

Chapter Fifteen

A Brief History of Analytic Philosophy

Abstract: Analytic philosophy and the philosophy of language were influenced by major developments in mathematics and logic that occurred in the nineteenth century. After Lobachevskii and Bolyai developed a non-Euclidean geometry in the early nineteenth century, a history of subsequent theories about language and knowledge are discussed:

Frege (1879) founded modern logic. Hilbert (1934) developed a formalist theory of mathematics. Philosophers followed by seeking to distinguish exactly how knowledge in mathematics differs from the empirical knowledge of the physical sciences. Russell's theory of descriptions (1905) and logical atomism (1918) sought the 'real' logical form of propositions to reveal the fundamental structure and composition of the world. Wittgenstein's *Tractatus* (1921) offered an account of symbolic representation (i.e., the picture theory of the proposition) that furnished a metaphysical account of the basic constituents of reality.

Philosophers of the Vienna Circle (1922-1938) flourished with a short-lived 'verification theory' of sentence meaningfulness and acceptance of Wittgenstein's explanation of mathematics as 'tautologous.' Four logicians, Godel (1931), Tarski (1944), Carnap (1956), and Davidson (1967) led the development of sophisticated formal meta-language semantics for analyzing natural and artificial languages.

In reaction to formal semantics, ordinary language philosophy (1950-62) took strong root at Oxford University, with Ryle (1949), Strawson (1949), and Austin (1975, 1979), in the forefront. Wittgenstein (1953) with his renunciation of the ideal language formalism of the *Tractatus* became the movement's influential leader. The Oxford School methodology of 'ordinary language' conceptual analysis of the 1950's faded away from a lack of systematic approach and from the influential critique of Grice (1989).

Quine's (1953, 1960, 1969, 1981) theories of naturalistic philosophy and how a logical language determines legitimate existents dominated discussions for decades.

Currently for many philosophers there is a strong interest in theories that involve metaphysics, semantic formalism, and analyses of modality. Kripke's *Naming and Necessity* (1980) presents a 'modal metaphysics' that combines the concept of 'necessity' and a causal theory about how proper names (as linguistic entities) are known, and a theory of how names refer to objects. Williamson (2007) favors investigations of 'metaphysical modality.' At the end of this chapter, skeptical doubts will be raised as to whether the currently fashionable 'possible worlds' modal semantics and model theories have much value with respect to philosophical fruitfulness.

Introduction

There are a number of excellent books about the history of analytic philosophy available including: (1) *The Oxford Handbook of the History of Analytic Philosophy* (2013) edited by Michael Beaney, (2) *A Brief History of Analytic Philosophy* (2012) by Stephen P. Schwartz, (3) *What is Analytic Philosophy?* (2008) by Hans-Johann Glock, (4) Scott Soames' *Philosophical Analysis in the Twentieth Century* (2003), (5) Soames' *The Analytic Tradition in Philosophy* (2014, 2018), as well as (6) *Analytic Philosophy: An Interpretive History* (2017) edited by Aaron Preston. These authors discuss issues that have dominated analytic philosophy. My interest is to synthesize and summarize portions of these writings in order to argue for a philosophical view that respects metaphysics as an important and inevitable part of analytic philosophy, but at the same time tries to minimize its impact (or centrality) for developing a 'true view' about the world and the use(s) of natural and artificial languages. As indicated in the abstract, the subjects of interest are: Frege, Hilbert, Russell, Wittgenstein, the Vienna Circle, the formal theorists (i.e., Godel, Tarski, Carnap, Davidson), ordinary language philosophy (e.g., Ryle, Strawson, Austin, Searle), Quine's naturalism, Dummett's metaphysics, and Kripke's modal metaphysics. Since many of these theorists have been discussed in previous chapters, I limit discussion to a sketch of issues not detailed earlier.

What is Analytic Philosophy?

According to Michael Beaney (2013), Bertrand Russell's and G.E. Moore's rebellion against British idealism are often considered as the earliest beginnings of 'analytic philosophy.'¹ In another sense, Beaney says the start of 'analytic philosophy' also includes the works of Frege and Wittgenstein (pp. 6-7).

¹ According to Beaney (p. 7), Russell was concerned with the foundations of mathematics. After initially favoring neo-Hegelianism, he came to believe that only by rejecting the neo-Hegelian doctrine of internal relations that an adequate account of mathematics could be provided. Relational propositions are fundamental, and relations had to be treated as 'real' (i.e., independent and irreducible) constituents of propositions in order for mathematics to consist of truths. For Moore, his dissatisfaction was with the idealist's anti-'common sense' denial of mind-independent objects. Moore's worldview was that the world is literally composed of concepts, and that propositions are just complex concepts. According to Moore, we grasp the constituent concepts that the propositions are actually *about*. For Moore, 'conceptual analysis' involves the decomposition of complex concepts into simpler (more basic) concepts. Against idealism, Russell and Moore both held 'direct-realist theories' of perception that was at the center of their rebellion.

In chapter nine, I characterized 'analytic philosophy' historically: (1) as being secular and having a critical scientific ethos, (2) as describing, classifying, clarifying, interpreting, and to some extent formalizing its content, (3) as paying attention to arguments, explanations, and the reasons used to defend a belief, (4) as seeking to answer substantive questions by eliminating vagueness and incompatibilities among our beliefs, (5) as written with a respect for clarity and rigor, (6) as discussing traditional questions, but sometimes presenting new questions and problems, (7) as oftentimes featuring a linguistic emphasis (e.g. logical positivism, ordinary language philosophy, formal semantics, conceptual analysis).² Finally, and very controversially, I suggested that (8) analytic philosophy should attempt to work towards a comprehensive worldview that is accessible and relevant to non-philosophers.³

An Overview: The Linguistic Turn in Philosophy

Analytic philosophers are familiar with the 'linguistic turn' in philosophy as the conscious shift in the attention to 'language.' P.M.S. Hacker in "The Linguistic Turn in Analytic Philosophy" (2013) states that the expression "linguistic turn" was originally introduced by the metaphysician Gustave Bergmann (1906-1997).⁴ Bergmann observed that the linguistic turn had been adopted by two different groups of philosophers: *ideal language* philosophers (e.g., Russell, Carnap, Bergmann), and *ordinary language* philosophers (e.g., Ryle, Strawson, Austin). In an anthology, *The Linguistic Turn* (1967,

² According to Alan Richardson (2017, p. 149), the term 'analytic philosophy' was imported to America in the 1940's from Europe. In 1949, the first textbook with the term 'analytic philosophy' appeared; *Elements of Analytic Philosophy* written by Arthur Pap (1949). In 1950, Feigl and Sellars founded *Philosophical Studies*, with the phrase "a journal of analytic philosophy" on its cover.

³ Most introductory textbooks strive to be clear and informative about selected topics. Among the past classic texts written with the intention of accessibility and interest for non-philosophers are Bertrand Russell's *The Problems of Philosophy* (1912) and his *The Scientific Outlook* (1931), Moritz Schlick's *General Theory of Knowledge* (1925), C.I. Lewis's *Mind and the World Order* (1929), A. J. Ayer's *Language, Truth and Logic* (1946), and A.C. Ewing's *The Fundamental Questions of Philosophy* (1951). David Hume (1740, 1748) and John Locke (1690) were similarly attentive at writing for a general audience. Many current philosophers believe that philosophy is too specialized for non-philosophers.

⁴ Bergmann (1964) was a member of the Vienna Circle known for his idiosyncratic writings on ontology. Hacker states that if confined to Bergmann's articles, the expression 'the linguistic turn' would likely never have been heard of again. With his idiosyncratic metaphysics, Bergmann criticized ordinary language philosophy as a psychological study, and J.L. Austin's linguistic philosophy as trivial.

1992) editor Richard Rorty adopted the phrase 'linguistic turn' (following Bergmann's suggestion) as involving two different philosophies about how philosophical problems may be solved (or dissolved) with attention to 'language': either by (1) *reforming language*, or (2) *studying the language* we ordinarily use. Hacker, and Soames (2017), maintain that Wittgenstein's *Tractatus* started the 'linguistic turn' with its attention to an 'ideal language' (p. 38).⁵

I. Frege's Influence on the Philosophy of Language

The impact of Gottlob Frege on the philosophy of language has been made clear in earlier chapters (9, 10, 12). Frege's (1879) advance in mathematical logic included (1) the introduction of the quantifier/bound variable technique for presenting general and existential statements and statements involving multiple generality, (2) the complete formulization of the propositional calculus, and (3) the axiomatization of the first-order predicate calculus with identity. In addition to the universal and existential quantifiers, Frege took 'function' as basic in logic. A 'function' is an incomplete or 'unsaturated entity' that takes an object as an argument and maps it onto a value, requiring an input to produce a result. 'Concept' was defined a kind of function, and the 'extension of a concept' is the value-range of a function. Frege did not produce a model theory; but with a semantic construal, his work led to more modern treatments of the syntax of logic.⁶

Frege's logicism was an attempt at a 'foundation' for mathematics. Frege wanted to reduce the mathematics of 'number' to logic.⁷ Frege was concerned about patterns of valid inference. He studied propositional structures that underlie formal, deductively

⁵ In the *Tractatus*, in presenting an ideal language, Wittgenstein conceived of logic as a transcendental condition of representation, and hence as constituting the depth-grammar of *any* possible language. The idea was to express an appropriate symbolism for what in ordinary language leads to endless misunderstandings. Where ordinary language disguises logical structure, and allows the formation of pseudo-propositions, and has single terms with numerous meanings, this could all be replaced by a symbolism which gives it a clear picture of the logical structure of representation, and excludes pseudo-propositions, and ambiguous terms.

⁶ Russell and Whitehead followed with *Principia Mathematica* (1903) as a modern 'mathematical logic,' leading to other forms of logic such as modal, tense, and deontic.

⁷ Dedkind, Hilbert, Russell, and Zermelo followed, using Cantor's set theory and offered various basic principles from which all, or substantial parts, of mathematics could be derived.

valid inference, and how parts of propositional structures connect with the world. Frege sought an ideal scientific language to make the structure, epistemology and ontology of science, more perspicuous.

An advocate of Frege's worldview and methodology was Michael Dummett (1925-2011) who believed (among many philosophers) that 'analytic philosophy' starts with Frege. He emphasizes that for Frege, the starting point of philosophy (and mathematics) is the analysis of the fundamental structure of 'thought.' Dummett (1991) maintains that 'modern analytical philosophy':

... is founded upon a far more penetrating analysis of the general structure of our thoughts than what was ever available in past ages, that which lies at the base of modern mathematical logic that was initiated by Frege in 1879. The central concern of logic is with inference, which lies somewhat off center in the philosophy of thought. But there can be no analysis of inferences without prior analysis of statements that serve as premises and conclusion. An advance in logic is therefore also an advance in the philosophy of thought; and the advance first achieved by Frege was immense. It was difficult to achieve because it involved refusing to be guided by the surface forms of sentences. *Frege* regarded his *notation* of quantifiers and variables *less as a means for analyzing language* as we have it, *than as a device for replacing it by a symbolism better designed for carrying out rigorous deductive reasoning*, insisting that he had provided not merely a means for representing thoughts but a language in which they could be expressed. (p. 2, italics added).

Dummett (1978) endorses Frege's project as the 'systematic methodology' for philosophy:

Only with Frege was the proper object of philosophy finally established; namely, first, that the goal of philosophy is the analysis of the structure of *thought*; secondly, that the study of *thought* is to be sharply distinguished from the psychological process of *thinking*; and, finally that the only proper method for analyzing thought consists in the analysis of *language*. (p. 458).

In his essay "Gottlob Frege: Some Forms of Influence" (2013), Tyler Burge states that Frege set the questions for future work in semantics, both of an 'ideal scientific language' and 'natural language' (p. 364). The questions included: How is one to distinguish reference from various notions of meaning? How is one to distinguish meaning from use, coloring, implicature, presupposition? What is the logical form of various sentences? What is needed to capture the contribution of the underlying logical form of a sentence in an inference? What are the roles, respectively, of communication and thought in

understanding meaning and reference? What is the correct semantical account of names, demonstratives, and indexical devices? What is the structure of pronominal cross-reference? How should prima facie intentional contexts be construed semantically and structurally? These Fregean ideas and questions have led to theories of meaning and reference in the attempt to understand the logical form and semantics of natural language.⁸

Frege's largest impact on philosophy was to connect philosophy more closely to the explicit use of logic, and direct inquiry to philosophical problems suggested by and tractable to the application of logic (Burge, p. 357). Frege's attempt to find the structure of inference in the logical structure of language, and to understand the structure of thought through an underlying deep structure of language, helped create 'the philosophy of language' and produced a new way of thinking about the philosophy of mind. As a mathematical realist, Frege thought that mathematical knowledge rests fundamentally on discovering true, rationally certain, self-evident axioms.

II. Hilbert's Formalist Theory of Mathematics

David Hilbert's (1862-1943) exploration of the deductive structure of geometry culminated in *Foundations of Geometry* (1899, 1934) where he produced long lists of axioms to finely dissect what depended on what. Hilbert's study was driven by mathematical questions. At the time of his initial writings, he had no concern for traditional philosophical issues. His understanding of 'consequence' was informal—he didn't state explicit rules of inference or formation rules for sentences, and he treated axioms as sentences with not necessarily interpreted primitives.

Hilbert's treatment of axioms as sentences with uninterpreted primitives was revolutionary. He was concerned with the independence of axioms, and their relationships to the rest of a syntactic formal theory. Hilbert maintained that systems of mathematics are formal systems concerned only with the manipulation of symbols and sets of stipulated operations, without attention to the meaning of the symbols. Formal

⁸ Among philosophers who follow these questions are; Saul Kripke, Hilary Putnam, Richard Montague, Donald Davidson, Mark Kaplan, Keith Donnellan, Robert Stalnaker, Gareth Evans, and Burge himself.

systems *may be interpreted* as a set of meaningless assertions. Axioms provide implicit definitions with a simultaneous characterization of a number of other terms in relation to each other. An axiomatic system is not (always) a system of statements about a subject matter, but a system of statements of a 'relational structure.' Many modern mathematicians are inclined to accept Hilbert's characterization of an axiom, with its emphasis upon a non-deducible set of axioms that underlie formal deductive theories.

As indicated above, Hilbert's idea of allowing symbols to remain undefined in a set of axioms was a major break from the thought of Frege, who believed that axioms should express objective truths, and that every (defined) term should have a definite meaning that fixes their denotation(s) (i.e., extensions).

III. Russell's Descriptions, Logical Atomism, and a Logically Perfect Language

Bertrand Russell's 'Theory of Descriptions' (1905) and *Logical Atomism* (1918) are both key works in the philosophy of language. Russell closely followed Frege's (1879) groundbreaking work in formal logic that presented a *truth-functional* view of language. A logical system is truth-functional if all its sentential operators (words such as 'and,' 'or,' 'not,' and 'if...then') are functions that take truth-values as arguments and yield truth values as their output. The conception of a 'truth-functional language' is deeply connected with the 'truth-conditional conception of meaning' for natural language. On this view, the *truth-condition* of a sentence is its *meaning*, and the meaning of a compound sentence is determined by the meanings of its constituent parts (viz. the principle of compositionality).

Russell believed that if we could construct a logically perfect language, every term (except logical constants, such as 'or') would correspond to an entity in the world, and every sentence of the language would, if true, correspond to a fact. Logical analysis includes the identification of the logical constituents of a proposition. Russell's theory of descriptions was to make clear the 'real' logical form of propositions and thus, reveal the fundamental structure and composition of the world. He thought that the nature of the world can be determined by the truths expressed in a logically perfect language. The structure of the sentence would show the structure of the corresponding (putative) fact,

including its entities that make it up. One can read an 'ontology' off the logical structure of the fact. Russell's worldview metaphysics was intended to represent how the world really is. Since it is the essential and fundamental purpose of language to represent the world, the more perfect (or 'ideal') language would more accurately represent the world and mirror metaphysical reality. A logically perfect language makes perspicuous many inferential connections which we adopt independent of the paraphrase of a sentence. The logically paraphrased sentence describes what the ordinary sentence *really says*. Language is meaningful in virtue of its underlying and truth-functional nature.⁹

Later, Russell became interested in an epistemic metaphysics involving empirical sense 'acquaintance' which is a direct and immediate cognitive relation between the 'mind' and entities outside (and sometimes inside) the mind. He states that there is no question that the mind is acquainted with certain objects; it is a psychological relation between persons (and their minds) and reality. In the *Problems of Philosophy* (1912), he stated that "*Every proposition which we can understand must be composed wholly of constituents with which we are acquainted*" (italics in original, p. 58). He says that this is the fundamental principle in the analysis of propositions. The critical problems with Russell's sense-data theory of epistemology and a logically perfect language are well-documented. Even in "The Philosophy of Logical Atomism" (1918a) he admits that "A logically perfect language, if it could be constructed, would not only be intolerably prolix, but, as regards its vocabulary, would be largely private to one speaker" (p. 176).

IV. Wittgenstein's *Tractatus*

Ludwig Wittgenstein's *Tractatus* (1921) was a fundamental influence in the turn towards an ideal language. Wittgenstein, like Russell, had a strong metaphysical view that included strong attention to language and logic. According to the *Tractatus*, the world consists primarily of facts (not objects), and it is facts that correspond to true

⁹ Russell believed that ordinary language was a poor candidate for understanding metaphysics. It contains nouns that supposedly correspond to 'objects' which couldn't (or don't) plausibly exist. Frege and Russell wanted to analyze the 'constituents and forms' of facts and catalogue the logical forms of sentences about the world. Russell's 'theory of descriptions' attempted to show that sentences containing singular definite descriptions which appear to refer to an object, do not always do so. Russell's philosophical method was to determine by logical analysis what kinds of facts there are and how they are related to each other, leading to his *Logical Atomism* (1918).

propositions and by existing, these facts make up a proposition.¹⁰ An elementary proposition depicts a possible combination of objects—a possible 'state of affairs'—by arranging the names of those objects in a certain manner. If that possible state of affairs actually obtains, the elementary proposition is true. Empirical propositions have sense by depicting possible states of affairs, that are either true or false. They purport to say how things are as a matter of contingent fact.

Wittgenstein also attempted to clarify the nature of *logical and mathematical truth* with an investigation of symbolism. Logical propositions are deemed as vacuous 'tautologies.' They combine empirical propositions in such a way, such that all factual information cancels out. For example, it is true that where one is situated, that it is presently (either) 'raining' or 'not raining' outside. A proposition '**p** or not-**p**' reflects the 'necessity' of *tautologies*. They make no claims of truth about how things are. A 'logical proposition' is understood as true from its symbolization alone. These propositions assert nothing at all. According to Wittgenstein, the only expressible 'necessity' of axioms is from their vacuous necessity as tautologies of logic.¹¹

For Wittgenstein (1921), there are no true nor knowable philosophical propositions. Philosophy is not a cognitive discipline, capable of asserting truths, but a critical and elucidatory one. Analysis provides no truths about the world. While empirical propositions have a sense, metaphysical and tautological propositions are senseless and not about the world. Traditional philosophical problems were confusions to be avoided. On the last page of the *Tractatus*, Wittgenstein asserts that philosophy cannot be a doctrine because in itself, it has no meaningful propositions. We can appreciate symbolic representation and analyze linguistic expressions but afterwards "throw away the ladder" (6.54). Philosophy is ultimately a therapy for showing that the *possibility* of any systematic philosophical theory is false, and that we should move away from theories.

¹⁰ All meaningful propositions can be analyzed into logically independent 'elementary propositions.' The ultimate constituents of such propositions are unanalyzable 'names' (the simplest components of language). Those names have as their meaning standing for the indestructible 'objects' (the simplest components of reality). Wittgenstein maintained that only simple names can represent simple things, only relations can represent relations, and only facts can represent facts.

¹¹ Wittgenstein believed that tautologies are not descriptive about relations between thoughts as Frege believed, nor are they descriptions of the most general facts in the universe as Russell suggested.

V. The Vienna Circle & Logical Positivism

The Vienna Circle (1922-1938) was a group of mathematicians, physical scientists, and philosophers that met periodically for discussions in Vienna (and later in Prague) who proposed a self-consciously revolutionary conception of scientific knowledge. Members had shared interests in logic, philosophy of logic, and philosophy of science. Their explicit goal was to articulate a form of consistent empiricism.¹² The Circle whose members were called 'logical positivists' or 'logical empiricists' rejected the need for a specifically philosophical epistemology that talked of 'justification' of knowledge claims from beyond science itself. Comprehensive description of natural phenomena, and the understanding of empirical and logical procedures became the new task for theorists who no longer looked towards philosophy for foundations.

Empirical theories were viewed as a logical structure of statements, that were accountable to experiential input via their predictive consequences, identifiable by observation. With great respect for Frege and Russell's logicism, and guided by Wittgenstein's notion of tautology, arithmetic was considered a part of logic, and was 'tautological' or 'analytic,' and without empirical content. The positivists believed that the *Tractatus* helped clarify the nature of 'logical truth' with an investigation of symbolism. A 'logical proposition' is true from symbolization alone. The truths of logic and mathematics were exhausted by whatever was provable from the premises and rules of symbolic logic. Logical positivism was deemed scientific, and it was opposed to speculative metaphysics and Hegelian idealism. The Circle revolved around a unified worldview. Its details were ultimately a collection of similar viewpoints, attempting to account for distinctions between cognitive factual assertions, expressions of convention, and formal truths.

¹² The circle was initiated by mathematician Hans Hahn with physicist Philip Frank, the social scientist Otto Neurath, and philosopher Moritz Schlick. Rudolf Carnap joined in 1926. Members included Herbert Feigl and Gustave Bergmann, among others. Kurt Godel was an associate. During its formative period, the Circle's activities were confined to discussion meetings, many in which the topic was Wittgenstein's *Tractatus*. Works published in German were written by Ernst Mach, Carnap, Hahn, and Neurath, with monographs edited by Schlick and Frank. The Circle also collaborated with the like-minded Berlin "Society of Empirical Philosophy" which included Hans Reichenbach, Carl Hempel, and Richard von Mises, among others. Despite death and geographical dispersion, the Circle's influence continued with the subsequent work of earlier visitors (Ayer, Ernest Nagel, Quine) and those members and collaborators who emigrated to the United States (Carnap, Feigl, Frank, Hempel, and Reichenbach).

The aspect of logical positivism that was of greatest interest, was its postulation of a 'verifiability criterion' of 'meaningfulness' and a loose definition of 'analyticity':

Verifiability Criterion of Meaningfulness- An assertion is meaningful if and only if it is a tautology (or a self-contradiction) or empirically verifiable (or falsifiable). Hempel stated that the fundamental principle of modern empiricism is the view that all non-analytic knowledge is based on experience (1950, p. 41).

An '**analytic assertion**' is a sentence that is true (or false) solely in virtue of the meaning or definition of its terms.

For the logical positivists it was held that an assertion was meaningful if and only if it was empirically verifiable (or falsifiable) or if it was a logical tautology (or a self-contradiction). An analytic sentence was true (or false) solely in virtue of the meaning or definition of its terms. Its self-evidence was from its purely formal structure. All mathematical and logical axioms, postulates, definitions, and theorems were understood as tautologies and are 'analytic.' They assert nothing at all. Mathematics is a separate discipline that is *non-empirical*, compared to the nature of physical science with its empirical mode of hypothesis and discovery.

Although Frege, Russell, and Whitehead had shown that mathematics was derivable from logic; logical propositions were now explained as tautologous.¹³ To repeat; it was definitive of logical positivism that logic and mathematics consist of nothing but tautologies. These formal truths had no referential content. The concepts of a proposition being 'analytically true,' 'tautologous,' '*a priori*,' or 'necessary' became nearly interchangeable. The concepts of a 'synthetic,' '*a posteriori*,' or 'contingent' proposition also became nearly synonymous. Synthetic propositions are justifiable *a posteriori*, while analytic propositions are justified *a priori*. Against Kant, the positivists maintained that there are no synthetic *a priori* propositions. Against speculative

¹³ A tautology is a 'proposition form' that is true, regardless of the substitution instances inserted in any of its propositional variables. In propositional logic, a well-formed formula is a 'tautology' if and only if 'the formula is true for all possible truth-value assignments in its truth table.' Truth-functional tautologies are necessarily true in virtue of their syntactical sentential form where standard truth-functional connectives are used. Sentences of the form 'p or not-p' and 'if p, then p' are understood as true from purely mechanical process (i.e., truth tables). A tautology is a compound sentence that comes out true no matter what propositions it is composed of. Tautologies and self-contradictions are limiting cases of truth-functions. They contain no information, do not represent facts. Tautologies hold necessarily in every possible case, and therefore they do not exclude any case, and don't assert anything about the facts of the world.

metaphysics, and borrowing from Frege and Russell, the question of 'existence' was treated as a quantifier, not a predicate.

A.J. Ayer's best-selling *Language, Truth and Logic* (1936, 1946) was an influential logic-based attack on metaphysical realism. Although not a member of the Circle, and not fluent in German, he stated "We say that a sentence is factually significant to any given person if, and only if, he knows how to verify the proposition which it purports to express..." (p. 35). This criterion of meaning applies to empirical propositions. Genuine propositions are the sense-data statements which are verified by comparison with experience. Scientific hypotheses are probable, but never completely verified. Mathematical propositions are not verifiable at all, since they neither agree nor disagree with reality. Their sense is given by proofs, by how they are justified. Mathematical and logical knowledge is justified on purely formal grounds, by proof of their derivability in a (conventional) formal axiomatic deductive system.

The demise of logical positivism was sudden, in large part due to Quine's (1953) objections to the concept of 'analyticity.' In the end, Ayer, Carnap, and Hempel ultimately agreed that the verifiability criterion of meaning, by its own standards, was itself cognitively meaningless, and suggested it was just a recommendation or proposal.¹⁴

VI. The Formal Approach to Language

Four prominent logicians, Kurt Godel (1931), Alfred Tarski (1944), Rudolf Carnap (1956), and Donald Davidson (1967) led the development of various kinds of formal semantics for analyzing natural and artificial languages. Their contributions to logic played a role in the development of analytic philosophy, and the rise of interest in logicism, formal axiomatics, meta-logic, logical truth, and logical consequence. Godel was primarily interested in mathematical foundational studies. Tarski was interested in the methodology of the deductive sciences. Carnap was interested in the role of syntax in

¹⁴ Similar to the later Wittgenstein (1953) and 'ordinary language' philosophers, logical positivists believed that philosophy was not a cognitive discipline. Philosophical theories do not consist of propositions of the empirical natural sciences. Traditional problems of philosophy (especially metaphysics) are pseudo-problems that arise from misleading features of natural language. Philosophy is the clarification of these problems. Morris Schlick thought some of philosophy's problems would disappear after being shown to be mistakes about language. The positivists' belief that statements in ethics, theology, metaphysics, and aesthetics were *meaningless*, was contentious.

language. Donaldson was interested in the concept of sentence meaning. Some of their correspondence and personal interactions influenced each other's views during the years.

Kurt Godel

Kurt Godel (1906-1978) is famous for his two incompleteness theorems. What Godel proved in his first theorem was that any axiomatic theory formulated in simple type theory that contains (a moderate amount) of arithmetic does *not* allow one to decide, by formal deductions from its axioms, *all* the sentences in its language; there is always a sentence such that neither it nor its negation, is deducible (assuming consistency). Therefore, theories based upon axiomatic theories are syntactically incomplete. This applies to Zermelo-Fraenkel set theory, and so on. Adding new axioms won't solve the problem because the same situation recurs. There will still be a sentence that is neither deducible nor refuted within a larger system. Higher order logic is not complete in the sense of how propositional and first-order logic are complete. Godel proved that Hilbert's explicit search for establishing the consistency of central mathematical theories was futile. No consistency proof for arithmetic can be given that doesn't employ resources stronger than arithmetic for itself, likewise for set theory, and so on.

With his second incompleteness theorem, Godel proves that there is that *no formal system* (that satisfies certain minimal conditions, including consistency) that can capture all of arithmetic. This was in contrast to Carnap, who had earlier thought he had proved the completeness of simple type theory, which wasn't the case. One of Carnap's theorem proofs about semantic completeness was flawed.

Alfred Tarski

Alfred Tarski (1901-1983) asked whether it is possible to define the notion of 'truth' for a formal language (such as the languages of arithmetic or geometry) in precise terms? Dedekind, Peano, and Hilbert had all implicitly used the notion of 'truth in a mathematical structure' in their investigations. Tarski sought to reconstruct the implicit use of 'semantic truth' that was already there. Tarski's 'truth under an interpretation' involves (1) correlating the non-logical symbols of the language with specific objects,

properties, and relations (as an interpretation), (2) using the notion of 'satisfaction' for defining the truth (at bottom level) for atomic sentences and (3) including the recursive structure of a formal language for developing molecular sentences. With a hierarchy of languages, the truth of a sentence can be defined at one level up, but never at the same level. For example, 'Snow is white' is true if and only if snow is white. Tarski maintained that with a metalanguage he could prove the laws of 'non-contradiction' and 'excluded middle,' and solve the liar's paradox.

Tarski's (1936) account of 'logical consequence' was influential. It presents a mathematically exploitable definition of a notion only implicitly understood before. Tarski's treatment of 'truth' and 'logical consequence' provided the foundation for model theory. The Tarskian semantics (further developed by Carnap) is extremely influential in present-day formal semantics.

Rudolf Carnap

As mentioned above, Rudolf Carnap (1891-1970) once thought he had proved the completeness of simple type theory, but it wasn't the case; one of his theorem proofs about semantic completeness was flawed. This made for big changes in his outlook. Some were prompted by Tarski and Godel. Carnap accepted Tarski's object-level and meta-level distinction. His new approach was consistent with the incompleteness theorems and used Godel's arithmetizing of syntax at certain points.¹⁵

Carnap adopted a pluralistic pragmaticism, believing that there are many logical systems. None was potentially the 'correct' one; they are just judged in terms of being useful. Thus, he moved away from the logicism of Frege and Russell, and their view that there is one 'correct logic' from which all reasoning was to be reconstructed. Carnap pursued the general goal of reconstructing scientific notions logically. As a philosopher

¹⁵ Like Wittgenstein, Carnap believed that logic and mathematics, although fruitful and indispensable to the empirical sciences, was purely formal, empty, and devoid of content. Carnap attempted to capture the concept of analyticity, and with it, explain the nature of logical and mathematical truth in syntactic terms. Carnap's *Meaning and Necessity* (1956) characterized various logico-mathematical truths as 'truths' based upon the *formation rules of the language* being used (as 'L-truths'). He distinguished meanings (intensions) as contrasted to extensions. Necessity as opposed to possibility was introduced as a new approach to modal logic. Ruth Marcan Barcus, Saul Kripke, and David Lewis have followed-up on Carnap's approach.

of science, Carnap sought to clarify the role that logic plays in scientific reasoning, detailing how logico-mathematical languages have applicability to the physical sciences. Carnap also believed that the use of logic and definitional explication could specify the subject matter and would allow for a new scientific philosophy involving piecemeal collaborative work. Philosophy could be fruitfully pursued by studying the logical syntax of natural and artificial languages.

Donald Davidson

Donald Davidson (1917-2003) was an American philosopher who proposed that the 'meaning' of a sentence is its truth conditions. The leading idea was that if a person knows the meaning of a declarative sentence, then that person knows what would have to obtain for the sentence to be true (i.e., its 'truth conditions'). Truth is a predicate of sentences. To specify the conditions under which a sentence is true is also a way of specifying the meaning of a sentence. In sum for Davidson, sentence meaning is best understood by understanding truth, and that the basic structure for any adequate theory of meaning is given with a 'formal theory of truth' (such as Tarski's). He states: "To give truth-conditions is a way of giving the meaning of a sentence" (1984, p. 24). For Davidson, 'sentence meaning' is not an abstract thing, like a set of possible worlds. Rather a sentence has truth-conditions.¹⁶

Summary: The Formal Semantic Approach to Language

Logic was transformed from the 1920's to the 1950's with the rise of metalogic with its sharp distinction between syntactic and semantic notions and techniques. There are several distinct 'schools of thought' about the nature and theoretical goals of formal

¹⁶ Davidson readily adopts Frege's principle of compositionality (i.e., the meaning of a sentence is a function of its constituent words). He states that the truth conditions of sentences are determined by the truth conditions of their constituents of which they are composed, and that syntactic processes generate truth-related semantic properties. This 'compositionality of truth conditions' serves as the model of sentence meaning. Sentence meaning is formulated in the semantics of a formal language such as the predicate calculus constructed by logicians. The specifications of sentences' truth-conditions are generated on the basis of the assignment of semantic values. Davidson sought to answer how speakers of a natural language can understand a potential infinity of sentences and how it was possible to understand assertions of previously unencountered sentences. He was concerned with how it is possible that a language is learnable.

analysis. Two of these schools-of-thought are distinguished by Hans-Johann Glock (2017, pp. 216-17) as 'formal semantics' and 'logical constructivism.'

Formal Semantics: The guiding idea is that formal logical calculi such as the first order predicate calculus developed by Frege and Russell bring to light the logico-syntactic depth structure of sentences of natural languages. Accordingly, logico-linguistic analysis explicates features and rules that shaped ordinary language all along. This idea was promoted by Davidson's project of a "theory of meaning for natural languages."

Logical Constructivism: Logical constructivism is revisionist rather than descriptive or explicatory. In the vein of Frege, Russell, Carnap, and Quine, it tries to avoid philosophical confusions allegedly engendered by ordinary languages by replacing the latter through an artificial ideal language, an interpreted formal calculus free of the perceived or actual shortcomings of natural languages, as ambiguity, vagueness, referential failure, and category mismatches.

Besides these two methodologies, there is another constructivist school of analysis:

Model theory: Model theory primarily studies the notions of interpretation, truth-in-a-model, and logical consequence. The work of Frege, Carnap, Tarski, and Davidson, set the stage for Montague (1974) grammar and the 'possible world' semantics of Lewis (1986) and Kripke (1980).¹⁷

VII. Ordinary Language Philosophy

Ordinary language philosophy (1950-1962) was a reaction against the perceived overreliance on symbolic logic, theories of natural science, and formal analysis in philosophy. It responded against the formal theories of Frege, Russell, early Wittgenstein, Carnap, and logical positivism. In their rejection of formalism, ordinary language philosophers believed that formal semantics cannot (by itself) offer solutions to philosophical problems. On the contrary, important features of natural language were not revealed, but were hidden by the logical approach. Ordinary natural language may be vague, ambiguous, or misleading, but genuine philosophical analysis requires the analysis of the 'ordinary use' of problematic concepts, not the substitution of logical formulas. It was argued by ordinary language philosophers that formal languages can't substitute for

¹⁷ Model theory is now a vast subdiscipline of mathematical logic. Contemporary philosophers studying mathematical logic and model theory include Barry Taylor (2006), Robert Stalnaker (2012), Timothy Williamson (2013) and Tim Button & Sean Walsh (2018). Other essays about modality are available in *Epistemic Modality* edited by Andy Egan & Brian Weatherspoon (2011).

the *many dimensions* of ordinary language speaker meanings. The meaning of a word is its 'use'-potential or 'use'-conditions. Speech is the contextual activity of saying things.

The early period of Ordinary Language Philosophy may be characterized as 'Wittgensteinian.' Wittgenstein's *Philosophical Investigations* (1953) was a renunciation of his *Tractatus* (1921). Glock (2013) describes Wittgenstein's change of philosophical viewpoint in the following:

A guiding principle of the *Tractatus* had been the rules of logical syntax mirror the structure of reality (see 5.511, 6.13). Wittgenstein now held that language is 'autonomous.' 'Grammar'—the constitutive rules of language-- is not responsible either to empirical reality or to a Platonic realm of abstract entities (PG88, 184-94, PI 371-3). Grammatical rules do not somehow follow from 'meanings,' they *constitute* them. Signs *in themselves* don't have meanings; we *give* them meanings by explaining and using them in a certain way (BB 27-8). There is not a single logical syntax shared under the surface between all meaningful sign- systems, but a genuine plurality of forms of representation (Glock, p. 576).¹⁸

Glock describes Wittgenstein as saying that we don't need logical analysis to understand language; we can only describe our linguistic practices as language games (BB 16-7, PI 23, 108). Language isn't a self-sufficient abstract system, it is part of human practices, part of a form of life (PI 23).

The *Philosophical Investigations* not only goes against Wittgenstein's earlier work, but the whole logic-metaphysical tradition to which it belongs. The investigations go against the assumptions of Augustinian *Confessions* that describe how Augustine learned to speak; words are names, their meanings are the objects for which they stand, and words are correlated with these meanings by ostension. Sentences were thought to be combinations of names which describe how things are, and that the essential functions of language are naming and describing, and it is linked with reality by means of word-world connections. Wittgenstein now believed that not all words refer to objects, and that *the meaning of a word* (is not an object of any kind, but) *is* the word's *use* according to grammatical rules (PI 43, 432, 454; BB 69).¹⁹ Whether someone understands a linguistic

¹⁸ The reference 'PI' denotes *Philosophical Investigations*, 'BB' refers to *The Blue and Brown Books* (1958), and 'PG' refers to *Philosophical Grammar*, ed. R. Rhees, tr. A.J.P. Kenny (Oxford: Blackwell, 1974).

¹⁹ A lasting legacy of Wittgenstein was his observation that not all words have necessary and sufficient conditions that define their correct use, and that most words don't have definitions (in the case of

expression, and knows its meaning, depends on whether she can *use it*, and explain it correctly, and whether she responds appropriately to its use by others. One cannot state philosophical theses or hypotheses as theories about meaning, but only *describe* how terms and expressions are in fact *used*. The slogan often attributed to ordinary language philosophy is that "the meaning of a linguistic expression is its use."

Ordinary language analytic philosophy took strong root after World War II at Oxford University, with Gilbert Ryle (1900-1976), J.L. Austin (1911-1960), Peter Strawson (1919-2006), and John Searle²⁰ in the forefront. With *Philosophical Investigations* in the foreground, Wittgenstein became its influential informal leader. The ordinary language methodology was that of a description of how *words* and *sentences* (as linguistic items) are *used* in ordinary and non-scientific discourse. These philosophers wished to resolve philosophical problems piecemeal with attention to errors made by traditional philosophers who ignored the study of the ordinary use of words in natural languages. They questioned whether formal theories could be successful in answering traditional philosophical problems.²¹

predicates) that precisely state what exact extensions fall under their intension. The correct application of concepts is united by the fact of their extensions having 'family resemblance' characteristics rather than their extensions having at least one common (necessary) essential defining characteristic. The empirical linguistic investigations of Rosch and Mervis (1975) and Smith and Medlin (1981) have confirmed this sort of familiar (group resemblance) concept, among other corroborating studies. Although Wittgenstein has retained somewhat of a cult following within academic philosophy, he has lost influence over the past decades. Both Quine's naturalistic conception of philosophy, and the rise of a modal essentialist metaphysics featuring the semantics of Kripke and Putnam have diminished Wittgenstein's appeal.

²⁰ Searle (1958, 1969) follows the writings of Austin, with refinements. 'Speech act' theory contends that the uttering of a sentence is (or is part of) an action within the framework of social institutions and conventions. There are three facets of a speech act; the locutionary act (producing a meaningful linguistic expression), illocutionary act (the action intended by a speaker in uttering a linguistic expression) and perlocutionary act (bringing about consequences). Searle develops a taxonomy of representatives, directives, commissives, expressives, and declaratives. In chapter eighteen, with examples, it is shown that Austin's 'performative utterance' and Searle's typological examples are better explained by the descriptive-prescriptive distinction.

²¹ Glock (2017, p. 217) states the following: "Conceptual analysts of the Oxford type tried to resolve philosophical problems not through substituting artificial terms and constructions for the idioms of natural languages, but through clarifying the latter. And they rejected the idea that such clarification will reveal ordinary language to be governed by a calculus of precise logical rules. More specifically, they described the ordinary uses of philosophically troublesome terms and contrasted them with their uses in philosophical theorizing. Such analysis may feature definitions of words and paraphrases of sentences; yet it does not revolve around the use of artificial logical calculi."

Like Wittgenstein and the logical positivists, ordinary language philosophers continued with a skepticism toward the cognitive value of systematic philosophical theories (especially those of metaphysics). The Oxford philosophers, unlike the logical positivists, and as a group, had no unified ideology; these philosophers were eclectic and mostly unsystematic in their choice of concerns. For the most part, they understood the task of philosophy as the *description and clarification* of the *taxonomy* of concepts and the *dissolution* of philosophical problems. The ordinary language philosophers were not particularly interested in the philosophy of mathematics nor in a philosophy of science.

Paul Grice

Philosopher H. Paul Grice (1933-1988), a native of England, and who taught in America after 1967 was influential with lectures, essays, and unpublished manuscripts that took issue against the works and beliefs of ordinary language philosophers. Those works were posthumously published as *Studies in the Way of Words* (1989). Although he was a life-long practitioner of ordinary philosophy, he was critical of ordinary language explanations such as those of J.L. Austin and the paradigmatic beliefs of many ordinary language philosophers. In particular, Grice *denied* (1) the slogan 'word meaning is use' (attributable to Wittgenstein) and (2) that the study of meaning was to be done in an informal case-by-case approach. Instead, he distinguished two notions of meaning: what a *sentence means* in general apart from any use of it, and what a *speaker means* by using a sentence in a context. Speaker meaning is what a *speaker intends* in specific occasions. Grice's aim was to determine how a distinction between 'meaning' and 'use' could be drawn, involving a systematic theory of language (1989, p. 4).

Grice sought to develop a theory of 'conversational implicature' as something coming from *the way* something is said, as contrasted to *what* is said. Although sentence meaning is among the most important factors governing the use of an expression, it is not the only factor. The main purpose of Grice's lectures was to construct a theory of language that explains what some of these conversational factors are, and how they interact with meaning. As an anti-ordinary language philosopher, Grice thought that philosophers should do more, than just simply 'describe' the use (and meanings) of expressions as Wittgenstein and ordinary language philosophers had thought. His concern

was that explanations of speaker 'meaning' and 'use' should be more sophisticated and systematic.²² Grice developed technical generalized stipulative definitions of 'what S means' that involve intentions as well as other psychological factors such as indicative and subjunctive moods. He understands communication as a rational activity in which a speaker intends to produce certain results and that audiences reason their way to those results by recognition of those speaker intentions (or speaker meaning).

For Grice, natural language is not just a system of symbols (that most often represent things) but is also a process of communication that is the result of interactions among persons. 'Pragmatics' is to be distinguished from 'semantics,' and 'meaning' should not be confused with 'use.' Unfortunately, it has been found that 'semantics' and 'pragmatics,' are difficult to disentangle in Grice's theory of speaker meaning. More unfortunate is that with tedious examination of ordinary language situations, technical definitions, and his unfinished work in ethics; Grice gives us little insight into the nature of mathematics and other important issues. Even with a 'systematic' ordinary language analysis of 'meaning' and 'use,' the apparent triviality and controversy about Grice's principles (i.e., descriptions and norms) of speaker meaning left most philosophers with little inspiration for further investigations. Scott Soames (2003b, pp. 195- 219) states that Grice's work marked the end of the ordinary language school of philosophy.²³

VIII. W.V.O. Quine's Naturalism

WVO Quine (1908-2000) responded to Wittgenstein's explanation of mathematics. Wittgenstein had argued that mathematical propositions (such as axioms and theorems) are 'tautologies', in that they are either necessarily true or false, no matter how the world is (and so are *a priori*). Propositions of logic were similarly generalized

²² Grice offered a "logic of conversation" that are seen as principles of successful communication that include a number of maxims (e.g., be informative, don't say propositions that you believe false, have adequate evidence for what you say, state propositions that are relevant to a conversation, avoid ambiguity, etc.). Meaning is tied to sentence meaning and intentional speaker meaning, and Grice illustrates this with mundane examples e.g., of conversations about how a person saying 'my car is low on gas' may get a listener response 'there is a station around the corner' which conversationally implies that the gas station is now open. 'Speaker meanings' govern the information conveyed in addition to the 'sentence meanings.'

²³ Soames (2003b) provides a detailed discussion of the works of Ryle, Strawson, and Austin. The details of these ordinary language philosophers' work are outside the scope of this chapter.

and described. This picture of mathematics being non-empirical allowed logical positivists to explain the necessity, certainty, and knowledge of mathematical propositions, as a kind of analytic (or *a priori*) knowledge, different from empirical knowledge. Mathematics is not based on observation, test, experiment, or experience, but it is a system of conventional formal definitions. For Wittgenstein and logical positivists, logical propositions were understood as *analytically true*, no matter how the world is.

This explanation of mathematics from tautologies and 'analyticity' did not survive Quine's (1953) critique. Quine, a radical empiricist, argued that positivists must abandon the analytic-synthetic distinction because it was a fallacy that there is "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" (p. 20). Quine argued that there is no non-circular, non-question begging definition for analyticity.

Quine's alternative proposed methodology was to translate scientific sentences into first-order logic and determine the ontological commitments of the sentences based on what those translations quantify over. Quine disputed Carnap's ontological relativism, and logical tolerance which allows that there is no single, objectively correct ontological theory about the world. Instead, Quine's ontological realism held that we can determine 'what exists' by examining the entities that are endorsed by our best scientific physical theories of the world. Quine's indispensability argument gives a broadly empirical defense of mathematical platonism, since mathematical entities are indispensable for making true assertions about the world. That there exists a mathematical component in describing physical laws implies that mathematically 'abstract' objects exist. Quine was against the physicalist idea that reality is exhausted by the physical. But by limiting 'what exists' to what is symbolized in logic, Quine's scientific translations incidentally didn't admit metaphysical 'properties,' 'meanings,' or 'fictional characters' as existents.

Quine wasn't interested in formal translations of sentences outside of scientific disciplines. The ultimate test of a scientific theory is its fit with experience, and not with its 'correspondence' to an independent reality. Quine believed that no propositions are immune to revision in light of empirical experience. The difference between natural and artificial formal languages is understood as a matter of degree, with the latter being more

precise. Since the propositions of mathematics or logic are in a more central position in our network of beliefs, they are less likely to be overturned by experience, than are physical laws.

IX. Michael Dummett

Michael Dummett (1925-2011) was a British philosopher who until retirement in 1992 was a Wykeham Professor of Logic at Oxford. He studied the philosophy of language, logic, mathematics, and metaphysics. As stated above, Dummett was an ardent supporter of Frege's logic as a way of developing a theory of 'thought' and 'meaning.' He was also heavily influenced by Hegel and Wittgenstein. Dummett's philosophy (1978, 1993) includes a metaphysics about realism and anti-realism which favors intuitionist mathematics (a form of anti-realism compared to Frege's platonic realism). He believed that every sentence (and thus every thought) that we are capable of expressing, is either true or false, even though we may not have the means to discover a truth value.

Dummett believed that formalist accounts of language, such as those of Davidson and Carnap were not very valuable. Instead, he thought that a 'Fregean semantics' can help to provide definitive answers to metaphysical questions (e.g., "Of what does reality consist?"). Among his many writings, he retained a strong belief that Fregean semantics has a key role in resolving metaphysical questions. In his final book, *The Nature and Future of Philosophy* (2010) he states:

A theory of how the meanings of sentences are derived from their composition— a semantic theory— can often have resounding consequences for metaphysical questions: questions concerning the nature of reality depend heavily on the answers to questions about how we can speak about reality, and thus on the structure of our thought about it (p. 17).

Dummett shares his linguistic intuitions about the concepts of 'proposition,' 'assertion,' 'statement,' and 'expression' in *Thought and Reality* (2006):

What, then, is the difference between a statement and a proposition, or between making a statement and expressing a proposition? One difference can be immediately drawn. To make a statement is to commit yourself to something, that is to assert something, but you can express a proposition without committing yourself to its truth or to anything at all. A proposition is expressed whenever a sentence is uttered whose content it is; but the sentence does not have to be

uttered with what Frege called 'assertoric force.' If when someone fails to arrive, you say 'Either his train is late, or he missed it' you have not asserted that the train is late; but you have expressed the proposition that the train was late. In this case, although you did not assert that proposition, you have asserted something, namely that one or other mishap occurred. But suppose you are listening to a philosophical lecture, and the lecturer says, 'Change is an illusion.' You repeat to yourself the sentence 'Change is an illusion'; pondering on it but not asserting it. Now you have expressed the proposition that change is an illusion, but not in the course of asserting anything (p. 4).

In this short passage, it is evident that Dummett's comments are tethered closely to his idiosyncratic linguistic intuitions and metaphysical worldview. He describes how he, and like-minded philosophers, *use* these terms (i.e., 'statement,' 'proposition,' 'expressing,' 'assertion') in discourse. But there is no attempt at a 'conceptual analysis' of these concepts. It is a problem that the key terms of metaphysical analysis are defined by consensual conceptual use (or stipulation). Dummett's linguistic intuitions and speculative metaphysics are not convincing. His writings are now seldom discussed.

X. The Revival of Metaphysics: Kripke and Modal Necessity

With Quine's advocacy of a canonical regimented artificial language to represent quantified sentences about the world, the notion of 'ontology' reentered mainstream philosophical discussions and initiated a renewed interest in metaphysics. But it wasn't Quine's nor Dummett's metaphysics that revived an interest in metaphysics. (Quine clearly didn't believe that metaphysics is about a higher abstract realm, nor is it *a priori*).

Instead, the hero of the contemporary ascent of modal metaphysics and the use of 'possible worlds' is Saul Kripke (1971, 1980).²⁴ As discussed in chapter twelve, Kripke sharply distinguishes between the concept of an *a priori* proposition as an epistemological distinction, and the concepts of 'contingent' and 'necessary' truths as a

²⁴ David Lewis (1986) is another prominent proponent of modal realism. He believed that other possible worlds exist in exactly the same way that the actual world does. A 'world' is a 'maximal mereological sum of spatiotemporally interrelated things.' What we call the *actual* world is just the world we happen to live; if there are other people who speak a language much like English, they can with equal justification use the word 'actual' about their own world. The word 'actual' in Lewis's view is an indexical. Possible worlds are set-theoretic constructions of various kinds. Robert Stalnaker (1976) is also a prominent advocate of "possible worlds" as "properties- ways a world might be" (2012, p. 8).

metaphysical (or ontological) distinction. Metaphysics is conceived to describe what we know *must* exist; it describes the constitution and structure of reality (about how things must be, independent of what we think). Kripke adopts a 'possible world' semantics notably used by Gottfried Wilhelm Leibniz (1646-1716). Leibniz believed that necessary truths are those propositions which are true in all possible worlds. For Kripke, a possible world is a possible world-state; a way that everything could have been. It is, in effect, a maximal property that the universe could have had. One alleged benefit of the possible-worlds theory is that it provides an explanation of the necessity of the truths of mathematics (e.g., $141678 + 639465 = 781143$ is true in all possible worlds). Kripke's epistemic assumption affirming the *a priori*-*a posteriori* distinction, and metaphysical assumptions (e.g., that 'identity,' 'possible worlds' and 'metaphysical necessity' are fundamental concepts of ontology) are central to his worldview. Metaphysical necessity and possibility in the possible-worlds sense includes distinctions between 'contingent truths' where **p** is true, but might not have been, and 'necessary truths' where **p** could only be true (i.e., what is and could not have failed to be).²⁵

XI. Ordinary Language Philosophy Fades. Is Modal Metaphysics the Answer?

Many philosophers are enthusiastic about the resurgence of metaphysics. This is well-documented by numerous texts and journal articles affirming what Peter Simons (2013) calls "the rediscovery of genuine and unresolved metaphysical problems." Simons claims that this has led to a "reverse of the linguistic turn" and that metaphysics is no longer dead. In fact, most philosophers recognize that formal metaphysics is "thriving."

²⁵ There are other advocates of 'modal metaphysics.' Some examples: Hilary Putnam (1975) provides 'essentialist' arguments involving the knowledge of natural kinds in possible worlds. Ruth Barcan Marcus (1961, 1993) supports Kripkean ideas including her argument that there are no contingent identity statements. David Lewis is also extremely influential with *Counterfactuals* (1973) and *On the Plurality of Worlds* (1986) which provide a defense of modal realism. Lewis was concerned with properties and relations, structures, sets, states of affairs, persistence, and change. His books include technical terms such as counterparts, haecceitism, and intrinsic duplicates. Not many philosophers accept Lewis's viewpoint, but the metaphysical *speculation* about 'possible worlds' without concern for linguistic form had reentered philosophy. A well-known passage of Lewis' (1973) defense of the existence of possible worlds: "It is uncontroversial that things might have been otherwise than they are. I believe, and so do you, that things could have been different in countless ways. But what does this mean? Ordinary language permits the paraphrase: there are many ways things could have been besides the way that they actually are... I therefore believe in the existence of entities which might be called 'ways things could have been.' I prefer to call them *possible worlds*" (p. 83).

He states that the resurrection of *analytic metaphysics* is "one of the more remarkable developments in philosophy in general and in its analytic strain in particular" (p. 710).

Steven P. Schwartz (2012) is similarly optimistic stating:

The most remarkable development in the recent history of analytic philosophy is the resurgence of metaphysics- traditional metaphysics- as an area for analytic philosophers. No philosophy-watcher at mid-twentieth century could have imagined the avalanche of work by analytic philosophers in the sort of metaphysics that the logical positivists imagined they eliminated... The primary cause of the rebirth of metaphysics was developments in formal modal logic in the 1960s... Modal logic is the logic of possibility and necessity. Modal logics are developed by adding to standard propositional or quantificational logic new symbols for necessity and possibility (p. 204).

Almost all recent work in philosophy of language has been in the formalist tradition of Carnap. Ordinary language philosophy has been absorbed and surpassed by Kripke, Putnam, and Donnellan, and others. No one would describe themselves or be correctly described as an ordinary language philosopher. Anti-formalism is obsolete ... a certain negative and dismissive attitude towards the philosophy adopted by Wittgenstein, Austin, and their followers- and some neo-pragmatists such as Rorty- is no longer fashionable... In every area, philosophers and logicians made progress, not by dismissing philosophical problems, but by bringing more sophisticated tools to bear (p. 300).

Schwartz maintains that mathematical approaches to modeling language were (and are) most promising.²⁶ He champions the work of Richard Montague, David Kaplan, Crispin Wright, and Timothy Williamson as alternatives to ordinary language philosophy.²⁷

²⁶ Lowe (2011) disagrees with the formal systems approach. Lowe claims that all metaphysics is implicitly modal, because it is primarily concerned with what kinds of things are possible and compossible (and only subsequently with what kinds of things are actual). He says that advocates of the formal systems approach typically seek to cash out modal claims concerning a distinctive class of entities, construed as 'possible worlds' to be quantified over by a distinctive class of variable in the theorist's favored formal language. Lowe states that to think of modal truths as expressible as truths about a special class of entities is a mistake. Metaphysics is about what kinds of things can and do exist, which in turn involves understanding the nature or essence of the things in question and hence their existence and *identity conditions*. He states that these conditions will then themselves have a modal-character, telling us when something of a given kind can or cannot exist or be the same as or different from another thing of that kind (pp. 106-108).

²⁷ Williamson (2007) favors an investigation of 'metaphysical modality': "Philosophers characteristically ask not just whether things are some way but whether they could have been otherwise. What could have been otherwise is *metaphysically contingent*; what could not, is *metaphysically necessary*. We have some knowledge of these matters. We know that Henry VIII could have had more than six wives, but that three plus three could not have been more than six. So, there should be an epistemology of metaphysical modality... the epistemology of metaphysical modality is one of mind-independent truths" (p. 134).

XII. Conclusion

As Schwartz asserts, it is true that few current philosophers would claim to be an 'ordinary language philosopher' given the history of the term (an exception is Baz, 2012). Ordinary language philosophers were clearly in error when they didn't take philosophical questions (about epistemology, ethics, aesthetics, language) as genuine problems but as 'confusions' generated by a misunderstanding of how sentences (and words) are used in ordinary language. Their work to 'dissolve' pseudo-problems was mostly innocuous, trivial, and a failure. It is also true, as Schwartz asserts, that almost all recent work in 'philosophy of language' has been in the *formalist tradition* of Carnap.

But this is unfortunate, because it is very unlikely that formal theories can be successful in solving philosophical problems. This is the same problem that concerned ordinary language philosophers. Does the 'possible worlds' semantics produce significant philosophical fruitfulness? I have argued in this book that 'possible worlds' offers nothing to explain (1) the nature of essential properties found in natural kinds, (2) the nature of mathematical entities and deduced truths, (3) the concept of identity, (4) the concept of existence, or (5) the nature of 'knowledge.' Like the Vienna Circle and Ordinary Language Philosophers, I'm skeptical about the worth of the 'imaginative conceivabilism' of metaphysical realists.

Against ordinary language philosophers who believed that linguistic entities (e.g., words, sentences) get their meaning from 'speaker use,' it is maintained throughout this book that speakers in a context *use* sentences to assert 'speaker meaning' (e.g., as descriptions, prescriptions, definitions, hypothetical subjunctives, questions, and so on). A virtue of 'ordinary language' philosophy was that these philosophers sought to resolve philosophical problems by clarifying our existing language through analyzing it or describing it. The massive failing of 'ordinary language' philosophy was (1) its introduction of highly artificial terms (e.g., locutionary, illocutionary, and perlocutionary acts) to describe ordinary language, and (2) its lack of systematic theoretical orientation to *solve* pertinent questions in epistemology. Contrary to ordinary language philosophers, it is certainly false that (all) philosophical problems are resolvable (or explainable) as linguistic confusions.

My suggestion for making 'ordinary language' (or 'linguistic') philosophy more interesting and fruitful, is for it to be reshaped in terms of 'conceptual analyses' as suggested in chapter nine. Conceptual analysis centers upon the evaluation of competing systematic philosophical theories (in a domain) using best explanation inferences. Analyses include functional explanations and hypotheses about how language is used, and the intentions of particular users. Functional explanations provide a theory of a person's reasons, assumptions, and goals for making an assertion. The 'speaker theory of reference' and its distinctions, as advocated here, are anchored by a theory of definition and concepts. On this worldview, analyses of various concepts and propositional assertions are to be explored as social scientific theories (that are true or false). I have maintained that the core problems of philosophical interest should include theories about knowledge, metaethics, aesthetics, and various definitional and mathematical assertions.²⁸

²⁸ On this worldview, metaphysical theories such as that of Thomas Hofweber and Scott Soames should be avoided. Hofweber (2016) seeks solutions to philosophical problems such as the nature of metaphysics, ontology, the semantics of quantifiers, focus and syntax, number words in natural language, the philosophy of arithmetic, perceptual beliefs, the problem of universals, idealism and ineffable facts (p. xiv). Hofweber's theories are based upon metaphysical, rather than conceptual, analysis. Soames (2017) interests are in seeking solutions to metaphysical problems such as (1) Frege's Puzzle (in Salmon, 1986), (2) Kripke's (2011) puzzle about belief, (3) Perry's (2001) problem of the essential indexicals, (4) Jackson's (1986) problem about knowing what red things look like, (5) Nagel's (1974) problem about what it's like to be a bat, and (6) Fine's (2007) problem about recognizing reoccurrence (p. 44). Much of Soames' theories about language and meaning are based upon strong metaphysical, rather than conceptual, analysis. Having little interest in metaphysical analysis, I don't share Hofweber's or Soames' primary philosophical concerns.