

UNIVERSITY OF CALGARY

From Wittgenstein to Quine:

The Rise and Fall of Logical Positivism in Early Twentieth Century Analytic Philosophy.

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE

DEGREE OF MASTER OF ARTS

DEPARTMENT OF PHILOSOPHY

CALGARY, ALBERTA

DECEMBER, 2004

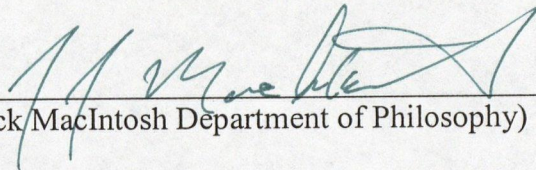
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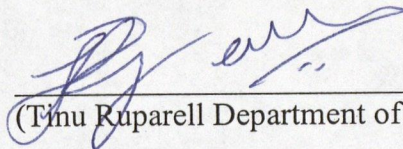
The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "From Wittgenstein to Quine: The Rise and Fall of Logical Positivism in Early Twentieth Century Analytic Philosophy" submitted by Timothy W. Stephenson in partial fulfillment of the requirements for the degree of Master of Arts.



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Abstract

This is my master's thesis. It is a work in the history of twentieth century philosophy of language. In it I examine a tradition of logical empiricism that began in Cambridge in the work of Wittgenstein and Russell before becoming the dominant approach to philosophy in the early to mid twentieth century. Beginning with Wittgenstein's Tractatus Logico-Philosophicus, I trace the rise of logical positivism. Identifying the two central theses of positivism and their origin in the work of Wittgenstein and Russell, I examine the two so-called dogmas of empiricism associated with this form of logical empiricism. In the closing sections I examine Quine's attempt to reconstruct a holistic form of logical empiricism.

Preface

I began this project two years ago with the aim of coming to terms with Quine's seminal essay *Two Dogmas of Empiricism*. I soon recognized that in order to understand the full force of his arguments I needed to place them within the context from whence they sprang. Be it just the proper methodology of the history of analytic philosophy or an interest in what some current historians of philosophy refer to as "contextualization", I began investigating not merely the direct target of Quine's two pronged attack but also the tradition that birthed this approach. What began as an investigation of Quine's Two Dogmas, grew into a study of the early stages in the development of the logico-linguistic tradition in twentieth century philosophy of language and, more specifically, those arguments leading up to and culminating in Quine's publication of "Two Dogmas". From Quine I was led to the corpus of works gathered in anthologies under the heading Logical Positivism and from positivism to the logical atomism of the early Wittgenstein and Russell. What began as a focused and modest project had rapidly grown and at the time seemed never ending. Overwhelmed by the project, I floundered in the vast sea of potentially relevant tertiary historical influences and potential fruitful secondary sources. Caught up in the complexities of Hume's *Treatise of Human Nature*, Kant's Critique of Pure Reason, Leibniz's *New Essay on Human Understanding*, not to mention the secondary sources, the importance of selectivity and a clear focus became apparent.

Under the guidance of Ali Kazmi, I focused my research. Restricting it to Quine's "Two Dogmas", Carnap's Aufbau, Wittgenstein's Tractatus Logico-Philosophicus, along with two secondary sources, I was able to limit the relevant arguments and make more

manageable the project at hand. While the aim of the project remains as initially conceived, the majority of potentially relevant historical connections have been set aside for sake of focus. What follows is a discussion of what I take to be the major developments (i.e. arguments) in the rise and fall of a certain logico-linguistic tradition. Incomplete in many ways, this analysis is, I hesitate to admit, but one step in a lifetimes worth of work. It is merely a snapshot of the history of twentieth century logico-linguistic philosophy.

T.W.S.
June 28, 2004

Acknowledgments

I would like to thank my fellow philosophers at the University of Calgary. I would especially like to thank Ali Kazmi for the patience and guidance you have offered as my advisor, you have shown me the rigor required for philosophy. I would like to thank Richard Zach for your assistance both philosophically and financially; as my friend and research advisor you have helped me greatly. I would like to thank Elaine Landry for the passion you bring to philosophy and the confidence you show in those around you. I would like to thank Mark Ereshefsky for the guidance you have offered. I would like to thank Mark Migotti for the excitement and fresh perspective you demonstrate. I would like to thank Jack MacIntosh for being the model professor and showing me how important wit and wisdom are to philosophy. I would like to thank Elizabeth Brake for your kindness. And last but not least, I would like to thank Renilda van Aerden for all the work you have done for me and the other graduate students over the years.

I would also like to thank my family and friends. I would especially like to thank my parents for their unending love and support. I would like to thank Laurie Barr for being the greatest friend and companion I have known. I would like to thank the entire Barr clan for their kindness and support – A person is lucky to have but one loving family in their life, you have provided me with a second. I would like to thank Jesse Hendrikse for being there as a friend and fellow philosopher. And, I would like to thank Dean Myers for showing me how to have fun.

T.W.S.
February 14, 2004

For
My Family

Contents

Approval Page	ii
Abstract	iii
Preface	iv
Acknowledgements	vi
Dedication	vii
Table of Contents	viii
Introduction	xi

Chapter 1 – From logical atomism to logical positivism:

- 1.1 – Wittgenstein's Tractatus Logico-Philosophicus.
 - 1.1.1 – The two-part structure of Tractarian atomism.
 - 1.1.2 – The argument for metaphysically simple objects.
 - 1.1.2.1 – Evaluation of Wittgenstein's argument for simples.
 - 1.1.2.2 – The nature of Wittgenstein's metaphysically simple objects.
 - 1.1.3 – The relationship at the atomic level between language and the world.
 - 1.1.3.1 – Wittgenstein's picture theory.
 - 1.1.4 – Wittgenstein's theory of meaning and meaningfulness.
 - 1.1.5 – Wittgenstein's theory of truth.
 - 1.1.5.1 – Truth-functional compounds.
 - 1.1.5.2 – Three-part semantic division of meaningful sentences and the coincidence of semantics and metaphysics.
- 1.2 – The rise of logical positivism.
 - 1.2.1 – Logical positivism.
 - 1.2.2 – Logical positivism's debt to Wittgenstein.
 - 1.2.3 – Positivism's position on metaphysically simple objects and the rejection of metaphysics.
 - 1.2.4 – Logical positivism's debt to Russell.
 - 1.2.5 – The difference in emphasis.

Chapter 2 – The First Dogma of Empiricism:

- 2.1 – Background to the analytic/synthetic distinction.
 - 2.1.1 – The argument from circularity.
 - 2.1.1.2 – Accounting for synonymy in terms of lexicographic definition.
 - 2.1.1.3 – Accounting for synonymy in terms of explication.
 - 2.1.1.3.1 – Accounting for synonymy in terms of modest explication.
 - 2.1.1.3.2 – Accounting for synonymy in terms of extreme explication.
 - 2.1.1.4 – Accounting for synonymy in terms of substitution *salva veritate*.

- 2.1.1.4.1 – Substitution within an intensional context.
 - 2.1.1.4.2 – Substitution within an extensional context.
 - 2.1.2 – Accounting for analyticity within artificial languages.
 - 2.1.2.1 – Naive specification.
 - 2.1.2.2 – Modified specification.
 - 2.1.3 – Accounting for synonymy in terms of semantic rules.
 - 2.1.4 – Summary of the arguments behind Quine’s attack on the analytic/synthetic distinction.
- 2.2 – Criticisms of Quine’s attack on the analytic/synthetic distinction.
 - 2.2.1 – The first criticism of Quine’s attack on the analytic/synthetic distinction.
 - 2.2.1.1 – The strong interpretation.
 - 2.2.1.2 – The weak interpretation.
 - 2.2.2 – The second criticism of Quine’s attack on the analytic/synthetic distinction.
- 2.3 – Evaluation of the first dogma of empiricism.
 - 2.3.1 – The successes of Quine’s attack on analyticity.
 - 2.3.2 – Evaluation of the first criticism of Quine attack on the analytic/synthetic distinction.
 - 2.3.2.1 – Evaluation of the first criticism on the strong interpretation.
 - 2.3.2.2 – Evaluation of the first criticism on the weak interpretation.
 - 2.3.3 – Evaluation of the second criticism.
 - 2.3.4 – Summary of the Quine’s attack on the analytic/synthetic distinction.

Chapter 3 – The Second Dogma of Empiricism:

- 3.1 – Verificationism and reductionism in logical positivism.
 - 3.1.1 – Verificationism and reductionism in Wittgenstein’s Tractatus.
 - 3.1.1.1 – The relationship between language and the world.
 - 3.1.1.2 – The Tractatus as a work of logical atomism.
 - 3.1.1.3 – The Metaphysic of the Tractatus.
 - 3.1.2 – The rejection of metaphysics.
 - 3.1.3 – Carnap’s logical construction of the world.
 - 3.1.3.1 – Russell’s logical construction of the material world.
 - 3.1.3.2 – Carnap’s *Aufbau* project.
 - 3.1.3.2.1 – The goal and methodology of the *Aufbau*.
 - 3.1.3.3 – The principled problem with the *Aufbau*.
 - 3.1.3.3.1 – The recurrence of an old problem.
 - 3.1.4 – Reductionism in the theoretical sciences.
 - 3.1.4.1 – The methodology of the theoretical sciences.
 - 3.1.4.1.1 – The problem with the methodology of the theoretical sciences.
 - 3.1.4.2 – A revised methodology.
 - 3.1.4.3 – The roots of Quine’s holism.

- 3.2 – Quine’s holism, an empiricism free of the dogmas.
 - 3.2.1 – The second thesis in Quine’s holism.
 - 3.2.2 – The third and fourth theses in Quine’s holism.
 - 3.2.2.1 – An example from the theoretical sciences.
 - 3.2.3 – The fifth thesis in Quine’s holism.
 - 3.2.4 – Summary of Quine’s holism.
- 3.3 – Evaluation of the second dogma of empiricism and Quine’s holism.
 - 3.3.1 – Quine’s holism.
 - 3.3.1.1 – The Grice/Strawson criticism reconsidered.
 - 3.3.1.2 – Evaluation of Quine’s stance on speculative metaphysical claims.
 - 3.3.1.3 – Quine on sense data, physical objects, and the existence of other minds.
 - 3.3.2 – Criticisms of Quine’s holism.
 - 3.3.2.1 – Evaluation of Quine’s web of beliefs.
 - 3.3.2.2 – Evaluation of the revisability theses.
 - 3.3.2.3 – The vacuity of Quine’s holism.
 - 3.3.3 – Summary of the second dogma empiricism.

Conclusion

Notes

Bibliography

Introduction

This thesis is a work in the history of the philosophy of language. It began as an attempt to understand Quine's "Two Dogmas of Empiricism"; however, it soon became apparent that in order to understand Quine's "Two Dogmas" it needed to be placed in the context of the tradition from whence it sprang. The need for contextualization is always important when writing history; however, it is all the more important when dealing with a work like "Two Dogmas" because it is both a critique of an existing tradition (i.e. logical empiricism) and a prescription for a new form of empiricism (i.e. Quinean holism). Not only is contextualization important to understanding the full force of Quine's critique, but it is crucial to understanding the extent to which Quine's positive outlook differs from what came before. Given the importance of contextualization, it became apparent that to understand "Two Dogmas" I needed to trace the origin of the tradition against which it is set.

Tracing the origin of the tradition against which "Two Dogmas" is set has a clear starting point; namely, logical positivism. Given that logical positivism is the primary target of Quine's critique, it is natural to begin there. However, it soon became apparent that logical positivism, as a philosophic system, is itself part of a tradition; namely, logical empiricism. From Quine I was led to logical positivism and from logical positivism I was led to logical atomism. Logical atomism, logical positivism, and Quinean holism are all part of the tradition that is logical empiricism. It is this segment of the history of the philosophy of language that I focus on in this thesis. That is to say, the

period that lies between the early Wittgenstein, with certain considerations given to developments in Russell's work, and the publication of Quine's "Two Dogmas".

Now one may feel inclined to immediately object to the bounds I have set: Is it not the case that one should continue to extend the process of contextualization back in order to understand the work of the early Wittgenstein and Russell? Is it not an error to draw a line at some point in time and count all that falls on one side of it relevant and all that falls on the other side irrelevant? These are important concerns, concerns about the proper methodology for contextualization and, more generally, any work in history. However, limits must be set and certain connections left uninvestigated. Are Leibniz, Kant, Bolzano, Frege, and Husserl, not relevant? Yes, each is relevant, as are many other philosophers. Take Kant for example. Kant, his idealism, and his notion of the synthetic apriori are relevant to the rise of logical positivism. In fact, logical positivism began as a branch of neo-Kantianism and its earliest incarnations can be understood as an attempt to better align itself with the realist intuitions driving the burgeoning science of the late nineteenth and early twentieth centuries. To say that Kant is not relevant to this tradition would be to grossly misrepresent the history of twentieth century analytic philosophy. However, to include Kant, let alone any of the other aforementioned philosophers, in my investigation would make an already sizable project immense and suffocating.

Lines were drawn and bounds set. The early Wittgenstein and Russell were counted in and many more out. As I have mentioned, these boundaries were partly a matter of manageability, but there was another important factor in my consideration that is to say, there was another factor that led me to draw the bounds of contextualization to include the logical atomism of Wittgenstein and Russell. It is that in the logical atomism

of the early Wittgenstein and Russell we find an explicit concern for three themes that would come to dominate analytic philosophy for much of the twentieth century. These three themes are:

- 1) What is the relationship between language and the world?
- 2) What is the relationship between language and logic?
- 3) What is the relationship between logic and the world?

These themes and, more specifically, a concern for the proper answer to them motivate much of the work in this period. While I do not explicitly address these themes and the differing views on them in this thesis, they are present nonetheless in the background and much of the debate that takes place in this period can be recast under these headings.

Having explained my project in the most general terms and given a rough rationalization of its boundaries, the specific direction of the project remains as initially conceived. Understanding Quine and his “Two Dogmas” remains the primary target. However, the scope has grown to include not only logical positivism but logical atomism and, in general, logical empiricism. The thesis has thus become less about Quine and his “Two Dogmas” and more about an approach to philosophy that flourished in the years between the early and mid twentieth century. It has become a work of not only identifying the two so-called dogmas but also locating their origin in a tradition. Furthermore, by placing “Two Dogmas” within a the context of a tradition and understanding it as such helps in understanding how the tradition fits within the greater context that is the history of philosophy. From within the tradition, Quine’s attack stands successful both as a critique of logical positivism and as a preliminary account of a strictly empirical holism. However, outside the tradition much of its significance is lost. By giving up crucial assumptions common in logical empiricism much of the significance

of Quine's work evaporates. In this thesis I attempt to give a fair treatment of both the successes and the failings of "Two Dogmas". I argue that it stands as both a resounding success in its pointed criticisms and, at the same time, a minor failure in its radical prescriptions.

In chapter 1 I trace the rise of logical positivism from the early writings of Wittgenstein. I begin with an account of the central theses of Wittgenstein's Tractatus. Following this account, I move to discuss the central theses of logical positivism. I argue that the roots of logical positivism can be found in Wittgenstein's Tractatus. Identifying both the similarities and differences between Wittgenstein's Tractarian system and the logical positivist's neo-Tractarian system, I demonstrate that the two systems share two foundational theses in common.

In chapter 2 I present and analyze Quine's first dogma of empiricism, which is in fact the first of the two theses common to both the Tractarian system and logical positivism. I begin with an account of Quine's argument for the unempiricalness of the analytic/synthetic distinction. Having presented Quine's argument against the analytic/synthetic distinction, I present two criticisms of Quine's argument. Following these two exegetical sections, I critically evaluate both Quine's argument and the aforementioned criticism. I argue that while Quine's attack on the analytic/synthetic distinction is damning to a certain conception of philosophy, namely any system that identifies necessity and apriority with the analytic (e.g. logical positivism), the significance of Quine's attack is lost if one gives up on the aforementioned identification.

In chapter 3 I present and analyze not only Quine's attack on the second dogma of empiricism, which is in fact the second of the two theses common to both the Tractarian

system and logical positivism, but also Quine's positive theory of a holistic empiricism. I begin by tracing the origin of verificationism to the Tractatus before explaining how the methodology of verificationism relies on a form of reductionism. Having explained the connection between verificationism and reductionism, I go into detail about the role verificationism and reductionism play in logical positivism, in particular their role in Carnap's Aufbau. Having set the stage, I go on to explain the unempiricalness of reductionism and, in turn, how any system committed to the sort of reductive analysis found in logical positivism fails to be empirically adequate. Following a critical discussion of the methodology of the theoretical sciences, I go on to expound Quine's positive account of a holistic empiricism free of the two dogmas. In the remaining section, I evaluate not only the second dogma, but also Quinean holism. I argue that while Quinean holism avoids the two dogmas it faces other, not altogether unrelated, problems that limit its significance.

Chapter 1

From logical atomism to logical positivism

1

This chapter, though far from exhaustive on the issue, attempts to sketch and evaluate the logical atomism of Wittgenstein's Tractatus Logico-Philosophicus and its relation to logical positivism.

1.0 – From logical atomism to logical positivism.

As I have already mentioned, this chapter concerns the logical atomism of the Tractatus and its relation to logical positivism. In it I focus on two things. First, I examine in detail the theses developed in Wittgenstein's classic work of logical atomism, the Tractatus Logico-Philosophicus. Second, I examine the development of logical positivism and its general Tractarian structure.

1.1 – Wittgenstein's Tractatus Logico-Philosophicus.

Wittgenstein's Tractatus Logico-Philosophicus was first published in German in 1921 and translated into English in 1922. Published with an introduction by Russell, his advisor, the Tractatus is a work of logical atomism. The Tractatus is recognized as one of the most challenging works of philosophy to-date.¹ However, the complexity of the work, which is partly owing to difficult and groundbreaking subject matter and partly to Wittgenstein's unwillingness to express the subject matter in a clear and concise manner,

did not significantly limit its influence. In this section I will draw out the central theses of the Tractatus and identify several problems associated with these theses.

1.1.1 – The two-part structure of Tractarian atomism.

The Tractatus is first and foremost a work of logical atomism. Like all atomistic theories, the Tractatus has a two-part substructure; at the atomic level there are doctrines concerning the basic building blocks of the world, while at the non-atomic level there are doctrines concerning the formation of molecules out of the basic building blocks. However, what distinguishes logical atomism from other forms of atomism is that it is a logico-linguistic theory that describes the relationship between language and the world; where the last residue of analysis are logical atoms and not physical atoms. With this in mind, more can be said about the two-part structure of Wittgenstein's logical atomism. At the atomic level there are doctrines about the relationship between the simple atoms that makeup the world and the simple elements of language that represent the world (i.e. doctrines concerning the relationship between metaphysically simple objects and atomic sentences). At the molecular non-atomic level there are doctrines concerning the relationship between atomic sentences and molecular non-atomic sentences and the relationship between non-atomic sentences and the non-linguistic world. Given this basic two-part substructure, Wittgenstein's logical atomism requires a form of linguistic reductionism at both the atomic and non-atomic levels.

Wittgenstein treats all meaningful molecular non-atomic sentences as reducible to atomic sentences; where the truth or falsity and meaningfulness of a molecular non-

atomic sentence can be determined by virtue of the truth or falsity and meaningfulness of the atomic sentences that are the terminus of reductive linguistic analysis of the molecule. Proceeding from a higher level of complexity at the non-atomic level to a lower level of complexity at the atomic level, the process of reductive linguistic analysis ultimately ends in atomic sentences which are themselves formed out of logically proper names and predicates. At the atomic level, the truth or falsity and meaningfulness of an atomic sentence can only be determined by reference to the state of affairs of the world and, more specifically, the corresponding metaphysically simple objects. Given the two-part structure of Wittgenstein's logical atomism and his commitment to a form of reductive linguistic analysis, more needs to be said about his justification for linguistic reductionism, the relationship between non-atomic molecular sentences and atomic sentences and, more importantly, the relationship between atomic sentences and metaphysically simple objects.

1.1.2 – The argument for metaphysically simple objects.

At the basis of Wittgenstein's logical atomism is his view that the structure of the world mirrors that of language. In fleshing out his view concerning the relation between language and the world, Wittgenstein commits to the further view that every molecule, be it on the side of language (i.e. a non-atomic molecular sentence) or on the side of the world (i.e. a non-atomic molecular fact), can be reduced to simples. As Wittgenstein notes at 2.0201,

2.0201 – Every statement about complexes can be resolved into a statement about their constituents and into the propositions that describe the complexes completely.

Though somewhat difficult to recognize, Wittgenstein is here making a claim about the parallel between language and the world that allows the former to completely represent the latter. What Wittgenstein is claiming is that complexes (i.e. non-atomic molecular states of affairs in the world) can be resolved completely into a series of discreet simple facts (atomic facts) and that the non-atomic molecular sentences that describe the former complexes can be similarly resolved into a series of atomic sentences which by virtue of the parallel between language and the world completely represent the latter. As such, in the same way complex facts can be reduced to a series of simple facts, non-atomic sentences can be resolved through logico-linguistic reductionism to simple atomic sentences completely.

Wittgenstein's commitment to reductionism leads him to add at 2.021, that the reduction on both the side of the world and subsequently on the side of language needs to terminate:

2.021 – Objects make up the substance of the world. That is why they cannot be composite.

Here Wittgenstein is claiming that the process of reductive analysis must come to an end (i.e. must terminate) both on the side of world and on the side of language. On the side of the world it must terminate in metaphysically simple objects. On the side of language it must terminate in atomic sentences. Not unlike the majority of the claims made in the Tractatus, 2.021 appears at first sight to be asserted in the absence of supporting

argumentation. However, the semblance of an argument can be reconstructed from two further claims, 2.0211 and 2.0212:

2.0211 – If the world had no substructure, then whether a proposition had a sense would depend on whether another proposition was true.

2.0212 – In that case we could not sketch any picture of the world (true or false).

What Wittgenstein is saying at 2.0211 is that without metaphysically simple objects, determining the truth or falsity and meaningfulness of a sentence through reductive definitions would proceed *ad infinitum* and so never terminate. In addition to this observation, at 2.0212 he goes on to explain the problem that arises. Namely, that this infinite process of defining things in a reductive manner would render the concepts of truth, falsity, and meaningfulness, indeterminate – rendering the aforementioned concepts (i.e. truth, falsity, and meaning) importantly absurd.

If we consider what Wittgenstein is adding with these two further claims, a general argument can be reconstructed. The aim of the argument is still to establish the existence of metaphysically simple objects and their linguistic counterparts. The form of the argument is roughly a *reductio ad absurdum*. The thrust of the argument is, generally, that without metaphysically simple objects and their corresponding linguistic counterparts one could not establish the meaning of a sentence without reference to the truth of further sentences. However, knowledge of the truth of these further sentences requires an understanding of their meaning, which would in turn require knowledge of the truth of still further sentences and so on. As such, Wittgenstein concludes that without

the existence of simples we arrive at the absurd conclusion that the meaning of a single sentence could not be established.

Given the general structure of the argument, what are the premises that lead to Wittgenstein's conclusion? Following Soames, I divide Wittgenstein's argument into five premises from which he draws two conclusions.² Let us begin by looking more closely at a formalized account of Wittgenstein's argument before moving to discuss the problems associated with it:

P1 – If it were the case that there were no metaphysically simple objects, then the simplest elements of our language (i.e. proper names) would refer to complex objects. For example: the proper name *t* would refer to an object *s*, but the object *s* would be composed of still simpler objects *l*, *m*, and *n*.

P2 – If it were the case that the simplest elements of our language referred to complex objects, the existence of a complex object and successful reference would depend on whether or not it was true that *l*, *m*, and *n* were composed in the requisite way.

P3 – Given that the meaning of proper name *t* is just its referent, it follows that the meaning of *t* would depend on (the truth of) *l*, *m*, and *n* being composed in the requisite way.

P4 – However, if there are no metaphysically simple objects and it is the case that the meaning of *t* would depend on (the truth of) *l*, *m*, and *n* being composed in the requisite way, then this same process would re-occur for *l*, *m*, and *n*.

P5 – If it were the case that this same process would re-occur for *l*, *m*, and *n*, then this process of reductive analysis needed for establishing the meaning of any sentence would repeat *ad infinitum*.

C1 – Thus, if it were the case that there were no metaphysically simple objects, then the meaning of one sentences would depend on the truth of other, more simple sentences, while the meaning of these other sentences would depend on the truth of yet still other more simple sentences. This process of regressive definition never terminates and results in the absurd conclusion that meaning is indeterminate.

C2 – The existence of metaphysically simple objects allows us to establish meaningfulness and thus avoids the above *reductio ad absurdum*.

Thus, through application of *modus tolens* Wittgenstein concludes that the reductive analysis of sentences must end in simples if sentences are to express anything at all.

However, this argument only seems persuasive if one accepts that meaning must belong to these sentences in a way that is once and for all complete and that the only way such completeness can be achieved is if the meaning of the parts of a sentence (i.e. its subject and predicates) have previously been established.

1.1.2.1 – Evaluation of Wittgenstein’s argument for simples.

Wittgenstein’s argument for the existence of simples is a *reductio ad absurdum*.

In it Wittgenstein employs the classically valid rule *modus tolens* to derive the conclusion that simples are necessary for certain concepts (i.e. meaning and truth). Given that we have such concepts, Wittgenstein concludes that simples must exist. However, the argument is replete with implicit assumptions. As Soames point’s out,

Although Wittgenstein introduces these assumptions later in the Tractatus, they are neither obvious in themselves, not given persuasive independent justifications. Thus, on this interpretation, the argument for metaphysical simples rests on a linguistic foundation which itself raises serious questions.³

The two crucial assumptions are: i) the Augustinian picture of language, and ii) verificationism.

In the Tractatus Wittgenstein presents a version of what he later came to call 'Augustine's picture of language'. On this account of language the basic role of words is to name, leaving sentences to describe. A genuine name (i.e. a name that successfully refers) has a meaning and the meaning of such a name is just the object in the world for which it stands. A genuine sentence (i.e. a sentence that successfully refers) has a meaning and the meaning of such a sentence is just a function where genuine names are related. Being relatively new to philosophy and because it was the general framework from within which both Frege and Russell viewed language, Wittgenstein accepts this basic account without question. It is on top of this basic account of the relation between language and the world that Wittgenstein constructs his own logically atomistic system.

Furthermore, within the basic Augustinian account of language that Wittgenstein unquestioningly accepts is the demand for determinacy in meaning. As Hacker points out,

This requirement was prominent in Frege's logic as an ideal which a logically perfect language must attain, but which natural languages fall short of achieving. According to Frege, the explanation of any concept-word in a language adequate for scientific purposes must determine for every possible object whether or not it falls under that concept, whatever facts may obtain. Not only must actual vagueness (actual borderline cases of application) be excluded, but the very possibility of vagueness must be excluded likewise.⁴

Wittgenstein saw no room in a language for vagueness and indeterminacy concerning meaning; for a language to be in good logical order meaning must be determinate.

To this basic Augustinian account of language Wittgenstein adds the requirement of verificationism. He adds the epistemic corollary that what connects words to their meaning is a verification theory of meaning. Frege and Russell had to invoke complicated apparati for making this connection, but Wittgenstein seemed to avoid the complications

associated with their accounts by making the connection between words and the things they represent one of direct correspondence.

In evaluating Wittgenstein's argument for the existence of metaphysical simples one must be charitable and evaluate it from within the framework from whence it sprang. While it is important to understand the problems associated with the assumptions that found this approach, for our purposes it is more important to understand the argument and its merit from within Wittgenstein's framework. However, even from within this framework the conclusion of absurdity does not follow and his commitment to simples remains a matter of faith. Let me explain.

Even granting Wittgenstein linguistic assumptions about the relationship between language and the world, the absurdity that underpins the *reductio* does not follow. Why is it absurd to say that the meaning of a sentence should depend on the truth of still further sentences? As I have already mentioned, Wittgenstein's argument claims that without simples to know the meaning of one sentence would depend on the truth of other, more simple sentences and that in order to know the truth of these other sentences would require knowledge of their meaning but once again this would depend on the truth of yet still other more simple sentences. This process of regressive definition would repeat *ad infinitum* and result in the absurd conclusion that if a sentence had a meaning it would depend on the truth and, in turn, meaning of still further sentences, and so on. But the absurdity does not follow from the fact that there are no simples because premises two and three do not follow from premise one.

In order to demonstrate this problem take my use of '*this*' as a logically proper name to refer to the copy of my thesis you have in your possession.⁵ First, the copy in

your possession must exist for the logically proper name to successfully refer. Second, the logically proper name may refer to the unique arrangement of molecules that make up the copy sitting in front of you. Third, since '*this*' is meant to refer to the unique arrangement of molecules that make up the copy sitting in front of you, it is necessary in order for *this* copy to exist and for '*this*' to have both a reference and a meaning that the molecules be arranged in the unique manner. However, it is by no means necessary that I have any knowledge concerning the manner in which these molecules are arranged.

Now one could amend Wittgenstein's argument in such a way as to specify that such knowledge is required. That is to say, one could amend the argument to make it the case that premises two and three do in fact follow from premise one through stipulation. As Soames suggests, one could simply stipulate that the semantic notion of meaningfulness depends on the epistemological notion of truth:

That in order for the meaningfulness of a sentence S to **depend** on the truth of the claim that so and so is simply for it to be the case that were it not a fact that so and so, then S would not be meaningful.⁶

This stipulation would be sufficient to make the argument follow; however, it renders the conclusion no longer absurd. If one were to make this stipulation, it no longer seems absurd that the meaning of some sentence should depend on the truth of some further fact, and so on because with the proper knowledge (i.e. scientific investigation) one could always provide the conditions for the meaning of a specific sentence. And, perhaps there are good reasons for doubting whether such knowledge could be obtained and, in turn, whether the absurdity reappears. However, Wittgenstein offers no further insights on this

issue and even if it were accurate to assume that he would be in favor of such stipulation supporting argumentation would be required to justify such a move.

Strictly speaking Wittgenstein's argument for the existence of metaphysically simple objects fails. It simply does not establish the existence of metaphysically simple entities. To properly understand Wittgenstein's commitment to the existence of such simple objects one must see them as a speculative commitment of the Tractatus; a commitment that should be understood from within a questionable theoretical framework.⁷

1.1.2.2 – The nature of Wittgenstein's metaphysically simple objects.

Turning from a critical evaluation of Wittgenstein's logical atomism and, more specifically, his commitment to simples, I will now sketch some remaining mysterious elements of the Tractarian system and the nature of Wittgenstein's metaphysically simple objects. Like the basic building blocks in other atomistic theories, Wittgenstein's metaphysical simples are fixed and unchanging. They represent the possibility for all change in the universe through their combination and recombination. They exist through all time and in all possible worlds (i.e. in all logical space) and, as such, are necessary (i.e. they exist in every possible state of affairs that the world could be in because they are the source of all possibility). Simples are ultimately responsible for the properties of the medium size objects that comprise the world of experience. This being said, all we can say about simples is how they combine (i.e. what properties result from their

combination) because their properties come into existence only with their configuration in medium-size objects. As Wittgenstein explains:

2.0231 – The substance of the world can only determine a form, and not any material properties. For it is only by means of propositions that material properties are represented – only by the configuration of objects that they are produced.

To try to go beyond, or should I say beneath, the properties manifested in medium-size objects and make claims about the essential character of these simple objects is impossible because properties, as we know them, do not exist on the metaphysically simple level. As such, while simples are responsible for all the properties, we must treat them as essentially devoid of all the properties present in the medium-sized objects we perceive on a day-to-day basis. To this Wittgenstein adds:

2.0232 – In a manner of speaking, objects are colorless.

This so-called “manner” to which Wittgenstein refers needs some clarification. It is not that simples are in fact colorless objects; as I will later explain, such a claim is nonsensical. It is rather that one can not say of a simple that it has color because color is a material property used to describe what comes about as a result of arrangements of simples in middle-sized objects. As Soames points out,

[Simples] do not themselves exhibit or possess specific properties like shape or color, nor do the objects by themselves determine which things actually instantiate such properties. Rather, we are told that these properties are represented only by propositions, and they come into being with “the

configuration” of objects. In other words, such properties are to be analyzed in terms of the relations among simples.⁸

Thus, for Wittgenstein, while we can name them, we can not describe them; all we can do is describe the properties they bring about in complex objects. This point is clearly brought out in Wittgenstein’s discussion of color:

Let us suppose we were to see a circular patch: is the circular form its property? Certainly not. It seems to be a structural “property”. And if I notice that a spot is round, am I noticing an infinitely complicated structural property?⁹

The claim made here is that when we perceive a property, be it structural, material, or so forth, what we perceive are the simple objects responsible for the property arranged in a manner such that their relation to one-another manifests the perceived property. In this case, to say of the metaphysically simple objects responsible for the perceived circular patch of color that they are ‘circular’ or ‘of a certain color’ is nonsensical, since metaphysically simple objects possess none of the properties we perceive in medium sized objects. All that can be said when we perceive a patch of color is that certain simples (i.e. *a*, *b*, *c*, *etc.*, where *a*, *b*, and *c* are proper names referring to metaphysically simple objects) stand in a certain configuration such that the simples manifest in the object the perceived patch of color. To try and say more about the simples is to speak nonsensically because we can not describe the simples themselves. Thus, Wittgenstein concludes at 3.221:

3.221 – Objects can only be named. Signs are their representatives. I can only speak about them: I cannot put them into words. Propositions can only say how things are, not what they are.

Given Wittgenstein's view that simples can only be named, more needs to be said about the relationship between the simple constituents of language and the metaphysically simple objects of reality.

1.1.3 – The relationship at the atomic level between language and the world.

As I have already mentioned, the ultimate constituents of an atomic sentence are logically proper names that stand for simple objects – objects that are in fact the meaning of the names and the subject of atomic sentences – and a further relational claim. What this means is that in some way the meaning of an atomic sentence just is nothing more than the atomic fact that it represents; where the meaning of an atomic sentence is a function of its constituent names related in some manner.

At the heart of this supposed relationship between the simple constituents of language and the simple objects of reality is the notion of logical form. Wittgenstein thinks an atomic sentence has the ability to represent a possible atomic fact, or state of affairs, only in virtue of the atomic sentence sharing a common logical form with the atomic fact it pictures. The idea is that at the atomic level the essential logical form of language is identical with the essential metaphysical form of reality because the atomic sentence comprises those structural features which language and reality must share if the former is capable of depicting the latter. As such, an atomic sentence is in essence a picture of an atomic fact. In this sense atomic sentences reflect what they represent.

To review, the meaning of a simple name is the simple object it denotatively represents. This means that there is a formal relationship between names and simple objects, where the meaning of a name corresponds with the simple it stands for and the name contributes the subject to the atomic sentence by going proxy for the object it represents. The very possibility of meaningfulness is based on this relation: unless a name has been associated with an object, a sentence in which the name occurs lacks a meaningful subject. Given this correspondence relation between names and simples, an atomic sentence draws upon this to make claims about possible states of affairs. The representation of a possible state of affairs in an atomic sentence is a model or a picture, where the combinatorial possibilities of the name (i.e. the possible atomic sentences it can serve as the subject in) mirror those possible combinations of the object it stands for.

Like the relationship between names and simples, there must be a similar logical relation between atomic sentences and the atomic fact it represents. That is to say, the atomic sentence must mirror the atomic fact, as the atomic sentence is merely a logical picture of an atomic fact and for a sentence to picture a fact it must be of the fact itself. Take for example sentence 1)

1) The book is on the table.

Assuming that both the book and the table are simple objects, sentence 1) acts like a picture in that it represents on the page some particular arrangement in the world (i.e. a state of affairs in which the simple object picked out by 'the book' is related to the simple object picked out by 'the table' in the way described by the relational term 'is on'). This

sentences acts like a picture because it is composed of names, which stand for objects in the world, in a manner that relates these objects to one-another. In sentence 1) the names 'the book' and 'the table' stand for objects while 'is on' draws some relation between the two objects that constitute the subject of the sentence. Had it been the case that the words were arranged differently, as in sentence 2), the sentence would represent a different state of affairs.

2) The table is on the book.

Containing the same simples and the same relational claim, sentence 2) pictures a radically different world by virtue of the order the simples appear in. Thus, an atomic sentence reflects what it represents, a possible state of affairs (combination of objects) which either does or does not exist and is either true or false.

1.1.3.1 – Wittgenstein's picture theory.

Though Wittgenstein does not offer an argument from analogy for his notion of pictorial representation, he makes use of analogies to clarify his point. At the heart of his picture theory is an insistence on the pictorial nature of atomic sentences. What this means exactly should become clear, but at its core is the idea that the relationship between an atomic sentence and the atomic fact that verifies it is a logical relation made possible by a common logical form. The two analogies Wittgenstein makes use of to clarify what he means by picture theory are:

- i) The courtroom model of a traffic accident.
- ii) The painting of a barn.

The purpose of these analogies, like any analogy, is to draw out important similarities between otherwise dissimilar things. In this case what is highlighted is the similarity between different forms of representation. In this case the analogies are meant to highlight the important similarity between a model, a painting, and a sentence with regards to what makes it possible for each to represent the world. More specifically, the analogies are meant to demonstrate that it is only in virtue of a common form that representation is possible.

In the former analogy, Wittgenstein asks us to imagine a law-court model of a traffic accident meant to represent a hypothetical accident that took place between a pram and a lorry.¹⁰ The purpose of the model is to represent a past state of affairs. By placing the toy pram and the toy lorry in certain positions within the model we are able to represent the state of affairs in which the accident took place by representing the spatial relationship between the actual pram and the actual lorry. What is crucial here is not just the correspondence relation between the toys and the actual vehicles but also the correspondence between the spatial relation of the actual objects with the toys meant to represent them.

In the latter analogy, Wittgenstein asks us to imagine a painting of a barn meant to represent an actual barn. The purpose of the painting is to represent an actual barn on canvas. By painting a portion of the canvas red one is able to represent the state of affairs in which the actual barn has the material property of being red. Once again what is

crucial here is not just the correspondence relation between the actual barn and the painted barn but also the correspondence between the material relations of the actual barn and those of the painted barn.

What, then, is the lesson to be drawn from these analogies? What is the similarity between how the sentences represent the world and how the model and painting represent the world? Simply put, the lesson is that in order for a linguistic fact to represent a matter of fact, both facts must share a common form. As in the case of the traffic accident, where the toys represent the actual vehicles in virtue of a common spatial form, and the painting, where the painting represents the barn in virtue of a common material form, in language atomic sentences represent atomic facts in virtue of a common abstract logical form. Thus, the sentence 1) is representational of the book actually being on the table in virtue of the sentence sharing a common logical form with a possible state of affairs. But logical form alone is not sufficient for an atomic sentence to represent an atomic fact. If logical form alone were sufficient and we understand the logical form of an atomic sentence in the same we understand the logical form of compound sentences, then the atomic sentences 'A is on B' and 'C is on D' have the same logical form and by virtue of what has already been said it follows that the state of affairs that C is on D shares its logical form with A is on B. But presumably these sentences represent altogether different states of affairs; one represents the state of affairs of A's being on B and the other represents the state of affairs of C's being on D. And, since A and C are different and B and D are different, the states of affairs they represent are different. Thus, it seems that in order for a sentence to represent a state of affairs it needs to have more than simply the same logical form as the state of affairs. But what more is required?

In order to avoid this problem one must either a) understand logical form in some richer way, or b) acknowledge that having the same logical form alone is not sufficient for representation. If one opts for a), then one needs to bolster the account of logical form with some consideration of the relevant objects. That is to say, the logical form of 1) is not merely 'A is on B' but also includes some consideration of the referents A and B. If one opts for b), then the relevant objects must be considered in addition to logical form. As it happens, options a) and b) amount to more or less the same thing for Wittgenstein's theory. Either way, the point is that since an atomic sentence is a linguistic entity (i.e. a combination of logically proper names and relational claims) and a state of affairs is a possible non-linguistic fact (i.e. a combination of objects and relational expressions), the former is representative of the latter if and only if the sentence shares a common form with the state of affairs and the sentence is composed of the same things as the state of affairs.

But what does it mean to say that the sentence and the state of affairs share some logical form? To say a sentence pictures a fact is to say that the names contained in the sentence are related in a manner that corresponds to the way the objects in the world denoted by those very names are related. Take sentence 1) again. Sentence 1) contains two logically proper names and one relational expression. The two logically proper names (i.e. 'the book' and 'the table') pick-out *sui generis* objects in the world. If the object picked out in the world by the occurrence of the logically proper name 'the book' in this sentence is my one and only autographed copy of the Satanic Verses, then considerations as to the meaning and truth of this sentence concern my copy of the book in question. Similar analysis holds for the occurrence of any logically proper name.

However, problems occur in the analysis of the relational expression in 1). Sentence 1) is thought to be representational of a state of affairs in that it corresponds to a simple fact in the world. But which of the following four possible facts does sentence 1) correspond to?

- A) The unique object picked out by the logically proper name 'the book' is in the upper right corner of the unique object picked out by the logically proper name 'the table'.
- B) The unique object picked out by the logically proper name 'the book' is in the upper left corner of the unique object picked out by the logically proper name 'the table'.
- C) The unique object picked out by the logically proper name 'the book' is in the lower right corner of the unique object picked out by the logically proper name 'the table'.
- D) The unique object picked out by the logically proper name 'the book' is in the lower left corner of the unique object picked out by the logically proper name 'the table'.

Given that this list of possible facts could be indefinitely large, it follows that the relational expression fails to specify a unique state of affairs. Insofar as this unique state of affairs is wanting, it seems improper to say of sentence 1) that it represents a single fact. But more can be said about the relationship between language and the world.

First, one needs to recognize the problem associated with Wittgenstein's choice of analogy. As I have explained, Wittgenstein sees an important analogy between pictures and atomic sentences. The problem is that the analogy of pictures and atomic sentences being pictures of states of affairs has certain limitations; namely, that there is an all-important disanalogy between pictures and atomic sentences. While atomic sentences represent single facts, pictures represent more than one fact. Otherwise put, pictures are "representationally dense".¹¹ A picture does not simply picture the book being on the

table. A picture represents not merely the book's being on the table, but also it's being at a certain place on the table, in a certain light, and so on. A picture is not going to represent just the book being on the table in isolation from all else. Thus, one needs to recognize the limitations of the analogy.

Second, if sentences are understood as representing individual facts, one needs to distinguish between the fact of the book being on the table from the fact of the book being on a certain edge of the table because the sentence 'the book is on the table' has different truth conditions from the sentence 'the book is on the left edge of the table'. That is to say, one needs to distinguish the fact that the book is on the table from a variety of other facts that may imply that it is true that the book is on the table but are nonetheless importantly distinct from that fact. For example, the truth of the sentence 'the book is on the left edge of the table' implies the truth of sentence 1) but it does not represent the same fact as sentence 1). Thus, if one follows Wittgenstein in approaching facts from the point of view of language and takes facts to be the sorts of things that sentences are meant to represent, there is a need to distinguish between facts of these sorts.

But what, you may ask, is the philosophic significance of what I have been saying? Ultimately, on such a view you have to accept that these are distinct facts. However, if one approaches the idea of facts not from the point of view of language but from that of human action, one may no longer feel the need to distinguish between facts in this way. Suppose I place the book on the table. It is the case that I placed the book on the table. However, it is also the case that I placed the book on the left edge of the table. How many acts did I perform in placing the book? Did I perform two acts? First, the act

of placing the book on the table. Second, the act of placing the book on the left edge of the table. If one approaches facts from the perspective of human action, one will no longer feel the need to distinguish between these two actions. There is just one action I performed – I put the book on the table. Of course I also put the book on the left edge of the table, but one would no longer want to separate these actions as two distinct facts as one needs to when approaching this action from the point of view of language.

The need to distinguish between the fact of the book being on the table from the fact of the book being in a certain place on the table seems to arise when one approaches facts as candidates for what sentences represent. Recall that for Wittgenstein facts exist and sentences are there to represent these facts. That is to say, it is the existence of facts that determine how language functions. However, it seems, as I have been suggesting, that the nature of facts that the proposal seems to presuppose is partially determined by the role these facts are supposed to play in accounting for the representational features of language.

The two points I have raised are important criticisms of Wittgenstein's view. First, there is that straightforward issue that analogy of pictures as applied to the representational character of language and the relationship between atomic sentences and facts has its limitations. Strictly speaking, sentences should not be thought of as pictures. Second, the characterization of facts is importantly influenced by the role they are taken to play in language. It is only because individual facts are taken to be the sorts of things that sentences represent that we need to distinguish between the fact that the book is on the table and the fact that the book is on a certain location on the table. On such an account you end up characterizing facts as true propositions. Whereas, if one does not

one does not approach facts from the point of view of language and one approaches facts from the point of view of human action, you are not forced to distinguish between the fact of placing the book on the table from the fact of placing the book on the left edge of the table.

1.1.4 – Wittgenstein's theory of meaning and meaningfulness.

The relationship between language and the world which makes representation possible is the correspondence between not only simple entities in the world and linguistic simples but also logical structure of language and the logical structure of the world – the structural identity between what represents and what is represented. Given this supposed correspondence, Wittgenstein offers a theory of meaning and meaningfulness that reflects this relation. In accordance with what has already been said, his theory of meaning respects the previously mentioned two-part structure. The meaning of a non-atomic sentence can be determined through the reduction of these complex sentences to the meaning of the constituent atomic sentences. The meaning of an atomic sentence is just the atomic fact it pictures. And, all of this is made possible by the relation of correspondence between metaphysically simple objects and the proper names we use to refer to these objects.

But what then determines the meaningfulness of atomic sentences? In short, atomic sentences are meaningful if and only if they are representational. That is to say, an atomic sentence is meaningful if and only if the picture it represents is possible. However, we are left asking what it means for a picture to be possible? For Wittgenstein

the meaningfulness of an atomic sentence is related to the possibility of the picture it represents obtaining in the world. This means that an atomic sentence is meaningful if and only if it is possible for the objects named in the sentence to be arranged in the world in the manner in which they are related according to the sentence. Thus, the meaningfulness for an atomic sentence is merely the possibility of the state of affairs pictured in the sentence obtaining.

In order to capture the distinction between meaningfulness and meaninglessness compare sentence 1) with sentence 3):

3) The beautiful is on the table.

While sentence 1) is meaningful for those reasons previously mentioned, sentence 3) is strictly speaking meaningless because it fails to represent a possible picture in that there is no object denoted by 'the beautiful'. Sentence 3) purports to be about objects but fails to denote because 'the beautiful' is not the sort of thing that denotes. As such, sentence 3) commits a category mistake and because of this is rendered meaningless. The purpose of this example is to show that atomic sentences are meaningful if and only if the picture of the world represented in the sentence is possible. Should it be the case, as it is in sentence 3), that the world could not have been arranged in the manner in which it is said to be arranged in the sentence, then the sentence fails to picture anything (possible) and, as such, is taken to be meaningless.

1.1.5 – Wittgenstein's theory of truth.

Truth for Wittgenstein is reserved for a subclass of meaningful atomic sentences for which there exists a corresponding atomic fact. Given that a meaningful atomic sentence is just one that pictures a possible state of affairs, a true atomic sentence is merely a meaningful atomic sentence for which there actually is a corresponding atomic fact – not just that there is a possible corresponding fact in a possible state of affairs. An atomic sentence is true if and only if it is both meaningful and the world is as the sentence pictures it; if and only if the world (i.e. the state of affairs is as the sentence pictures it to be) is as the sentence represents it. A consequence of this is that sentences that are meaningless cannot be true because it is not possible for the world to be as the sentence pictures it. Thus, to return to an earlier example, while it is meaningless to speak of it being either true or false that the beautiful is on the table because the sentence is strictly speaking meaningless, to say it is true that the book is on the table is to say that the state of affairs is such that the objects referred to by the names ‘the book’ and ‘the table’ are actually related in the manner noted in the sentence by the relational expression ‘is on’.¹² Setting aside concerns about relational claims and their ability to represent unique facts in language, I will say more about the assignment of truth-values.

Given that Wittgenstein’s theory of truth is essentially founded on his theory of meaning and meaningfulness, his account of truth is wonderfully systematic. The world is all that is the case; it is the conjunction of all molecular facts which, in turn, is to be understood completely in terms of atomic facts. If we record all molecular facts that happen to be the case and reduce them to their corresponding atomic sentences, we can

represent the actual world on a truth table by assigning truth to the exhaustive list of atomic sentences. As Soames elegantly explains,

Let A be the set of all atomic sentences, and let f be an assignment of truth values to members of A . For each sentence S in A , f assigns S either truth or falsity. The set of sentences in A to which f assigns truth represents one complete world.¹³

Though Soames is here speaking of the method for representing one complete world, the method for representing the actual world follows the same pattern. In order to account for a further possible world, one must consider a different assignment of truth values to the members of A . For each different assignment, the set of sentences to which truth is assigned represents a different possible world. This world is represented on a truth table by all the true atomic sentences. Altering just one instance on the table – turning it from true to false can represent a further possible world. By continually altering just one instance we can represent all possible worlds. That is to say, there is a one-to-one correspondence between exhaustive assignments of truth values to the members of the set of atomic sentences and genuine possible worlds. This account of possible worlds, where each possible world is represented by a possible exhaustive set of truth-values, allows us to represent each possible world on a truth table world-by-world. As Soames explains,

Finally, consider every possible assignment of truth values to members of A – i.e. every possible way of distributing truth and falsehood among the atomic sentences. One of these ways will assign truth to every atomic sentence, one will assign falsity to every atomic sentence, and for every possible combination between these two extremes, there will be an assignment that gives that combination of truth values to the sentences in A .¹⁴

This being said, there is a modal assumption behind this view.

If one is to understand that on Wittgenstein's view this world is represented on a truth table by all the true atomic sentences, altering just one instance on the table, turning it from true to false, represents a further possible world. However, this is on the assumption that the falsity of the atomic sentence is compatible with the truth of the other atomic sentences. In order for that to be the case all the atomic sentences must be modally independent of each other. Otherwise there is no guarantee that changing one of the atomic sentence's truth value from true to false represents a possible state of affairs. If we assume that for Wittgenstein atomic sentences are modally independent of each other, as I think Soames is suggesting, then one encounters problems concerning symmetrical relations. Imagine a world in which the atomic sentence 'A is to the right of B' is assigned truth on a truth table. It seems that the truth table must also include the further truth that 'B is to the left of A' since this world is just defined as the set of sentences to which truth is assigned. If these sentences are modally independent of one-another, it should be possible for one to be true and the other false. However, this is unacceptable; it can not be the case that A is to the right of B and yet B not be to the left of A. What is to be done is unclear as Wittgenstein fails to address such concerns. One simply needs to understand that this is another area in which Wittgenstein's view is flawed.

1.1.5.1 – Truth-functional compounds.

Given what I have thus far explained to be Wittgenstein's Tractarian system, I can now say more about his general views on the relationship between logic, language, and the world. First, recall that for Wittgenstein atomic sentences are true in some

possible worlds and false in others and, as such, should be understood as contingent.

Second, for Wittgenstein the truth of each atomic sentence should be understood as independent of all other atomic sentences. That is to say, the truth or falsity of an atomic sentence has no bearing on the values assigned to the other members of the set of all other atomic sentences in a possible world. Third, a possible world is just a collection of possible facts, which can be completely represented in terms of possible atomic sentences. Given these assumptions, it follows that there is a one-to-one correspondence between exhaustive assignments of truth values to the members of the set of atomic sentences and the possible worlds these assignments determine. In virtue of this one-to-one correspondence, Wittgenstein draws three further distinctions:

- i) Tautologies.
- ii) Contradictions.
- iii) Contingents.

Our ability to represent not only this world but also all possible worlds on truth tables produces interesting semantic consequences at the molecular level when considerations bear on truth-functional connectives.

Truth-functional connectives are sentential connectives that allow one to form molecular non-atomic sentences from singular atomic sentences. Truth-functional operators have the property that the truth-value of the newly formed sentence is determined solely by the truth-values of the constituent sentences. These connectives include the standard Boolean connectives (\neg , \wedge , \vee) and the material conditional (\rightarrow) and the biconditional (\leftrightarrow). If we have a language that includes a full stock of the truth

functional connectives we can build up molecular, or non-atomic, sentences by joining two atomic sentences by a truth-functional operator.

This being said, if we have a language that includes a full stock of truth-functional operators and we can represent not only this world but also further possible worlds on a single truth table then tautologies and contradictions fall out naturally. Take sentence 5) for example:

5) Either it will rain tomorrow or it will not rain tomorrow.

Sentence 5) is clearly a disjunction of the logical form $A \vee \neg A$. Sentence 5) is comprised of one atomic sentence that occurs in two forms plus truth-functional connective. The truth-value of this molecule is determined by the truth-value of the constituent sentences. However, given the logical form of the sentence, no matter what truth-value A is assigned, the molecule comes out true. It should be noted that an attempted denial of a tautology would result in contradiction. Contradictions are on par with tautologies – it just happens that they are necessarily false.

Given what I have said concerning truth tables and the role truth-functional operators play in language, I can say more about the content of tautologies and contradictions. For Wittgenstein, tautologies and contradictions, as molecules formed out of atomic sentences, have no empirical content. Sentence 5) says nothing about the world because it comes out true in all possible worlds. Similarly, contradictions come out false in all possible worlds. Clearly we do not need to check these sentences against the world to see if the states of affairs they picture are as the world. Tautologies are true regardless

of the state of affairs in the world. Contradictions are false regardless of the state of affairs in the world. Given this account tautologies and contradictions are both classified as meaningful sentences. The former just happens to always be true while the latter just happens to always be false. As such, both tautologies and contradictions make no claims about the state of affairs in the world – they picture no fact. As such, both tautologies and contradictions are devoid of factual content. They say nothing about the world since a tautology is true no matter what the state of affairs is. Truth functional operators are necessary in order to relate atomic sentences and construct molecules able to say of the world that it is so-and-so or such-and-such, and that it is not such-and-such. However, having established truth functional operators, tautologies and contradictions will result from combining atomics in certain admissible or inadmissible ways. Unlike the remaining contingent molecules, tautologies and contradictions explain the internal structures and relations within language.

There is a problem however with Wittgenstein's treatment of tautologies and contradictions; namely, that it is not altogether consistent with his criteria for meaningfulness. Recall that for Wittgenstein an atomic sentence is meaningful just in case there is a possible circumstance in which it is true. Conversely, an atomic sentence that is not possibly true is classified as meaningless. Why then is it the case that the same view is not extended to molecular sentences and, more specifically contradictions? Take a conjunction which is contradictory but each of its conjuncts are meaningful atomic sentences. Why is such a sentence considered meaningful whereas an atomic sentence that is not possibly true considered meaningless? It seems as if the temptation to say that such a sentence is a meaningful sentence (i.e. where both conjuncts are independently

meaningful) arises from the fact that the constituents have meaning and the connective has a meaning so we assign meaningfulness to the molecule or say that the sentence is meaningful. But if this were our criterion for characterizing the meaningfulness of molecular sentences (i.e. each of its parts are individually meaningful), why should not the same idea be extended to atomic sentences. Take a sentence of the form “A is F” where A has a referent and F has a referent and that alone, without the additional epistemological considerations, counts for the meaningfulness of the sentence. However, if this were the criterion, it would classify as meaningful obviously meaningless sentences. Take the instance in which A refers to an instance of the color red and F refers to an instance of the color purple. On such a criterion, the sentence “red is purple” comes out as meaningful. Given that this is obviously not an acceptable result, one must either reformulate the criterion or give up on it.

It seems that there is some difficulty with Wittgenstein’s criterion for meaningfulness; namely, that his so-called uniform criterion does not apply uniformly to both atomic sentences and molecular sentences. Having identified both the three-part semantic distinction and the problem associated with this distinction, there is a further metaphysical distinction that needs to be discussed.

1.1.5.2 – Three-part semantic division of meaningful sentences and the coincidence of semantics and metaphysics.

As I have explained, Wittgenstein draws what he takes to be an exhaustive three-part semantic distinction concerning the status of all meaningful sentences of a language.

The three categories of sentences are:

- i) Tautologies.
- ii) Contradictions.
- iii) Contingents.

Tautologies are the members of a class of sentences that are true no matter what.

Contradictions are similarly on par with tautologies, they picture nothing and they are false in all possible worlds. Contingent sentences are the remaining class of meaningful sentences. Containing all remaining meaningful sentences that are neither tautologies nor contradiction, contingent sentences have factual content, they make claims about the world, and while true in some possible worlds they are false in others.

Given what has been said about the correspondence between language and the world, the notion of possible states of affairs, and the three-part semantic distinction, it is important to note that for Wittgenstein this three-part semantic distinction coincides exactly with the three-part metaphysical distinction between necessity, impossibility, and contingency. Why does the semantic coincide exactly with the metaphysic? For Wittgenstein, tautologies are logically true. Tautologies are true no matter because they are true in all possible worlds. The reason they are true in all possible worlds has to do with the fact that the truth of the molecule is dependent on the truth of its constituents, which in turn depends on the correspondence relation between metaphysically simple objects and linguistic simples. Given the truth-value of the constituents and the nature of the logical operators, the tautologies are necessarily true. This fact about tautologies and,

conversely, contradictions means that the former coincides with the metaphysical notion of necessity, while in the latter coincides with the metaphysical notion of impossibility. Tautologies are necessary because the meaning of the constituents are such that when combined in certain ways by truth-functional operators, the molecule could not have been false – it is metaphysically necessary. Contradictions are impossible because the meaning of the constituents are such that when combined in certain ways by truth-functional operators, the molecule could not have been true – it is metaphysically impossible given our theory of meaning. Similarly, contingent sentences seem to be metaphysically contingent given that the meaning of the constituents of the molecule are combined in such a way by the truth-functional operators that they come out true in some instances on the truth table and false on others.

Take tautologies and contradictions for example. While tautologies are taken to be true in virtue of meaning alone, contradictions are taken to be false in virtue of meaning alone. Having established the truth its constituents and the function of the truth functional operators, the truth of each tautology and similarly the falsity of each contradiction can be determined through formal calculations – the logical analysis of these sentences. In that the truth or falsity of these sentences depends solely on meaning and the nature of truth functional operators, their truth should be seen as wholly independent of factual content (i.e. how the world is). As such, these sentences seem to be necessarily true, not because of some way the world is and not because the world could be no other way, but because we have chosen to represent it in the way we have. Thus, the distinction between tautologies/contradictions and contingent sentences becomes a distinction between necessary and contingent sentences because of the fact that while the former have no

factual content and have nothing to do with the state of the world, the latter are wholly vulnerable to its states of affairs. This connection between language and the world can be captured by the following three identifications¹⁵:

A proposition is a *tautology* (logical truth) if and only if every assignment of truth values to atomic sentences makes the molecule S true. As such, S is true in all possible worlds in that S is true regardless of the state of the actual world. Thus, S is necessary if and only if S is logically necessary and, hence, a tautology.

A proposition S is a *contradiction* iff every assignment of truth values to atomic propositions makes the molecule S false. As such, S is false in all possible worlds in that S is false regardless of the state of the world. Thus, S is impossible if and only if S is logically impossible and, hence, a contradiction.

A proposition S is *logically contingent* iff S is neither a tautology nor a contradiction. As such, S is true in some possible worlds and false in other possible worlds. Thus, S is contingent if and only if it is logically contingent.

While this is only one of the two important doctrines present in the Tractatus, the importance of his identification of logical necessity with metaphysical necessity will become apparent in my discussion of Quine's attack on logical positivism.

1.2 – The rise of logical positivism.

As I have already mentioned, in the second section of this chapter I examine the central theses of logical positivism and their Tractarian roots. Drawing on what I have already explained, I will argue that the central theses of logical positivism can be located in the logico-linguistic tradition of logical atomism of Wittgenstein and Russell's logical analysis of material objects in terms of sense data. I will begin this section with a brief discussion of positivism, identifying the defining commitments of logical positivism.

1.2.1 – Logical positivism.

Logical positivism is an early twentieth century attempt to produce a rigorous scientifically guided philosophy; a philosophic system capable of achieving the sorts of progress seen in other fields as a result of the rise of science and the scientific method. At the core of this scientifically guided philosophy was a methodology not unfamiliar to philosophy. However, before discussing the connection between positivism and the proceeding philosophic developments, more needs to be said about the defining doctrine of logical positivism.

Logical positivism as a formal approach to philosophy was born in Vienna in the meetings of the Vienna Circle. Led by Moritz Schlick, the members of the Vienna Circle, a collection of scientists, mathematicians, logicians, and philosophers, developed a rigorous highly formal approach to philosophy as a reaction to the neo-Kantianism that dominated German philosophy. Opting for empirical realism over the speculative Kantian idealism, the logical positivists adopted Wittgenstein's notion of meaning and the parasitic notion of truth as the key to avoiding idealism. Armed with a Tractarian theory of meaning, not only could they once and for all avoid Kantian idealism, they could also establish a scientifically rigorous philosophy. What began as the musings of a group in Vienna grew into the most significant philosophic system of the twentieth century. With roughly the Tractarian theory of meaning, the analytic/synthetic distinction, and a Russellean account of verificationism, logical positivism presents a philosophic theory of everything.

1.2.2 – Logical positivism's debt to Wittgenstein.

As I have already mentioned, the positivist's debt to Wittgenstein relates to their adoption of Wittgenstein's theory of meaning and, in turn, Wittgenstein's three-part division of all meaningful sentences. At the core of logical positivism is the Tractarian idea that the meaning of any contingent sentence is just its method of verification (i.e. the empirical evidence that makes the sentence true). Revisit sentence 1) for example. The meaning of this sentence is just that which it represents. Namely, the objects named by 'the book' and 'the table' being related in the appropriate way by the expression 'is on': While the meaning of this sentence is just that which it pictures, the truth of this sentence depends on the world actually being as the sentence pictures it to be. Accepting the Tractarian theory of meaning leads the logical positivists to accept Wittgenstein's division of all meaningful sentences. While for Wittgenstein, the three categories include tautological sentences, contradictory sentences, and contingent sentences for the positivists the same three semantic categories were distinguished as analytically true sentences, analytically false sentences, and synthetic sentences. The difference in nomenclature aside, Wittgenstein's semantic thesis and the semantic thesis of the logical positivists is generally thought to be identical. Analytic truths, like Wittgenstein's tautologies, are true in virtue of meaning alone. Analytic falsehoods, like Wittgenstein's contradictions, are false in virtue of meaning alone. And, synthetic sentences, like Wittgenstein's contingent sentences, are true in virtue of the way the world is (i.e. the existing state of affairs).¹⁶ Having adopted Wittgenstein's general theory of meaning,

what was required was a principle for the evaluation of the meaning and truth of the synthetic sentences. Recall that for Wittgenstein the meaning and truth of what we are now calling a synthetic sentence is directly related to the existence of metaphysically simple objects on the side of the world and corresponding metaphysically simple linguistic entities on the side of language. This analysis of meaning and truth is unacceptable to the positivists because it involves committing to the existence of metaphysically speculative entities.

1.2.3 – Positivism’s position on metaphysically simple objects and the rejection of metaphysics.

Wittgenstein and the logical positivists both acknowledge the aforementioned semantic distinction. Given this common acknowledgment it would seem natural to assume that like Wittgenstein the positivists were committed to the existence of metaphysically simple objects and the formal correspondence between language and reality. While seemingly natural, this assumption is incorrect. In fact, it is this major difference that led the positivists to adopt a Russellean account of verificationism.

For Wittgenstein, the existence of simples and the correspondence between metaphysically simple objects and simple names is necessary to establish meaning, truth, and falsity; however, the positivists see the commitment to simples as unnecessary. The positivists see Wittgenstein’s commitment to this metaphysical thesis as inconsistent with other commitments in the Tractarian system. Recalling Wittgenstein’s argument for the existence of metaphysical simples, the logical positivists reject Wittgenstein’s

conclusion. The positivists recognize the role simples play in Wittgenstein's theory of meaning, truth, and falsity; however, they deny that metaphysically simple objects are the only way to found such concepts. To commit to the existence of metaphysical simples is not only speculative in nature but fails the Tractarian test for meaningfulness. How can we say that they exist if we can say nothing about them? As Soames explains, at the time Wittgenstein was of the opinion that "his statements couldn't be confirmed or refuted by science, but rather were supposed to be prior to science."¹⁷ However, even Wittgenstein soon recognized the problems with this position.

In place of Wittgenstein's metaphysical simples, the logical positivists opt for a Russellean approach. Replace Wittgenstein's metaphysical simples with logical constructions. Familiar with Russell's work in the *Principia* concerning the notion of logical constructions and, more specifically, Russell's account in Our Knowledge of the External World of material objects as logical constructions out of sense data, the logical positivists followed Russell's maxim and substituted constructions out of known entities for inferences about unknown entities. By making the requisite substitution the logical positivists are able to reconstruct the Tractarian system without the added speculative inference concerning the existence of metaphysically simple objects. That is to say, the positivists are able to have the same desired system without the speculative inference of a metaphysical relationship between language and the world. In rejecting merely Wittgenstein's formal correspondence, a correspondence that provided Wittgenstein with his own method of testing contingent sentences against the world in virtue of the logical form common to language and reality, in favor of a coherence theory, the positivists are

able to retain the same method of testing contingent sentences without the speculative inference.

1.2.4 – Logical positivism's debt to Russell.

As I have already mentioned, the positivist's debt to Russell relates to their adoption of Russell's emphasis on the logical analysis of sense experience and material objects rather than Wittgenstein's metaphysical simples. The motivation behind Russell's substitution is a form of Occam's Razor. Developed with Whitehead in their work in the *Principia*, this process allows one to avoid problems associated with inferred entities by substituting in for these entities logical constructions that no longer suffer the problems of inferred entities. As Russell explains,

When some set of supposed entities can be replaced by purely logical structures composed of entities which have not such neat properties. In that case, in interpreting a body of propositions hitherto believed to be about the supposed entities, we can substitute the logical structures without altering any of the detail of the body of propositions in question. This is an economy, because entities with neat logical properties are always inferred, and if the propositions in which they occur can be interpreted without making this inference, the ground for the inference fails, and our body of propositions is secured against the need of a doubtful step.¹⁸

In Our Knowledge of the External World Russell applies this approach to Moore's problem of the external world. Russell attempts to bridge the gap between our experience of material objects and knowledge of their existence by treating material objects as logical constructions out of sense data. Following Russell, the positivists adopt this general view of the material world. Like Russell the positivists claim that material

objects, in so far as they can be known to exist, are inferred entities. Adhering to Russell's maxim they make the requisite substitution of logical constructions for inferred entities. As Ayer points out,

We know that it must be possible to define material things in terms of sense-contents, because it is only by the occurrence of certain sense-contents that the existence of any material thing can ever be in the least degree verified. As thus we see that we have not to inquire whether a phenomenalist "theory of perception" or some other sort of theory is correct, but only what form of theory is correct.¹⁹

Putting aside discussion of what is meant by Ayer's reference to a phenomenalist "theory of perceptions", Ayer's point, like Russell's, is simple; namely, the existence of material objects can not be justified in the traditional sense because of the limiting nature of perception; however, if we free ourselves of talk of material objects and treat material objects as logical constructions out of sense data, verificationism is possible. To say that such a sentence is true is just to say that the experience of certain sense data, data we commonly take to be continuous with the material object in question, is sufficient to verify the sentence and that the presence of such sense data, data we commonly take to be continuous with the material object in question, is necessary to verify the sentence. By making this minor substitution the logical positivist project becomes epistemologically focused rather than Wittgenstein's metaphysical focus.

1.2.5 – The difference in emphasis.

Having recognized the tension within Wittgenstein's system, a tension that threatened its consistency, the positivists went about essentially reconstructing

Wittgenstein's logical system with an epistemological emphasis without the required metaphysical commitment – a difference that led the positivists to identify the semantic distinction with the corresponding epistemological distinction rather than the metaphysical distinction.

Given the positivists rough acceptance of Wittgenstein's semantic distinction one would expect them to follow Wittgenstein in identifying this three-part semantic distinction with the previously mentioned three-part metaphysical distinction. However, this was not the case – at least on the surface. Unlike Wittgenstein, the positivists identify the semantic distinction with a two-part epistemological distinction – identifying the analytic with the a priori and the synthetic with the a posteriori. More specifically, they treat analytic sentences (i.e. both analytic truths and analytic falsehoods) as true or false a priori and synthetic sentences as true or false a posteriori. The reason, traceable to their rejection of metaphysics and Wittgenstein's metaphysical commitments, marks a significant, yet not altogether important, difference in approach. Let us turn to two sentences in order to demonstrate the unimportance of this difference. Take 4) and 5) for example:

4) $b + b = 2b$

5) $A \vee \neg A$

For both Wittgenstein and the positivists 4) and 5) are analytic. That is to say, 4) and 5) are true in virtue of meaning alone. As such, it seems that the truth of 4) results from the fact that the laws of mathematics and, more specifically, algebra contain rules of usage for these operators that make its denial self-contradictory. Similarly, the denial of 5)

results in contradiction given the conventional meanings of the truth functional operators. Thus, without changing the conventions and what the different operators mean it seems as though neither could be denied.

Having shown that for both Wittgenstein and the positivists 4) and 5) are true in virtue of meaning, alone, I want to look at Wittgenstein's analysis of 4) and 5) versus that of the positivists'. For Wittgenstein, both are analytic and in virtue of their analyticity, logically necessary, because analyticity coincides with necessity. This is equivalent to saying that there is no possible state of affairs in which 4) or 5) could be false. For the positivists, both are analytic and in virtue of their analyticity, apriori, because analyticity coincides with a priority. This is equivalent to saying that there is no possible state of affairs in which either could be false because their truth can be known independent of experience. On the surface there seems to be little difference in that both call 4) and 5) analytic. However, as we look deeper, there appears to be an important difference, while the former classed 4) and 5) as necessary, the latter classed 4) and 5) as a priori. Following Soames, I claim that while there is a difference it turns out to be merely a matter of nomenclature:

There is no real disagreement between Wittgenstein and the positivists on this point, because both identify the necessary with the a priori. ... Thus, for these philosophers, the necessary, the apriori, and the analytic were one and the same.²⁰

What Soames here identifies is that for both Wittgenstein and the positivists the analytic/synthetic distinction, the necessary/contingent distinction, and the a priori/a posteriori distinction coincide exactly. The ground for Soames' dissolution of this supposed disagreement is their deeper agreement concerning the common source of

necessity and a priority. The key is that for both Wittgenstein and the positivists the analytic/synthetic distinction is a difference between unworldliness and worldliness. Whether you follow Wittgenstein and identify 4) and 5) as necessary or follow the positivists and identify 4) and 5) as true a priori, the truth of 4) and 5) is still a matter of their analyticity and, as such, their unworldliness. Thus, the difference in nomenclature evaporates. Being a metaphysician first, Wittgenstein's interest in the relationship between language and reality was noticeably metaphysical. Being empiricists first, the positivists are more closely related to the epistemological emphasis. Whereas Wittgenstein would have wanted to claim that if p is analytic, then it is necessary; and if p is necessary, then it is known a priori. The positivists would have wanted to say that if p is analytic, then it is knowable a priori; and if p is a priori then it is necessary – a point I will return to in chapter 2 and my discussion of the first dogma.

Chapter 2

The First Dogma of Empiricism

2

This chapter, though far from exhaustive on the issue, attempts to sketch and evaluate the first half of Quine's attack on not only logical positivism but also, more generally, a form of logical empiricism.

2.0 – The first dogma of empiricism.

As I have already mentioned, this chapter concerns the first so-called dogma of empiricism. In it I focus on Quine's attack on the analytic/synthetic distinction and, more specifically, his criticisms of the claim that a clear and theoretically viable distinction can be drawn between analytic sentences (i.e. those sentences whose truth is purely a matter of the meanings of their constituent terms) and synthetic sentences (i.e. those sentences whose truth is determined by appeal to the state of the world). Concentrating on the first four sections of "Two Dogmas", I will explain why for Quine analyticity is rendered unintelligible before turning to consider the strength of his argument.

2.1 – Background to the analytic/synthetic distinction.

Quine's argument from circularity, an argument that drew considerable interest following publication, attacks the widely supposed distinction between those sentences that are taken to be analytic and those sentences that are taken to be synthetic. Targeting one of the foundational theses of logical positivism, Quine's aim is not merely a

refutation of logical positivism but the creation of an empiricism free of dogmatic metaphysical commitments – a purely empirical empiricism free from speculative commitments (e.g. a commitment to a distinction that is not empirically justifiable).

The origin of the analytic/synthetic distinction is difficult to determine. Arguments can be made that locate precursors of this distinction in Leibniz's distinction between *truths of reason* (*verites de raison*) and *truths of fact* (*verites de fait*) and still others that locate it in Hume's distinction between *relations of ideas* and *matters of fact*. And, while the distinction first appears in Kant's Critique of Pure Reason, it is its appearance in Wittgenstein's Tractatus Logico-Philosophicus that had the greatest influence on logical positivism. Following Wittgenstein's Tractarian approach, the positivists separated all meaningful sentences into two categories:

- A) Those sentences which are true or false in virtue of meaning alone (tautologies for Wittgenstein and analytic sentences for the positivists).
- B) Those sentences for which their truth or falsity depends not only upon meaning but also on the state of the world (i.e. contingent sentences for Wittgenstein and synthetic sentences for the positivists).

While there is an important difference in emphasis between Wittgenstein's largely metaphysical arguments and the positivists epistemological arguments, for our purposes the crucial point is that both take the respective metaphysical distinction (i.e. necessary/contingent) and epistemological distinction (i.e. a priori/a posteriori) to coincide exactly with, and are defined in terms of, the semantic distinction (i.e. the analytic/synthetic distinction).²¹ As Soames explains,

One important feature of the way that Wittgenstein and the positivists made the distinction was that, for them, the analytic/synthetic distinction coincides exactly with the necessary/contingent distinction, and the apriori/aposteriori distinction.²²

With this thesis in mind, Quine asks about the status of the analytic/synthetic distinction:

What does it mean to say the analytic/synthetic distinction is an intelligible distinction?

2.1.1 – The argument from circularity.

In what amounts to a survey of the prominent accounts of the analytic/synthetic distinction (up to 1951), Quine argues that all attempts to found an account of the distinction have been either unprincipled (i.e. based on equally unfounded concepts) or blatantly circular (i.e. reasoning that, when traced backwards from its conclusion to its premises, returns to the initial starting point; namely, the conclusion). Beginning with the *traditional view*, which discriminates between strict logical truths and a wider class of analytic sentences, the source of Quine's concern becomes apparent. Take sentence 1) as an example of a logical truth:

- 1) All unmarried men are unmarried men.

Sentence 1) is an example of a logical truth because it is true in virtue of its logical form alone (i.e. all x are x). Furthermore, the denial of sentence 1) and, more generally, any logical truth is logically impossible because it entails a contradiction. This brings to the fore an important fact about logical truths; namely, that such truths are true independently of the state of affairs of the world. In fact the truth of sentences like 1) seems to be a

matter of how (truth-functional) logical operators (e.g. negation, conjunction, disjunction, and conditional) operate.²³

Similarly, certain sentences seem to be false in virtue of form alone (i.e. (not all x are x). Take sentence 2) as an example of a logical falsehood:

2) Not all unmarried men are unmarried men.

Like sentence 1), which was true in virtue of its logical form, sentence 2) is false in virtue of its logical form alone.

Quine's has no objection to the strict class of logically true and logically false sentences. A logical truth is merely a sentence that remains true under all reinterpretations of its components with the exception of its logical operators, while a logical falsehood is simply a sentence that remains false under all reinterpretation of its components with the exception of its logical operators. However, the simplicity of the *traditional view* is soon lost when we move away from logical truth to the wider class of analytic sentences. Take sentence 3) as an example of the wider class of analytic sentences:

3) All unmarried men are bachelors.

Philosophers have traditionally taken sentence 3) to be a case of the wider class of analytic sentences. Unproblematic, one would think. It seems as though a sentence of this wider class can be transformed into a simple logical truth by substituting synonym for

synonym. In the case of sentence 3) such a transformation involves substituting for the term “bachelors” an occurrence of “unmarried men”. The traditional account of analyticity starts with sentences like 1) and 2) (i.e. logical truths and logical falsehoods) and expands that strict set by including all those sentences that can be transformed into the strict class by substituting synonyms for synonyms. Thus, according to the *traditional view*, we can define a sentence as analytic if it satisfies either part of the following two-part condition for analyticity:

A sentence is analytic if and only if it is:

- a. True in virtue of logical form; or
- b. It can be turned into a sentence that is true in virtue of logical form by substituting synonym for synonym.

The success of such a condition, however, places the burden of explanation on the yet unanalyzed concept of synonymy. That is to say, the notion of analyticity proposed in the above condition rests on the supposed empirical intelligibility of the concept of synonymy.

Given the importance of synonymy to the traditional view and its central role in the reduction of the wider class of analytic sentences to the strict class of logical truth, Quine asks whether we can make sense of synonymy. Quine’s concern is first with the empirical adequacy of the concept of analyticity as an account of this concept is crucial to the success of the positivists’ form of logical empiricism. However, given the role synonymy plays in the positivists’ account of analyticity the question of empirical adequacy can be shifted from analyticity to synonymy. As such, Quine asks whether synonymy is an empirically adequate concept and thereby provides the conditions for

extending analyticity beyond the strict class of logical truths. Should this not be the case, it would seem as though we must look elsewhere for the explanatory foundations required to make analyticity intelligible.

2.1.1.2 – Accounting for synonymy in terms of lexicographic definition.

Turning to synonymy, Quine first entertains an account of synonymy in terms of definition. An appeal to definition seems to suggest that the wider class of analytic sentences can be reduced to logical truths by definition. Those who find such an account plausible believe that “bachelor” and “unmarried man” are synonyms because they share a common definition or the former is defined as the latter and the latter defined as the former. However, as Quine notes, in appealing to definition to ground our notion of synonymy we are putting the cart before the horse:

The lexicographer is an empirical scientist, whose business is the recording of antecedent facts; and if he glosses ‘bachelor’ as ‘unmarried man’ it is because of his belief that there is a relation of synonymy between those forms, implicit in general or preferred usage prior to his own work. The notion of synonymy presupposed here has still to be clarified, presumably in terms relating to linguistic behavior. Certainly the “definition” which is the lexicographer’s report of an observed synonymy cannot be taken as the ground for synonymy.²⁴

Quine’s objection is that lexicographic definitions merely report the existing synonyms we are trying to explain. If we do not already have an antecedent concept of synonymy, we cannot expect lexicographic definition to explain the concept by examining dictionary entries. However, appeal to definition has yet to be exhausted.

2.1.1.3 – Accounting for synonymy in terms of explication.

Having shown common lexicographic definition insufficient to found a principled account of synonymy and, in turn, analyticity, Quine turns to a more technical sort of definition more common to philosophers and logicians than lexicographers; the type of variant definitional activity in question is explication.

In explication the purpose is not merely to paraphrase the definiendum into an outright synonym, but actually to improve upon the definiendum by refining or supplementing its meaning.²⁵

Given the basic purpose of explication we can identify two types of explication:

- 1) Extreme explication.
- 2) Modest explication.

2.1.1.3.1 – Accounting for synonymy in terms of modest explication.

Modest explication is a definitional process by which philosophers and logicians attempt to clarify and make precise the various possible meanings of a term. The aim of modest explication is not to alter the various possible meanings of the term in question, but to make equally clear and precise the proper usage of said term in deviant contexts. As Quine notes,

In order that a given definition be suitable for purposes of explication, therefore, what is required is not that the definiendum in its antecedent usage be synonymous with the definiens, but just that each of these favored contexts of the

definiendum, taken as a whole in its antecedent usage; be synonymous with the corresponding context of the definiens.²⁶

The problem with modest explication is that it is merely a process of clarification and enhancement where the various definiens are clarified and enhanced. As such, none of the various definiens can be regarded as strictly synonymous with the original vague term. Not unlike lexicographic definition, modest explication merely clarifies preexisting synonyms – once again putting the cart before the horse.

2.1.1.3.2 – Accounting for synonymy in terms of extreme explication.

Extreme explication on the other hand is unique in that it does not rely on preexisting synonymies. Unlike the previous types of definition extreme explication actually introduces explicitly conventional notations for the purpose of abbreviation or expediency. As Quine notes,

Here the definiendum becomes synonymous with the definiens simply because it has been created expressly for the purpose of being synonymous with the definiens.²⁷

In such instances, as in the *Principia* where definition is meant to introduce new vocabulary (e.g. the logician's definition of the conditional "if P, then Q" by means of "either not-P or Q"), the definition itself, while an example of synonymy, is insufficient to provide a principled account of analyticity because it assumes the concept of synonymy rather than explain it. While extreme explication does not merely report preexisting synonyms, instead introducing synonyms through explicit stipulation, such an

account nevertheless presupposes the concept of synonymy because in introducing a new abbreviated vocabulary for any number of possible purposes we need an antecedent notion of synonymy otherwise such abbreviation would not be possible.

2.1.1.4 – Accounting for synonymy in terms of substitution *salva veritate*.

Unsatisfied by an appeal to definition, Quine turns to consider the possibility of accounting for synonymy of nonlogical expressions in terms of interchangeability in all contexts. This suggestion, reminiscent of Leibniz's notion of substitution *salva veritate*, takes two nonlogical terms to be synonymous if and only if said terms can be freely interchangeable in all contexts without changing the truth-value of the original sentence under consideration. Setting aside those problematic counter-instances of sentences that become false under substitution because of fragmentary occurrences inside a word,²⁸ Quine asks whether substitution *salva veritate* is a strong enough criterion for synonymy or whether, on the contrary, some non-synonymous expressions might thus be interchangeable and, as such, whether interchangeability as a criterion is insufficient. To state the question otherwise, we can ask: Is interchangeability *salva veritate* a sufficient condition for synonymy? Take sentences 4) and 5) for example:

- 4) All and only bachelors are bachelors.
- 5) All and only bachelors are unmarried adult males.

The analyticity of 4) is unproblematic, as 4) is a logical truth. A sentence that is logically true is analytic. However, Quine wants the account of analyticity to be such that there are

going to be other sentences which are deemed analytic as well; so, for example, a characterization that not only classifies 4) as analytic but we also extends analyticity in such a way that 5) comes out as analytic. If interchangeability *salva veritate* is a sufficient condition for synonymy then we clearly reduce sentence 5) to sentence 4) by substituting synonym for synonym; thus, demonstrating not only the analyticity of 5) but also that an account of synonymy in terms of interchangeability *salva veritate* holds the key to analyticity.

The proposal is that a sentence is analytic if it can be converted into a logical truth by replacing synonyms with synonyms. In the case of 4) and 5), since ‘unmarried adult male’ is a synonym for ‘bachelor’, sentence 5) turns out to be an analytic sentence because we can replace ‘bachelor’ with its synonym ‘unmarried adult male’. But the success of this account relies on an account of synonymy. One must now ask: what is it for two expressions to be synonymous? The proposal at hand takes two expressions to be synonymous just in case they are interchangeable in all sentential contexts *salva veritate*. And, it is here that Quine raises the question: In which sentential contexts? Otherwise put: what is the range of the expression ‘all sentential contexts’?

Turning to the extensional contexts, Quine considers the prospects for analyticity by relativizing interchangeability *salva veritate* to a strictly extensional language.²⁹ The benefit of an extensional language, reminiscent of the logically perfect language proposed by Russell, Wittgenstein, and certain positivists, is that any two predicates that agree extensionally (i.e. any two predicates that are true of the same object) would seem to be interchangeable *salva veritate*. However, extensional agreement of such predicates is not a sufficient condition to guarantee synonymy as can be seen by appeal to a common

case. Take the corextensional terms ‘creature with a heart’ and ‘creature with a kidney’. It is true that ‘creature with a heart’ and ‘creature with a kidney’ may be interchanged *salva veritate* in extensional contexts; however, it is clear that these two concepts differ in cognitive content and, as such, are non-synonymous terms. The problem with substitution *salva veritate* in an extensional language is that coextensional agreement alone is insufficient – it would admit nonsynonymous coreferential terms like ‘creature with a kidney’ (i.e. ‘cordate’) and ‘creature with a heart’ (‘renate’). Thus, allowing the sentence ‘All cordates are renates’ to be classed as analytic because the expressions in question satisfy the conditional of extensional agreement even though the terms are obviously not synonymous. The only way to make the proposed test for synonymy work is specify interchangeability *salva veritate* in such contexts that include the intensional adverb ‘it is necessary that’.

As I have explained, if the sentential contexts are only the extensional contexts, then interchangeability in those sentential contexts is not sufficient for synonymy because for example ‘creature with a heart’ and ‘creature with a kidney’ are intersubstitutable *salva veritate* in all extensional contexts and yet we don’t want to say that those two expressions are synonymous. So, in order for this test for synonymy to work, to give us the correct results, it must as well be the case that in order for two expressions to be synonymous they must be interchangeable in such extensional contexts as ‘it is necessary that such and such’. By specifying the conditions for interchangeability we can reassure ourselves of the analyticity of 5). Substituting ‘unmarried adult male’ for ‘bachelor’ appears to be satisfactory and, in turn, interchangeability *salva veritate* in all extensional contexts that include the intensional adverb ‘it is necessary that’ appears to be

a sufficient condition for synonymy. However, the inclusion of this intensional adverb is not as innocent as it first appears. As Quine notes,

The above argument supposes we are working with a language rich enough to contain the adverb 'necessarily', this adverb being so construed as to yield truth when and only when applied to an analytic statement. But can we condone a language that contains such an adverb? Does the adverb really make sense? To suppose that it does is to suppose we have already made satisfactory sense of 'analytic'. Then what are we so hard at work on right now?³⁰

The problem Quine here identifies is that the inclusion of the intensional adverb merely shifts the burden of proof. But in order to determine whether two expressions are interchangeable *salva veritate* in the context 'it is necessary that such and such', we will need to know whether the sentence 'it is analytic that such and such' is true or not. That is to say, such a proposal merely shifts the burden of proof from analyticity to synonymy and from synonymy to necessity.

If a language contains an intensional adverb 'necessarily' in the sense lately noted, or other particles to the same effect, then interchangeability *salva veritate* in such a language does afford a sufficient condition of cognitive synonymy, but such a language is intelligible only in so far as the notion of analyticity is already understood in advance.³¹

The problem with this proposal is that one has introduced this criterion and the notion of synonymy in order to help understand what analyticity was and now it turns out that in order to determine whether two expressions are synonymous one will first have to figure out whether certain sentences of the form 'It is analytic that such and such' are true or not. If it were the case that necessity was a sufficiently clear or intelligible concept, then such a shift could possibly work. However, this is not the case. Traditionally necessity

has, as noted in the previous chapter, been understood in terms of analyticity.³² Thus, on the assumption that necessity is defined in terms of analyticity it seems that such an approach takes us full-circle from analyticity to synonymy, from synonymy to necessity, and from necessity back to analyticity; leaving analyticity yet unexplained.

To review, Quine is considering a criterion for synonymy. The criterion is intersubstitutability *salva veritate* in all contexts. Whether this criterion is successful or not depends upon what the range of the expression 'all contexts is'. In other words, it depends on the kind of language at issue. If the set of all contexts includes only extensional contexts, then this criterion fails because two expressions which are extensionally equivalent will be intersubstitutable *salva veritate* in all extensional contexts; that is just what it means to say the two expressions are extensionally equivalent. However, that two expressions are extensionally equivalent is no guarantee that they are synonymous. However, if the range of the expression includes such contexts as 'it is analytic that' then the criterion will give us correct results but it cannot be a criterion used to characterize analyticity because it presupposes the notion of analyticity it is trying to explain. Thus, leaving the proposal flat and the notion of analyticity yet unexplained.

2.1.2 – Accounting for analyticity within artificial languages.

Interest in artificial languages can be traced to the rise of Logicism. In both Russell's early work and, more importantly for our purposes, in the Tractatus we find the claim that vagueness in ordinary language can be overcome by reducing natural

languages like English to a logically perfect artificial language. Following both Russell and Wittgenstein, Carnap employs the notion of a logically perfect artificial language for much the same purpose. In providing an account of the relationship between natural language and a logically perfect artificial language one must give an account of analyticity. Carnap's use of an artificial language to define analyticity takes many forms; however, following Quine I will limit my discussion to two forms.

2.1.2.1 – Naïve specification.

The first of these forms defines analyticity through *naïve specification*. Beginning with an artificial language L_0 we specify all the analytic sentences of our artificial language via certain semantic rules. These semantic rules specify those sentences, and only those sentences, that are analytic. The problem with such an approach to the problem of analyticity should be obvious; *naïve specification* does little to explain the grounds for specification. That is to say, *naïve specification* fails to provide a principled account of the analytic/synthetic distinction in that it fails to explain why the semantic rules specify certain sentences as analytic and others as synthetic. Remember, what we are looking for is a principled account of the distinction, not merely a means by which the distinction can be made. As Quine notes,

Before we can understand a rule which begins 'A statement is analytic for L_0 if and only if ...', we must understand the general relative term 'analytic for'; we must understand ' S is analytic for L where ' S ' and ' L ' are variable.'³³

This being said, we can modify *naïve specification* by treating semantic rules as conventional definitions.

2.1.2.2 – Modified specification.

Instead of naively specifying the analytic sentences, the semantic rules provide the rules of definition upon which the class of analytic sentences for *L0* can be identified. In this case of *modified specification* the conventional definitions actually define the conditions for membership in the class of analytic sentences and, as such, seem to provide some grounds for the analytic/synthetic distinction. However, all we have really done is shifted the burden of proof from what were bare semantic rules to what are now conventional definitions. While this could be seen as a higher level of explanation, it again fails to provide the sort of principled explanation required. While it is true that we have defined the class of statements that are analytic for *L0* and even what it is to be ‘analytic-for-*L0*, we have failed to define what it means to be ‘analytic’ and ‘analytic for’. As Quine puts,

We do not begin to explain the idiom ‘*S* is analytic for *L*’ with variable ‘*S*’ and ‘*L*’ even if we are content to limit the range of ‘*L*’ to the realm of artificial languages.³⁴

Unsatisfied by an appeal to *specification*, Quine turns to a second form of semantic rule in the hopes that, by appeal to such a form, we can ground a definition of analyticity within an artificial language.

2.1.3 – Accounting for analyticity in terms of semantic rules of truth.

The second form of semantic rule under consideration differs from both *naïve* and *modified specification* in that it merely identifies which sentences of the artificial language in question are members of the class of truths of said language; not that the members of the class are true but rather are truths of the language. The advantage of this form of semantic rule is that it does not appeal to the yet unintelligible concept of analyticity, appealing instead to the unproblematic concept ‘true’.³⁵ A *semantic rule of truth* does not specify all the truths of our language as such a process would be impractical given the infinite stock of true sentences within any language; instead, a *semantic rule of truth* merely stipulates, recursively or otherwise, a certain multitude of sentences which, along with others unspecified, are to count as true. Give the list of stipulated truths we can define analyticity thus:

A statement is analytic if it is (not merely true but) true according to the semantic rule.³⁶

Simplicity aside, this approach fails to get us very far. Instead of appealing to the yet unexplained concept of analyticity, we are just appealing to a yet unexplained expression ‘semantic rule’. The problem with this approach is that it cannot be the case that every true sentence which says that some set of sentences are true can count as a semantic rule because if that were the case then all truths of the language would be analytic because under such an interpretation all the truths of the language can be interpreted as being true in virtue of some semantic rule. It is our inability on this account to differentiate truths in

virtue of some semantic rule from those that are merely true means that such an approach reduces to a form of blind stipulation. As Quine points out,

Semantic rules are distinguishable, apparently, only by the fact of appearing on a page under the heading 'Semantical Rules'; and this heading is itself meaningless.³⁷

It seems that an appeal to a *semantic rule of truth* is of little help because it merely substitutes 'true according to the semantic rule for L' for 'analytic for *LO*' and, thus, substitutes the equally vague term 'semantic rule' for 'analytic for'.

This being said, Quine briefly entertains a couple of other attempted definitions of analyticity within an artificial language; however, each attempt definition falls short of founding an account of analyticity. The central lesson to be learned is that appeal to an artificial language rich enough to include an account of semantic rules is not helpful in solving the problem of analyticity and, as Quine puts it, *a feu follet par excellence* as they fail to found our account of analyticity.

2.1.4 – Summary of the arguments behind Quine's attack on the analytic/synthetic distinction.

From what I have said, the structure of Quine's argument against the analytic/synthetic dichotomy becomes clear. Quine's charge is that there is a certain family of concepts, of which analyticity is one, such that if any one member of the circle could be satisfactorily explained, the other members of the circle could be satisfactorily explain in terms of it. In order to make satisfactory sense of one of the members of the

family of concepts it must not be the case that the explanation incorporates any other concept belonging to the family. If the explanation were to incorporate another concept belonging to the family then the explanation would be blatantly circular. To avoid such circularity an explanation must take the form of a strict definition without making use of any other member of the family of concepts as their inclusion builds in the circularity we are trying to avoid. Unable to provide such a principled explanation of analyticity and, in turn found an account of the analytic/synthetic distinction, Quine concludes,

It is obvious that truth in general depends on both language and extralinguistic fact. The statement 'Brutus killed Caesar' would be false if the world had been different in certain ways, but it would also be false if the word 'killed' happened rather to have the sense of 'begat'. Thus one is tempted to suppose in general that the truth of a statement is somehow analyzable into a linguistic component and a factual component. Given this supposition, it next seems reasonable that in some statements the factual component should be null; and are the analytic statements. But, for all a priori reasonableness, a boundary between analytic statements and synthetic statements simply has not been drawn. That there is such a distinction to be drawn at all is an unempirical dogma of empiricists, a metaphysical article of faith.³⁸

To review, the argument from circularity is not meant to show that there are no analytic truths but rather that analyticity is unintelligible and, as such, our commitment to the analytic/synthetic distinction is a matter of metaphysical faith. Quine takes this conclusion to be justified by the fact that no principled account has yet been given. While it may be easy to give an account of analyticity (e.g. analytic sentences are just those which are true by virtue of meaning alone or which result from logical truths by replacing nonlogical expressions with others synonymous with them) this account is unprincipled for the reasons previously mentioned; namely, this account draws on equally unclear and ultimately unintelligible concepts. As such, Quine concludes that each of these unclear

concepts (i.e. ‘analyticity’, ‘meaning’, ‘synonymy’, and ‘necessity’) form a family of unintelligible concepts. And thus, any account that rests on any one of these members is unintelligible.

2.2 – Criticisms of Quine’s attack on the analytic/synthetic distinction.

In their seminal paper, “In defense of a Dogma”,³⁹ Grice and Strawson, two ordinary language philosophers, argue that there is a distinction between analytic sentences and synthetic sentences. In arguing for this conclusion they present two important criticisms of Quine’s first dogma and, more specifically, his argument from circularity. The first of these criticisms, beginning from what they take to be an ambiguity of Quine’s conclusion, attempts to pin-down Quine’s conclusion. Offering what they refer to as the *strong* and *weak* interpretations, Grice and Strawson go on to argue that under either interpretation Quine’s argument fails to justify the conclusion. The second criticism, beginning from a common sense ordinary language approach, attempts a *reductio ad absurdum* on Quine’s skepticism about synonymy. That is to say, they claim that if it is true that the notion of synonymy is unintelligible, then the entire notion of meaning is rendered similarly unintelligible. Addressing each of these criticisms in turn, I will sketch the arguments behind these criticisms – leaving my evaluation of both Quine’s initial arguments and the critical responses for the closing section of this chapter.

2.2.1 – The first criticism of Quine’s attack on the analytic/synthetic distinction.

As I mentioned in the introduction to this section Grice and Strawson offer two criticisms of Quine's argument from circularity. The first of these criticisms, beginning from what they take to be an ambiguity in Quine's conclusion, attempts to show that under either interpretation Quine's conclusion is unjustified. The ambiguity Grice and Strawson speak of is found in the opening paragraph of "Two Dogmas". In this passage Quine claims that the "belief in some fundamental cleavage between truths which are analytic, or grounded in meanings independently of matters of fact, and truths which are synthetic, or grounded in fact," is "an ill-founded dogma" and, as such, worthy of abandonment.⁴⁰ The ambiguity to which they speak concerns Quine's description of the distinction as "ill-founded" and worthy of abandonment: What does it mean to say that the idea that there is a distinction at all between analytic sentences and synthetic sentences is an ill-founded dogma? Does Quine mean there is in fact no distinction or just that the distinction cannot be clearly defined? Grice and Strawson point out that the Quine's conclusion in some way depends on how you interpret this initial passage.

Starting with what Grice and Strawson refer to as the *strong* interpretation I will expound their argument for their conclusion that what Quine is saying is just false. Having sketched the *strong* interpretation, I will move to the *weak* interpretation and expound their argument for their conclusion that under such an interpretation Quine cannot draw such a strong conclusion. After expounding both interpretations I will turn to their second criticism.

2.2.1.1 – The strong interpretation.

According to Grice and Strawson the *strong* interpretation of Quine's argument from circularity concludes that there is in fact no substantial distinction whatsoever between those sentences traditionally classified as analytic and those traditionally classified as synthetic. That is to say, there is no difference whatsoever between those traditionally taken to be true or false in virtue of logical form plus meaning and those sentences for which their truth or falsity is traditionally thought to depend not only upon meaning but also upon some fact about the world. That a distinction has been drawn is not only unintelligible and ill founded but also an unempirical article of metaphysical faith.⁴¹

Grice and Strawson take this conclusion to be problematic because common sense suggests that Quine's conclusion is plainly false. That is to say, common sense beliefs about language seem to suggest that there is in fact a difference between not only analytic and synthetic sentences, but also a difference between synonymous and non-synonymous terms. Making an argument from common practice Grice and Strawson claim that since it is the case that there is widespread agreement amongst those who understand the analytic/synthetic distinction, it follows that there must be some grounds for this agreement; some feature of the sentences themselves that make such widespread agreement possible. They even go so far as to hypothesize that if it were the case that you were to present a group of people who understood the analytic/synthetic distinction with a list of previously unclassified sentences and ask them to place them in the appropriate class (i.e. either the class of analytic sentences or the class of synthetic sentences) the lists would show widespread agreement. Though this empirical hypothesis was never tested,

Grice and Strawson thought such an experiment sufficient to demonstrate that there is some feature of the sentences themselves responsible for people independently producing the same lists. As a result, they suggested, that would provide further evidence for the existence of some sort of distinction.

From their argument from practice Grice and Strawson conclude that on the strong interpretation of Quine's conclusion, the conclusion that there is in fact no distinction between those sentences traditionally classed as analytic and those sentences traditionally classed as synthetic, is just false. While Grice and Strawson grant it that it is difficult to give a principled account of this distinction, it does not follow from the fact that such an account has yet to be given that there is in fact no distinction whatsoever. It simply suggests that we as philosophers have yet to provide such a principled account. However, that such a distinction in fact exists can be demonstrated simply by widespread agreement.

Leaving my evaluation of this interpretation and conclusion until section 3, I will turn to the weak interpretation.

2.2.1.2 – The weak interpretation.

According to Grice and Strawson there is also a *weak* interpretation of Quine's conclusion. On the *weak* interpretation we can take Quine's conclusion that while it is not the case that we can give a principled account of the distinction between analytic sentences and synthetic sentences, there is nonetheless a distinction; it just happens to be the case that the distinction has been traditionally misunderstood as founded upon a

principled account, when in fact it is unprincipled. Otherwise put, on this weaker interpretation we should take Quine's conclusion to be that there is a distinction between those sentences that have traditionally been classed as analytic and those that have traditionally been classed as synthetic and philosophers have reasons for their classificatory practice; however, philosophers have misunderstood the reason behind their classificatory practice and, as such, the distinction has been misunderstood.

At its core this interpretation takes there to be a distinction between those two distinct classes of sentences; however, the distinction rests on an unprincipled account. Having shown through the argument from circularity that analyticity can only be defined in terms of synonymy, which can in turn only be defined in terms of necessity, which in fact presupposes an antecedent account of analyticity, Quine has shown that a principled account has traditionally been assumed. While this may be true, on a weaker interpretation we can still account for the distinction between analytic sentences and synthetic sentences, it is just that we cannot give a principled account – an account in which this circle of interdefinability is broken. Thus, it seems that Quine can conclude that belief in some *fundamental* cleavage between analytic sentences and synthetic sentences is an ill-founded dogma on the grounds that a principled account has not been given, while maintaining that the distinction can still be accounted for on unprincipled grounds.

Grice and Strawson want to suggest that there is nothing wrong with an unprincipled distinction. Their contention is that since analyticity can be defined by appeal to an antecedent notion of synonymy, we can account for analyticity; it is just that we cannot give a strong principled account. While it may be the case that we would

prefer a principled account (i.e. a more complete and accurate foundationalist account of analyticity) that is another matter; all we need to salvage analyticity is this unprincipled account. As such, Grice and Strawson conclude that Quine must limit the conclusions he draws from his argument from circularity. All Quine is justified in concluding is that analyticity, synonymy, necessity, and semantic rules, form a family of interdefined concepts. No one concept, be it analyticity or any other member of the family, should be privileged. Thus, Grice and Strawson conclude that while Quine's argument from circularity make an interesting anti-foundationalist point (i.e. the point that these terms form a series of interdefinable concepts), it ultimately fails to show that analyticity is in any way unintelligible – merely misunderstood.

Leaving my evaluation of this criticism until section 3, I will turn to the second criticism of Quine's argument from circularity.

2.2.2 – The second criticism of Quine's attack on the analytic/synthetic distinction.

The second criticism raised by Grice and Strawson charges Quine's with an absurd form of skepticism. They claim that Quine's argument from circularity and, more specifically, Quine's skepticism about synonymy produces absurd skeptical consequences concerning meaning and sameness of meaning. Foreshadowing Quine's next major philosophic move, Grice and Strawson point-out that if Quine wants to deny the notion of synonymy, he must deny the notion of meaning altogether since synonymy can be defined in terms of sameness of meaning. Grice and Strawson take such a denial as absurd because of certain common sense assumptions about ordinary language;

however, as history has shown, five years later Quine took this very approach in his classic Word and Object.⁴² Leaving Quine's skepticism about meaning and sameness of meaning, I will focus on the argument behind this second criticism.

Grice and Strawson present a simple argument for their conclusion that skepticism about synonymy is unintelligible given that it carries with it absurd skeptical consequences about meaning. They claim that if it is the case, as common sense suggests, that sentences can be said to have meanings, then it seems to follow that there must be true answers to such questions as: "What does this, or that, expression mean?" However, if it is the case that there are answers to such questions, then it follows that we can account for sameness of meaning. Furthermore, if we can account for sameness of meaning, then it follows that we can account for the synonymy of sentences. Thus, by constructive dilemma it seems to follow from our common sense notion of sentential meaning that we can account for synonymy. And, if this is the case, then we can bypass the aforementioned criticisms and provide a principled account of analyticity defined in terms of meaning. Thus, they conclude that it is absurd to deny the notion of synonymy as unintelligible because this requires an absurd skepticism about meaning and, more specifically, denying the notion of sameness of meaning altogether. As Grice and Strawson put it,

To say that two expression x and y are cognitively synonymous seems to correspond, at any rate roughly, to what we should ordinarily express by saying that x and y have the same meaning or that x means the same as y. If Quine is to be consistent in his adherence to the extreme thesis then it appears that he must maintain not only that the distinction we suppose ourselves to be making by the use of the terms "analytic" and "synthetic" does not exist, but also that the distinction we suppose ourselves to be making by the use of the expressions "means the same as," "does not mean the same as" does not exist either. ... Yet

the denial that the distinction ... really exists, is extremely paradoxical. ... If talk of sentence-synonymy is meaningless, then it seems that talk of sentences having a meaning at all must be meaningless too. For if it made sense to talk of a sentence having a meaning, or meaning something, then presumably it would make sense to ask "What does it mean?" and if it made sense to ask "What does it mean?" of a sentence, then sentence-synonymy could be roughly defined as follows: "What does it mean?" asked to one of them, is a true answer to the same question, asked of the other.⁴³

Having sketched both Quine's argument from circularity and the two criticisms made by Grice and Strawson, I will now evaluate these arguments.

2.3 – Evaluation of the first dogma of empiricism.

Having spent the previous two sections expounding Quine's attack on analyticity and two criticisms leveled against said argument; I will now evaluate both Quine's argument and these criticisms. I will begin by evaluating Quine's argument from circularity as it bears on logical positivism. I will show that, while devastating to a certain approach to philosophy (i.e. logical positivism and, in fact, any form of linguistic analysis that defined a priority and necessity in terms of analyticity), much of its significance is lost if one gives up certain theses. Having evaluated Quine's argument and its devastating affects on a certain approach, I will move to evaluate the aforementioned two criticisms. Addressing each in turn, I will show how the first criticism fails on both interpretations, before going on to explain in what limited way the second criticism holds. I will argue that while the second criticism succeeds in salvaging a notion of analyticity, its success is limited by the kind of notion salvaged. Limitations aside, I will go on to discuss what this reveals about linguistic analysis.

2.3.1 – The successes of Quine’s attack on analyticity.

As I have explained, there is an important sense in which Quine’s attack on analyticity is devastating. It is devastating to both logical positivism and any form of linguistic analysis that gives explanatory priority to the semantic over the epistemological and metaphysical. Let me begin by saying something about the nature of Quine’s attack.

Following Wittgenstein, logical positivism employs a form of logico-linguistic analysis. Privileging the semantic over and above the epistemological and metaphysical, they take all a priority and necessity to be a matter of analyticity. By defining the metaphysical notion of necessity and epistemological notion of a priority in terms of the semantic notion of analytic, the aforementioned philosophers place the explanatory weight on analyticity. The reason the logical positivists choose to identify necessity and a priority with the semantic is to counter the common objection to empiricism. The common objection to empiricism is that it is not possible on strict empiricists principles to account for the apparent necessity of certain truths. That is to say, it is impossible for empiricists to account for our knowledge of the necessity of the truths of mathematics and logic because to do so would require them to admit that there are some truths about the world (i.e. all necessary truths) which can be known independently of experience – an admission that leads to rationalism and Kantian Idealism. Thus, the problem is that there appear to be sentences (i.e. the sentence of mathematics and logic) that are necessarily true. That empiricism be able to account for the apparent necessity of these sentences is

crucial to its success as a general philosophic position. As Ayer explains, faced with such an objection, there remain two possible counters for empiricism:

The empiricist must deal with the truths of logic and mathematics in one of the two following ways: he must say either that they are not necessary truths, in which case he must account for the universal conviction that they are; or he must say that they have no factual content, and then he must explain how a proposition which is empty of all factual content can be true and useful and surprising.⁴⁴

Of the two tacks available to empiricism, Mill takes the former.

Mill argues that the necessary truths of mathematics and logic like all other apparently necessary truths are in fact inductive generalizations based on an extremely large stock of previous instances. It is in fact the size of the stock that makes us think these sentences to be necessarily true rather than merely contingent empirical generalizations. One of the problems with this view surrounds confutability. The problem is that should an instance arise that would confute one of these so-called truths, we will invariably opt to leave the principle unassailed by the instance. The fact that we retain the principle as unassailable in the face of recalcitrant experience is, for Ayer and the logical positivists, sufficient to indicate “that Mill was wrong in supposing that a situation could arise which would overthrow a mathematical truth.”⁴⁵

Unsatisfied by such an approach to the necessary truths of mathematics and logic the logical positivists take the latter tack. As I have explained, the logical positivist offer a verificationist thesis; namely, that a sentence is meaningless unless it is empirically verifiable. As such, if they are unable to give an account of necessary truths and, in turn, admit “that there were some facts about the world which could be known independently

of experience”, it would show that their highly logicized form of empiricism contain incompatible theses.⁴⁶

In contrast to the Millian tack, the logical positivists propose that these truths are independent of experience in that they do not owe their validity to empirical considerations and their verification principle.

Are independent of experience in the sense that they do not owe their validity to empirical verification. We may come to discover them through an inductive process; but once we have apprehended them we see that they are necessarily true, that they hold for every conceivable instance. And this serves to distinguish them from empirical generalizations. For we know that a proposition whose validity depends upon experience cannot be seen to be necessarily and universally true.⁴⁷

In accounting for the necessity of the truths of mathematics and logic the logical positivists hold that these principles appear necessary because of their analyticity. That is to say, these principles appear true simply because of the conventions that govern their respective disciplines and to deny them would contradict the rules that govern their use. Let me explain.

For the logical positivists a sentence is analytic when its validity depends wholly upon the definition of the terms contained therein. Take the following sentence for example,

Either some ants are parasitic or none are.

This sentence is analytic because empirical considerations are not required to establish its truth. That it is true that there either are or are not parasitic ants can be established without empirical considerations. As Ayer explains,

If one knows what is the function of the words “either,” “or,” and “not,” then one can see that any proposition of the form “Either p is true or p is not true” is valid, independently of experience. Accordingly, all such propositions are analytic.⁴⁸

Devoid of factual content, analytic sentences instead enlighten us by illustrating in practice the way in which we use certain terms.⁴⁹ Analytic sentences reveal such things as unrecognized synonymys, unsuspecting implications, and consistency within a system. It is only by identifying the analytic sentences of a language that we can understand the possible ways of combining sentences and avoid falling into contradiction.

This being said, the crucial element in the positivists theory of the analytic is that it is this semantic concept that accounts for the necessity of the truths of mathematics and logic. Analytic sentences appear as necessarily true because they can not be confuted in experience. They can not be confuted in experience because they make no claim about the world. Instead, they merely record the manner in which the terms in our language work. The necessity of any sentence follows from its analyticity, which in turn follows from the conventions of language use; to deny any such sentence infinges on the conventions and results in contradiction. This is not to say that the conventions could not have been otherwise. The conventions could have been otherwise. Had the conventions been otherwise, the stock of analytic sentences would have been otherwise. However, what keeps us from changing these conventions, our stock of analytic sentences, and the laws of mathematics and logic, is that we could not say what an unlogical world would be like. Following Wittgenstein, Ayer draws on 3.031 of the Tractatus on this point:

3.031 – It used to be said that God could create anything except what would be contrary to the laws of logic. – The truth is that we could not say what an ‘illogical’ world would look like.

Thus, we are limited not by how the world is but by our ability to say what such a world would be like. But even if such a system were to be conceived and the conventions changed, the positivists theory of the analytic would remain; the analytic sentences would follow from the new conventions and they would be necessary given the new conventions. As Ayer explains,

It is perfectly conceivable that we should have employed different linguistic conventions from those which we actually do employ. But whatever these conventions might be, the tautologies in which we record them would always be necessary. For any denial of them would be self-stultifying.⁵⁰

It is this account of the analytic that the logical positivists saw as vindicating empiricism, discharging the aforementioned objection to empiricism by giving an empirically adequate account of the necessity of the truths of mathematics and logic by accounting for them in terms of the analytic.

Ironically, by placing the explanatory weight on what was understood to be a secure semantic notion, the foundations of both your epistemology and metaphysic are left open to devastating criticism. That is to say, by placing the explanatory weight on analyticity, necessity and a priority become vulnerable to devastating criticisms should it be shown that analyticity is unintelligible. Recognizing the weakness at the foundation of this form of analysis, Quine goes about undermining the entire approach by demonstrating the empirical inadequacy of its primary concepts. By showing that analyticity can not bear the explanatory weight assigned to it, not only is analyticity

rendered unintelligible but so are the notions of necessity and a priority as they are defined in terms of analyticity.

Addressing all possible accounts of analyticity up until 1951, Quine finds the concept empirically inadequate. What he is looking for and what is required is a principled foundationalist account of analyticity. An account that specifies the necessary and sufficient conditions for a sentence being accurately classed as analytic without presupposing an equally unclear notion. That is to say, an account that not only specifies the necessary and sufficient conditions for analyticity, but also for which we can specify the necessary and sufficient conditions for the concepts employed in the account. Without such a foundationalist account the strong logical concept of analyticity required is lacking and the concept is rendered empirical unintelligible.

Given the vulnerability of logical positivism as a philosophic system and the account of analyticity required, Quine goes about challenging the status of the analytic/synthetic distinction. Demonstrating that our account of analyticity presupposes a notion of synonymy, which in turn presupposes an account of necessity, which can only be defined in terms of analyticity, Quine is justified in concluding that there is no way to found such an account of analyticity. Furthermore, he is also justified in concluding that there is no way of giving a principled account of necessity and a priority given that they are understood as defined in terms of analyticity. And, as such, justified in his conclusion that there is no genuine distinction between the analytic and synthetic, no genuine distinction between the necessary and the contingent, and no genuine distinction between the a priori and the a posteriori. Indeed, the idea that any such distinctions exist is the first dogma.

As I have explained, Quine's attack is devastating to logical positivism because of the role analyticity plays in their system. However, as an attack, it is devastating to any system that gives analyticity explanatory priority over and above necessity and a priority and requires the strong logical concept of analyticity – I conjecture that this identification was widely assumed in analytic philosophy. As such, Quine's attack was devastating to analytic philosophy at the time of publication. This being said, I will now turn to two attempts to salvage analyticity.

2.3.2 – Evaluation of the first criticism of Quine attack on the analytic/synthetic distinction.

As I explained in the previous section of this chapter, Grice and Strawson make two criticisms of Quine's attack on the analytic/synthetic distinction in an attempt to disarm Quine's devastating attack. Addressing each in turn, I will explain how on both interpretations the first criticism fails, before going on to explain the merits of the second criticism.

2.3.2.1 – Evaluation of the first criticism on the strong interpretation.

On the strong interpretation Grice and Strawson claim that it is just false that there is no distinction whatsoever between analytic sentences and synthetic sentences. They justify this conclusion by appeal to common sense practice. They argue that ordinary language use suggests that there is in fact a difference between not only analytic

sentences and synthetic sentences, but also a difference between synonymous and non-synonymous terms. Citing widespread agreement amongst those who understand the distinction, they claim that it follows from this agreement that there must be some grounds for this agreement; some feature of the sentences themselves and, turn, analyticity and syntheticity that make such uniform agreement possible.

The problem with this criticism is that it places too much emphasis on uniformity in ordinary language. We have to be careful we do not assume that in all cases where there is uniform agreement there is also a concept to be agreed upon. Imagine, for example, a case in which there is uniform agreement within a population concerning the proper application of some concept or predicate for which nothing (i.e. no object in the world) can satisfy the concept or predicate. Take the predicate *is a witch* for example.⁵¹ If we think back to 1692 in Salem Massachusetts we can recall a time in which there was uniform agreement about the proper application of the predicate to certain women. In fact, it would be safe to say that at the time those taken to understand the predicate uniformly categorized and ultimately condemned the same 24 people to death. The purpose of this example is to show that even though there is uniform agreement and a supposed distinction, we would not say that there is in fact some genuine distinction to be made. In the case of witches we do not want to say that there is in fact a genuine distinction between those people who are witches and those people who are not because the distinction goes no deeper than folklore. Putnam makes a similar point in “Is Semantics Possible” in reference to the semantic concept of meaning and the scientific concept of “causation:

Certainly we cannot assume that *there* is a scientific subject to be constructed here just because ordinary people have occasion to use the word “meaning” from time to time; that would be like concluding that there must be a scientific subject to be constructed which will deal with “causation” just because ordinary people have occasion to use the word “cause” from time to time. In one sense, *all* of science is a theory of causation; but not in the sense that it uses the word *cause*. Similarly, any successful and developed theory of language-use will in one sense be a theory of meaning; but not necessarily in the sense that it will employ any such notion as the “meaning” of a word or utterance. Elementary as this point is, it seems to be constantly overlooked in the social science.⁵²

Without going into the details of Putnam’s views on the status of meaning and causation, the general point is similar. Uniform agreement does not entail a genuine concept, predicate, or distinction. Thus, it seems that in certain cases uniform agreement is not a sufficient condition to ensure a genuine concept, predicate, or distinction.

The proper Quinean response to the initial criticism presented by Grice and Strawson is just to deny, as in the witch case, that there is in fact a genuine distinction at hand. Like the witch case, the predicates ‘*is analytic*’, ‘*is necessary*’, and ‘*is synonymous*’, are cases in which uniform agreement fails to ensure a genuine distinction. In each of these cases the Quinean must argue that false beliefs about what it is to be analytic, necessary, and synonymous, have all been assumed to be definitional. Thus, by parity of reasoning, it seems as though a good argument can be made against the *strong* interpretation.

This being said, the burden of proof lies with the Quinean to show that as in the witch case, the predicates ‘*is analytic*’, ‘*is necessary*’, and ‘*is synonymous*’, are all cases in which there is no genuine distinction. However, in order to show this, one would have to show that it is the case that for each of these predicates philosophers have made similar false definitional assumptions. If it is the case that you buy the aforementioned

identification, then Quine's argument from circularity provides such a demonstration. However, if you do not buy the aforementioned theses, then Quine's attack probably would not seem threatening but if you do want to retain analyticity and pursue this counter argument then such a demonstration seems more difficult. Given, as I have alluded to, that few philosophers currently buy the requisite identification, Quine's argument falls short of its goal; namely, showing the analytic/synthetic distinction to be ill founded in the strong sense required. However, one should note that the criticism presented by Grice and Strawson falls similarly short. As I have tried to show, Grice and Strawson merely show that there is uniform agreement amongst philosophers, they do little to show that there is in fact a genuine distinction to be made here. While it may be the case that there is a genuine distinction behind this presumption, it remains to be shown that there is in fact no genuine distinction at all.

2.3.2.2 – Evaluation of the first criticism on the weak interpretation.

On the *weak* interpretation, Grice and Strawson take Quine's conclusion to be that while it is not the case that we can give a principled account of the distinction between analytic sentences and synthetic sentences, there is still a distinction nonetheless. It is just that the distinction has been misunderstood. That is to say, the distinction has been taken to be a principled distinction when in fact the distinction is unprincipled. Grice and Strawson suggest that while it may be the case that we would prefer a principled account (i.e. a more complete and accurate foundational account) that is another matter; all we need to salvage analyticity is this unprincipled account according to the weaker

interpretation. Grice and Strawson conclude that Quine is only justified in drawing the limited conclusion that analyticity and the other members of the family of interdefined terms form a family of terms, not that the family of concepts is unintelligible.

This criticism needs to be approached with caution. On the one hand it seems accurate to say that interdefinability does not render the concepts that form the family of unintelligible and meaningless. Common sense suggests that we can identify these interdefined concepts and make use of them even if it is the case that we cannot give a account of any one of them without appeal to another family member. However. On the other hand, we must keep in mind the historical context in which this criticism is being made; namely, a context in which the concept of analyticity is taken to be conceptually prior to the other family members. It is important to note that at the time most philosophers, including both positivists and ordinary language philosophers, took analyticity to be conceptually prior to necessity and a priority. All Quine has done is show that there can be no principled account of analyticity sufficient to serve as the foundation upon which we can define these other concept. As such Quine's criticism seems pointed in this limited sense; namely the sense in which one buys the identification of the epistemological and metaphysical with the semantic.

2.3.3 – Evaluation of the second criticism.

The second criticism raised by Grice and Strawson is an attempted *reductio ad absurdum* on Quine's argument from circularity. Quine claims that we cannot appeal to synonymy to ground our principled account of analyticity because synonymy can only be

defined in a language in which the concept of necessity is already defined which in turn has traditionally been defined in terms of analyticity. However, as Grice and Strawson accurately point out, Quine is able to deny synonymy only if he is willing to give up on meaning and, more specifically, sameness of meaning. Common sense suggests that such skepticism is not unjustified, so, Grice and Strawson conclude, it seems as though an account of analyticity can be established after all. It seems as though we can define synonymy in terms of sameness of meaning and, in turn, salvage analyticity.

This pointed *reductio ad absurdum* did not go unnoticed. Unless one is willing to deny meaning altogether, a principled account of synonymy remains if and only if one is able to give a principled account of sameness of meaning – not a far cry. Whether Quine would have identified this *reductio* on his own is unclear, however, it nonetheless remains, as Grice and Strawson pointed out, that unless one is willing to give up meaning and in turn translation one cannot avoid the absurd consequences. While I will not discuss it here, the success of Quine's rejection of meaning and translation four years later in Word and Object remains highly questionable.

Quine's later work aside, I want to say more about this criticism. I think the criticism holds and you do in fact get an account of analyticity. However, the notion of analyticity is not the strong logical account required by positivists and required by anyone who identifies the epistemological and metaphysical with the semantic. The sort of account we get from this approach is not rigorous enough. While common sense notions of meaning and sameness of meaning save a certain account of analyticity, unless you are able to provide the necessary and sufficient conditions for meaning the strong notion of analyticity is still wanting. This being said, this criticism foreshadows future

realizations in the history of philosophy (i.e. the separation of the analytic from the epistemological and the metaphysical). As this criticism suggests, you can have an account of analyticity it just does not carry the weight it was being asked to. While its not until Kripke's seminal work in Naming and Necessity that we get a clear separation of semantic considerations from epistemological and metaphysical, the seed of it appears in this criticism.⁵³

2.3.4 – Summary of Quine's attack on the analytic/synthetic distinction.

What was once taken to be a devastating criticism has lost much of its force over the years. This is not to say that it is not still devastating to a certain approach, it just happens that few still espouse such an approach. In a certain historical sense Quine's argument achieves exactly what it is intended to achieve; namely, identify one of the dogmas present in a certain form of logical empiricism. However, at the same time it severely limits the sort of conclusion Quine can justifiably draw. If one gives up on the identification of the necessary, the a priori, and the analytic, on the one hand, and of the contingent, the a posteriori, and the synthetic, on the other hand then the force of Quine's argument is lost. As such, even if the force is lost it seems accurate to say of Quine that he was the first to realize the problems inherent to this identification. Though he did not give up on the identification, he did recognize the problems associated with it.

Chapter 3

The Second Dogma of Empiricism

3

This chapter, though far from exhaustive on the issue, attempts to sketch and evaluate a) the second half of Quine's attack on logical positivism and, more generally, a form of logical empiricism and b) Quine's holistic empiricism.

3.0 – The second dogma of empiricism.

As I have already mentioned, this chapter concerns the so-called second dogma of empiricism. In this chapter I will examine the so-called second dogma of empiricism – the dogma of *reductionism*, be it of the *radical* or a more *conservative* variety. Dividing my examination into three sections I will first sketch the arguments that appear in sections 5 and 6 of “Two Dogmas of Empiricism” and then evaluate these arguments. In section 1, I will focus on section 5 of “Two Dogmas”; I will examine the roots of the positivist conception of verificationism and Quine's attack on verificationism. In section 2, I will focus on section 6 of Two Dogmas; I will discuss Quine's conception of an empiricism free of the two dogmas. In section 3, I will evaluate these arguments and assess both the strength of Quine's attack and some problems with his strictly empirical holism

3.1 – Verificationism and reductionism in logical positivism.

Quine opens section 5 of “Two Dogmas” by highlighting the skeptical conclusions set out in the previous sections. Having briefly retraced the stages of his argument from circularity, Quine turns to consider the verification theory of meaning. “But what, it may be asked, of the verification theory of meaning?”⁵⁴ Quine’s interest in the verification theory of meaning has two sources. First, he is interested in the status of this theory of meaning: He wants to determine whether the verification theory of meaning is an empirically adequate theory. Second, he recognizes that the verification theory of meaning potentially holds the solution to the problem of analyticity by accounting for it in terms of sameness of meaning – If the meaning of sentences *P* and *Q* are their respective methods of confirmation or infirmation and it happens to be the case that sentences *P* and *Q* have the same method of confirmation or infirmation, it follows that both *P* and *Q* are not merely similar in meaning but have the same meaning. However before addressing either of these reasons, more needs to be said about verificationism and reductionism.

Having motivated his investigation into verificationism, Quine goes about tracing the history of verificationism from its roots in the classical empiricism of Locke and Hume through Russell’s classically oriented logical empiricism and his later logical atomism to Carnap’s logical positivism.⁵⁵ While Quine’s account of the history of verificationism is to a certain extent accurate, it obscures almost as much as it reveals in failing to make explicit the most significant stage in the development of what is now referred to as verificationism; namely, the theory of verificationism in Wittgenstein’s Tractatus and the subsequent sublimation of this notion in logical positivism. Setting aside any further discussion of verificationism in the classical empiricism of Locke and

Hume, more needs to be said about verificationism and its radically reductionist methodology in the Tractatus before I go on to discuss its form in logical positivism and their Russellean approach. Only having developed this stage in the history of verificationism, will I go on to discuss Quine's devastating criticisms.

3.1.1 – Verificationism in Wittgenstein's Tractatus.

As I explained in chapter 1, verificationism and reductionism play a central role in the logical atomism of Wittgenstein Tractatus. According to Wittgenstein, verificationism is both a theory of meaning and a theory of truth. As a theory of meaning, verificationism says that the meaning of a synthetic sentence is determined by reducing it to a sentence in a logically perfect language. Expressed in terms of a set of atomic sentences conjoined in the appropriate way by the requisite logical operators, the sentence in a logically perfect language avoids the vagueness and ambiguity of its natural language counterpart. The meaning of the logically perfect sentence and, in turn, its natural language counterpart is a product of the meaning of its atomics plus consideration for how they are arranged. The meaning of an atomic sentence is just the atomic fact it pictures. The meaning of a molecular sentence is a product of the meaning of its atomics plus consideration for their arrangement as represented by their logical relation in the sentence. By invoking his correspondence theory and making the meaning of an atomic sentence just the atomic fact pictured by the atomic sentence Wittgenstein maps language onto the world. In mapping language onto the world and allowing the objects in the world and their relations to give content to the sentences that represent them Wittgenstein's verification theory of

meaning not only provides a principled criterion for determining the meaning and meaningfulness of any sentence but makes meaning an empirical matter for scientific observation. On top of the verification theory of meaning Wittgenstein adds a verification theory of truth. Similar in structure to the verification theory of meaning, the verification theory of truth takes the truth-value of the molecule is a product of the truth-value of its atomics plus consideration for how they are arranged. However, unlike in the verification theory of meaning in the verification theory of truth is connected with actuality. Whereas the mere possibility of the world being as the sentence depicts it is sufficient in the case of the former, the world actually being as the sentence depicts it is necessary for the latter. On Wittgenstein's view, the truth of sentence S depends on the entities named in S being arranged in the same manner as they are arranged in the world. Where it is the way the world is that makes true the picture that is represented by the sentence. Thus, a sentence is taken to be true if and only if it in fact pictures an actual fact. As such, both the truth and meaning of any synthetic sentence is a product of a relationship between language and the world.

3.1.1.1 – The relationship between language and the world.

Given what I have said about the relationship between language and the world, the major obstacle facing such a theory becomes apparent; namely, providing a precise account of the reduction on both the side of language and the world and then the relation between language and the world. Reduction on the side of language, from natural language to a logically perfect language, is achieved by the logical techniques developed

in the *Principia* and applied in Russell's theory of descriptions. Reduction on the side of the world, from molecular facts to atomic facts, is achieved by scientific analysis of the world of experience. Reduction on the side of language produces meaningful sentences in our logically perfect language, which in turn picture singular facts. The meaning results from the denotative connection between names and the objects named. In virtue of the denotative connection of naming a supposed isomorphism holds between the names of the logically perfect language and the objects of the atomic facts that make up the world. The objects of the world are assigned names and these names provide meaning to the atomic sentences of the logically perfect language by corresponding to the atomic facts that comprise the world. As such, Wittgenstein's account of the crucial relationship between language and the world is one of correspondence.

It is this correspondence relation at the base of the Tractarian system between the atomics of language and the atomics of world that not only holds the system together but also makes it explicitly metaphysical in nature. It is only in virtue of this relation that "A proposition is a picture of reality." (4.01) As he goes on to explain, "At the first sight a proposition – one set out on the printed paper, for example – does not seem to be a picture of the reality with which it is concerned. But neither do written notes seem at first sight to be a picture of a piece of music, nor our phonetic notation (the alphabet) to be a picture of our speech. And yet these sign-languages prove to be pictures, even in the ordinary sense, of what they represent." (4.011) What makes one a picture of the other is the internal logical relation, "A gramophone record, the musical idea, the written notes, and the sound-waves, all stand to one another in the same internal relation of depicting

that holds between language and the world. They are all constructed according to the same logical pattern.” (4.014)

3.1.1.2 – The Tractatus as a work of logical atomism.

Leaving aside the *reductio ad absurdum* Wittgenstein thought sufficient to justify his commitment to this isomorphic relation as it is discussed at length in chapter 1, how should one categorize the Tractarian system? Speaking in traditional terms, it seems fitting to describe it as a correspondence theory for the simple reason that meaning and truth are a product of the correspondence between certain simple elements on the side of language with their corresponding simple elements in the world. However, such a categorization fails to recognize the first step of the reduction – the reduction of natural language to a logically perfect language and the reduction of the molecular world to an atomic world. As such, it should be categorized as a correspondence theory on the atomic level but as a coherence theory of the molecular (i.e. non-atomic) level.

3.1.1.3 – The metaphysic of the Tractatus.

Recognizing important similarities between Wittgenstein’s views as set out in the Tractatus and their own, the positivists rejected only his atomism, the metaphysic required to support his logical atomism, and the mysticism. Strongly influenced by the successes of scientism and Logicism, logical positivists are generally of the belief that only science could provide information about the basic structure of the world. The

positivists rejected the metaphysic for two closely related reasons. First, Wittgenstein's purely philosophic argument for metaphysical simples – a supposed *reductio ad absurdum* – was rightfully recognized as insufficient to justify the existence of such simples. Rejecting this argument and the subsequent metaphysical position as self-defeating (i.e. meaningless nonsense) by its own criterion of meaningfulness, the positivists pursued what they thought was a non-metaphysical epistemological approach. Second, Wittgenstein's correspondence theory requires a correspondence relationship between language and the world. However, in order to talk about this isomorphism one needs to accept that you could compare atomic sentences with atomic facts. The problem associated with such a comparison is that it requires an account of the relationship between language and the world. However, any talk of this relationship is once again metaphysical in nature and, such, a nonstarter for the positivists as it compares pseudo-material entities with their sentential counterparts.

3.1.2 – The rejection of metaphysics.

Setting aside many of the early atomistic sections, the logical positivists chose to focus on the later sections of the Tractatus – the sections in which Wittgenstein boldly acknowledges that everything contained in the earlier sections was metaphysical and, as such, speculative nonsense. Emphasizing Wittgenstein's closing meditations the positivists took these later sections to demonstrate the right method of philosophy. "To say nothing except what can be said, i.e., the propositions of natural science, i.e. something that has nothing to do with philosophy: and then, always, when someone else

wished to say something metaphysical, to demonstrate to him that he had given no meaning to certain signs in his propositions.”⁵⁶ (6.53) Taking the metaphor in 6.54 literally, the positivist thought they understood the Tractatus as it had been intended. By treating the early section as an approach to philosophy that its author only realized to be empirically inadequate by the time he had reached the later sections, they thought they had understood the book. They thought they had “climbed out through them, on them, over them ... [and] ... (must so to speak throw away the ladder, after he has climbed up on it).”⁵⁷ Abandoning the ladder that for them was the metaphysic of correspondence required for the atomism of the early sections and the mysticism, the positivists sought to construct an empirically adequate system in the image of the Tractatus free from its metaphysic. By replacing the correspondence theory with a coherence theory via an older Russellean approach, positivists like Carnap, thought they could remove the metaphysical elements while retaining the basic Tractarian framework in a neutral logically empirical way.

This shift from a correspondence plus coherence theory to a strictly coherence based system can be fleshed out more fully by understanding the shift in terms of methods for a difference in method of ascertaining truth. For the former system truth is determined by comparing sentences with facts. While for the latter, truth is determined by comparing sentences with an antecedently recognized set of true sentences. While there is disagreement amongst some of the positivists on the whether there could be a limited correspondence, the majority favored pure coherence.⁵⁸ Hempel eloquently summarizes the purely coherentist theory,

So also the concept of truth may be characterized in this formal mode of speech, namely, in a crude formulation, as a sufficient agreement between the system of acknowledged protocol-statements and the logical consequences which may be deduced from the statement and other statements which are already adopted. ... The system of protocol statements which we call true, and to which we refer in every day life and science, may only be characterized by the historical fact, that it is the system which is actually adopted by mankind, and especially by the scientists of our culture circle; and the 'true' statements in general may be characterized as those which are sufficiently supported by that system of actually adopted protocol statements.⁵⁹

With this eloquent summary of the coherentist position in hand, more needs to be said about the origin and details of this reductive approach.

3.1.3 – Carnap's logical construction of the world.

In the winter of 1921, while bed ridden with influenza Carnap read a copy of Russell's classic, Our Knowledge of the External World.⁶⁰ Unlike most of Carnap's philosophical insights which, as he noted, "are usually gained not in moments of inspiration but rather through a slow process of growth and development" on this rare occasion Russell's book "made a strong, lasting impression."⁶¹ It was Russell's reductive approach to logicism and his logical approach to traditional problems of epistemology that would influence Carnap's approach to philosophy for the remainder of his life. Moved by Russell's rigorous logical approach and, more specifically, his application of the techniques of modern logic to dissolution of traditional epistemological problems, Carnap felt he had located the proper method and aim of philosophic analysis in Russell's work. "I felt [Carnap wrote] as if this appeal had been directed to me personally. To work in this spirit would be my task from now on!"⁶² As is often the case with such stories of

inspiration, what struck Carnap was the similarity between Russell's view of logic, epistemology, and science, and his own views on said fields. It had been only one year earlier in a letter that Carnap had expressed a desire for a foundationalist account of scientific concepts:

The exact sciences [he said] frequently work with concepts (which are occasionally even their principled concepts) of which they cannot say exactly what they mean; and on the other hand: the traditional methods of philosophy help here a little.⁶³

What Carnap identified with in OKEW was Russell's view that reductionism via the techniques of modern logic developed in the *Principia* could be used to clear up the vagueness in traditional philosophy by recasting the subject in terms of a linguistic doctrine about the meanings of sentences of a certain kind. Following the doctrines set out in his classic work of logicism and those in his theory of descriptions, Russell, and later Carnap, attempted to, whenever possible, avoid vagueness by substituting logical constructions for inferred entities.

3.1.3.1 – Russell's logical construction of the material world.

In OKEW Russell applies this doctrine to Moore's problem of the material world and, more specifically, our knowledge of the material world. By substituting logical constructions out of sense data for material object, Russell attempted to dissolve Moore's problem of the external world by recasting sentences that appear to be about material objects in terms of sentences about sense data. According to his epistemological thesis

our knowledge of the material objects is just knowledge of logical constructions out of sense data. As such, any true sentence about a material object is recast in terms of a truth about sense data experience of a certain type. Take Russell's discussion of the experience of a table as an example of this substitution:

A table viewed from one place presents a different appearance from that which it presents from another place. This is the language of common sense, but this language already assumes that there is a real table of which we see the appearances. Let us try to state what is known in terms of sensible objects alone, without any element of hypothesis. We find that as we walk round the table, we perceive a series of gradually changing visible objects. But in speaking of "walking round the table," we have still retained the hypothesis that there is a single table connected with all the appearances. What we ought to say is that while we have those muscular and other sensations which make us say we are walking, our visual sensations change in a continuous way, so that, for example, a striking patch of color is not suddenly replaced by something wholly different, but is replaced by an insensible gradation of slightly different colors with slightly different shapes. This is what we really know by experience, when we have freed our mind from the assumption of permanent "things" with changing appearances. What is really known is a correlation of muscular and other bodily sensations with changes in visual sensations.⁶⁴

According to this bold new approach to the material world, true knowledge claims about material objects are in fact true knowledge claims about logical constructions out of sense data.⁶⁵ Take sentence 3) as a typical example of the sort of sentence in question:

3) I see a table.

When Russell says he knows sentence 3) to be true, he is in fact saying much more than just that it is true that he sees a certain material object; namely, a table. First of all we must translate 3) into a sense data language. Let 3a) represent sentence 3) after translation:

3a) I am having the sense data experience of what is commonly referred to as the sense data experience of a table.

Given this account, Russell must flesh out what exactly counts as the sense data experience of what we commonly refer to as the experience of a table. In order to explain what counts as a table-like sense data experience, Russell must include several more counterfactual conditionals in his reduction. In order to round out such a reductive account he would have included such conditionals as 3b), 3c), 3d):

3b) If I were to have the muscular sensations that are called “touching the table”, I would ultimately have the sensory experience of tactile pressure and hardness.

3c) If I were to have the muscular sensations that are called “stepping towards the table”, I would have the sensory experience of a continuous larger visual table-like experience.

3d) If I were to have the muscular sensations that are called “walking around the table”, I would have the sensory experience of a gradual and continuous changing visual table-like experience.

With this list of counterfactual conditionals Russell can logically reduce, though as in many cases the process produces a much larger and complex analysis, the simple epistemological claim about material objects to a series of claims about sense data experiences.⁶⁶

The apparent virtue of Russell’s approach is that it appears to be ontologically neutral. It seems to offer an epistemological system without committing to the existence of some sort of metaphysically simple objects. From the given primitive of sense data one can follow Russell’s approach and conceivably reconstruct the material world and in turn

the body of knowledge that is modern science. Recognizing both the metaphysical problems associated with the correspondence theory in Wittgenstein's Tractatus and the successes of Russell's supposedly metaphysically innocent coherence theory, Carnap set himself to work on constructing a system in the image of the former but with the epistemological emphasis of the latter. As Quine notes, the construction of such a system makes Carnap's job quite clear:

Radical reductionism, conceived now with statements as units, set itself the task of specifying a sense-datum language and showing how to translate the rest of significant discourse, statement by statement, into it.⁶⁷

3.1.3.2 – Carnap's *Aufbau* project.

Guided by the doctrines of his predecessors, in 1924 Carnap completed a preliminary manuscript entitled Vom Chaos zur Wirklichkeit, translated in English as From Chaos to Reality. In this manuscript, considered a preliminary sketch of the *Aufbau*, Carnap attempts a logical construction of the material world in which inferred entities such as material objects are replaced by logical constructions out of sense data. Four years later in 1928 Carnap published a revised version of this work under the title Der Logische Aufbau de Welt, translated in English as The Logical Construction of the World.

Modeling the general system of Wittgenstein's Tractatus but in keeping with the general epistemological approach of Russell's OKEW, Carnap's *Aufbau* was an ingenious anti-metaphysical foundational constructionist work. Its purpose was to show how all non-analytic (i.e. synthetic) knowledge can be derived strictly from given sense

experience in a strict logically empirical fashion by applying the techniques developed in the *Principia Mathematica* to the “problem of the analysis of reality” via the reduction of the material world to the given. But what separates Carnap’s *Aufbau* from the works of his predecessors, Russell included, are two things. The first is the magnitude of his reduction. The second is its place within a grand philosophic theory of everything. However, before discussing the details of the reduction in Carnap’s *Aufbau*, more needs to be said about general method of reductionism in the *Aufbau*.

3.1.3.2.1 – The goal and methodology of the *Aufbau*.

The general form of the reductionist project is as follows: We start with a system of expressions that serve some essential purpose (i.e. those of science). Given the success of this system of expressions at achieving its purpose, we do not doubt the truth of the individual expressions given that they live up to the standard imposed by the system. However, within any system (especially science as it marries the empirically obvious with the highly theoretical), there are vague expressions and concepts; unable to provide a strictly empirical account for these vague expressions and concepts (often time primitive expressions and principle concepts) reductionism allows us to reconstruct the system of expressions by replacing the old system of expressions with a slightly modified new system of expressions that no longer suffers from the aforementioned problems of vagueness. Thus, the new system no longer suffers from the problems of the former while preserving all of the successes.

Reconstruction is favored over abandonment (i.e. abandoning the vague concepts) because often times we do not know how to do without such concepts. Take 4) as an example of a problematic expression.

4) The square root of -1

On the semantic side we may feel uncertain about the meaning or referent of this expression. On the metaphysical and, more specifically, ontological side we may feel equally uncertain about the reasons for believing what we say with it. However, on the epistemological side we are certain of not only the things we can do with a theory that includes it but of the things we could not do without it or something equivalent to it. As such, we have strong epistemological reasons for retaining 4) without really having much of an answer to the associated semantic and metaphysical problems. Motivated by epistemic certainty, reductionism of this form attempts to provide a new foundationalist account that sheds light on the existing semantic and metaphysical problems by providing a reconstruction of old system of expressions in terms of concepts and expression with which we are more certain. By means of this highly logical method of reduction logicians like Russell, Carnap, and others of their ilk, hoped to provide an empirically adequate account of this and other vague expressions. If such a project were empirically adequate then the problems associated with expressions like 1) would disappear.

By applying this reductionist approach to the reconstruction of science, the goal was roughly to do with all synthetic knowledge claims what logicism had attempted with mathematics and what Russell had started in OKEW; namely, drawing on the techniques of modern logic plus a given primitive domain to produce an account of science devoid

of inferred entities and rich with logical constructions. Constructing an account of scientific knowledge from raw sense data, Carnap reconstructs a wholly rational account of the macroscopic scientific world through the logical techniques developed in the *Principia*. Like any reconstruction, Carnap's rational reconstruction begins with a specified set of primitives, and by certain logical transformation, generates everything (i.e. every object and every concept). The major problem facing Carnap was to identify the primitives (i.e. the raw things that will count as primitive for the reconstruction). Drawing on Russell's success of OKEW, Carnap adopted raw sense data as his primitives. While it happens to be the case that like Russell's reconstruction Carnap's reconstruction starts from raw sense-data as primitive, such a starting point is not the only available one. Carnap, as an empiricist of the Russellean vein, chose a sense data language in his reconstruction out of agnosticism concerning the status of material objects; however, as he later demonstrated, he could have chosen a physicalist language or even Hegelean Absolutist language (sec. 56).

Without going into the technical steps of Carnap's reconstruction, the reduction is patently Russellean in methodology. Carnap sets out a series of definitions that allow him to reduce any field of data to a limited set of concepts referred to as "the basis". By dividing all known objects into four categories (sociological entities, other minds, physical objects, and primate sensations) Carnap is able to move from the most certain of the categories (private sensation) to the remaining categories reconstructing the expressions that comprise the body of knowledge that is science. Thus, fulfilling the radically reductionist empiricist project by reducing our epistemology and, more

specifically, science to claims about sense data and through logical maneuvers reconstructing a comprehensive and coherent scientific picture of the world.

3.1.3.3 – The principle problem with the *Aufbau*.

The reconstruction of the *Aufbau* attempts to provide a definite (i.e. a complete) translation for each individual synthetic sentences into logically perfect sentences about immediate experience. The goal was to provide an empirically adequate reconstruction of the scientific world devoid of the speculative metaphysical entities by following Russell's general methodology. The purpose was not ontological; that is to say, the purpose was not to establish what is the ultimate furniture of the world and what is its nature. No, its purpose was epistemological and foundational. As Coffa points out,

Here we are no longer asking what *p* means or what it is about, but what reasons we have for believing that it is true.⁶⁸

The problem with the *Aufbau* is that it fails in principle. It fails as a supposed empirically adequate system, a system free from speculative metaphysical commitments, because it is not as empirically genuine as it is made out to be in that its ontology extends beyond the empirical objects and relations it attempts to explain. Taking a Russellean approach, Carnap treated material objects as logical constructions from sense data. Treating material objects as logical constructions out of sense data, Carnap went about logically reconstructing the disparate qualities of which these material objects could themselves be reconstructed. In order to account for these qualities Carnap reduced the occurrence of

each quality to individual spatio-temporal point-instants. Carnap was able to reconstruct these individual qualities as spatio-temporal point-instants through the application of a quadratic. By accounting for each quality in terms of sense data and assigning each occurrence a point-instant in the three dimensional plane and a further instant in time, Carnap was able to apportion each sense datum and, in turn, material object, a truth value. Take the occurrence of some quality q for example. As Quine eloquently explains,

Statements of the form ‘Quality q is at point-instant $x;y;z;t$ ’ were, according to his canons, to be apportioned truth values in such a way as to maximize certain overall features, and with growth of experience the truth values were to be progressively revised in the same spirit.⁶⁹

While this is, as Quine notes, a good ‘schematization’ of the scientific approach, it fails in principle. As Quine goes on to say,

it provides no indication, not even the schetchiness, of how a statement of the form ‘*Quality q is at $x;y;z;t$* ’ could ever be translated into Carnap’s initial language of sense data and logic. The connective ‘is at’ remains an added undefined connective; the canons counsel us in its use but not in its elimination.⁷⁰

The problem Quine here identifies is a fundamental problem inherent to the Russellean reductionist approach. However, before saying anything further about the Russellean heritage, more needs to be said about why such a reduction fails. The problem is not in assigning qualities to individual point-instants. This can be done simply in terms of assigning sense data content to individual instants. The problem is individually locating these point instants; that is to say, the problem is with the requisite connective ‘is at’.

What is the empirical account of this connective? How do we define it in strictly empirical terms without antecedent consideration for some set of point instants?

In order to define any point instant we attribute sense data content to it; however, in order to locate this point instant in four-dimensional space (the three dimensions of space and the one dimension of time) requires reference to further instances. Without reference to further instances it is impossible to provide a complete account of any occurrence. Thus, the problem is that we cannot give content to the instances individually. To give a complete account of such an instance we must introduce posits (e.g. connectives like 'is at') into our supposedly strict empirical language. It seems that in order to explain such relational connectives as 'is at' we must introduce such posits as in some way primitive. However, in doing so we introduce nonempirical concepts in the form of these posits. As metaphysical entities begin creeping into our reconstruction, empirical adequacy slips away. Otherwise put, the problem with Carnap's reductionism is principled in that it requires the construal of all sentences with empirical content into individual observation sentences about immediate sense-data experience; however, such a reconstruction inevitably falls short. While such a reduction may appear to facilitate the reconstruction of science and allow for a principled theory of verification, it fails because synthetic sentences are neither translatable nor verifiable individually.⁷¹

3.1.3.3.1 – The recurrence of an old problem.

The problem plaguing Carnap's reconstruction is not altogether new. In fact, it is similar in kind to the problem that plagues Russell's account as set out in OKEW. As I

mentioned earlier (see endnotes) Russell recognizes the problem with this analysis. Russell does not think that he has provided at a complete analysis of any particular material object sentence. In fact Russell does not think that a complete analysis of any particular material object sentences can be given. He recognizes that no matter how many clauses he might include, there inevitably are indefinitely more that have an equal claim to being part of a complete analysis of the material object statement. Furthermore, he recognizes that inherent to these clauses is a lack of logical rigor in that they are not fully specified. While for Russell, the problem is the continual talk of sense data “of a certain sort” without spelling out precisely what these different sorts are, for Carnap the problem is inability to define away the vagueness of certain connectives and concepts.

3.1.4 – Reductionism in the theoretical sciences

Having shown that the positivist commitment to radical reductionism fails not merely in practice but in principle, Quine goes on to explain how reductionism continues to hold favor among empiricists. Though Quine fails to specify who these empiricists are, it is safe to say that his targets are not so much philosophers but the practitioners of theoretical science.

3.1.4.1 – The methodology of the theoretical sciences.

Theoretical sciences aim at coherent scientific theories; whether these theories be comprehensive scientific theories of everything or just hypotheses consistent with sets of

currently accepted scientific theories matters little here. Assuming the latter, the general methodology by which these practitioners demonstrate the truth of their respective hypotheses is as follows: Beginning with the set of currently accepted expressions – i.e. a set of experimental conditionals that just are a scientific theory – one formulates some further, yet untested, hypothesis. Uncertain about the truth or falsity of this further hypothesis, scientists attempt to determine its status by developing experiments to test said hypothesis. In developing such experiments scientists construct a further experimental conditional. These further conditionals, which have the hypothesis as the antecedent and some specifies empirical outcome as the consequent, are meant, if verified, to demonstrate, in isolation from any further hypotheses, the truth of the initial hypothesis. Take Tyco Brahe's argument against the heliocentric view of the universe as a paradigmatic example of this methodology.⁷²

P1) If the earth orbits the sun, then the stars will appear to change their relative position throughout the year.

P2) The stars do not appear to change their relative positions throughout the year.

C1) Therefore, the earth does not orbit the sun.

Beginning with the hypothesis expressed at 1) Brahe develops an experimental conditional that allows him to test the veracity of his hypothesis. With this conditional in mind, Brahe observes the world. Brahe returns with the results (i.e. observational data) expressed at 2). Having found the consequent of his experiment conditional to be false, Brahe appears justified in denying the antecedent of the conditional. And, in turn,

justified in concluding that the heliocentric view of the universe is false. The logical form of Brahe's argument can be expressed as:

- | | |
|-----|-------------------|
| P1) | $H \rightarrow O$ |
| P2) | $\neg O$ |
| C1) | $\neg H$ |

From our post-Copernican vantage point Brahe's conclusion appears preposterous. But what makes it appear so given that the logic behind the reasoning is valid?

3.1.4.1.1 – The problem with the methodology of the theoretical sciences.

The problem with this argument resides in P1). The problem is that built into P1) is an implicit assumption; namely the assumption that the stars are relatively close to the earth. By making this assumption explicit the new argument appears as follows:

- | | |
|-----|--|
| P1) | If the earth orbits the sun and the stars are relatively close to the earth, then the stars will appear to change their relative position throughout the year. |
| P2) | The stars do not appear to change their relative positions throughout the year. |
| C1) | Therefore, the earth does not orbit the sun. |

The logical form of the new argument is thus:

- | | |
|-----|------------------------------|
| P1) | $(H \ \& \ A) \rightarrow O$ |
| P2) | $\neg O$ |
| C1) | $\neg H$ |

By making this once hidden assumption explicit we can make elucidate an argument that once appeared preposterous. Furthermore, by making this assumption explicit it becomes apparent that it is not the hypothesis that the earth orbits the sun that alone gets tested, but this hypothesis in conjunction with certain subsidiary cosmological assumptions. Indeed, the interesting philosophical point demonstrated by this example is that a theoretical hypothesis is never tested in isolation from a set of subsidiary assumptions. As is the case with Brahe's argument, the theoretical hypothesis in question is tested, not in isolation, but against the ever-present set of background subsidiary assumptions that comprise the scientific theory that is cosmology. Without knowing exactly which observations count in favor and which count in opposition to hypothesis H because of the theoretical nature of both the field and the hypothesis under consideration, one must conjoin it with subsidiary hypothesis S in order to produce observational predictions. From within theory T, the conjunction of subsidiary hypothesis A and initial hypothesis H produce a series of observational predictions P which can be expressed as an experimental conditional $((H \& A) \rightarrow P)$. By making the subsidiary assumption explicit in the logic of the argument, we can see how Brahe, himself a founding father of theoretical science, tests hypotheses. Quine's point is that all arguments of theoretical science function in this way. That is to say, all arguments in the theoretical sciences take certain subsidiary assumptions as implicitly true in order to test a given hypotheses in isolation. The problem is that by doing so, they are in actuality not testing hypotheses in isolation. The upshot of this is that any approach that takes individual hypotheses to be testable and verifiable in isolation is intolerably restrictive in reductive analysis in that it associates the confirmation of a hypothesis with a specific set of observations. Or as Quine explains,

The notion lingers that to each statement, or each synthetic statement, there is associated a unique range of possible sensory events such that the occurrence of any one of them would add to the likelihood of the truth of the statement, and that there is associated also another unique range of possible sensory events whose occurrence would detract from that likelihood. ... The dogma of reductionism survives in the supposition that each statement taken in isolation from its fellows, can admit of confirmation or infirmation at all.⁷³

3.1.4.2 – A revised methodology.

Given that no method of verification is uniquely associated with a given hypothesis, what is the proper unit of verification? Our example suggests that the unit of verification is not the individual hypothesis (i.e. not the individual sentence) but a cluster of hypotheses; namely, the cluster of hypotheses that comprise the initial hypothesis in question and the set of subsidiary hypotheses. And, as such, verification gets spread out over clusters of hypotheses. It just so happens that the cluster in this case consists of merely two hypotheses; however, that is a result of the simplicity of the example. This example raises the crucial question: What counts as the cluster of subsidiary hypotheses? Quine's more radical revisionary view is that by allowing clusters of subsidiary assumptions to play a role in the verification of any hypothesis it follows by parity of reasoning that behind each subsidiary assumption of the cluster are still further clusters of subsidiary assumptions. If we grant, as Quine suggest we should, that typically for each hypothesis there are clusters of auxiliary assumptions (secondary assumptions) and that beneath these clusters are still further clusters of subsidiary assumptions (tertiary assumptions) and that this chain continues to the bounds of any theory, then it follows that the unit of confirmation is neither the individual sentence nor a finite clusters of

sentences, but entire theories. This leads Quine to conclude “that our statements about the external world face the tribunal of sense experience not individually but only as a corporate body” – where a corporate body should be understood as entire theories.⁷⁴

3.1.4. – The roots of Quine’s holism.

Having exposed Quine’s argument for the epistemological conclusion that the unit of confirmation is not the sentence but entire theories, I can set Quine’s epistemological holism against the positivist epistemological view. As I mentioned in the previous chapter, Quine was a reformed positivist – a student of Carnap’s and visiting member of the Vienna Circle. And, with this in mind, it seems natural that his approach should not differ all that much from that of his positivist predecessors. Like his predecessors Quine recognizes that “in general the truth of statements does obviously depend on language and upon extralinguistic fact”.⁷⁵ With this in mind, Quine goes on to acknowledge the root of their similarity; namely, the common view that generally speaking the truth of a sentence or set of sentences does depend on two things:⁷⁶

- A) What the sentence or set of sentences say about the world (i.e. the cognitive content of the sentence).
- B) The world being as the sentence or set of sentences picture it (i.e. say it is).

This being said, Quine does not think that what follows from this general two-part distinction concerning sentential truth is what the classical empiricists and logical empiricists have taken to follow. Unlike his empiricist predecessors who have argued that

what follows from this general two-part distinction is the strict logical view that the truth of a sentence can be strictly analyzable in terms of a linguistic component and a factual component, Quine thinks that this picture is over simplified in its restrictions. While, as an empiricist, Quine is roughly willing to accept the view that a sentence or set of sentences represent the world because associated with each sentence or set of sentences is an observational or set of observational claims that, when compared with the world, allow for representation and verification, his version of this thesis is not as simple in that it is holistic in form. While his predecessors believe that the truth of each individual sentence *S* depends on what *S* says about the world and the world being as *S* says it is, Quine takes truth to be apportioned to the set of sentences that constitute the entire theory.

From his general epistemological argument and the subsequent holistic conclusion Quine derives a further semantic conclusion; namely, the semantic conclusion that the unit of meaning is not the individual sentence but the set of sentences that constitute the entire theory. In drawing this conclusion for semantic holism Quine rejects two further positivist theses:

P1) Individual sentences are the primary units of meaning; words have meanings only in virtue of the contributions they make to the meanings of sentences.

P2) The meaning of a sentence is defined in terms of the observational events that confirm it.

In place of these two theses Quine offers two holistic theses:

H1) Entire scientific theories are the primary units of meaning; sentences have meaning only in virtue of the contributions they make to the meanings of theories.

H2) The meaning of a theory is defined in terms of the observational events that confirm it.

As a result of this shift in unit of meaning and bearer of meaning Quine concludes that the proper view is that the basic unit of meaning is the entire theory.

Quine is able to make this shift because, like his positivist predecessors, he identifies the epistemological with the semantic (i.e. the belief that the unit of confirmation is the unit bearer of meaning; where its meaning is just the set of observational events that confirm it). This method of analysis is essentially the very same method he attacks the positivists for holding; namely, the identification of meaning with evidence. However, Quine is not falling into contradiction because it is not the method of analysis or the identification, so much as it is the unit of significance (i.e. the unit of epistemological significance and the unit of semantic meaningfulness) that he is attacking. According to Quine, what went wrong with the positivist approach to the criterion of verifiability was not the identification of meaning with empirical evidence (i.e. observational data) because this, as an empiricist, he takes to be axiomatically true but rather the location of the unit of epistemological significance and semantic meaningfulness with the individual sentence.

3.2 – Quine's holism, an empiricism free of the dogmas.

In the previous section of this chapter I discussed the second dogma of empiricism; namely, *reductionism*, be it the explicitly radical reductionism of

Wittgenstein's logical atomism, Russell's logical empiricism, and Carnap's logical positivism, or the implicit reductionism present in the methodology of the theoretical sciences. Having explained why reductionism fails in principle I went on to identify the two foundational theses that underlie Quine's holistic counter suggestion. In this section I will focus on section 6 of "Two Dogmas" and flesh out, in considerably more detail, four further theses that make up Quine's conception of a holistic empiricism free of the dogmas.

As I explained at the end of section 3.1, Quine advocates an epistemological thesis and a semantic thesis:

QH1e) – The unit of confirmation is the theory as a whole, not the individual sentence.

QH1s) – The unit of meaning is the whole theory, not the individual sentence.

Having argued for these two foundational theses in section 5 of "Two Dogmas", Quine rounds out his updated holistic empiricism by offering four more theses.

3.2.1 – The second thesis in Quine's holism.

Opening section 6 Quine presents one of his infamous sweeping theses. In what is primarily an epistemological and a semantic thesis, Quine draws on both dogmas in support of the first of the four theses:

QH2) The totality of our so-called beliefs, from the most casual matters of geography to the profoundest laws of atomic physics or even of pure

mathematics and logic is a man-made fabric that impinges on experience only on the edges.⁷⁷

Speaking metaphorically, Quine suggests that the totality of our beliefs form a man-made web-like system of beliefs that is one's theory. Given Quine's epistemological holism and semantic holism, it follows that the form of our theory is web-like in structure – no sentence can be said to be either meaningful or belief said to be true without consideration of those further sentences and beliefs that surround it. As to the form of this man-made system it forms a metaphorical web of beliefs. At the center of this web are the basic laws of logic and mathematics. These core beliefs, traditionally taken to be necessarily true, are the most protected beliefs in our system. Gradually moving outwards in all directions toward the periphery of the web-like structure one moves incrementally from the more protected beliefs to those more open for revision. As Putnam explains,

In Quine's view, the unrevisability of mathematical statements is greater in degree than that of, say, the three-dimensionality of space or the conservation of energy, but not absolute. Truths of mathematics are partly empirical and partly 'conventional' [i.e. pragmatic] like *all* truths; mathematics is as factual as physics, only better 'protected'.⁷⁸

In moving outward in any direction from the core at no point does one encounter a difference in kind between any of the beliefs. The difference, marked only by the supposed difference in levels of empirical content, is not a principled difference in kind but one of degrees.⁷⁹ Setting aside further discussion of the man-made nature of this web-like system until the end of this section, in the following three subsections I will discuss the theses that follow from QH1e) and QH1s).

3.2.2 – The third and fourth theses in Quine's holism.

The following two theses mirror each other and, as such, will be dealt with together:

QH3) Any sentence can be held true come what may by making the requisite adjustments elsewhere in the theory.

QH4) No sentence is immune to revision because any statement can be rejected or deemed false by making the requisite adjustments elsewhere in the theory.

In order to get QH3 from QH1e and QH1s it helps to place it within a theoretical context. Imagine a theory T that contains the hypothesis S. Hypothesis S makes the observational prediction O, which can be expressed as the observational conditional $S \rightarrow O$. Even if it is the case that O fails to obtain, a result that would seem to falsify S in virtue of being the antecedent of the observational conditional, given QH1 and QH2, one need not give up S. The idea is that the prediction made by S is made within the context of certain other auxiliary assumptions (i.e. P, Q, R). Even though O came out false, one can retain S by rejecting one of the auxiliary assumptions as they stand with S in antecedent of our conditional as the conjunction P, Q, R, and S.

3.2.2.1 – An example from the theoretical sciences.

A clear example of this can be found in Ray Davis' experiment to prove that the sun is powered by nuclear fusion.⁸⁰ Davis thought he could show that the sun was powered by nuclear fusion by placing a large chlorine bath at the bottom of a deep

vertical shaft. He believed that if it were the case that the sun was powered by nuclear fusion, a specified amount of radioactive argon isotope would form in the chlorine bath. From within the existing scientific theory of solar-physics Davis hypothesizes that the sun is powered by solar fusion. This hypothesis, in conjunction with a series of subsidiary hypotheses ranging from solar ray theory to basic chemistry, leads Davis to predict the appearance of a specified amount of argon isotope in the bath. On this account, had it been the case that Davis' prediction obtained, Davis and the scientific community would have been justified in concluding that it is in fact true that the sun is powered by nuclear fusion. However, the amount of isotope found in the bath was five times lower than Davis had predicted. Assuming the experiment was properly executed and the experiment was well designed, if Davis and the rest of the scientific community had in fact adhered to the reductionist method, they would have had to reject the hypothesis that the sun is powered by nuclear fusion. Neither Davis nor the scientific community was willing to accept this conclusion as the theory of solar-fusion was viewed as far too important to be discarded. Instead, it was decided that one or more of the subsidiary hypotheses was mistaken so as to preserve the existing theory.

In this case the consequent came out false (i.e. $\neg P$ turns out to be the case). Following our deductive rules of reasoning the antecedent must also be false but this reveals the crucial problem and Quine's point; namely, deciding which part of the antecedent is false or whether both are false. According to basic truth tables a conjunction is false when either the right conjunct is false (i.e. $\neg S$), the left conjunct is false (i.e. $\neg R$), or both are false; in the aforementioned case we have no principle to which we can appeal to solve this problem. As Soames points out,

If the Predictions are false, then we know that at least one of the statements used in making them must be rejected. But which?⁸¹

According to Quine there is no principled empirical criterion that can decide this matter because individual sentences are not confirmed or disconfirmed by directly comparing them with experience. Instead, one's choice can only be based on pragmatic considerations based on simplicity of explanation, parsimoniousness, and the maxim of minimal mutilation, to the existing system. However, no matter what criterion you employ to rationalize your decision QH3 follows from QH1e and QH1s.

As for QH4, a similar argument applies. Imagine a theory T in which you have the observational conditional S that makes the observation prediction P. If it is the case that P obtains, it would seem to suggest that the observational conditional S was true. However, according to Quine, given QH1), QH2), and what it is to be a scientific theory we need not hold S. If we understand a theory as the set of all observational conditionals where the antecedent of the conditional specifics some event and the consequent some further event, then the theory is just the set of all observational predictions made by these conditionals. This means two distinct theories can be equivalent in virtue of making the same observational predictions. Thus, we can have two theories, T contains the observational $S \rightarrow P$ and T* the observational conditional $R \rightarrow P$, and given that the consequent obtains we are equally justified in holding T or T*. While this may sound paradoxical, according to Quine, it is only because we are used to talking about sentences as independently meaningful. Whereas for Quine sentential meaning is matter of the sentences place within a web. As Soames points out,

If we give up this view, and accept holistic verificationism [i.e. QH1e and QH1s], then it is much more natural to suppose that no sentence is immune from revision.⁸²

3.2.3 – The fifth thesis in Quine’s holism.

The final thesis QH5) is the underdetermination thesis. Though further developed in Word and Object, it first appears in “Two Dogmas”.

QH5 – For any consistent theory T and the class of possible observations O to which it fits, there is a theory T*, logically incompatible with T, which also fits observations O.

Though apparently contradictory, QH5) follows naturally from the above theses. The underdetermination thesis is not unlike QH4) in that it relies on both QH1e), QH1s), and the account of what it is to be a scientific theory. Recall that in QH4) we established that we can have two theories, T contains the observational conditional $S \rightarrow P$ and T* the observational conditional $R \rightarrow P$, and given that the consequent obtains we are equally justified in holding T or T*. Taking this line of reasoning one step further, the underdetermination thesis simply specifies the conditions of the two theories under consideration. T contains the observational $S \rightarrow T$ and T* the observational conditional $\neg S \rightarrow T$, and given that the consequent obtains we are equally justified in holding T or T*. Given that T and T* have contradictory antecedents the two theories should be understood as logically incompatible. That is to say, it appears that T and T* can not both be true because they make incompatible claims about the world. As such, it seems

unreasonable to call T and T* empirically equivalent. However, if we recognize that the meaning of a theory is just the class of possible observations it fits and that two theories have the same meaning if and only if they fit the same class of possible observations, then the underdetermination thesis falls out naturally.

3.2.4 – Summary of Quine’s holism.

These five theses form the foundation of Quine’s new holistic empiricism. Built in the image of Wittgenstein’s Tractatus and bolstered by certain Russellean considerations, Quine’s new holistic empiricism retains his forbearers strong scientific outlook but without their strong logical distinctions. Having given up the strong logical distinction between the analytic and synthetic, Quine is able to embrace a form of radical revisibility. Should it happens to be the case that in the future science requires radical revisibility, Quinean holism can accommodate such revisions. Furthermore, Quine’s holistic approach makes it possible for him to explain why the two dogmas are in fact two sides of the same coin. If it is the case that the sentences that express our beliefs about the world “face the tribunal of sense experience, not individually but only as a corporate body”, and if it is the case that the nature of this corporate body is such that no sentence belonging to it is in fact immune to revision, then it follows naturally that no statement is immune to revision. Thus, there are no analytic statements in the sense set out by the positivists. Our willingness to hold certain sentences certain is decided “upon our vaguely pragmatic inclinations to adjust one strand of the fabric of science rather than another in accommodating some particular recalcitrant experience”.⁸³ What we get is a man-made

fabric of beliefs. Whereas his predecessors thought true beliefs were importantly agent independent truths about the world, Quine wants us to recognize the theory ladenness of both our epistemology and our semantics. What we are left with is a theory that recognizes the man-made element in both.

3.3 – Evaluation of the second dogma of empiricism and Quine’s holism.

In this section I will evaluate both Quine’s attack on logical positivism and theoretical science via his critique of reductionism and his theory of empirical holism. I will divide my evaluation into three further subsections. In the first subsection I will add to my account of Quine’s holism on three points. In the second subsection I will focus on several problems that result from Quine’s holism. In the third subsection I will review my evaluation of Quine’s attack on the second dogma of empiricism.

3.3.1 – Quine’s holism.

Evaluating Quine’s holism is a difficult task as it bears on so many points. First, I will return once again to the first objection raised by Grice and Strawson. I will argue that the ambiguity to which they speak can be discharged once and for all given a more complete account of Quine’s holism. Second, I will examine Quine’s stance on speculative metaphysical claims. I will argue that Quine’s holism vindicates the logical positivist’s objection to speculative metaphysics by showing their empirical irrelevance. Third, I will examine Quine’s commitment to a sense data analysis. I will argue that the

old Russellean problem of other minds reoccurs in Quine holism as a result of his commitment to a sense data account of experience.

3.3.1.1 – The Grice/Strawson criticism reconsidered.

Having explained both the second dogma of empiricism and the web-like structure of Quine's holism, I want to say more about the first criticism raised by Grice and Strawson. As I mentioned in the previous chapter, Grice and Strawson accuse Quine of being ambiguous in his attack on the analytic/synthetic distinction. Having addressed what they take to be the problems associated with both interpretations and offered what I take to be the proper Quinean response, I think the apparent ambiguity which Grice and Strawson identify can be discharged.

According to Quine the fabric of our system of beliefs is comprised of a series of interconnected laws, principles, theorems, and conjectures. Differing only in degree, the disparate sentences that comprise this web of beliefs leaves no sentences immune to potential revision in the face of recalcitrant experience. Speaking to this very issue Quine explains,

I have been urging that this difference is only one of degree, and that it turns upon our vaguely pragmatic inclination to adjust one strand of the fabric of science rather than another.⁸⁴

As Quine here suggests, the analytic/synthetic distinction, a distinction that has traditionally been understood as a difference of kind, is in fact a difference merely in degree. Like the physical laws, this distinction is heavily protected as it sits centrally in

our web of beliefs. To wholly abandon such a distinction would require overwhelming evidence. If such evidence were to obtain, other modifications to our system would be more likely before rejecting such a well-established logico-linguistic distinction. It does not follow from the fact that a principled account of the analytic/synthetic distinction has never been made and furthermore could never be made that the distinction does not exist. It just means that the distinction we have, the version of the analytic/synthetic distinction that is in fact a part of our web of beliefs, is not principled in the strong logical sense required by logical positivism. The first and second dogmas provide reasons to reject this distinction as a principled distinction of kind, but as a logico-linguistic community we must determine whether we want to retain our existing belief in the distinction or revise our system to accommodate Quine's discoveries. It is obviously not the case that Quine is denying the fact that a distinction has traditionally been made or that it has traditionally been taken to be one of kind. No, such a denial would fly in the face of history – a history Quine is well versed in. Any discussion of inconsistency and irreconcilability of these two disparate theses evaporates when “Two Dogmas” is taken as a whole.

3.3.1.2 – Evaluation of Quine's stance on speculative metaphysical claims.

In the twentieth century the logical empiricists pickup Wittgenstein's attack on metaphysics. Often quoting Wittgenstein's classic dictum damning the speculative philosophy of divinity and metaphysics as matters on which we must be silent, the positivists championed this anti-metaphysical position in the twentieth century. Given what I have been saying about Quine's positivist heritage, more needs to be said about

Quine's views on speculative metaphysics: Is he equally aggressive towards metaphysical concerns as his predecessors?

Quine accepts the general philosophic system set out by Wittgenstein and forwarded by the positivists. He generally endorses verificationism as a theory of meaning and, in turn, the identification of meaning with empirical evidence. This identification would seem to suggest that Quine would be similarly aggressive towards metaphysics because, as I have explained, the claims of metaphysics fail the test for meaningfulness. However, what these claims fail is old positivists test for meaningfulness. If the unit of meaning and test for meaningfulness is no longer the sentence but the theory, the aggression towards metaphysics dissipates. Let us look more closely.

Imagine for example a theory in keeping with the one envisioned by Wittgenstein and the logical positivists. Such an empirically adequate theory T contains only experimental conditionals that make reference to empirical concepts that make reference to quantities, numbers and experimental reasoning. Now imagine for example that there is a similar theory TM that contains all the observational conditionals of T plus certain additional independent speculative metaphysical claims concerning the existence of God. Given that these additional metaphysical claims are independent and, as such, do not affect the initial stock of observational conditionals, it follows that both T and TM make the same observational predictions. In that both T and TM contain the same observational conditionals and make the same observational predictions, they make the same claims about reality regardless of the presence of these additional metaphysical claims in TM. Since both theories make the same claims about reality it seems that the additional

metaphysical claims about TM are useless in the sense that they have no real bearing on our theory. This would seem to suggest that these useless claims are merely extra baggage that should be shed. However, as Soames points out,

But even if one doesn't realize this, or finds them pleasing and, for that reason, doesn't reject them, they raise no issue of substance, and are utterly trivial.⁸⁵

With this in mind, it seems that Quine vindicates the positivists intolerance towards speculative metaphysics. In so far as the metaphysical claims are independent they have no bearing; they are utterly irrelevant to the empirical content of the theory. While parsimony may suggest that irrelevant beliefs should be dismissed, such considerations are of little importance here. What matters is that Quine is anti-metaphysical in that such claims have no bearing on the observational conditional that constitute our theory; however, the virtue of Quine's account explains what exactly makes such claims irrelevant.

3.3.1.3 – Quine on sense data, physical objects, and the existence of other minds.

Having explained Quine's general deflationary approach to metaphysics and the subsequent irrelevance of metaphysical claims, I want to say something about one metaphysical issue Quine weighs in on; namely the metaphysical issue surrounding physical objects and sense data. As I explained in the previous section, since Russell's OKEW empiricists have favored a sense data approach to a physicalist approach to the problem of the material world. Faced with the solipsistic skeptical charge put forth

concerning the material world, Russell attempts to dissolve this epistemological problem by treating material objects as logical constructions out of sense data. However, in dissolving this epistemological problem Russell commits to sense data as the raw primitives over and above physical objects. Following this empiricist tradition Quine adopts the sense data approach to the material world. In this subsection I will look at Quine's attack on physicalism – an approach that while consistent with both the empiricist tradition and the parsimony of his holism, ultimately results in the same problem Russell faced concerning the existence of other minds.

Alluding to his empiricist sense data heritage, Quine explains that physical objects are mere “myths” on par with the Homeric gods. Comparing physical objects to Homeric gods Quine goes on to say,

As an empiricist I continue to think of the conceptual scheme of science as a tool, ultimately, for predicting future experience. Physical objects are conceptually imported into the situation as convenient intermediaries – not by definition in terms of experience, but simply as irreducible posits comparable, epistemologically, to the gods of Homer. For my part I do, qua lay physicist, believe in physical objects and not in Homer's gods; and I consider it a scientific error to believe otherwise. But in point of epistemological footing the physical objects and the gods differ only in degree and not in kind. Both sorts of entities enter our conception only as cultural posits. The myth of physical objects is epistemologically superior to most in that it has proved more efficacious than other myths as a device for working a manageable structure into the flux of experience.⁸⁶

Drawing an analogy between the myth that is the Homeric gods and the myth that is the belief in the existence of physical objects, Quine takes both myths to be irrelevant. As I explained in the previous subsection, metaphysical claims concerning the divine are ultimately irrelevant to our scientific theory in that these claims that comprise such a

belief have no bearing whatsoever on the experimental conditionals that define our scientific theory. Similarly, a belief in physical objects is irrelevant in that the claims concerning physical objects have no bearing whatsoever on the experimental conditionals that define our scientific theory. Imagine a theory T_s that, following Russell's approach as set out in OKEW, defines material objects in terms of sense data and entails the set of experiential conditionals D . Now, imagine a logically equivalent theory T_p that defines material world in terms of physical objects instead of sense data. These two theories (i.e. T_s and T_p) are logically equivalent in that both entail the same set of experiential conditionals D ; both make the same predictions about the world. Given that both T_s and T_p are verified by the same sensory experience and make the very same claims about the world, these two theories are empirically equivalent. Any choice between these two theories is purely pragmatic. However, on Quine's instrumentalist approach T_s is favored to T_p because it invokes the principle of parsimony involving a more simple apparatus. As Quine explains in the above quote, physical objects are like the Homeric gods in that both import unnecessary entities.

Interestingly, in the initial version of "Two Dogmas" published in the Philosophical Review Quine includes a passage relevant to this discussion.⁸⁷ Here is the relevant passage:

Imagine, for sake of analogy, that we are given the rational numbers. We develop an algebraic theory for reasoning about them, but we find it inconveniently complex, because certain functions such as square root lack values for some arguments. Then it is discovered that the rules of our algebra can be much simplified by conceptually augmenting our ontology with some mythical entities, to be called irrational numbers. All we continue to be really interested in, first and last, are rational numbers; but we find that we can commonly get from one law

about rational numbers to another much more quickly and simply by pretending that the irrational numbers are there too.

I think this a fair account of the introduction of irrational numbers and other extensions of the number system. The fact that the mythical status of irrational numbers eventually gave way to the Dedekind-Russell version of them as certain infinite classes of ratios is irrelevant to my analogy. That version is impossible anyway as long as reality is limited to the rational numbers and not extended to classes of them.

Now I suggest that experience is analogous to the rational numbers and that the physical objects, in analogy to the irrational numbers, are posits which serve merely to simplify our treatment of experience. The physical objects are no more reducible to experience than the irrational numbers, but their incorporation into the theory enables us to get more easily from one statement about experience to another.

The salient differences between the positing of physical objects and the positing of irrational numbers are, I think, just two. First the factor of simplification is more overwhelming in the case of physical objects than in the numerical case. Second, the positing of physical objects is far more archaic, being indeed coeval, I expect, with language itself. For language is social and so depends for its development upon intersubjective reference. (See footnote)

Omitting this passage from the copy of “Two Dogmas” published in From a Logical Point of View as it repeats ideas present in “On What there is”, Quine explains that physical objects, like irrational numbers and the Homeric gods, are instrumental for certain specific purposes but ultimately just convenient intermediaries for other irreducible posits. Any choice between a theory that contains one of these convenient intermediaries instead of an irreducible posits must for Quine, all things being equal, favor the theory containing the irreducible posit. Should it be the case that things are not equal and the convenient intermediaries are instrumental to the success of the theory, then commitment to such a theory is justified.

The problem facing Quine’s argument for a sense data approach, and for the more skeptically inclined it may not be such a problem, is that favoring this irreducible posit (i.e. sense data) results in a potential *reductio ad absurdum*. If it is the case that

knowledge of material objects is just knowledge of sense data, then it follows that knowledge of material objects is partially based on raw data provided by sensation and partially based on knowledge of hypothetical conditionals and categorical conditionals describing the positive correlation between certain material objects and certain sense data experiences. This produces a problem concerning the existence of other minds. If we are to understand material objects as logical constructions out of sense data, then we must understand other people and other minds as merely logical constructions out of sense data. In fact it seems that on a sense data interpretation the existence of other people and other minds are mere myths on par with the Homeric gods and the irrational numbers. While the solipsistic skeptic may welcome this approach, common sense suggests otherwise. Common sense suggests that our knowledge of other people and other minds is not just knowledge by logical construction. Common sense suggests that you and those around you are real mind independent people. Given Quine's position terminates in such absurdity, one could conclude that such analysis is hopeless; however, there are several options.

First, Quine can adopt the extreme skepticism of solipsism. He can deny the existence of everything beyond his own private sense data experience. While such a position may be philosophically tenable, even in his most skeptical moments Quine would reject it. Quine is a scientifically minded philosopher; his goal is to provide a rigorous, empirically adequate, approach to philosophy that is consistent with the method and findings of an empirically adequate science. As such, Quine would be unwilling to accept such an extreme philosophic position as it flies in the face of our best science.

Second, Quine could treat people and other minds as special instances of material objects. Following a move Russell pursued in OKEW, Quine could claim that knowledge of other people and other minds must be allowed to be not susceptible to doubt. And, as such, any question of whether our knowledge of their existence is justified is off the table. However, I do not think Quine would accept this approach. Such an approach would require Quine to treat other people and other minds as special instances of material objects. But what exactly makes them different from tables and chairs. Science treats all medium sized objects as equal regardless of the philosophic problems this creates.

Third, Quine could simply opt for a physical object theory instead of a sense data theory. Recall that Quine chose the latter over the former under the condition that both were empirically equivalent. However, given that the latter produces such absurdities, there are grounds for denying their empirical equivalence. If it is the case that the two theories are not empirically equivalent, the two theories are no longer equivalent. Should the theories be found to be no longer equivalent, holistic verification says that we select the theory that better fits experience. Thus, leading Quine to accept a physical object approach. While this seems like the best approach, Quine must now explain why physical objects are the favored raw primitives instead of logically constructed sense data objects in an empirically sound manner. He could sight the potential reductio as his justification, but this is not necessarily a strong argument. Once again we are back at the problem Russell addresses in OKEW.

3.3.2 – Criticisms of Quine's holism.

In this section I will address three objections to Quine's holism. First I will examine some concerns surrounding Quine's metaphorical web of beliefs. Second I will examine some concerns surrounding Quine's revisibility theses. Third I will examine some concerns surrounding Quine's underdetermination thesis.

3.3.2.1 – Evaluation of Quine's web of beliefs.

As I explained in the previous section, Quine's holism can be understood metaphorically to be web-like in structure. The purpose of this metaphor is to suggest that our theory, be it our semantic theory or our epistemological theory, forms an interconnected network in which no individual belief can be attributed content without reference to the network as a whole. Given Quine's epistemological holism and semantic holism, it follows from the web-like structure that no sentence can be said to be either meaningful or belief said to be true without consideration for those further sentences and beliefs that surround it. This being said, Quine's metaphor, as metaphors often do, obscures almost as much as it reveals: What exactly counts as a web-like structure and what falls within its domain.

Focusing on Quine's epistemological holism, we can apply the metaphor of a web-like structure to Quine's holism in two ways. We can think of the web in three-dimensional space or we can think of the web in two-dimensional space. If we apply a three-dimensional image of the web to Quine's metaphor then it would seem that Quine is suggesting the interconnectivity of all beliefs. Imagine a core from which a series of threads spread out in both the *x*, *y*, and *z* axis connecting all beliefs ranging from our

theory of logic, to our evolutionary history, to our atomic theory, to our theory of every day facts. Using the three-dimensional image of a web to metaphorically describe the structure of our system of beliefs seems to suggest the preposterous; namely, it seems to suggest the interconnectivity of all beliefs regardless of their content. Now it should be noted that certain beliefs, like independent speculative metaphysical beliefs, have no empirical bearing and, as such, fail to connect with other beliefs. However, the remaining stock seem, on this interpretation, to be interconnected. Does Quine mean to suggest that a belief concerning the evolutionary biological history of the Tasmanian Tiger (a marsupial indigenous to Tasmania and thought to have gone extinct in the mid twentieth century) is in some way epistemically connected to and, more importantly, dependent on a belief concerning the atomic structure of uranium? Better still, if we include his views about semantic holism, that a belief concerning the meaning of the word 'snow' is in some way connected to a belief concerning irrational numbers. If it is the case that Quine's metaphorical web is the sort of web I have been describing by my three-dimensional image, then it seems that all beliefs with empirical content are interconnected.

This strikes me as blatantly false. If we understand interconnectivity in terms of shared empirical content, then according to Quine it follows that these disparate beliefs share empirical content. But what exactly is the empirical content shared in the two above-mentioned examples? Without a knockdown argument to demonstrate my point I am left asking rhetorical questions to support my point; however, I maintain the objection nonetheless.

Shifting to the two-dimensional image of the web, the metaphor seems more convincing. Imagine a point on the xy -axis connecting all the beliefs within a certain domain. Spreading out in all directions on the two-dimensional plain are threads connecting all the beliefs within a certain domain. Without specifying what exactly counts as a “certain domain”; imagine that it includes all beliefs within say, biology. The beliefs that constitute our theory of biology form an interconnecting web in which each is in some way connected to and, more importantly, dependent on further beliefs. By restricting the domain and, in turn, the range of interconnectivity the metaphor sounds more reasonable. It seems far more reasonable on this interpretation to imagine all beliefs within a domain sharing empirical content.

The problem with Quine’s metaphor is that it seems to suggest the former interpretation. As I quoted earlier, Quine explains the web as covering “the totality of our beliefs” and connecting “the most casual matters of geography” to the “profoundest laws of atomic physics or even pure mathematics and logic”. Including all beliefs, I suggest, defies common sense. However, if you want to adopt the two-dimensional interpretation, you need to not only define what counts as a domain but specify the relationship between the disparate domains. However, if you adopt the two-dimensional interpretation of the metaphor then you can no longer talk about a change of belief in one domain affecting beliefs in an entirely independent domain.

3.3.2.2 – Evaluation of the revisibility theses.

Possibly the most radical of the theses that make up Quine's holism, the revisability theses (i.e. QH3) and QH4)) opposes one of the central tenets of traditional philosophy. Traditionally philosophers have argued that there is a restricted class of metaphysical claims considered necessary, a similar class of epistemological claims considered a priori, and a further class of semantic claims considered analytic. In opposition to this tradition Quine claims that these restricted classes are unempirical articles of metaphysical faith. Whether it is the choice to hold a claim true in the face of recalcitrant experience as QH3) suggests or to reject a claim as false in the face of recalcitrant evidence as QH4) suggests, the revisability theses emphasize the man-made nature of our web-like system. Intrinsically linked, QH3) and QH4) follow naturally from QH1e) and QH1's). In fact, to use some Quinean lingo: they seem like two side of the same coin. Both emphasize the pragmatic considerations involved in maintaining and revising our system. In this subsection I will look at the extent to which these theses accurately describe our system of beliefs. That is to say, I will consider whether in fact there are some beliefs that can not be revised and, as such, must be held true no matter what; thereby falsifying a crucial element of Quine's empiricism.

Epistemologically for Quine logical truths are core beliefs and, as such, well protected. Traditionally logical truths have been taken to be analytic apriori necessary. Take for example the law of non-contradiction. The law of non-contradiction says that no sentence can be both true and false (i.e. $\neg(p \ \& \ \neg p)$). The common sense intuition behind the law of non-contradiction is that it seems impossible for it to be true of a book that it is in fact on the table and yet for it to simultaneously be false that this same book is on the

table: If it were true that the book was in fact on the table, it could not be false that the book is on the table without resulting in contradiction.

According to Quine, we need not hold this logical law true. According to the revisability theses we can give up our faith in the necessity, a priority, and analyticity, of the law of non-contradiction if we are willing to make the appropriate changes elsewhere in our system of beliefs. Once protected as nonrevisable, this so-called law is open for revision in the face of recalcitrant experience. We have a natural tendency to hold this law true because it plays an important role in our system and, as such, is centrally located in system of beliefs. However, like any other belief, it is open for revision if the requisite evidence arises. But what, you may ask, could possibly count as evidence against this law? Take 5) for example:

5) Homer Simpson is bald.

Sentence 5) is an example of a sentence involving a vague predicate. The problem with a sentence like 5) is that its truth-value is often unclear. It is true that Homer Simpson is bald given that he has no hair on his head. Now what if Homer had one hair on his head, would he be bald? The answer would probably still be yes. However, if we continue adding hairs to Homer's head, each time asking if he is still bald, at what point does this sentence become false. That is to say, at what point does it become false that he bald?

This example demonstrates that for any sentence involving a vague predicate there will be cases where both truth values seem to apply; where one could consider it both true that he is bald and false that he is bald. If we construct an experimental conditional out of the

law of non-contradiction, vague predicates like the above noted offer examples of cases in which the consequent comes out false.

Given that we can specify the conditions under which this so-called law of logic and canon of rationality come out false, namely when the sentence under consideration contains vague predicates, it seems obvious that it is just false that the law as it is formulated is necessary, a priori, and analytic. It only takes one counter example to falsify a law and sentence 5) is just such an example. What then is to be done. The pragmatic element of Quine's holism leaves the course of action open. The law can be retained. The law can be rejected. The law can be revised so as to take account for instances of vague predicates. Faced with such an example and the resulting choice, the task for the Quinean is clear. The task for the Quinean is then to trace out the ramifications that follow from all possible reformulations of the law that lie between the law as it was and rejecting the law altogether. The magnitude of this task demonstrates why we are so reluctant to make such revisions.

This being said, such examples do not in fact prove Quine's point. While such examples may demonstrate only that certain laws are open to revision, it does not follow that no statement is immune to revision – such a conclusion is obviously fallacious. No definite number of examples can prove Quine's point, but one counter example can refute it. Take for example a weaker formulation of the law of non-contradiction; call it the minimal law of non-contradiction. The minimal law of non-contradiction says that it is not the case that every sentence is both true and false. To place this within an epistemic context, we could ask, as Putnam does,

Could someone believe that all his own beliefs (and everyone else's), and all possible beliefs, for that matter, are both fully warrantably assertible and that their negations are fully warrantably assertible as well?⁸⁸

While I can not at this time provide a counter to this law, it may be possible. The problem remains clear: the truth of these theses can never be conclusively demonstrated by massaging examples. For every example of a sentence supposedly immune to revision, the Quinean task is to develop a counter example to disarm the reply.

This being said, there is a further, and more devastating, objection to Quine's revisability theses. Consider for a moment the role the first dogma plays in Quine's argument for the revisability theses. Quine's argument for the revisability theses appeals to two other theses. The first thesis is QH1) and the second is the first dogma. Having shown, as QH1) does, that the unit of empirical significance is the entire theory Quine is able to conclude that for any synthetic sentence it can be held true or rejected as false in the face of recalcitrant experience. However, in order to get the full form of the revisability theses Quine needs to appeal to the first dogma and his rejection of the analytic/synthetic distinction. If it is the case that there is in fact no distinction between the analytic and the synthetic, then no clear boundary can be drawn and Quine can derive the full form of the revisability theses. However, given what I said in chapter 2 regarding the limited success of Quine's attack on analyticity, the revisability theses remain up in the air. That is to say, if you give up on the identification of the epistemological and metaphysical with the semantic, much of the strength of the revisability theses evaporates. If this identification is required in order to derive the full form of the revisability theses and it is not the case that the identification holds, then you need to provide another argument to get the full form of the revisability theses. This does not mean you can not

have the full form of the theses – that would be invalid reasoning – it just means you have to look elsewhere for an argument to support these theses.

Without the identification of the epistemological and metaphysical with the semantic the argument from circularity loses much of its strength. Without the full form of the argument from circularity the revisability theses lose much of their strength. No longer is Quine able to claim that no sentence is immune to revision. As Kripke has shown in Naming and Necessity, there are necessary truths and a priori truths that are not analytic. And, as such, are immune to revision even in the face of Quine's attack on analyticity.

3.3.2.3 – The vacuity of Quine's holism.

The final objection I will raise concerns the vacuity of Quine's holism.⁸⁹ According to Quine, the meaning of a theory is just the class of possible observations it fits (i.e. the empirical predictivity of the theory). If this is our account of what a theory means and we apply this account to two theories – one that explicitly acknowledges Quinean holism and one that explicitly denies Quinean holism – the vacuity of Quine's holism becomes apparent. Take theories T and T* for example. Theory T fits the class of possible observations O and explicitly recognizes Quinean holism. Theory T*, logically incompatible with T in that it denies Quinean holism, also fits observations O. While these two theories contradict each other on Quinean holism, they have the same empirical predictivity. As Soames explains, “neither his philosophy nor its negation plays any very straightforward or significant role in making observational predictions about the

world.”⁹⁰ Since the Quinean thesis does not affect the observational conditionals contained in a theory, there is no empirical difference between T and T*; both theories contain the same observational conditionals, make the same observational predictions, and have the same meaning, even though they are contradictory. However, the real problem is finding a reason why a scientific theory should be holistic in the Quinean sense if it makes no empirical difference. Quine’s holism is of no empirical significance and, as such, there is no reason for us to adopt it. It follows that by its own criteria it is vacuous in empirical content and should be dismissed as irrelevant in a manner consistent with the dismissal of speculative metaphysical claims about the divine.

3.3.3 – Summary of the second dogma empiricism.

We are left with a mixed evaluation of the second dogma of empiricism and Quine’s holism. On the one hand Quine’s attack on logical positivism has to be viewed as successful. The unit of empirical significance is the theory and not just the individual sentence. Given the success of his attack on logical positivism and subsequent shift in unit of significance, it follows that Quine’s attack on the methodology of the theoretical sciences also holds. That being said, the same success does not translate to his holism. I have raised concerns about Quine’s web metaphor. To say that all beliefs form an interconnected web of beliefs is, as I have suggested, preposterous. However, if we interpret the metaphor as holding with a fixed domain, we face the problem of determining the bounds of the domain and accounting for the relationship between domains. I have argued that it is just false that no sentence is immune to revision. There

are certain epistemological claims and certain metaphysical claims that are not open to revision. Furthermore, I have argued that according to Quine's account of the nature of a scientific theory and his underdetermination thesis, we have no reason to adopt his form of holism.

Conclusion

In this thesis I have attempted to understand and evaluate the significance of Quine's "Two Dogmas of Empiricism". In pursuing this goal I placed "Two Dogmas" within the context of the tradition of logical empiricism. In placing "Two Dogmas" within this tradition and attempting to understand it as the culmination of a tradition that began with logical atomism and became logical positivist, this thesis should be understood as a work in the history of the twentieth century analytic philosophy of language. Tracing the development of logical empiricism from logical atomism through logical positivism to Quinean holism, I have run through several arguments and problems associated with these positions.

In Chapter 1 I traced the roots of logical positivism to Wittgenstein's Tractatus. I began by identifying the foundational theses of Wittgenstein's Tractatus. As I explained, the first thesis of the Tractatus is that of logical atomism. Wittgenstein's logical atomism, developed while studying under Russell at Cambridge, is a bold logico-metaphysical

thesis concerning the basic building blocks of reality and language. According to this thesis there must be metaphysically simple objects on the side of the world and corresponding linguistic simples on the side language in order for the latter to accurately represent the former. Employing a *reductio ad absurdum* Wittgenstein argues that what makes linguistic representation possible is this correspondence relation between the simplest elements in language and the simplest elements in world. From this logico-metaphysical thesis Wittgenstein concludes that any sentence for which reductive analysis does not terminate linguistic simples fails to refer to metaphysically simple objects and is, as such, strictly speaking meaningless. From this logico-metaphysical thesis and subsequent theory of meaningfulness Wittgenstein derives two further theses.

The first of these two further theses is the thesis of verificationism.

Verificationism is both a semantic thesis and an epistemic thesis. As a semantic thesis verificationism serves as a theory of meaning. As an epistemic thesis verificationism serves as a theory of truth. As a theory of meaning verificationism says that the meaning of an atomic sentence is just the atomic fact it pictures. As a theory of truth verificationism says that the truth of a sentence depends on that which it represents obtaining.

The second of these two further theses is a three-part logico-semantic distinction concerning the different types of meaningful sentences. Given the two aforementioned theses Wittgenstein divides all meaningful sentences into those which are tautological, contradictory, and contingent. Tautological sentences are the class of sentences that are true no matter what. Contradictory sentences are the class of sentences that are false no matter what. Contingent sentences are the class of sentences that can be either truth or

falsity, where truth and falsity depends on the state of the world. Given the metaphysic behind this three-part logico-semantic distinction, Wittgenstein goes on to note that while the truth of tautologies and falsity of contradictions are metaphysically necessary, the truth or falsity of the contingent sentences is metaphysically contingent.

Excited by much of the Tractarian system a school of logically minded realists, later known as the Vienna Circle,⁹¹ developed a neo-Tractarian theory that has since come to be known as logical positivism. Borrowing Wittgenstein's theory of verification and his three-part semantic distinction, the logical positivists rejected only the metaphysic of the Tractatus as self-defeating by its own standards. Championed by Rudolph Carnap, possibly the Circles most prolific member, logical positivists attempted to reconstruct a general Tractarian system without the additional speculative metaphysical commitments found in Wittgenstein's work.

For Wittgenstein, the semantic distinction had an important metaphysical emphasis. Recall that for Wittgenstein there are three classes of meaningful sentences. The first and second classes are taken necessarily true and necessarily false respectively. Setting aside the third class of sentences for now, what makes the sentences of the first two classes true or false is a metaphysical issue. A tautology is true because the picture the sentence represents is necessarily the case – the sentence could not be false. Similarly a contradiction is false because the picture the sentence represents is necessarily not the case – the sentence could not be the true. Thus, sentences of the first and second types are either necessarily true or necessarily false because no extra-linguistic considerations could possibly affect their truth or falsity. Dissatisfied with this account because it involves a metaphysical notion of truth in making claims about the nature of the world

and how the world must be, positivists substituted in an epistemological notion of truth and a priority. The approach was essentially the same as Wittgenstein had conceived it; however, the truth of tautologies and the falsity of contradictions was no longer a matter of metaphysical faith but rather epistemic certainty.

A similar shift in emphasis can be found with regards to contingent sentences. Whereas for Wittgenstein the truth of such sentences was a metaphysical issue concerning the objects in the world being arranged in the manner they are pictured in the sentence, the truth of such sentences was considered a posteriori for the positivists. Shifting from a metaphysical notion of truth to its epistemological counterpart, the truth of such sentences still depends on the objects in the world be as they are pictured in the sentence it just happens that the positivistic account of this relation is no longer metaphysical but epistemologically grounded. In place of the metaphysical account of the world, the positivists opted for an epistemologically oriented account in terms of sense data. Following Russell, the positivists treated the objects of the world as logical constructions out of sense data. On such an analysis they thought they had found a way to maintain the basic framework of the Tractarian system without any of the speculative metaphysical elements found therein.

What we left with is not all that dissimilar to the highly logicized approach as set out in the Tractatus. The emphasis on reductive logico-linguistic analysis remains. The same three-part semantic distinction remains, although within the positivist framework it became a two-part distinction in name because they treat tautologies and contradictions as tokens of the same type. The theory of verification remains more or less in tact. Where the two systems differ is in terms of emphasis. The Tractarian system had a metaphysical

emphasis, while the positivist's system had an epistemological emphasis. As such, the former identified the semantic notion of the analytic with the metaphysical notion of necessity, while the latter identified the semantic notion of the analytic with the epistemological notion of the a priori.

Differences aside the primary virtue of logical positivism as a philosophic system, the virtue that drew scientifically minded philosophers to it and, in turn, drove away more metaphysically inclined traditionalists, was its logico-scientific approach. Logical positivism holds the view that science and science alone can provide information about the world. While the traditionally minded philosophers did not approve of this analysis, what had been achieved by the traditionalist approach? Until the turn of the century philosophers were still discussing the same apparently unanswerable questions. Science and the scientific philosophy built on logico-linguistic analysis brought real progress.

The success of logical positivism was relatively short lived. From its birth as a formal system in the mid 1920's to its collapse in the early 1950's logical positivism as a philosophic system was fraught with problems. Setting any discussion of the problems that plagued logical positivism in the years leading up to the publication of "Two Dogmas", I have argued that the principled objections set forth by Quine are sufficient to demonstrate the principled failings of not only logical positivism but the general Tractarian approach.

In chapters 2 and 3 I presented and analyzed the arguments put forth in Quine's "Two Dogmas". In what should be considered the decisive attack on an already collapsing system "Two Dogmas" targets the two aforementioned foundational theses of logical positivism; namely, the analytic/synthetic distinction and verifications. As I

explained, Quine's aim is to demonstrate the unempiricalness of both of these theses and, ultimately, that any form of empiricism that holds these theses contains unempirical dogmas. In what is a two pronged attack Quine addresses each thesis in turn.

In chapter 2 I presented and analyzed Quine's attack on the first thesis of logical positivism. Beginning with the semantic thesis, Quine attacks the supposed empirical adequacy of this distinction. Dividing the class of analytic sentences into those which are logically true (i.e. true by virtue of form alone) and those which are true by virtue of form and their nonlogical content (i.e. true by virtue of form plus meaning), Quine argues that it's not possible to provide an empirically adequate characterization of the members of the latter class. Arguing from circularity, Quine claims that, as a concept, analyticity is a member of a family of empirically unintelligible concepts; any attempt to define a member of this family requires appeal to similarly unintelligible concepts. As such, Quine concludes that all members of the family (i.e. analyticity, meaning, synonymy, and necessity) are empirically unintelligible. Thus, Quine concludes that the purported analytic/synthetic distinction remains an article of metaphysical faith, as an empirically adequate definition is still wanting. That a clear distinction can ever be drawn is the first dogma of empiricism.

In chapter 3 I presented and analyzed Quine's attack on the second thesis of logical positivism. Quine attacks the supposed empirical adequacy of the verification thesis. According to the verification thesis the meaning of a sentence is just its method of verification. This requires the construal of all synthetic sentences as reducible to sentences about immediate experience. In order to facilitate this translation, each sentence is translated individually into a sense data language. The problem is that

reductionism is itself a dogma. Sentences are not individually translatable; sentences get translated collectively. Attacking Carnap on this issue, Quine demonstrates that the positivistic approach fails in principle by showing that even the most basic claims about the location of a quality in both space and time requires a relational claim that can only be defined in terms of some further space/time coordinate. Having shown the sort of reductionism required by verificationism fails in principle, Quine goes on to show that the very same problem persists in the methodology of the theoretical sciences. With all of this clearly set out, Quine's provides a holistic counter suggestion. In keeping with much of the positivistic system, Quinean holism follows naturally from the positivist system by simply rejecting the analytic/synthetic distinction and changing the unit of empirical significance from the sentence to the theory as a whole.

As an attack on logical positivism the success of Quine's "Two Dogmas" should not be understated. In "Two Dogmas" Quine demonstrates that any form of logical empiricism (i.e. any system that takes the semantic as the key to the epistemological and metaphysical) that contains either dogma fails the test for empirical adequacy in containing speculative metaphysical commitments. This being said, one should similarly not overstate the significance of Quine's attack – as Quine himself does with regards to both dogmas.

As I have explained, the first dogma is a devastating attack on the analytic/synthetic distinction as found in logical positivism. However, this does not mean that sense can not be made of the distinction. An account of analyticity can be given in terms of common sense notions of meaning and sameness of meaning; it just happens that this account is insufficient for the purpose it was meant to serve within logical positivism

because it is importantly vague. Similarly, in sketching his holistic empiricism Quine oversteps his bounds in claiming that no statement whatsoever is immune to revision. First, this is patently not the case as Kripke has shown. Second, this conclusion only seems to follow if one identifies the metaphysical and epistemological with the semantic; giving up this identification reveals the Quine's folly.

What leads Quine into error is his positivist heritage. Quine is a reformed positivist. His work, while critical of logical positivism, remains largely within the basic framework passed down from Wittgenstein through the logical positivists. As such, Quine, like his forebears, unquestioningly accepts not only the identification of meaning with empirical evidence, but also the identification of the metaphysical and epistemological with the semantic. As I have explained there are problems associated with both identifications. If one accepts the former identification and identifies meaning with evidence and continues down the path of logical empiricism to Quinean holism, then what you end up with at the end turns out to be vacuous. As I have explained Quine's theory of holism is vacuous by its own criteria of meaningfulness and since accepting it makes no difference to the set of observational conditionals that constitute the theory the theory itself turns out to be vacuous. This fact, reminiscent of what led the later Wittgenstein to reject the metaphysic of his Tractarian system, leaves little reason, beyond appeal to a form of instrumentalism, to adopt Quinean holism as a theory of everything. Better maybe to give up on the identification than accept such a theory. If one accepts the latter identification and identifies the metaphysical and epistemological with the semantic, then one is ultimately led down the path to Quine's revisability thesis. However, radical revisability is not necessary, as this identification need not be made. By

abandoning this identification and uncoupling the epistemological and the metaphysical from the semantic radical revisability is not longer required. As Kripke has urged, much of the force out of Quine's holistic empiricism evaporates when we recognize that our semantic theory is separable from our epistemic and metaphysical theories.

This being said, one should not dismiss all of the prescriptive elements put forth in "Two Dogmas" as flawed and without significance. Take for example Quine's discussion of the process by which we test scientific hypotheses. Quine argues that the proper methodology for testing scientific hypotheses is not individually but rather collectively. Separating this claim from the rest of theses that make up Quinean holism, I want to suggest that as an epistemological thesis this thesis is acute. It rightly urges us to look past the simple model of science as testing theses individually and in a wholly unbiased manner and recognize our role in the construction of scientific theories. Quine takes this thesis to justify radical holism. As I have explained, I have reservations about his holism, however, reservations aside, I think Quine is right to suggest that it is wrong to think that hypotheses are tested in isolation. Is it the entire theory that gets tested or can it be restricted to some domain within the entire theory? Answers to this and other such questions are not so cut and dry, instead they stand out as areas where further analysis and research is required.

As I have presented it, we are left with a mixed view of Quine's work. On the one hand Quine stands victor. Quine's acute criticisms demonstrate the unempiricalness of a form of logical empiricism that purported to be the pinnacle of empirical austerity. However, on the other hand Quine stands defeated. His radical holism plagued by many of the same issues that troubled the theories of his predecessors. Where Quine will fit in

the history of philosophy has yet to be determined, as much work is still required in identifying those prescriptive elements that continue to carry weight after shedding the problematic assumptions of his predecessors. As such, it seems to me that in coming to terms with Quine's work, both the critical Quine and the constructive Quine, and the tradition to which it is a part is an important task in the history of the philosophy of language.

¹ Coffa, The Semantic Tradition: From Kant to Carnap, To the Vienna Station, ed. Linda Wessels (Cambridge: Cambridge University Press, 1991) 142.

² Soames, Manuscript, (unpublished) 268-9.

³ Soames (unpublished), 269.

⁴ Hacker (1996), 24.

⁵ Soames (unpublished), 270-1.

⁶ Soames (unpublished), 271.

⁷ Soames would have us see Wittgenstein's commitment to metaphysically simple objects as a postulate of the Tractatus rather than as a theorem as he claims that "it is better ... to view these doctrines as basic postulates of the Tractarian system, than as theorems forced on Wittgenstein by other more basic assumptions."⁷ But I think there are good reasons to see his Augustinian picture of language, concern for determinate meaning, and commitment to verificationism as forcing these conclusions on him. Though I will not discuss this issue any further, this example raises two interesting questions. The first concerns the difference between postulates and theorems. The second concerns Wittgenstein's views in this area. Both questions are interesting and offer areas for future research.

⁸ Soames (unpublished), 267-7.

⁹ Ludwig Wittgenstein, Notebooks 1914-1916, (Oxford: Basil Blackwell, 1961) 18.

¹⁰ NB 29.9.14

¹¹ I am indebted to Ali Kazmi for not only this terminology but also for a revealing discussion on this issue.

¹² This theory of meaning and meaningfulness results in an interesting relationship between those atomic sentences that while meaningful given that they picture a possible state of affairs are false since the state of affairs they picture are not as the world is. For these sentences one must ask what is the meaning of these false atomics? In accordance with what has already been said, the meaning of these sentences is just the possible picture. However, as Soames notes, "Wittgenstein did not think that in addition to actual facts or states of affairs, there are some further entities – merely possible facts or states of affairs – that have a kind of being that falls short of full-fledged existence or actuality." (Soames, 287) Thus, it seems that there are no meanings of false atomics.

¹³ Soames (unpublished), 289.

¹⁴ Soames (unpublished), 290.

¹⁵ Soames (unpublished), 294-5.

¹⁶ For ease of future of discussion I will follow the positivist's terminology referring to this semantic distinction as that between analytic sentences (both those that are analytically true and those that are analytically false and synthetic sentences.

¹⁷ Soames (unpublished), 272.

¹⁸ Bertrand Russell, Logical Atomism, (1924) 160

¹⁹ A.J. Ayer, Language, Truth, and Logic, 2nd ed. (New York: Dover, 1946) 53.

²⁰ Soames (unpublished), 338.

²¹ It should be noted that both Wittgenstein and the positivists held that all necessary truths are analytic and that the source of this necessity lay in meaning. "For Wittgenstein, the basis of this view lay in his contention that for a sentence to SAY anything, for it to provide any information, is for its truth to EXCLUDE certain possible states that the

world could be in. Since necessary truths exclude nothing, they say nothing; and since they say nothing about the way the world is, the way the world is makes no contribution to their being true. Hence, their truth must be due to their meaning alone.” (338) “The positivists, who found this conclusion welcome, emphasized a different line of reasoning. Being empiricists, they believed that all knowledge about the world is dependent on observation and sense experience. It follows that since all apriori truths can be known independently of observation and sense experience, they must not be ABOUT the world; and if they don’t tell us anything about the world, then the world must play no role in determining that they are true. Rather their truth must be a matter of meaning alone.” “If one thinks about these motivations, one sees that, in effect, Wittgenstein’s reasoning identified the necessary with the analytic, whereas the positivists’ reasoning identified the apriori with the analytic.” (338). The is no real disagreement between Wittgenstein and the positivists on this point, because both identify the necessary with the apriori.” (338). “Thus, for these philosophers, the necessary, the apriori, and the analytic were one and the same.” (338).

²² Scott Soames (unpublished) 337.

²³ Logical truths and logical falsehoods “are simply the result of having a symbol system that includes truth-functional operators. You need the truth-functions in order to say things like *the world is NOT so and so*, and *the world is either such and such OR so and so*. But once you have truth-functional operators, logical truths will result from combining them in certain admissible and inadmissible ways.” (296). Thus, logical truths and logical falsehoods amount to nothing more than artifacts of our symbol system that is language.

²⁴ Quine, “Two Dogmas of Empiricism” in From a Logical Point of View, 2nd ed. Revised (Harvard: Harvard University Press, 1953), 24.

²⁵ Quine (1953), 25.

²⁶ Quine (1953), 25.

²⁷ Quine (1953), 26.

²⁸ The counter-instances I speak of are cases in which the interchangeability of synonymous pairs fails given the structure of the occurrence within the sentence in question. Take the pair ‘bachelor’ and ‘unmarried man’ for example. Under the majority of cases these nonlogical expressions are interchangeable; however, in certain cases (e.g. “bachelor” has less than ten letters) substitution fails. In order to avoid such counter instances, Quine suggests we treat occurrences “bachelor” like “bachelor of arts” and “bachelor’s buttons”; that is to say, treat each of these occurrences as indivisible words. By treating these in such a manner and stipulating that synonymy is not supposed to apply to fragmentary occurrences inside a word Quine is able to sidestep these counter instances. While this move presupposes an antecedent account of what counts as a word, I, like Quine, take this for granted.

²⁹ In a strictly extensional language both the vocabulary and the logical operators are defined extensionally. Such a language consists of an indefinitely large stock of one-place predicates (e.g. ‘F’ where ‘Fx’ means that x is a man) and many-place predicates (e.g. ‘G’ where ‘Gxy’ means x loves y), mostly having to do with extra-logical subject matter. The rest of the language is made up from the extensionally defined logical operators. The predicates serve as the atoms from which atomic sentences are constructed (i.e. a predicate followed by one or more variables ‘x’, ‘y’, etc.); while complex

sentences are built up by combining atomic sentences with logical operators (e.g. 'not', 'and', 'or', etc.) and quantification.

³⁰ Quine (1953), 29-30.

³¹ Quine (1953), 31.

³² As I pointed out in the previous chapter, the logical positivists and, in fact, most analytic philosophers accepted two theses:

1) All necessity and apriori are defined in virtue of analyticity.

2) Analyticity is required in order to understand necessity and apriority.

³³ Quine (1953), 33.

³⁴ Quine (1953), 33-4.

³⁵ While some may take issue with the unproblematic nature of the concept 'true', Quine grants it for sake of argument.

³⁶ Quine (1953), 34.

³⁷ Quine (1953), 34.

³⁸ Quine (1953), 36.

³⁹ H.P. Grice and P.F. Strawson, "In Defense of a Dogma," in *The Philosophic Review* (vol. 56, 1956)

⁴⁰ Quine (1953), 20.

⁴¹ As I have already shown, with the unintelligibility of the analytic/synthetic distinction goes the distinction between synonymous and non-synonymous expression. However, as I will show in the following chapter, Quine takes the rejection of the analytic/synthetic distinction to carry with it certain other distinction; namely, the distinction between necessary and contingent truths, and the distinction between a priori and a posteriori truths, as both distinctions have traditionally been defined in terms of analyticity and syntheticity.

⁴² W.V.O. Quine, *Word and Object*. Cambridge: MIT press, 1960.

⁴³ Grice and Strawson (1970),

⁴⁴ Ayer (1946), 73.

⁴⁵ Ayer (1946), 77.

⁴⁶ Ayer (1946), 73.

⁴⁷ Ayer (1946), 75.

⁴⁸ Ayer (1946), 79.

⁴⁹ This point about the content of analytic sentences is expanded on by Ayer in an illuminating discussion of the concept of implication:

If I say "Nothing can be coloured in different ways at the same time with respect to the same part of itself," I am not saying anything about the properties of any actual thing; but I am not talking nonsense. I am expressing an analytic proposition, which records our determination to call a colour expanse which differs in quality from a neighbouring colour expanse a different part of a given thing. In other words, I am simply calling attention to the implications of a certain linguistic usage. Similarly, in saying that if all Bretons are Frenchmen, and all Frenchmen Europeans, then all Bretons are Europeans, I am not describing any matter of fact. But I am showing that in the statement that all Bretons are Europeans, and all Frenchmen Europeans, the further statement that all Bretons are Europeans is implicitly contained. And I am thereby indicating the convention which governs our usage of the words "if" and "all". (Ayer (1946), 79).

⁵⁰ Ayer (1946), 84.

⁵¹ I am indebted to Soames for this example.

⁵² Hilary Putnam, "Is Semantics Possible," in Language, Belief, and Metaphysics, edited by H.E. Kiefe and M.K. Munitz, pp. 50-63. Reprinted in Naming, Necessity, and Natural Kinds, edited by Stephen P. Schwartz. (Ithaca: Cornell University Press, 1977) 111.

⁵³ Kripke blows apart the identification of the identification of the analytic with the necessary and the a priori. Take the identity claim expressed in the following sentence for example:

"Water is H₂O."

Since Kripke presented the lectures that later became Naming and Necessity philosophers have generally rejected the identification of the analytic with the necessary and the a priori on the grounds that there are identity claims that are necessarily true without being analytic. For those who accept the identification, sentence 7) is synthetic – it seems obviously contingent a posteriori synthetic because it is an empirical discovery that the object that is water is also H₂O. However, as Kripke argues, both theoretical identifications marked by rigid designators 'water' and 'H₂O' are identity statements using these rigidly designating names are necessary (if true). This can be demonstrated in first order logic. Beginning with schema 1):

1) (x)(y) [(x=y) ((Fx (Fy))]

We can substitute in for F(x) the necessarily true identity claim expressed by 2).

2) (x)((x=x)

By substituting 2) into 1) we produce as a substitution instance of 1) sentences 3)

3) (x)(y) [(x=y) (((x=y))]

Since it is the case that the consequent of the major conditional is itself a conditional, the antecedent of which is logically true, the antecedent drops out of 3) leaving 4).

4)(x)(y) ((x=y) (((x=y))

This shows that when true contingent identity claims appear impossible. This being said, for our purposes, 4) is significant because it shows that you can have necessity without analyticity. That is to say, you can have necessarily true sentences like 7) that are not analytic (i.e. not true in virtue of logical form plus meaning). This is just one sentence amongst a class of many which philosophers now take to be necessary without being analytic. This goes to show that the identification does not always obtain. That is not to say, that the identification does always fails, there are cases in which a sentences' necessity is derivative of its analyticity. Rather, just that the identification does not always hold true.

⁵⁴ Quine (1953), 37.

⁵⁵ It should be noted that there are interesting and convincing arguments put forth by Misak in her work Verificationism, that suggest that the notion of verificationism is already present in classical empiricism before Hume and Locke; locating its origin instead in the work of Bishop Berkeley. While I will not address this debate, it is an area for potential future research.

⁵⁶ Wittgenstein (1922), 6.53.

⁵⁷ Wittgenstein (1922), 6.54.

⁵⁸ See Moritz Schlick, "The Foundation of Knowledge," in Ayer's Logical Positivism, 209-27, and "Facts and Propositions," *Analysis* 2 [1935]: 65-70 for an account of incorrigible 'basic propositions' and limited correspondence within a largely coherence based system.

⁵⁹ Carl Hempel, "On the Logical Positivists' Theory of Truth." In *Analysis* 2 (1934-5) 54-57.

⁶⁰ Bertrand Russell, Our Knowledge of the External World (London: George Allen and Unwin, 1914). Henceforth referred to as OKEW.

⁶¹ Mia Reichenbach's typescript, 1962, RC 090-02-05, pg. 3-4 ASP. As cited in Coffa (1991), 208.

⁶² "Intellectual Autobiography." In Schilpp, *The Philosophy of Rudolf Carnap*. 13

⁶³ Carnap, Circular letter, 7 April 1920 (ASP). As cited in Coffa (1991) 207.

⁶⁴ Russell (1914), 84-5.

⁶⁵ This new approach to epistemology is based on two theses:

- 1) The basis for our knowledge that material objects to exist and the truth or falsity of a sentence concerning such object is perception.
- 2) On the basis of perceptual experience we know that certain types of sense data experiences are positively correlated with other types of sense data experiences.

Given these two theses, Russell was confident talk of material objects must reduce to talk of sense data experiences.

⁶⁶ It should be noted that Russell recognized two problems with this approach. First, he never thought such an analysis could provide the necessary and sufficient conditions for any sentence. Second, he recognized that the counterfactual conditionals lack the specificity required by such a logical approach. As Soames notes,

It should be emphasized that Russell never thought that he had arrived at a complete analysis of any particular material object statement. He knew that no matter how many clauses like (5a), (5b), and (5c) he might produce, there would always be many more that would have an equal claim to being part of a complete analysis of the physical object statement. He also knew that clauses like (5a)-(5c) are themselves sketchy and not fully specified. These clauses continually talk of sense data "of a certain sort", without spelling out precisely what these different sorts are. However, this did not deter Russell, or later philosophers who were influenced by him. (Soames, 232)

⁶⁷ Quine (1953), 39.

⁶⁸ Coffa (1991), 210.

⁶⁹ Quine (1953), 40.

⁷⁰ Quine (1953), 40.

⁷¹ It should be noted that Quine need not show that for each synthetic sentence that it share empirical content with others, only that many synthetic sentences inseparably share empirical content.

⁷² Carl Hempel, Philosophy of Natural Science (Englewood Cliffs, N.J.: Prentice-Hall, 1966) 7, 23.

⁷³ Quine (1953), 40.

⁷⁴ Quine (1953), 41.

⁷⁵ Quine (1953), 41.

⁷⁶ Quine (1953), 41.

⁷⁷ Quine (1953), 42.

⁷⁸ Hilary Putnam, "Analyticity and Apriority: Beyond Wittgenstein and Quine," in *Midwest Studies in Philosophy*, Vol. 4. Ed. P. French et al. 1979. Reprinted in A Priori Knowledge, ed. Paul K. Moser. Oxford: Oxford University Press, 1987. 98.

⁷⁹ It should be noted that this holistic view also encompasses the analytic-synthetic cleavage. The difference between so-called analytic and synthetic truths is simply a matter of degree, not one of kind as his empiricist predecessors had assumed.

⁸⁰ Harry Collins and Trevor Pinch, The Golem: What Everyone Should Know About Science (Cambridge: Cambridge University Press, 1993) 121-139.

⁸¹ Soames (Unpublished), 486.

⁸² Soames (Unpublished), 495.

⁸³ Quine (1953), 46.

⁸⁴ Quine (1953), 46.

⁸⁵ Soames (Unpublished), 509.

⁸⁶ Quine (1953), 44.

⁸⁷ I am indebted to Soames for bringing this passage to my attention.

⁸⁸ Putnam (1979), 101.

⁸⁹ I am indebted to Soames for bringing this objection to my attention.

⁹⁰ Soames (Unpublished), 517.

⁹¹ The Vienna Circle included Otto Neurath, Friedrich Waismann, Hans Hahn, Olga Hahn, Rudolph Carnap, Carl Hempel, Victor Kraft, Philipp Frank, Kurt Reidemeister, and Herbert Feigl, among others.

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