syntax and
pure semantics- pure pragmatics.[131] It would study natural language,
and indicate the best ways to construct conventions in a formal meta-
language which would capture these features of the natural language which
the philosopher of language might be trying to analyse. The principle
of tolerance is "still maintained".[132] Carnap has preserved the spirit,

if not the letter of the thing. We have entire freedom in the construction of our semantic calculi but are restricted for any system S as we must satisfy the (new semantic) L-concepts which are constant in S. This is to say that they must be semantically adequate for S - the counterpart of syntactic adequacy in logical syntax.

It is in Carnap's famous 'Empiricism, Semantics, and Ontology' (1950), that we see the final development of the principle of tolerance. This article raised a new storm of controversy when it was first published. Consequently, there is an enormous body of secondary literature on the subject. I propose to relate Carnap's approach to language and reality in 'Empiricism, Semantics and Ontology' to his earlier work on the principle of tolerance and show how several kinds of objections to Carnap's essay can be met by relating these two planes of his thought clearly. The later Carnap, the teacher in North America, interacted several times with W.V.O. Quine of Harvard, with whom Carnap and Tarski had enjoyed discussions in Europe in the 1930's. We shall look briefly at what Quine has to say about this essay and see the extent to which there is in fact a dispute between Carnap and Quine on questions of the ontological implications of language.

The exigesis of the article is fairly easily accomplished. In light of what has gone before in this essay, the point is fairly simple. Carnap is trying to determine what sort of entities we can admit in our semantics for a given theory of language. The semantics, which we are trying to construct will itself, be a theory, of course, and it will be couched in a language of some sort; presumably one that is formalized. Now, says Carnap, a theory is basically a framework for asking questions. When we are examining such a framework (eg. semantically) there are two

sorts of ways in which we can go about it. First of all, we can pose
our question within the language of the theory we are examining. Secondly,
we can pose our question in terms of a different language than that of
the theory under discussion. The first type of question Carnap calls
an 'internal question'; the second, an 'external question'. The point
that he wishes to make is the following: To ask a question about a
theory, framed in terms of that theory, is to ask a question that admits
of an answer which is either analytically true or synthetically true
(empirically verifiable). For instance, if we were to ask a committed
realist, in a realistic language, if 'entities' exist by saying - "Do
things exist?", the forthcoming answer would be analytically true - it
is by definition part of the realist framework to hold that things exist.
If we were to ask him if trees exist, the answer would be synthetically
true. All he would have to do is check it out and he would empirically
discover that, in fact, trees do exist. But suppose that we question our
realist in a phenomenalistic language. The first question about
'entities' might be now reformulated as follows: "Do any aggregations of
sense data exist?" What is our realist to make of this question? His
framework does not countenance such 'entities' as aggregations of sense
data. Carnap's claim is that he must construe the 'external' question
as meaningless, as it asks about 'entities' which are, in principle,
excluded from the language of the theory.

If we have adopted the scientific attitude, then should someone
ask us a question posed within the scientific framework, we can answer
it. But a certain class of people, namely philosophers, tend to raise
the following sort of question, "Do objects exist?". Should this be
meant as an internal question, it must be rephrased in scientific terms,
if it is to be answered by the scientist (perhaps "Are there space-time

point-instances or space-time worms?", to which the answer is an univocal "Yes!"). Should the philosopher, however, intend his question be an external one, and respond to the scientist, "But that is not what I asked you! I want to know ▓▓▓ts exist", then the scientist can only shrug his shoulders an▓▓▓that objects are point-instances as far as he is concerned and what the philosopher asked as far as he can make out is meaningless. In principle, the scientist cannot answer it. In fact, the most that he can make of it, is that the philosopher is called into question the whole framework of the scientific language because,

> To be real in the scientific sense is to be an element in the framework.[134]

and therefore,

> To accept the thing world or any other given theory of the world means nothing more than to accept a certain form of language.[135]

An external question can only be construed as a question about the framework as a whole - about its adequacy for scientific tasks, about the propriety of its definitions, and so on. Otherwise, such an external question must be rejected as meaningless. Theories or frameworks stand or fall as a whole. A thesis about the adequacy, propriety, or strength of the framework is clearly not formulable within that framework. Carnap was convinced by Tarski that one must avoid antinomies by assessing a system in an essentially a richer systematic meta-language. Within the object langage itself, if it is properly formed, one has no logical resources to do such a thing. However, Carnap is further making the more radical claim that questions about a system's absolute value on wisdom are not formulable in any other cognitive framework either. The reason is simple. Genuine questions, according to Carnap, admit of either

empirical or analytic answers either in a properly scientific object language or in such a metalanguage. They are cognitively meaningful only if they can be posed as internal questions of some such cognitive language. There is no way in which we can empirically or analytically decide between theories as to which is the true mirror of reality, or the right representation of reality. Too earnest a realism or too ambitious a picture theory of meaning cannot be stated scientifically; it leads us back into the illusions of metaphysics. The external question about the framework as a whole can only be resolved on practical, aesthetic or other generally pragmatic grounds. One must simply consider one's goals and choose the framework which suits one best. Since we cannot decide between properly scientific sets of language forms on theoretical grounds, we can but tolerate all the others. In his Autobiography, Carnap explains his project in 'Empiricism, Semantics, and Ontology' thus:

> In accord with my old principle of tolerance, I proposed to admit any forms of expression as soon as sufficient logical rules for their use were given.[136]

The fact that ordinary language usually seems to enable us to function well in our world gives no proof that the naive realist account of the world is the correct one. It just shows us the pragmatic 'advisability' of accepting a great many common sense beliefs about the ordinary world in our ordinary life. The introduction of a new linguistic framework does not demand any sort of theoretical justification as it makes no assertion about reality. It only offers us the choice of a new linguistic form. The upshot of the article is that, as consistent empiricists, we can construct any kind of semantics we wish for the language of science, by introducing any entities we may wish, without fear of ontically stepping on any toes whatever. Accepting a proper notion of (theoretical)

ontic commitment is a move which involves no metaphysical baggage.

Quine brings out an essential feature of this affair which has not yet been emphasized. I have deliberately tried to steer clear in this essay of the notions of convention and conventionality - and of the thesis that they provide the foundation of the language of science. Since the publication of Quine's article 'Truth by Convention' (1936)[137] these notions, which had seemd relatively straight forward, began to look very obscure, or at least enormously complicated. Yet Carnap's interest in Tarskian semantics increased his willingness to appeal to those notions, along with those of analytic and synthetic truth. In 1951, Quine published a far stronger challenge to Carnap and logical empiricism's reliance on the British empirical tradition. Here Quine attacked the distinction between logical and empirical truth (between analytic and synthetic statements), on the grounds that there is no real criterion for distinguishing consistently between the two.[138] According to Quine, we have conventionality as a trait only at the forefront of science.[139] The rest of the 'fabric' of science is discursive. But we cannot in principle draw the line of demarcation between the two with any sort of precision at all. Hence it is extremely difficult to hold that 'philosophical' positions are simply a result of one's choice of language form. Consequently, as Quine himself admits, he and Carnap have radically opposed views as to what constitutes the logic of a given scientific theory.[140] Later Carnap partly acceded to this view.[141] He accepts Quine's notion of ontic commitment for any given theory, but not his explanation of ontological relativity itself.[142] That is what divides them so greatly over the notion of logical and empirical truth. Quine's reasoning cannot be gone over here. Quine does, however, end his article with the following lines:

> Carnap maintains that ontological questions, and likewise
> questions of logical or mathematical principle, are questions
> not of fact, but of choosing a convenient conceptual framework
> for science; and with this I agree only if the same be conceded
> for every scientific hypotheses.[143]

In light of my analysis of the role of the principle of tolerance,
I cannot see how Carnap could reasonably refuse to follow Quine on this
issue. The disagreement here seems to be about the kind of ontological
commitment which is necessarily a feature of any theory or framework.
For Quine, this commitment is of cognitive nature. That is to say, that
a linguistic framework theoretically commits us to holding that those
entities to which our framework commits us, really do exist. It is
precisely this use of 'really' which Neurath had objected to so strongly
at the meetings at Schlick's home.

For Carnap, as must be clear by now, such a kind of ontic commitment
is metaphysical and unacceptable. The kind of commitment we have to
entities, indded our whole ontology, has no theoretical basis as the
form of language (or linguistic framework) which is the proximate
cause of our commitment, has ultimately only practical considerations
as causes. To put the case very strongly, for the scientist and the
scientific philosopher, there is in the world, only what we choose there
to be. Science does not tell us what the world 'really' is like or
what it is like in itself.

This may seem somewhat paradoxical, but I do not think that it
is a caricature of Carnap's position. The idea of distinguishing
between kinds of ontic commitment may also disturb some, but it is
the basis upon which, in positivistic terms, Carnap separates the
scientists from the metaphysicians.

Quine also has a rather insipid critique of Carnap's method of

formalizing the distinction between internal and external questions. The claim is that it relies on Russell's Theory of Types (ramified or unramified). Quine even goes on to psychologize that Russell's superceded theory provided the model for Carnap's current analysis. If my interpretation of Carnap's principle of tolerance is sound, then Quine's criticism is superficial and misleading. I can only briefly speculate about the more substantial nature of Quine's reservations concerning Carnap and logical truth. These reservations are further clarified in Quine's 'Speaking of Objects' (1958) and his Word and Object (1960) where he argues for his view of the indeterminacy of translation. This thesis leads him to hold that the facts countenanced by any theory are over-determined by that theory and that consequently there is no method for precisely comparing any two given theories. For Carnap, it is possible to compare two theories because of his adherence to the notion of logical truth. One can turn an external question into an internal question, provided that the person who poses the question is willing to provide one with a transformation rule which will lay down a meaning postulate for the question he has asked. This may be difficult to do in practice, however, it is certainly possible for Carnap. The theory of physicalism depends upon it. Since Quine denies that there are any strictly logical truths, this move is not open to him. The conflict of views which result between these two philosophers, is in large part, I suspect due to this disagreement over the nature of a scientific theory. The root of this dispute lies in the acceptance or denial of the existence of purely logical truths.

PART II: The Principle of Tolerance and Its Critics

CHAPTER SIX: The Criticism of Goldstick and Lambros Assessed

The literature on Carnap's principle of tolerance in the philosophy of science and language is not very large. Professor D. Goldstick of the University of Toronto has recently mounted a direct attack on the principle in his article 'The Tolerance of Rudolph Carnap'.[144] Goldstick's interpretation of Carnap is clear and interesting, but he does not understand Carnap as a philosopher consistently guided by political and moral ideals. Here Goldstick typifies many other commentators on the history of Logical Positivism. His exegesis of Carnap misses certain crucial features which I have attempted to stress. Goldstick's quite unbalanced view of Carnap leads him to think that he can show that the principle of tolerance is inconsistent with all the rest of Carnap's thought. This he tries to do by setting up a classic reductio. He gives a pair "of (empirically) truly assertible English sentences", A and B, where A can be translated into a phenomenalistic language L, such that it is here an analytic sentence A', and into a physicalistic language L2, such that it is here a synthetic sentence A''. Conversely, B is synthetic in L, and analytic in L2, insofar as it gives us the assertions B' and B'' respectively. He goes on,

> We appear, then, to have the following alternative: either A' or A'' on the one hand and B' and B'' on the other hand have the same cognitive meaning as each other or else they do not.[145]

Let us address ourselves to the former alternative and call it P. Goldstick claims that if Carnap accepts P it will wreck havoc with his self-confessed basic principle in semantics and syntax: the distinction between logical or analytic truth and factual (empirical) or synthetic truth.

> The idea that the very same truth should ever be expressible
> indifferently by an analytic or synthetic sentence would blur
> the whole analytic-synthetic distinction on which Carnap
> was so insistent throughout his career. Moreover, is it
> not the entire tendency of Carnap's thought to regard as
> being <u>bona fide</u> information about the world only what can be
> asserted in truly synthetic sentences.[146]

I think that Goldstick is largely sound here. In fact, it is

obvious that Carnap cannot hold P, on pain of inconsistency. Quine

claims that the analytic/synthetic distinction is gratuitous in Carnap,

but we may pass this over, as doing away with it was certainly contrary

to Carnap's intentions. Therefore, we can grant Goldstick the success

of his argument to rule out P as viable for Carnap. However, his

<u>reductio</u> is incomplete without a similar kind of success against the second

alternative - Not-P. On this front, Goldstick argues as follows,

> ...there will be, for each person, at least two empirical
> facts which are expressible in English, but inexpressible in
> (L) and in (L2) respectively. That is to say, there will be
> at least one empirical fact necessarily overlooked by the
> phenomenalistic world-view and at least one empirical fact
> necessarily overlooked by the physicalistic world-view.[147]

Surely, he goes on to argue, this gives a theoretical ground for

asserting that English is theoretically superior to either L or L2.

This argument is invalid as a <u>reductio</u> of the second clause of Goldstick's

alternation for two reasons. First of all, Carnap himself would claim

that this presents no problem for him as it is an <u>ignoratio elenchi</u>.

He never claimed to be able to make a sentence by sentence translation

from one language form to another. In fact, as has been seen above,

he is sympathetic to Duhem, Poincaré, and presumably Quine on these matters.

So, in principle, Goldstick has no ground for claiming theoretical primacy

for English over L and L2, for the project of comparing them with English

never gets off the ground in terms of sentence by sentence translation.

Even granted that Goldstick could modify his objection somehow[148]
so that English, L and L2 were all intertranslatable and it turned out
that English had more synthetic sentences in it than either L or L2;
this still does not license Goldstick to claim that these two langages
"overlook" empirical facts. They merely do not countenance as many
facts as English does. Only relative to English do L and L2 have less
empirical content, as it were. But this by no means gives us theoretical
grounds for adopting English over either L or L2. For by the doctrine
of internal and external questions, precisely what is to count as empirical
content is different from language form to language form. There is no
absolute standpoint from which we can pronounce that the facts countenanced
by English are the correct set of facts. Presumably, it is part of the
force of physicalism that it does not embrace the same set of facts
that English does. If we must say that a language has a wider empirical
scope, it still gives no theoretical grounds for adopting it. Consider
a person who adheres to the principle of plenitude. It is entirely
likely that his form of language will embrace many more facts than English
will ever be able to. Yet surely this gives us no cognitive grounds
for accepting this form of language.

Explanatory power or the range of a theory provides, on Carnap's
grounds, no cognitive reason for adopting that theory. I might construct
a form of language in which I can formulate a theory as to why seven is
a holy number - a fact which notoriously goes unexplained in a physicalistic
form of language; but unless that fact warrants explanation, it seems
ridiculous to hold that my theory must be preferred to one formulated
in physicalistic terms. If there is no utility in explaining a fact,
then one would likely prefer to adopt a form of language in which that

fact could not even be formulated - to be more precise - where the assertion
of the fact would be meaningless. One of the reasons for choosing
physicalism is that the facts which are meaningfully assertible in it,
are those kinds of facts, and only those kinds of facts which are of
interest to scientists, and hence, on Carnap's and Neurath's view, those
relevant to a better organization of the world. One might put it somewhat
paradoxically by saying that it is the quality, not the quantity of facts
expressible in it that is relevant to the choice of a form of language.
Of course, the word 'fact' seems out of place here. Carnap himself has
often pointed out the danger of talking in the material mode of speech
about concepts which belong in the formal mode. I have done so here,
only to try to meet Goldstick on his own ground.

I think that we may conclude then, that by the principle of tolerance,
one is theoretically justified in choosing English (as opposed to L or L2)
if and only if both a) the facts countenanced in English are the facts
whose explanation is relevant to one's goals, in some important sense,
and b) that one holds that power of explanation is a virtue of theories.
Both of these requirements themselves, however, are normative conditions.
Thus the second alternative of Goldstic's reductio is shown to be impotent,
construed either in terms of a sentence by sentence translation between
theories, or in terms of some other, more holistic kind of translation.
This, of course, ruins his reductio as a whole and therefore his
argument against the principle of tolerance does not go through.

Another recent article on the principle of tolerance, takes a
rather narrower approach. Charles Lambros, in his 'Carnap's Principle of
Tolerance and Physicalism', tries to link Carnap's 'genera' from the
Logical Syntax, and Wittgenstein's talk of 'modes of signification' from

the _Tractatus_. Wittgenstein is cited several times in the _Logical Syntax_ as one who holds that there is only one logically sound, empirically adequate language. This in turn, argues Lambros, presupposes a fixed ontology, whose character, however, is still the subject of great debate amongst commentators on the Early Wittgenstein.

Carnap, on the other hand, explicitly rejected ontological questions as meaningless. Thus Lambros claims to have found a serious objection to the principle of tolerance. Unfortunately, Lambros ought to have studied Carnap's principle of tolerance in the light of Neurath's influence on Carnap. For Lambros' account, although lucid, leaves out all the points which elucidate the needed connection between a form of language and the goals which one sets. He also ignores the indeterminate character of protocol statements. He therefore fails to grasp the nature and the structure of what he seeks to criticize. He raises two supposed difficulties which he thinks make the principle of tolerance extremely difficult for Carnap to hold, unless he wishes to hold it in a vacuous form. I will address myself to each of these supposed difficulties in turn:

> Difficulty first arises when we ask about the interpretation of systems as well as their construction. For how is one to decide how many genera, and of what different kinds, should be built into the language? If the choice is blind, then serious doubts about the applicability of the language to the domain arise. What prior assurance is there that such a "blind" choice will fit in any coherent way onto the world? ...it seems obvious that such a choice is not blind at all, nor is it desirable that it be so: that every step of genus-building goes on with an eye toward the intended domain, and perhaps is guided also by the reason for lack of success of earlier systems, and so on. 149

Lambros is arguing that there is a theoretical justification for one's form of language, and with one qualification he is correct. For any form of language, there is a goal-relative theoretical justification,

namely one's aim, goal, purpose and so on for that language. Compare Kant's contrast of hypothetical and categorical imperatives. This will be of paramount theoretical importance in the choice of genera, but the having or the choice of the basic goal can receive absolutely no theoretical justification and therefore 'ultimately', neither can the language form. Lambros has not posed a difficulty for Carnap as he overlooked the essential point: A host of basic human goals offers a host of (goal-relative) theoretical grounds for adopting a host of goal-directed forms of language.

The second objection posed by Lambros, concerns the problem of Carnap's own consistency in holding both the principle of tolerance and the thesis of physicalism.

> ...it is difficult to say exactly how much it...infringes
> upon the Principles (sic) of Tolerance, but infringe it does...
> One must still say that any genus which is to be meaningful
> has to have its appropriate physical aspects. To a degree
> this cuts into the liberality of the Principle of Tolerance,
> but no doubt in a way which, far from distressing Carnap,
> would satisfy him. It was never intended as a license for
> non-meaningful talk anyway, and the thesis of physicalism
> insures that it is not.[150]

What Lambros forgets, is that for Carnap, physicalism can be adopted and be consistent with his programme of radically rejecting metaphysics only <u>because</u> of the principle of tolerance, as I have argued at length above. There is a mere practical justification for the thesis of physicalism. Carnap, in fact, cannot theoretically adopt the physicalistic genera as he would be violating Neurath's dictum 'Wie Schiffer sind wir...'. The 'true' or 'real' or 'actual' nature of the world or experience is beyond us. To ask about it is senseless. Only the inquiry into various forms of language can be cognitively conducted. In conjunction with out ends we choose our form of language; physicalism is the choice of

Carnap and Neurath. But given their elimination of what they hold to be metaphysics, only the principle of tolerance itself can harmonize these two theses. The genera of the physicalistic system allow the formation of a language in which one can verify protocol statements. The choice of both the protocol statements and the language form is ultimately non-cognitive. So the principle of tolerance is in no way menaced by the thesis of physicalism. Lambros is mistaken.[151]

CHAPTER SEVEN: A Critique of the Principle of Tolerance

The principle of tolerance has been re-interpreted and defended against two recent critiques. Now I propose, in my turn, to attack the principle. I think that a number of considerations can be brought to light which will cast serious aspersions on the tenability of the principle of tolerance as a tenet of the doctrine of the Vienna Circle. However, I do see one way of mitigating the force of my argument, which may or may not be acceptable to those of a positivistic temper. This I will set forth at some length. Then, perhaps, some conclusions can be drawn about the principle of tolerance, considered both as a part of the philosophy of logical empiricism, and as principle which philosophers of other persuasions ought to adopt.

We find, to begin with, that the status of the principle of tolerance itself; in terms of Carnap's philosophy, is somewhat peculiar. From one useful perspective, it is in a similar situation to the principle of verification. It has been long argued by opponents of positivism that the principle of verification is not itself verifiable and that therefore the whole programme of the positivists is self-defeating. The general answer to this objection has been that the principle of verifiability is not itself a part of science, it is merely a methodological rule of thumb, a recipe, command or some such, and therefore stands in no need of verification.[152] This answer, although its pleaders were doubtless both sincere and profound, is unsatisfactory, as it gives no cognitive justification of the verification principle which itself is supposed to be the ground of cognitive reasoning. Another form of reply which appears prima facie to avoid this problem is to claim that it only describes what we do when we do science and reason cognitively. But this explanation

77.

merely begs the question. It demands a prior cognitive criterion of demarcation between science and metaphysics. As a description, it cannot serve this function. The principle of tolerance suffers from the same ailment. Even if it really did describe what we do when we construct a form of language, even if it really served as a handy rule of thumb, it can still have no force as a legislative principle. It does not tell the prospective philosopher or scientist how to go about forming his language, ie. what he ought to do. Carnap did think that it was descriptive, but also thought that it must have cognitive force as a rule to follow, as it tells us what it is rational to do when constructing or criticizing a form of language. Otherwise how can we make sense of it? Could we take it as an indispensable and logically primitive principle, somehow analogous to the logically primitve notion of 'negation'? This would seem to be an extremely dubious move, at least until it is afforded far more clarification as well as rational support.

The second reason that the principle of tolerance is at best dubiously consonant with positivist doctrine centres around the nature of the goals a human being can have and can be said to have. It is not clear what can count and what cannot count as a goal. The Carnapian programme with its humanitarian ideals seems to have the notion of consistency built into it. That is, the theoretical choice of language is based on the goals. But what theoretical justification does Carnap even have for something so basic in his system as consistency? It would seem to be necessary if one wishes to check one's language against one's goals. Why even demand this as a criterion? How can we even make sense of the notion of checking, if consistency is not one of our goals? Carnap might try to parry the question by saying that consistency is a meta-goal.

But from Carnap's standpoint, a techinical prefix like 'meta-' should never be added to a term which is not already clear and scientifically acceptable.

We may view this situation on two levels. Consistency, as far as one's form of language goes, seems to be an intuitively obvious requirement. Yet how can consistency be something which we ought - quite fundamentally - to honour if Carnap's distinction between the cognitive and the non-cognitive is accepted? T.S. Kühn and Paul K. Feyerabend have argued at length that consistency is not even necessarily a virtue of theories with regard to the advancement of science. They say that the goals of science are in no way bound to be approached more quickly if one has consistency of theory as an aim.[153] I would reply that if the roads to scientific failure are paved with good intentions, and the roads to scientific success with outlandish intentions, that is a good ground for seriously improving, not debasing our intentions. Such arguments may expose a naivety in Carnap's de facto approach. But in principle they do not upset the principle of tolerance. However on the second level, these arguments are troublesome. For suppose that consistency is one of one's goals. And suppose also that having a form of language laden with paradoxes and inconsistencies appears inductively to be the only form of language for pursuing the rest of one's goals. One can construct such a language from using Russell's predicate logic without the type restrictions and give it a Russellian interpretation. But suppose that one holds as a matter of a fundamental attitude that one's form of language ought to be inconsistent with one's goals. What then do we say - that somehow the latter goal is inconsistent with one's first goal? How can we do that? Have we fulfilled our goal by saying that our inconsistent

language is consistent with our goal of inconsistency? Goals have no cognitive justification, not even against other goals, for I can insist that an inconsistency of goals is one of my goals. The obvious answer is that the latter is a meta-goal. Again the question arises - How do we rank basic goals as they are not cognitive to start with? It would seem _prima facie_ that they must be assigned some kind of logical priority. But how can this be done? Indeed, even if we could do so, we are open to a 'third man' or to a 'slippery slope' type of argument. To wit: I can hold as a meta-meta-goal that my goals and meta-goals ought to be inconsistent and so on _ad infinitum_. This regress is definitely vicious.

Equally troublesome to those who would hold the principle of tolerance is another intuitively 'obvious' goal one would hold with respect to one's form of language - simplicity. What would we want to say should I deny this as a goal and further assert that optimum complexity is one of my goals? (Perhaps I cherish some bizarre principle of plenitude). In theory, my form of language can be infinitely complex. For instance, my syntax could have only one formation rule, but it might be infinitely long. Or, if you prefer, I could have one formation rule which is finitely long, but its name is of infinite length. Furthermore, one has the problem with goals themselves again. Suppose that I hold that my goals ought also to conform to my optimum complexity principle. How then does one make sense of an infinite complexity of goals? Is it possible that it could be done in terms of meta-goals, and so on and so forth?

The whole notion of goals itself with respect to a language form is not without its paradoxes. I cannot go into this deeply here, but let

me suggest three questions which seem to arise immediately in this regard.
First of all, it looks as if there must be some logical constraint on
what can count as a goal, if it is to be intelligible to others. It
must be so formed that it can be translated into other forms of language
that are intelligible to other persons. In fact, it is difficult to see
how we could make sense of any form of language which was in harmony with
the following goal: the consistent violation of the law of non-contradiction.
Insofar as we are human beings, it is difficult to see how one could
intelligibly hold that as a goal. We would have no idea of how to give
an interpretation to such a language. Even if expressions of goals have
no cognitive content for Carnap, surely they must be goals which are
logically capable of being rendered intelligible.

The that language forms can be consonant with one's goals is
not terribly straight forward either. How does one go about checking
such a thing? Do we ask a psychologist to do it? A psychiatrist,
perhaps? Can anyone really articulate all their goals, even given that
in principle one could know all one's goals? One might also wonder
about the nature of this 'harmony' or 'consonance' between one's goals
and one's form of language. It is supposed to be cognitively scrutinizable.
Is there a casual relationship here or simply a logical one? How might
one go about deciding this sort of question?

, Third and last of all, one can wonder about another facet of the
relation between language form and goals - namely what effect does one's
language have on one's goals? The goals determine one's choice of language
form, but surely one's choice of language form will have some influence
on what kinds of goals one holds. 'Self-aggrandissement' as a goal would
seem to be unformulable in a physicalistic form of language. If one

were a 'native' speaker of physicalism, one would be logically precluded from holding such a goal. One can imagine many other examples.

I believe that yet a more serious type of objection to the principle of tolerance than all of the foregoing can now be raised. Even granted that one can cognitively check one's form of language against one's goals, there remains no cognitive justification for one's adoption of any given form of language in the first place. One's choice of language need not necessarily be completely blind. However, this possibility is not ruled out by Carnap. One can give no cognitive grounds for doing so. As Neurath urges, the choice of a language form is more likely to be made 'in the practice of life'. Once again, however, there is no cognitive justification for preferring one reason over another for adopting a form of language. These considerations in themselves may not seem terribly offensive, but they have a consequence which could be rather undesirable. It is logically impossible, by the principle of tolerance, to offer cognitive reasons as to why anyone could not adopt any form of language to be intelligible to the community of philosophers and scientists, certain restrictions are put upon one's choice: One must give rules for translating one's form of language into another form of language which is already intelligible to some members of the philosophical and/or scientific community, and one's form of language must be in harmony with one's goals. Even these two limiting conditions leave open the possibility that all sorts of language forms would have to be equally good, in whatever sense of that word one wishes to use.

Indeed, it becomes impossible to refute a language form. It may seem to be strange to talk about 'refuting' a language form, but consider the consequences entailed by refusing to admit this sort of discourse. As

we saw in connection with the discussion of Quine, one's form of language determines exactly what the basic entities are in one's conceptual framework, at least for practical purposes. Does it not seem at least intuitively bizarre that a philosopher should not be in a position to give a cognitive argument against any given ontology? The consistent Carnapian may not rationally argue against any language form whatever, and a fortiori against any ontology.

This raises an important point. Carnap seems to have presupposed throughout his career that the ██████████ tolerance would be exercised only in those situations where ██████████ forms of language were maintained by people w██████ a set of goals. Presumably, not all the goals that a philosoph██████ scientist might hold would count as being relevant to the decis███████ which form of language ought to be adopted in any given situation. Of course, it is not clear how one would go about determining which goals were relevant to making such a choice. Even the determination as to what might count as sharing a set of goals is no easy matter, as it would ███ to lead us back into the problem of ranking the goals, as surely this would be also germane to this issue. It does not appear to me to be possible for Carnap to rule out a priori the kinds of situations I have delineated above in which two groups of philosophers and scientists hold divergent goals.

We might well wonder if two people could share a set of goals and have cognitive justification for each adopting a different language form. Given that all the issues raised by the concept of goals insofar as they play a role in the choice of a language form are in principle resolvable, I would argue that once again, Carnap does not seem to have any a priori grounds for ruling out such a situation. It looks as if Neurath held that

it was a matter of fact that one's form of language was determined by
one's Weltauffassung which in turn depended on one's goals; perhaps the
latter were, in turn, dependent on a non-cognitive Weltanschauung.[154]
However, this does not give us sufficient grounds for ruling out the
case in which two forms of language satisfy one set of goals. This
might seem to cause only minor difficulties for the proponent of the
principle of tolerance. Surely in this case, it might be argued, one
could legitimately exercise the principle of tolerance, too.

. Such reasoning is obvious, but extremely facile, for it neglects
a fundamental shift which is being made from one sense of tolerance to
another. The principle of tolerance as it was conceived by Carnap,
was to be employed to obviate the need for metaphysical disputes,
because the reasons for adopting any given form of language could only
be non-cognitive; that is, have their ultimate foundation in the goals
which one might hold. Since there is no strictly rational (cognitive)
way to settle such a dispute, tolerance was urged by Carnap.

Hence it would be irrational, on Carnap's grounds, to choose the
one form of language over the other, but the reason for its being irrational
is not of the same nature as it would be when there are competing
sets of goals and language forms which satisfied each respective set
of goals. For if two people share the same set of goals, they can
give no cognitive grounds for accepting either form of language which
satisfy these goals, which is the only criterion Carnap has given us
for choosing between language forms. This provides us with cognitive
grounds for tolerating two language forms as there are no rational grounds
for choice to be had here. The cognitive grounds in the usual type of
situation where goals are not shared are different because in that

situation, one has in principle no rational grounds for adopting one form of language instead of another. Yet if the condition which eliminates this non-cognitive aspect in the choice of a language form is removed, it looks as if there is still a case left open where no rational choice is possible either. But, as Neurath says, "the practice of life" will force us to make a choice. However, in our 'aberrant' case of tolerance, there is no choosing of goals at stake. The goals are already agreed upon, as it were, and the question becomes one concerning which form of language one ought to choose, given that all else really is equal. The adoption of goals is, if I may wax somewhat poetic, is an existential act. One is forced by the exigencies of day to day living to set certain goals for oneself, and, to a greater or lesser extent, attempt to abide by them. In the case at hand, the requisite sense of tolerance necessary to exercise the principle of tolerance, rather forces us to be completely arbitrary in such as fashion as we presumably would never be with regard to our choice of goals by which we live. Thus, we must either deny that tolerance can be exercised, or admit that Carnapian tolerance can be equivocal. Surely, the latter alternative is more attractive. I have belaboured this point because it shows that cases can be constructed which Carnap and Neurath do not consider, that render the force of the principle of tolerance much more diffuse than would seem to be, at first glance, the case.

The philosopher or scientist will, like Buridan's ass, inevitable choose the one form of language or the other. _Praxis_ triumphs over process - not the _praxis_ which forces us to choose goals, but the _praxis_ which impels the scientist or philosopher onward in their everyday work. It is along these lines, that we may seek to buttress the principle of

tolerance against the criticisms which have been made so far in this chapter.

I have discussed at length the relation of one's goals to one's form of language and how this is effected by the practice of life. Let me introduce a new factor which may be useful: the practice of science. This new variable complicates our picture immeasurably and I cannot do justice to it here. However, I would life to speculate a bit about its influence on the wissenschaftliches Weltauffassung. Hopefully my remarks will at the very least suggest some reasons as to why the positivists did not seriously entertain the objections I have raised so far in this, chapter.

It looks as if the practice of life is what determines both the conception of, and the choice of goals. It plays a role in the ranking of goals which are perhaps largely determined in the individual by sociological forces. Science, presumably, has arisen from the practice of life as the method for rationalizing the world and through the understanding it brings to us, makes this old planet a better place in which to live - a very Socratic doctrine at bottom. The very best. science; that is, the science which has made the most progress in the rationalization of our world, has been that science which has been most free of metaphysics. This is taken by the Vienna Circle to be a matter of fact. Science works without the help of philosophy. However, it looks as if the philosophers of the Vienna Circle do grant themselves an important role in a society which embraces the wissenschaftliches Weltauffassung. The forces of science need direction. They must be brought to bear on the problems which stand in the way of our realization of our goals. But the sacrosanct methodology of science must not be

interfered with by the philosopher as he endeavours to orientate the scientist. So the form of language which the philosopher constructs and recommends to the scientist will certainly be influenced by the philosopher's understanding of what scientific methodology is. This, it seems to me, is an anologue of the practice of life; in this case perhaps it could be termed the 'practice of science'. This practice of science seems to over-ride any theory of science. Again, it seems that for the Vienna Circle, science was essentially action, not theory. I beg to beg all the questions o· detail here, in order that this discussion remains at a very abstract and speculative plane. I am merely trying to sketch a way in which a left wing member of the Vienna Circle might account for the viability of the principle of tolerance, if he were pressed along the lines I have pursued in this chapter.

Remember that physicalism was selected by Neurath as the basic language of science both because it allowed the hottest pursuit of the goals of the society (through the elimination of metaphysics) and it was closest to what Neurath conceived to be the practice of science. Physicalism furthered the collective nature of scientific activity, which Neurath took as a matter of empirical fact as a pre-condition for scientific progress, and the kernel of the protocol statments it generated were closest in content and form to those statements actually used by scientists.

Indeed, given that Neurath was a Marxist, perhaps it is not unreasonable to import a tenet of Leninism into the scope of this discussion. Lenin held that theory must be conditioned by practice, else it becomes sterile ideology. He says that the workers must be prepared to hold contradictory positions if practice so dictates, and must be able to change theories with gay abandon should circumstances so necessitate.[155] This contradicts

nothing I have imputed to the positivist position. In fact it could dove-tail surprisingly well with it. Of course, this does not entail that practice supercedes theory. As must be clear by now, one's form of language determines exactly what there is to be encountered in the realm of practice.

A scientific philosophy must take as its paradigm the practice of science.[156] This of course begs the question as to what in fact the scientific philosopher takes to be the practice of science. If the question of practice is as relevant to making sense of the principle of tolerance as a tenet of logical empiricism as I have suggested that it could be, then perhpas tolerance itself ought to be overthrown. Kuhn has suggested that communities sometimes ought to be intolerant of the science of other communities. Feyerabend has gone even further and urged that in the name of progress intolerance is frequently a good thing in science and has attempted to show that dogmatism of the most thorough kind has been responsible for some very significant advances in science.[157]

Neurath, himself, was very prone to cast goals in terms of what a community desired, as we have seen. Given that a community has certain goals and the practice of life in a community entails a certain form of language and therefore admits only certain entities into its 'world'. Neurath does not seem far from some philosophers who have held, in one form, or another, that the basis of any philosophy is one's Weltanschauung. I have in mind such people as Dilthey, Jaspers, and Wittgenstein. The role of what Wittgenstein calls Lebensformen (forms of life) is very close indeed to what Neurath seems to have had in mind when he talked about the practice of life in different communities. It seems to be implied

by Wittgenstein that people who do not share similar forms of life, have a great deal of difficulty understanding each other as they have different goals. 'Sociological' considerations (broadly construed) have determined that they pursue these goals in different ways. Thus arises the phenomenon of incommensurable paradigms between different forms of life which give rise to various forms of language. We then have insurmountable difficulties in stating which form of language is superior because they ought to be judged by different criteria - one set for one form of life, and another for a different form of life.

For Wittgenstein, a language is simply a tool for helping one get around in one's world. Each form of life is, so to speak, a different world. Indeed, it is perhaps not overstating Wittgenstein's case to claim that someone from one form of life can never render intelligible, to himself and other who share his form of life, another radically dissimilar form of life.[158] Neurath could be said to be arguing that a new form of life be adopted by his fellow man. The analogy with Wittgenstein cannot be taken too closely, however, as Wittgenstein never distinguished between a weltanschauung and a Weltauffassung.

This brings us to two considerations which seem to count against the principle of tolerance, which do not seem to be mitigated by the introduction of the notion of praxis. Neurath's sociological programmed relies on the fact that we can come to understand other forms of life. This is done by means of studying their forms of language and generating rules of translation such that they can be rendered intelligible in the scientific language of physicalism. In this way, we can make sense of the practice of a society and see how it relates which the members of that society have set for themselves. It is here

that an essentially hermeneutical problem arises. How can we, from the standpoint of physicalism, do justice to the goals of another community which does not share the goals which are consonant with physicalism as a form of language? How can physicalism, which is a ▓▓▓▓ designed to eliminate metaphysical notions, capture even the ▓▓▓▓▓▓▓ of a community which might hold metaphysical beliefs ▓▓▓▓ world which were implicit in its form of language. This is to ▓▓▓▓othing about making the jump to understanding the goals implicit in its Weltanschauung.[159]

The left wing of the Vienna Circle was so anxious to eschew metaphysics that they were forced to answer this question with a piece of the boldest metaphysics ever uttered: All philosophies, in the end attempt to assert the same thing. All forms of language are intertranslatable, at least in principle. Heidegger may be gibberish in Bantu, but so much the worse for Heidegger (or Bantu). The fact that Being and Time is unintelligible in Bantu does not count against the thesis of in principle translatibility between language forms. It merely shows that Heidegger and the Bantus cherish widely divergent sets of values. Physicalism represents the language in which only that which is amenable to scientific progress may be stated. All the 'inessential' elements drop out in physicalism. Thus, as far as we share in the Western tradition of science, all other languages seem to be trying more or less poorly, to assert the same propositions as can be asserted in physicalism. This sounds like linguistic imperialism of the first order. However, it is to be remembered that physicalism is held to be utile, simply because it asserts the propositions in such a manner that the can be verified by means of science. So Carnap and Neurath have not contravened the principle of tolerance. They have not attributed any greater cognitive status

to physicalism, than they have to any other language form. However,
given that the criterion for success of translation is not the felicitous
rendering of the assertions of one language form intelligible in another
language form, but rather the fulfillment of requirements of a purely
formal nature; it seems as if they must hold that there is some set
of ultimate facts to which all forms of language tacitly have reference.
Otherwise, how can all forms of language be said to be intertranslatable
(short of holding that there is a universal language in which one can
state all the formal requirements for the translation of any and all
language - a position which manifestly contradicts the principle of
tolerance). Wittgenstein in his _Tractatus_ to the contrary, we cannot
even point out to these facts. But the left wing Circle member looks
as if he is committed to holding that there is such a set of facts, which
in principle is unknowable as it must be captured in a form of language
before we can be said to know it. This already colours the 'objectivity'
of this set of facts. As scientific philosophers, we adopt physicalism
as this formulation of these facts is the most useful. Although no
privileged position is thereby alotted to one form of language, the
principle of tolerance does seem to drive one to hold a patently
metaphysical position: All forms of language strive to assert the same
thing, but from the point of view of any other form of language, they do
so with greater or lesser success in each individual case.

The doctrine of physicalism cannot even get off the ground without
the possibility of there being in principle translatability between forms
of language. This consideration raises another puzzler for the proponent
of physicalism based on the principle of tolerance. The whole issue
of tolerance of language forms was raised in the context of the construction

of a syntactic meta-language. All the issues which have been raised
in this capter can be considered as merely having reference to the
forms of object languages. The arguments all apply with even more
devastating force to forms of meta-languages such as Carnap's Logical
Syntax and Semantics. Different meta-languages are designed to do different
jobs.[160] But there is no assurance that we will be able even to make
sense of someone's form of meta-language, even if we know the purpose
for which it is designed. All the problems with regard to goal determina-
tion, goal ranking, different species of tolerance, the practice of life
and the practice of scientific philosophy (as opposed, in the case of
meta-linguistic forms, to the practice of science) re-assert themselves
with a vengence. The practice of scientific philosophy is not nearly
such a mitigating influence against these difficulties on the level
of the form of meta-languages, as was the practice of science with
respect to the form of object languages. There is no long successful
tradition in scientific philosophy upon which to draw examples of successful
practice. Nor is it clear that the heart of scientific philosophy lies
in the way it is practiced. Philosophers who have adhered to the
wissenschaftliches Weltauffassung have not yet proved their worth.

CHAPTER EIGHT: Concluding Remarks

It may seem like an anti-climax to put forth the claim at this point that the principle of tolerance as a tenet of logical empiricism is supported by non-cognitive considerations. What is perhaps now called for, is a thorough examination of the cognitive/non-cognitive distinction. Unfortunately, this cannot be undertaken here. What I have tried to show is that the principle of tolerance is maintained by the left wing of the Vienna Circle because it attributed great importance to the non-cognitive concerns of the individual and of society. It is a pivotal piece of the doctrine of the Vienna Circle. This philosophy was intended to give a metaphysically neutral structure for the improvement of the lot of individuals and societies. The principle of tolerance itself was supposed to be strictly cognitively founded. It relied on the tautology: 'It is irrational to make assertions about that concerning which it is logically impossible to make strictly rational assertions.' This tolerance had reference only to non-cognitive issues, thus departing somewhat from the usual sense of the word. Tolerance is generally considered to be a value, held by an individual or society. For Carnap, it was no value, it was a consequence of a most fundamental belief of the members of the Vienna Circle. However, when one examines the reasons for maintaining such a basic tautology, we find that they are deeply rooted in certain non-cognitive beliefs about the nature of man, science, and society.

Perhaps the most important of these beliefs, was the conviction on the part of most of the Vienna Circle that metaphysics was the root of reaction in terms of discovering the solution for the ills of society. I have stressed the non-monolithic character of the views of the Circle

93.

members, and have to this point sympathised more with the left wing than with the right wing. At this juncture, however, it looks as if Schlick in particular was much more perspicuous than his colleagues. He was the only one to actually try to investigate the effect of metaphysics on the individual and society, most notably in his Natur und Kultur. His conclusion seemed to be that metaphysics had not had a wholly dilatory effect. Neurath, on the other hand, in his forays into history exhibits a wholly hostile attitude towards metaphysics which heavily coloured his observations to the point where he was not even willing to take it seriously. His attitude is pretty much summed up in his facetious "they (metaphysicians) can let seven be a holy number." Presumably, his study of history was intended to be a scientific enterprise, which for Neurath meant that already metaphysical strains in past history could be discounted without further ado, when discovered, as they added nothing in scientific terms, to the significance of historical action. Surely Schlick's attempt to isolate the role of metaphysics in history and to try to assess its significance before roundly condemning it makes more sense. In light of the view of the Vienna Circle I have advanced in this essay, perhaps both wings of the Circle would have benefitted from some more mutual influence on those issues with respect to which they felt that they were in opposition.

The flight from metaphysics made it seem, in light of the principle of tolerance, as if one could set up all kinds of 'bizarre' forms of language which might fulfil some incredible set of goals. I have suggested that praxis might put some kind of limit to what forms of language would be admissable. This limit would itself have ultimately only non-cognitive justification, but still might be cognitively justifiable

in terms of a set of goals. It is not clear, however, that certain
forms of language could be said to be 'bizarre' a priori and, in practice,
ignored without further ado. Leon Chestov, a nineteenth century
theologian, developed with holiness aforethought, a logic was riddled
with inconsistencies which he though would further his theological aims.[161]

On the other hand, it is not clear either that tolerance of language
forms allows any form of language whatever to be seriously countenanced.
First of all, it is arguable whether or not in fact, there can be such
a thing as an inconsistent natural language,[162] in which words 'inconsistent
natural language' would be at all intelligible to twentieth century
mathematicians, linguists, scientists, or philosophers.[163] This leads
us on to the second point. If someone who has a different form of life
has a certain form of language which is radically different from our own,
we may never, in principle, be able to make sense of it. Neurath
thought that by means of a sociology based on social behaviourism, that
such a project was in principle possible, but contemporary work in
linguistics indicate that this may not, in fact, be so.[164] If this sort
of case were to arise, it looks as if we should have to exercise tolerance.
The tolerance would here not be in order because the considerations upon
which the form of language rests are in principle, incapable of being
either rationally defended or attacked. Rather, tolerance would be a
necessity because we could not make sense of the form of language, the
goals, and a fortiori the meta-languages under consideration. The principle
of tolerance, as I have interpreted it, makes no allowance for such an
eventuality. If we were to act in the spirit Carnap and Neurath, I
believe that we would tolerate this unintelligible form of language,
but the Vienna Circle doctrine does not even purport to give us a theoretical

reason for so doing. Perhaps in practice, we would be forced to take the attitude of tolerating only those unintelligible forms of language which we take to be furthering progressive tendencies.

It might be argued that with the introduction of the principle of tolerance, we have a theory which embraces the most thoroughgoing conventionalism imaginable. This may be so, but only in the most attenuated sense of conventionalism imaginable. Theories which rely on conventional devices are supposed to thereby skirt all normative considerations. The principle of tolerance, on the contrary, makes it possible that one can explicitly construe one's theory normatively, and that, as in the case of the left wing members of the Vienna Circle, it can be a programme for social change. Usefulness is usually the criterion for adopting a convention. The principle of tolerance makes it important to consider exactly what it is to be useful. The goals that we hold which determine what language form we choose are not merely those kinds of aims which are usually taken as reasons for adopting a convention such as brevity or beauty. There are goals which express our deepest hopes and aspirations. Our choice of language form effects the very quality of life itself!

The philosophy of the left wing of the Vienna Circle can be construed as intending to have nothing but such an effect. The rejection of metaphysics was based precisely on the conviction that any theory that was metaphysical so ipso did not such an impact, as may be seen from history, and could not have such an impact because it was logically precluded from saying anything about the world which could effect social progress. The wissenschaftliches Weltauffassung was taken to be the only way to grasp the world which would make it a better place in which to live.

Such uncritical faith in the practice of science and the worth of
technology may seem facilely optimistic to we inhabitants of the
1970's. Perhaps this is why Carnap stopped even hinting at the social
implications of his philosophy in print after he was driven to emigrate
to America. However, right up until his death, he continued to work on
securing the release of academics imprisoned in Mexico for political
reasons, and carried on his work with underprivileged blacks in Los
Angeles. Carnap realised that he excelled more in the 'technical' issues
in logic and philosophy, than in the political and social issues. Here
he relied more on his intuitions, founded upon a simple and kind soul.
Here is a portion of a moving letter he wrote to Russell.

> Throughout your life, I have followed with the greatest interest
> not only your philosophical work but also, especially during
> the last years, your political activities, and I admire your
> courage and your intensity of energy and devotion...
> I am in complete agreement with the aims for which you
> are fighting at present: serious negotiations instead of the
> cold war, no bomb-testing, no fallout shelters. But not
> having your wonderful power of words, I limit myself to
> participation in public appeals and petitions initiated by
> others and to some private letters to President Kennedy on
> these matters. Even such letters are difficult for me.
> By nature I am inclined to turn away from the insane quarrels
> of parties and governments, and pursue my thinking in a
> purely theoretical field. But at present, when the survival
> of civilisation is at stake, I realise that it is necessary
> at least to take a stand...[165]

But the link between his largely unformulated political views, and
his "technical" philosophy definitely exists.

We must take 'Neurath's figure' seriously if we are to get an
over-view of the way in which the left wing of the Vienna Circle viewed
their work. Working from a set of goals incapable of rational justification,
using only 'sound scientific method', they aimed to lay out a philosophy
which would say only what could be said, and leave all else to the realm

of metaphysics. The philosophy would order the knowledge of the world such that it would be a tool of social progress. From a theoretical point of view, the choice of goals was blind.[166] However, the Circle as a whole displayed an animal faith that all rational men would want to improve their lot and that of others. In practice, it seemed to them, the objectives to be reached were quite clear. There was no place for their ship to go to dry-dock where they could rebuild it, jettisoning the reactionary and metaphysical elements. They had no assurance of being right or correct. They felt that there was no way to find out. Such a project was considered to be flatulent. In the end, human happiness was all that was worthwhile for Carnap, Neurath and Hahn. The principle of tolerance gave philosophers the freedom to construct language forms which would be of the most use to the individual and society. It was metaphysical even to assume that what was beneficial to one society would be beneficial to another.

The principle of tolerance may seem intuitively bizarre taken either on its own, or as a tenet of the left wing version of logical positivism. I hope that in the latter case it makes more sense now after some reinterpretation of the work of the Vienna Circle along the same lines that it was conceived by at least some of its members. Although, it does not seem to be tenable without the resolution of a host of difficulties, one whould certainly respect the conception of philosophy from which it sprung. To conclude, let us be reminded of Marx' eleventh thesis on Feuerbach:

> Philosophers have only _interpreted_ the world in various ways;
> the point however, is to _change_ it.

NOTES

1. Neurath, Otto, 'From Vienna Method to Isotype', in Empirical Sociology, eds. Neurath, Marie, and Cohen, Robert S., Dordrecht: D. Reidel, 1973, p.224

2. Quoted in Zuurdeeg, W.F., A Research for the Consequences of the Vienna Circle Philosophy for Ethics, Utrecht: Keminck en Zoon N.V. 1946, p.141

3. Neurath, Otto, 'Die Wissenschaftliches Weltauffassung: Der Wiener Kreis', in Empirical Sociology, op cit. pp.304-5

4. Carnap, Rudolph, The Logical Structure of the World, trans. George, R.A., Los Angeles: University of California Press, 1967, p.290

5. Whitehead, A.N., Adventures of Ideas, Cambridge: Cambridge University Press, 1961, p.59

6. Passmore, John, A Hundred Years of Philosophy, Middlesex: Penguin Books, 1968, pp.367-393

7. Ibid., p.379

8. Weinberg, Julius, An Examination of Logical Positivism, New Jersey: Littlefield, Adams and Co., 1960

9. The book is so dated (having been first published in 1936), in that it takes no account whatever of the admission of semantics into Carnap's theory, and is so oblivious to the motivation for logical positivism in the first place, that the serious student of logical positivism can find virtually nothing of interest here at all. The first consideration alone makes one question the integrity of whoever was responsible for having had it reprinted.

10. Urmson, J.O., Philosophical Analysis, Oxford, Clarendon Press, 1966, pp.125-6

11. Passmore, John, 'Logical Positivism' in The Encyclopedia of Philosophy, ed. Edwards, Paul, New York: MacMillan and Free Press, 1967, pp.52-7

12. There are a number of works in German which deal with the same material. With the exception noted below in the text, their accounts do not differ significantly from their English counterparts as far as I can determine. See the bibliography for a partial listing.

13. Richard von Mises, Friedrich Waismann, and Gustav Bergmann (and perhaps Moritz Schlick, too). For two of the most insightful criticisms of logical positivism in the vein by those outside that particular tradition, see John Wisdom's 'Metaphysics and Verification', in Philosophy and Psychoanalysis, Berkeley and Los Angeles: University of California Press, 1969, pp.102-111, and Iris Murdoch's The Sovereignity of Good, London: Routledge and Kegan Paul, 1971.

14. New York: Dover Publications, 1952, p.34. Ayer, although he attended some of the Circle's meetings in the early Thirties, was not a member. He did become, however, the earliest exponent of their thought to the English-speaking world.

15. In Schilpp, P.A., ed., The Philosophy of Rudolph Carnap, Illinois: Open Court, 1963, pp.8-85

16. Schilpp, Ibid., p.8.

17. Ibid., pp.4-6

18. Ibid., p.9

19. Carnap, Aufbau, op. cit. p.5

20. Ibid., p.9

21. Ibid., p.10

22. Carnap's construction system as set forth in the Aufbau was the first serious attempt to carry out such a project, which had been greatly discussed, but which no one had cared to attempt. Even so, it was only a sketch for such a system. Nelson Goodman in his Structure of Appearance, Cambridge: Harvard University Press, 1951, attempted the same thing about twenty years later. He chose the same base for his system as did Carnap, and refers to 'Erlebs' (short for the German Elementar - erlebnisse - literally: elementary experiences), for some unknown reason N.M. Martin in his article 'Carnap' in the Encyclopedia of Philosophy, Vol.I, op. cit., asserts that Carnap uses a phenomenalistic base for his construction system. This flatly contradicts what Carnap says on phenomenalism in the Aufbau. Mr. Martin, however, does mention that Carnap was concerned with political and social matters and supports this somewhat by talking about Carnap's personality.

23. See Carnap, The Pseudoproblems of Philosophy (1927), an essay appended to the English translation of the Aufbau, op. cit.. Carnap was very concerned in this early period with what he called "epistemology" as it seemed to him that metaphysics in essence, boiled down to epistemology. We noticed that in the Aufbau there is only one place where metaphysics obviously might enter and that is in the area that we today would call the epistemological section of that construction system. No wonder Carnap was concerned with metaphysics as epistemology.

24. Carnap, Aufbau, op. cit., p.86

25. Ibid., p.87

26. Ibid., p286

27. Ibid., p.287

28. Ibid.

29. I mean here the Pyrrhonian notion of the *epoché*, in the exercise of which one suspends one's judgement with regard to all things that are beyond the ken of reason. Husserl's notion does not seem to fit the bill here as if implies a conscious act of 'bracketing' ontological questions with regard to the object of one's phenomenological reflection. Carnap, so far as I can determine never refers to Husserl in any of his writing. For Pyrrho, the *epoché* was a technique which, once mastered, served as a palliative - one ceased bothering oneself with problems which were in principle as far as one could ever know, unanswerable.

30. Carnap, Aufbau, op. cit., p.298. See also Wittgenstein's cryptic, but nonetheless, therefore, famous prop. 6.521 in the *Tractatus* trans., Pears, D.F., and McGuiness, B.F.: London: Routledge and Kegan Paul, 1971, p.149

31. The other two being Kraft's *Grundlagen einer Wissenschaftlichen Wertlehre*, Wien: Schriften zur wissenschaftliches Weltauffassung, V.4, 1937, and Karl Menger's *Moral, Wille and Weltgestaltung, Grundlagen zur Logik der Sitten*, Wien: Schriften zur wissenschaft-liches Weltauffassung V.7, 1934.

32. Compare Carnap's remarks in 'The Elimination of Metaphysics' in Ayer, A.J., *Logical Positivism*, New York: The Free Press, 1959, where he argues that Nietzsche is a model of a good philosopher as when he made assertions (statements intended to have theoretical or cognitive content) he tried to support his points empirically. However, when he made an expression (a statement with no cognitive content, eg. emotive, imperative, persuasive), it was very clear in his text that he was so doing. The perniciousness of traditional philosophy, according to Carnap, lies in the fact that the expressions of these philosophers are both taken and intended as assertions.

33. Schlick, M. 'L'école de Vienne et la philosophie traditionnelle', *Gesammelte Aufsatze*, ed., Waismann, F. Vienna: Gerold and Co., 1938, p.394. This barb was almost certainly aimed at Neurath, as one can see by what follows below.

34. Schlick, op.cit., p.392. Again, compare this with Neurath, who urged that the word 'philosophy' be abandoned altogether, and that the phrase 'the Unity of Science' be used in its place.

35. von Mises, R., *Positivism: A Study in Human Understanding*, Cambridge: Harvard University Press, 1951, p.27

36. The explanation for this and the history of Wittgenstein's relationship, both personally and philosophically with the Vienna Circle is extremely interesting, but off the point. Carnap's and Neurath's criticism of Wittgenstein's notion of the language, is relevant, but far too intricate a matter to go into here. I will add, however, that Waismann's subsequent turn away from logical positivism is not nearly so radical in light of his relationship with Wittgenstein.

37.

38.

39.

40. Dorothy Em.cit., 'From the Economy to Economy in Kind', pp.123-7

41. Ibid., 'Anti-Spengler', pp.158-213

42. Ibid., p223

43. He would be more pleased if he were alive today. The widespread use of pictorial language as a means of communicating with the public at large has become commonplace (eg. on road signs, direction indicators in buildings, on charts and maps, etc.).

44. For more description of his appearance, personality and numerous anecdotes, see the memoir of his, prefixed to his essays in Neurath, id._cit. (Popper's is especially good), and Carnap's 'Autobiography', op._cit.

45. Heller, Heinrich, 'Thesis of Neurath', in Neurath, op._cit., p.46. It is small wonder that Schlick on once heard to tell Waismann that he wished that Neurath would go away. (!)

46. Kraft, V., The Vienna Circle, trans., Pap, A., New York: The Philosophical Library, 1953, p.6 ff. This work is the English translation of the only book on the Vienna Circle by one of its members. It seems to me to be very good, but aside from one passage which I shall quote below, he skips over most of the issues which I consider to be of importance for understanding the principle of tolerance. If I may use an of language, Kraft was a member of the ring wing faction of the Circle, and so is probably less likely to consider the issues I wish to raise as terribly worthwhile or relevant.

47. Reichenbach, H., 'In Eigener Sache', Erkenntnis, V.4 1933/34, pp.75

49.   Geldeon, *op. cit.*, p.10

50.   *Ibid.*

51.   *Ibid.*

52.   Ayer, *op. cit.*, has an introduction ... Ayer, the Circle's
      ... tradition in England, which set to be a discussion.

[illegible paragraph]

54.   Neurath, Carnap, and Morris, Charles, ed., *Foundations of the Unity
      of Science*, Vol.II, Chicago and London: University of Chicago
      Press, 19??; monograph no. 8, by de Santillana, Giorgio, and Zilsel,
      Edgar; monograph no.9, by Joergensen, Joergen. The latter is a very
      nice exposition of logical positivism and the history of the Vienna
      Circle. Joergensen was a Danish philosopher who worked closely with
      members of the Circle. However, it glosses over many of the features
      of the Circle's thought which I have greatly emphasized here. Perhaps
      it is the most even account of the philosophy of the Vienna Circle.
      The present essay, by putting much more weight on the aims of the
      Circle, rather than its methods, seem wildly polemical by comparison.

55.   Joergensen, *op. cit.*, p.7

56.   Neurath, 'Le développement du Cercle de Vienne et l'avenir de
      philosophie', *Actualités Scientifiques et Industrielle*, No. 290, 1936.

57.   Neurath, 'Sociology and Physicalism', in Ayer, *op. cit.*, p.306.

62.

63.

64.

65.

66. Quoted in _____, ___, p.___

67. _____, '_____', ___, pp.___

68. Ibid.

69. _____, '_____ ____ and _____ _____', ___, p.___

70. _____, ___, p.___

71.

72.

73.

74.

75. _Ibid._, p.192

76. Both in Ayer, op. cit., Carnap's article is abridged and given the English title 'Unity of Science'.

77. _Erkenntnis_, Vol.III, 1932/33. In English in Ayer, _op. cit._

78. Wittgenstein, Ludwig, _Tractatus Logico-Philophicus_ _op. cit._ p.7 prop.1.1.

79. Neurath, 'Protocol Sentences' in Ayer, _op. cit._, p.199

80. Ibid., p.201. This is a paragraph for which Neurath has been chiefly remembered - largely because it has been so often cited by W.V.O. Quine, who refers to it as 'Neurath's Figure'.

81. _Ibid._, p.207

82. _Ibid._, p.208

83. _Erkenntnis_, Vol. III, 1932/33

84. Several commentators claim that this is where Carnap got the idea. (eg. Kraft and Ayer). I have not found enough evidence to warrant this assertion. Significantly, Carnap does not take it up in his (albeit brief) discussion of Popper in his 'Autobiography'.

85. Popper, K., _Logik der Forschung_, Wien: Schriften zur Wissenschaftliches Weltauffassung, V.9, 1935, pp.19ff, 195

86. See, for instance, Carnap, 'The Elimination of Metaphysics' in Ayer _op. cit._, p.62

87. Carnap's 'Autobiography' in Schilpp, _op. cit._, p.51. Carnap does not give the date of this debate but it certainly could not have been after 1932, as can be seen by its substance. Carnap says that it influenced him greatly. The influence shows first in the _Aufbau_, but more in his 'Ueber Protokollsaetze'.

88. _Ibid._

89. Reichenbach, H., _The Rise of Scientific Philosophy_, Los Angeles: University of California Press, 1951, pp.314-4.

90. Neurath, 'Sociology and Physicalism', in Ayer, _op. cit._ p.208

91. Feigl, _op. cit._, p.281

92. Carnap, _The Logical Syntax of Language_, trans., Smeaton, Amethe, New York: Harcourt, Brace and Co., 1937, p.8

93. _Ibid._ p.51, Carnap's emphasis.

94. _Ibid._ p.52, Carnap's emphasis

95. His view of the nature of mathematics, influenced by Frege, Russell, and Goedel, is, of course, no less controversial or fallible than his view of the nature of philosophy or science.

96. Menger, Karl, 'Der Intuitionismus', _Blaetter fuer deutsche Philosophie_, 4. Band, Heft 3/4, 1930

97. This argument, of course, begs the question as to whether in fact Brouwer and Weyl did want to accomplish the same thing with regard to their respective foundations for mathematics. To determine a philosopher's intentions is not easy, which may be the primary lesson to be learned (if indeed there is one) from reading this very essay.

98. The positivists never themselves drew this distinction, as far as I can tell. Presumably, they thought that the second disjunct entailed the first; which is by no means clear at all to me.

99. Carnap, _op. cit._, p.164

100. _Ibid._, p.317

101. _Ibid._, p.318

102. _Ibid._, p.320

103. Carnap, 'Autobiography', in Schilpp, _op. cit._, p.68

104. Carnap, _Philosophy and Logical Syntax_, London: Kegan Paul, French, Trubner and Co. Ltd., 1935, p.78

105. See Russell's indignant remarks on this in 'Logical Positivism', _Polemic_, Vol.1, 1945, pp.11-12

106. Carnap, 'Autobiography', in Schilpp, _op. cit._, p.18

107. This insight I owe to Caton (see next note) except that he does not notice that the shift occurs so early in Carnap's thought. He is merely contrasting the _Aufbau_ and the _Logical Syntax_ and ignores Neurath's influence.

108. Caton, Hiram, 'Carnap's First Philosophy', _Review of Metaphysics_, June, 1975, p.651

109. Carnap, 'Autobiography', _op. cit._, p.44

110. Kraft, _op. cit._ p.60

111. Buck, R.C., and Cohen, R.S., eds., _Boston Studies in the Philosophy of Science_, Vol.8, Dordrecht: D. Reidel and Co., 1970, for a number of tributes to Carnap, including some anecdotes.

112. ..."In the discussions of the Vienna Circle, Neurath has been conspicuous for his early - often initiating - and especially radical adoption of new theses. For this reason, although many of his formulations are not unobjectionable, he has had a very stimulating and fruitful influence upon its investigations; for instance, in his demands for a unified language which should not only include the domains of science but also the protocol-sentences and the sentences about sentences; in his emphasis on the fact that all rules of the protocol-sentences depend upon conventional decisions, and that none of it's sentences - not even the protocol sentences can every be definitive, and finally, in his rejection of so-called pre-linguistic elucidations and of the metaphysics of Wittgenstein. It was Neurath who suggested the designations "Physicalism" and "Unity of Science". One of the most important problems of the logical analysis of physics is that of the form of the protocol sentences and of the operation of testing (problem of verification). Carnap, The Logical Syntax...., op. cit., pp.320-1.

113. Stegmueller, in Buck and Cohen, op. cit. makes the interesting observation that Marxism is never attacked as being a philosophical (in the bad sense, ie. metaphysical) doctrine. Of course, it is to be suitably reinterpreted as a physicalistic, rather than a materialistic, theory. See Neurath, 'Sociology and Physicalism', in Ayer, op. cit., and the title monograph in Neurath, Empirical Sociology, op. cit.

114. See also 'Die Wissenschaftliche Weltauffassung...' in Neurath, Ibid.

115. Carnap, Aufbau, op. cit., pp.xvii-xviii

116. Carnap, 'Autobiography', op. cit., p.83

118. Ibid.

119. Ibid.

120. Ibid., p.9

121. Feigl, 'Memoir of Rudolf Carnap', in Buck and Cohen, op. cit., p.xv

122. Neurath, Empirical Sociology, op.cit., p.xiii

123. Schinory, 'Memoir of Rudolph Carnap', in Buck and Cohen, op.cit., p.xxvi

124. See Neurath, title essay, op.cit., for the complete story

125. Note that a similar move is made by a philosopher who strenuously denies being a logical positivist - Karl Popper. Unlike Carnap, he has written extensively on socio-political theory, claiming that his canons for a good society are based on the only correct philosophy of science. Science, being the paradigm of rationality both for Popper and Carnap, dictates how a society ought to be run. From

125. (con't)

this position, Popper feels free to tag the theories of his philosophical opponents with various epithets connotating, in his eyes, various forms of irrationality, eg. primitivism, tribalism, and so forth. Both Popper and Carnap are consistent when they make this move. If science is the paradigm of rationality, then what is unscientific is irrational. Popper relies heavily on this sort of argument. Carnap need not, except in the unique case where someone contravenes the principle of tolerance. Otherwise, by the principle of tolerance, it seems to me that Carnap must have a very liberal criterion for what is to count as science - any theory would seem to have to count as a legitimately scientific theory.

126. See Naess, Arne, Four Modern Philosophers, Chicago: University of Chicago Press, 1965, p.15, for just one of many such accounts. Here I should also like to acknowledge my debt to Prof. Hermann Tennesen of the University of Alberta who has talked to me about what Carnap was like as a person on the basis of his friendship with Carnap when they were both teaching at the University of California at Berkley in the early 1960's.

127. Hempel, C., 'Memoir of Rudolph Carnap', in Buck and Cohen, eds., op. cit., p.xviii. One only needs to examine the history of the principle of verifiability and its formulations to see this 'strongly confirmed' - all the way from the Scheinprobleme in the Aufbau, to his late 'The Methodological Character of Theoretical Concepts', op. cit.

128. Reichenbach, M., 'Memoir of Rudolph Carnap', in Buck and Cohen, op. cit., p.lxv. This is extremely revealing when one considers that Kant is responsible for the 'apodictic' distinction between pure (theoretical, cognitive) and practical reason.

129. Tarski, Alfred, 'The Concept of Truth in Formalized Languages', (from the German 'Der Wahrheitsbegriff in den formalisierten Sprachen') in his Logic, Semantics, and Metamathematics, ed. and trans. Woodger, J., New York: Oxford University Press, 1955.

130. Carnap, Introduction to Semantics, Cambridge: Harvard University Press, 1942, p.247

131. Carnap, 'Meaning and Synonymy in Natural Languages', in Meaning and Necessity, Chicago: University of Chicago Press, 1957, p.233.

132. Schilpp, op. cit., p.66. This is done, for example, through his theory of 'meaning postualtes; see 'Meaning Postulates', in Carnap, op. cit., p.222.

133. See Kekes, John, 'Skepticism and External Questions', Philosophy and Phenomenological Research, March, 1971, p.327 for a general categorization of the objections.

134. Carnap, 'Empiricism, Semantics and Ontology', in Linsky, L., ed., Semantics and the Philosophy of Language, Urbana: University of Illinois Press, 1952, p.210

135. Ibid., p.211

136. Carnap, 'Autobiography', op. cit. p.66

137. In Quine, W.V.O., Ways of Paradox, New York: Random House, 1966.

138. See his 'Two Dogmas of Empiricism', in From a Logical Point of View, New York: Harper and Row, 1961, p.20, and 'Carnap and Logical Truth', in The Ways of Paradox, op. cit.

139. Ibid., pp.112-113

140. Quine, 'Carnap's Views on Ontology', op. cit. p.129

141. Carnap, 'Empiricism, Semantics, and Ontology', op. cit. p.218 n1 and p.220 n2.

142. Quine, 'Ontological Relativity' in Ontological Relativity and Other Essays, New York: Columbia University Press, 1969, p.53

143. Quine, 'Carnap's Views on Ontology', op. cit. p.130

144. Goldstick, D., 'The Tolerance of Rudolph Carnap', Australian Journal of Philosophy, December 1971.

145. Ibid., p.259

146. Ibid., p.260

147. Ibid.

148. I have grave doubts as to whether this can be done. This stems largely from the fact that I do not think that the artificial context in which Goldstick situates his reductio can be coherently construed in Carnapian terms, as it confuses sentence tokens with sentence types, taking A as a type, whereas it is merely the token in English of 'A'. This would be a long argument, however, and I leave it be here as it is inessential to the business at hand.

149. Lambros, Charles H., 'Carnap's Principle of Tolerance and Physicalism' in the Transactions of the C.S. Peirce Society, 1974, p.26

150. Ibid., p.30

151. Ibid., p.27, also gives a brief genetic explanation of '...how the problem could have arisen in Carnap's philosophy without his realizing it...', claiming that Carnap's concerns were different for each. Physicalism was the result of the positivist reaction against the traditional (especially German) dichotomy between the natural and the social (Geistes) sciences, according to Lambros. So far, so good.

151. (c...)
However, the principle of tolerance, he claims, was a reaction against those who wanted 'various limitations of logic' (ie. Brouwer and Wittgenstein). This he got straight out of the _Logical Syntax_. If he had instead done his historical homework, he might not have bothered writing this article. Indeed, the position, as he takes it, is roughly Carnap's own in the _Aufbau_, where toleration as exercised with regard to the base of the construction system, provided that it was in some empirical language to begin with. However, this was superceded in 1932 in 'Ueber Protokollsaetse', _op. cit._

152. See especially Carnap's late 'The Methodological Character of Theoretical Concepts', _op. cit._

153. Kuhn, T.S., 'The Structure of Scientific Revolutions,' _The Unity of Science_, Vol. 2, No. 2, Chicago: University of Chicago Press, 1975, pp.168ff and Feyerabend, P.K., _Against Method_, London: NLB, 1975, pp.188ff

154. Neurath, 'Sociology and Physicalism', _op. cit._, and 'Empirical Sociology' _op. cit._, to name just the two major essays. The following is offered as an example. It is from 'Personal Life and Class Struggle', Neurath, _Ibid._, p.273. "Intolerance in the field of world-outlook is on the whole alien to the workers." (who all presumably share a _Weltanschauung_).

155. See Lenin, V.I., _"Left Wing" Communism, An Infantile Disorder_, Peking: Foreign Languages Press, 1970. As Feyerabend acutely points out (Feyerabend, Paul, K., 'Against Method: Outline of an Anarchistic Theory of Knowledge', in _Minnesota Studies in the Philosophy of Science_, Vol.4, ed., Radner, M., and Winokur, S., Minneapolis: University of Minnesota Press, 1970, pp.17-19), Lenin's entire monograph can be read as an essay in scientific methodology, see especially pp.110-101. He argues roughly that the proletariat, although it has certain aims, must not embrace any one theory, at the expense of the others. _Praxis_ will dictate the means by which the proletariat will reach its goals, and this will mean, given the ever changing material conditions in which the proletariat finds itself, that there is no single method for the proletariat to embrace.

Lenin also has written an attack against what he calls 'positivism' entitled _Materialism and Empiro-Criticism_, Peking: Foreign Languages Press, 1972. Here he argues that the positivism of Mach and Avenarius is solipsistic, bourgeoisly individualistic, and reactionary. If one may legitimately question Lenin's judgement with regard to Mach, one has even stronger grounds for disabusing oneself of the villifications to be found in Ruml, A., _Der Logische-Positivismus_, Berlin: VEB Deutscher Verlag der Wissenschaften, 1965. This work attempts to extend Lenin's critique to logical positivism. It is the only indepth treatment of the work of the Vienna Circle which tries to assess it in the political and social light. Alas, if the thesis I propound in this essay has any substance at all, Herr Ruml has missed the mark badly. He sees the principle of tolerance as encouraging bourgeois libertarianism, instead of seeing it as an instrument for making a theory a tool for social reform. See especially his p.174.

156. It has been suggested ... that the principle of tolerance has as a paradigm: The 'Copenhagen Interpretation' of quantum mechanics. It is historically ... that Carnap kept abreast of developments in physics, and that he himself was trained as a physicist. On the other hand, it seems clear that however difficult the issues are when it came to discussing the 'Copenhagen Interpretation' that this view of the principle of tolerance is false. Complementarity, means precisely that: the wave theory supplants the particle theory in certain situations and vice versa. They are not interchangeable. In they were, then we might have a paradigm for the principle of tolerance, but no longer complementarity. It would rather be theoretical supplementarity.

157. See Kuhn, op. cit., pp.166-7 and Feyerabend, Against Method, op.cit., pp.298-9. If my interpretation of left wing logical positivism is correct, the latter has anticipated many of Feyerabend's major points in his "anarchistic epistemology". To mention but three points of affinity:
a) Feyerabend's principle of proliferation
b) the necessity of a humanistic bent to sound science, and c) the necessity of changing our picture of the physical structure of the world in keeping with our picture of man and society.

158. See Wittgenstein, L., Philosophical Investigations, trans, Anscombe, G.E.M.; and Wittgenstein, L., On Certainty, trans, Anscombe, G.E.M.

159. This sort of critique is similar in kind to that which has been used by phenomenological sociologists like Alfred Schuetz against Max Weber's theories.

160. Carnap, 'Autobiography', op. cit., p.18. This is evident in the introduction to his monumental work on inductive logic, Logical Foundations of Probability, Chicago: University of Chicago Press, 1952, and in the sequel to that work: The Continuum of Inductive Methods, Chicago: University of Chicago Press, 1952, pp.53 and 59-60. He holds that one may ... any one of an infinite range of inductive methods, and there will ... different sense of 'probable' for each one of them. Again, it ... a question of choosing the method to suit one's ends.

161. Shestov, Léon, Athènes et Jerusalem: Essai de philosophie religeuse, Paris, 1938.

162. Herzberger, Hans, 'The Logical Consistency of Language' in Emig, J.A., Fleming, J.T., and Popp, H.M., eds., Language and Learning, New York: Harcourt, Brace and World, 1966, pp.250-263.

163. In a similar fashion, we would not know what to make of a claim that some arithmetic as strong as what we now call a 'classical arithmetic' is both complete and consistent.

164. Such is the claim of Chomsky and various of his followers.

165. Letter to Russell, May 12, 1962, in Russell, Bertrand, Autobiography. London: George Allen and Unwin Ltd., 1975, p.626.

166. As Goldstick, op. cit., points out, there are remarkable affinities between what I call left wing logical empiricism and existentialism, especially that of the Sartrean ilk.

BIBLIOGRAPHY

Achinstein, Peter and Stephen F. Barker. eds. The Legacy of Logical Positivism. Baltimore: The Johns Hopkins Press, 1969.

Ayer, A.J. ed. Logical Positivism. New York: The Free Press, 1959.

Bergmann, G. The Metaphysics of Logical Positivism. New York: Longmans Green, 1954.

Buck, R.C. and R.S. Cohen. eds. Boston Studies in the Philosophy of Science. Vol.8. Dordrecht: D. Reidel and Co., 1970.

Carnap, R., The Continuum of Inductive Methods. Chicago: University of Chicago Press, 1952.

-----. 'Empiricism, Semantics, and Ontology'in Linsky, L. ed. Semantics and the Philosophy of Language. Urbana: University of Illinois Press, 1972. First published in 1950.

-----. Introduction to Semantics. Cambridge: Harvard University Press, 1942.

-----. The Logical Foundations of Probability. Chicago: University of Chicago Press, 1950.

-----. The Logical Structure of the World and the Pseudo-Problems of Philosophy. trans. George, Rolf. A. Los Angeles: University of California Press, 1967.

-----. The Logical Syntax of Language. trans. Smeaton, Amethe. New York: Harcourt, Brace and Co., 1937.

-----. Meaning and Necessity. Chicago: University of Chicago Press, 1957.

-----. 'The Methodological Character of Theoretical Concepts'. Minnesota Studies in the Philosophy of Science. Vol.I. Feigl, H. and M. Scriven. eds. Minneapolis: University of Minnesota Press, 1956.

-----. Philosophy and Logical Syntax. London: Kegan Paul, Trench, Trubner and Co., 1935.

-----. 'Testability and Meaning'. Philosophy of Science. 1936-37.

-----. 'Ueber Protokollsaetze'. Erkenntnis. Vol.III. 1932/33.

Caton, H. 'Carnap's First Philosophy'. The Review of Metaphysics. June, 1975.

Edwards, Paul. ed. The Encyclopedia of Philosophy. Vol.5. New York: MacMillan and Free Press, 1967.

Emig, J.A., J.T. Fleming, and H.M. Popp. eds. Language and Learning. New York: Harcourt, Brace and World, 1966.

Dingler, Hugo. Die Grundlagen der Geometrie. Stuttgart, 1933.

Feyerabend, P.K. Against Method. London: NLB, 1975.

-----. 'Against Method: Outline of an Anarchistic Theory of Knowledge' in Radner, M. and S. Winokur. eds. Minnesota Studies in the Philosophy of Science. Vol. IV. Minneapolis: Univeristy of Minnesota Press, 1970. pp. 17-130.

Fleming, D. and B. Bailyn. eds. The Intellectual Migration to America. Cambridge: Belnap Press, 1969.

Goldstick, D. 'The Tolerance of Rudolph Carnap'. Australasian Journal of Philosophy. December, 1971.

Goodman, Nelson. The Structure of Appearance. Cambridge: Harvard University Press, 1951.

Hahn, Hans. 'Logik, Mathematik und Naturkennen'. Einheitswissenschaft. Heft 2, 1932/3.

Kekes, John. 'Skepticism and External Questions'. Philosophy and Phenomenological Research. March, 1971.

Kraft, Viktor. Grundlagen einer Wissenschaftlichen Wertlehre. Wien: Schriften aure wissenschaftlichen Weltauffassung. 1933.
-----. The Vienna Circle. trans. Pap, A. New York: The Philosophical Library, 1953.

Lambros, C.H. 'The Principle of Tolerance'. Transactions of the C.S. Peirce Society. 1974.

Lenin, V.I. "Left-Wing"Communism, An Infantile Disorder. Peking: Foreign Languages Press, 1970.
-----. Materialism and Empirio-Critism. Peking: Foreign Languages Press, 1972.

Menger, K. 'Der Intuitionismus'. Blaetter fuer deutsche Philosophie. 4. Band, Heft 3/4, 1930.
-----. Morale, Wille und Weltgestaltung, Grundlagen zur Logik der Sitten. Wien: Schrifter sur wissenschaftliches Weltauffassung. J.7. 1934.

Murdoch, Iris. The Sovereignity of Good. London: Routledge and Kegan Paul, 1971.

Naess, Arne. Four Modern Philosophers. Chicago: University of Chicago Press, 1965.

Neurath, O. 'Le développement du Cercle de Vienne et l'avenir de la philosophie'. Actualités Scientifiques et Industrielle. No. 290. 1936.
-----. Empiricism and Sociology. eds. Neurath, M. and R.S. Cohen. The Vienna Circle Collection. Vol. I. Dordrecht: D. Reidel Publishing Co., 1973.
-----. 'Wege der Wissenschaftliches Weltauffassung'. Erkenntnis. Vol. 1. 1930/31.

Neurath, O., R. Carnap and C. Morris. eds. Foundations of the Unity of Science. Vol. II. Chicago and London: University of Chicago Press, 1970.

Passmore, John. A Hundred Years of Philosophy. Middlesex: Penguin Books, 1968.

Popper, K. *Logik der Forschung*. Vien: Schriften zur wissenschaftlichen
Weltauffassung. V.9. 1935.
-----, *The Open Society and Its Enemies*. London: Routledge and Kegan
Paul, 1962.

Quine, W.V.O. *From A Logical Point of View*. New York: Harper and Row, 1961.
-----, *Ontological Relativity, and Other Essays*. New York: Columbia
University Press, 1969.
-----, 'Speaking of Objects'. *Proceedings and Addresses of the American
Philosophical Association*. Vol. 31. 1958. pp.5-22.
-----, *The Ways of Paradox*. New York: Random House, 1966.
-----, *Word and Object*. Cambridge: MIT Press, 1960.

Reichenbach, H. *The Rise of Scientific Philosophy*. Los Angeles: University
of California Press, date unknown.
-----, 'In Eigne Sache'. *Erkenntnis*. Vol. IV. 1932/33

Runl, ?. *Der Logische-Positivismus*. Berlin: VEB Deutscher Verlag
der Wissenschaften, 1965.

Russell, B. 'Logical Positivism'. *Polemic*. No. 1. 1945.
-----, *Our Knowledge of the External World*. London: George Allen and Unwin,
1969.

Schilpp, P.A. *The Philosophy of Rudolph Carnap*. Illinois: Open Court, 1963.

Schlick, M. *Gesammelte Aufsaetze*. ed. Waismann, F. Vienna: Gerold and
Co., 1938.
-----, *Lebensweisheit*. Published in roughly 1918. I have been unable to
find the name or location of the publisher.
-----, *Natur und Kultur*. Zurich: Atlantis Verlag, 1952.
-----, *Problems of Ethics*. trans. Rynin, D. New York: Dover Publications,
1962.
-----, 'Vom Sinn des Lebens'. *Symposion*. 1927.

Shestov, Leon. *Athènes et Jerusalem: Essai de philosophie religeuse*.
Paris, 1938.

Tarske, A. *Logic, Semantics, and Metamathematics*. ed. trans. Woodger, J.
New York: Oxford University Press, 1955.

Tucker, R.C. ed. *The Marx-Engels Reader*. New York: Norton, 1972.

Urmson, J.O. *Philosophical Analysis*. Oxford: at the Clarendon Press, 1966.

von Mises, R. *Positivism: A Study in Human Understanding*. Cambridge:
Harvard University Press, 1951.

Weinberg, J. *An Examination of Logical Positivism*. New Jersey: Littlefield,
Adams, and Co., 1960. First published in 1936.

Whitehead, A.N. *Adventures of Ideas*. Cambridge: Cambridge University
Press, 1961.

Wisdom, John. *Philosophy and Psychoanalysis.* Berkeley and Los Angeles: University of California Press, 196.

Wittgenstein, L. *On Certainty,* eds. Anscombe, G.E.M. and von Wright, G.H. trans. Paul, D. and Anscombe, G.E.M. New York: Harper and Row, 1972.

-----. *Philosophical Investigations.* trans. Anscombe, G.E.M. New York: Basil Blackwell, 19.

-----. *Tractatus Logico-Philosophicus.* trans. Pears, D.F. and McGuiness, D.F. London: Routledge and Kegan Paul, 1971.

Sundeen, V.J. *A Request for the Completion of the Vienna Circle Philosophy for ...* Utrecht: ... en Zoon N.V., 19.