Analytic philosophy didn’t begin as a self-conscious revolt against earlier Idealism. It began with interest in new topics – logic, language and mathematics – that hadn’t been rigorously pursued before. The tradition started in 1879 when Frege invented modern logic with the aim of explaining how we can achieve certainty in mathematics. His strategy was to reduce higher mathematics to arithmetic, a process already underway, and then to reduce arithmetic to logic. To do this he had to develop a logic more powerful than any deriving from antiquity. The fact that his key semantic ideas could be adapted to spoken human languages doubled the achievement. For Frege, the function of language is to represent the world. For S to be meaningful is for S to represent the world as being a certain way – which is to impose conditions it must satisfy if S is to be true. In time, the idea became central to theories of linguistic meaning.

For Frege, numbers were whatever they had to be to explain our knowledge of them. The explanation was to come from logical definitions of arithmetical concepts. Arithmetical truths were to be logical consequences of the definitions plus self-evident logical axioms; empirical applications of arithmetical truths were to be logical consequences of those truths plus non-mathematically stated empirical truths. To achieve these ends, he defined zero as the set of concepts true of nothing, one as the set of concepts true something, and only that thing, two is the set of concepts true of some distinct x and y, and nothing else, and so on. Since being non-self-identical is true of nothing it is a member of zero; since being my wife is true of Martha and only her, it is a member of the number one. Other integers follow in train. The successor of n is the set of concepts F such that for some x of which F is true, the concept being an F which is not identical to x is a member of n. Natural numbers are
members of every set containing zero and closed under successor. Multiplication is repeated
addition, which is repeated application of the successor function. In this way arithmetic was
to be derived from what Frege took to be logic. Were his definitions what we really mean by
arithmetic terms? Frege, didn’t try to settle this by asking speakers, or testing their
“intuitions.” For him the correct analyses were those that did the needed explanatory work.

Unfortunately, his system contained a contradiction found by Bertrand Russell, after
which Russell inherited the task of reducing arithmetic to logic. He completed it in Principia
Mathematica, using a more complicated version of Frege’s ideas. Although he was
mathematically successful, the complications – including the axioms of infinity and
reducibility plus the ramified theory of types – that he had to introduce were philosophically
costly.¹ Frege dreamed of deriving mathematics from self-evidently obvious logical truths,
but some of Russell’s complications were neither obvious nor truths of logic. Later
reductions eliminated the worst complications, but the systems to which they reduced
mathematics were not logical systems that govern reasoning about all subjects. They were
versions of an elementary mathematical theory now called “set theory.”

Despite this limitation, Principia Mathematica reinforced the idea of logical analysis as
a powerful tool for addressing philosophical problems. Earlier, in “On Denoting,” Russell
achieved success by arguing that the logical forms of our thoughts are often disguised by the
grammatical forms of sentences we use to express them. There, he introduced the idea of
incomplete symbols that don’t have meaning or reference in isolation -- using, in the case of
singular definite descriptions, his flawed “Gray’s Elegy Argument.”² Unfortunately, this

¹ See sections 4 and 5 of Chapter 10 of Soames (2014), plus the reply to Pigden in Soames (2015b).
² See Nathan Salmon (2005) and Soames (2014), section 5 of chapter 7 and section 2.3 of chapter 8.
dubious beginning foreshadowed philosophically more contentious “incomplete symbols” later on. The first of these was the basis of the infamous no-class theory of *Principia Mathematica*, which, in addition to purporting to eliminate both numbers and classes via creative logical analysis, also attempted to dispense with non-linguistic propositions and propositional functions.³

Following *Principia Mathematica*, Russell applied his reductionist program to material objects and other minds in *Our Knowledge of the External World* (1914a) and *The Philosophy of Logical Atomism* (1918-1919). The result was an epistemically-driven, metaphysical system of logical atomism in which apparent talk of mind and matter is reduced to talk of momentary instantiations of perceptibly simple properties and relations.⁴

The relation between the resulting system and our pre-philosophical knowledge of the world was supposed to roughly parallel the relation between Russell’s logicized version of arithmetic and our ordinary knowledge of arithmetic. Just as his logicist reduction didn’t aim at giving us new arithmetical knowledge, but at validating that knowledge and exhibiting its connections with other knowledge, his logical atomism didn’t (officially) aim at *adding* to our ordinary and scientific knowledge, but as validating it and exhibiting the connections holding among its parts.

Elaborating this idea, Russell says:

Every philosophical problem, when it is subjected to the necessary analysis and purification, is found to be not really philosophical at all, or else to be, in the sense in which we are using the word, logical.⁵

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³ See Russell (1910b) and chapter 12 of Russell (1912). Also, Russell and Whitehead (1910) section 3 of chapter 3 of the Introduction, Soames (2014) sections 3-5 of chapter 9, and sections 4 and 5 of chapter 10.


⁵ Russell (1914a) p. 33
Philosophical propositions …must be a priori. A philosophical proposition must be such as can neither be proved or disproved by empirical evidence…Philosophy is the science of the possible…Philosophy, if what has been said is correct, becomes indistinguishable from logic.\(^6\)

Since Russell thought that a priori necessary connections were logical connections, he took explaining them to require definitions, as in the reduction of arithmetic to logic, or reductive analyses, as in his analysis of statements about the material objects and minds as statements about perceptible simples. Although he spoke of ‘analysis’, that term was misleading, since his “analyses” of empirical statements weren’t even approximately equivalent to those statements. Thus, his system was less an analysis of our pre-philosophical world-view than a proposal to replace it with a revisionary metaphysics dictated by a view of what reality must be like if it is to be knowable. For Russell during this period, linguistic analysis was logical analysis, which required using logical tools to craft philosophically justified answers to what G.E. Moore in 1910 characterized as the most important job of philosophy, namely:

> to give a general description of the whole Universe, mentioning all the most important things we know to be in it, considering how far it is likely that there are important kinds of things which we do not absolutely know to be in it, and also considering the most important ways in which these various kinds of things are related to one another. I will call this, for short, ‘Giving a general description of the whole Universe’, and hence will say that the first and most important problem of philosophy is: To give a general description of the whole Universe.\(^7\)

In sum, language during this stage of the analytic tradition was both an object of study and, through its connection with the new logic, an all-purpose tool for doing traditional philosophy. Though the tool was often tied to questionable linguistic doctrines, it was also used in uncontentious ways to reveal defects in philosophical arguments and to frame objections to certain doctrines. One example is the critique in Russell (1910a) and Moore

\(^6\) Russell (1914b) quoted at page 111 of the 1917 reprinting.

\(^7\) Moore (1953), pp. 1-2.
of the Absolute Idealist argument that all properties of an object, including its relational properties, are essential to it, and that, because of this, Reality is an interconnected whole every part of which is essential to every other part. As they show, that argument suffered from a scope ambiguity involving a modal operator. On one resolution the argument is logically invalid; on the other it is question begging. Another example is the critique in Russell (1908, 1909) and Moore (1907-08) of William James’s theory that ‘true’ means ‘what is useful to believe’. Moore and Russell argue that James can’t be right because, unlike the claim that \( p \text{ is true} \), the claim that \( p \text{ is useful to believe} \) is neither equivalent to \( p \text{ nor} \) a claim one is warranted in believing iff one is warranted in believing \( p \). These examples, which don’t invoke questionable linguistic doctrines to advance antecedent philosophical ends, illustrate the timeless the relevance of language to philosophy.

The founding document of the second stage of the analytic tradition was Ludwig Wittgenstein’s *Tractatus Logico-Philosophicus*. Despite both developing systems of logical atomism, Russell and Wittgenstein had starkly different philosophical visions. Whereas Russell offered an all-encompassing theory of what reality must be like if it is to be knowable, Wittgenstein offered an all-encompassing theory of what thought and language must be like if they are to represent reality. The *Tractatus* does, to be sure, begin with abstract metaphysics, but its metaphysical simples are never identified and no analyses of scientific or ordinary truths are given. Since, like Russell, Wittgenstein believed that all necessary, *a priori* connections are *logical* connections, he could have tried to give logical analyses of empirical statements, had he shared Russell’s view that the metaphysical simples

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8 Soames (2014), pp. 414-419.

9 To which Russell added that James would have done better to frame his view as a theory of belief revision, rather than a theory of truth. See Soames (2014), pp. 420-428.
that ground analysis could be informatively identified. In fact, he believed it was impossible to identify them. Consequently, his meager metaphysics was a reflex of his vision of how language represents the world. He wanted, not to do metaphysics, but to end it by showing how it violates the principles governing intelligible thought and language.

For Wittgenstein propositions, as conceived by Frege, Russell, and Moore, don’t exist. In their place we are given an analysis of representational language in which “propositions” are meaningful uses of sentences. As the *Notebooks 1914-1916* make clear, Wittgenstein saw this reconceptualization of the proposition as the single great problem of philosophy.

My whole task consists in explaining the nature of the proposition. (p. 39)

The problem of negation, of conjunction, of true and false, are only reflections of the one great problem in the variously placed great and small mirrors of philosophy. (p. 40)

Don’t get involved in partial problems, but always take flight to where there is a free view over the whole of the single great problem. (p. 23)\(^{10}\)

Wittgenstein’s one great problem was to explain the essence of representational thought and language. This, he thought, was philosophy’s only real task.\(^{11}\)

Apart from tautologies -- which he took to say nothing and to be meaningful only in so far as they show us something (unstatable) about our symbolism -- he assumed that for a proposition to be meaningful, it must tell us something about which possible state the world is in. He took it to follow that all intelligible thoughts must be contingent and aposteriori. *Since he believed that philosophical propositions are never either one, he concluded that there are no genuine philosophical propositions, and, correspondingly, no philosophical problems.* For Wittgenstein, a sentence that is neither a tautology nor contradiction has


\(^{11}\) See chapter 1 of McGinn (2006), and chapters 1-3 of Volume 2 of Soames (forthcoming).
meaning only if its truth, or its falsity, is guaranteed by elementary facts. Thus, he thought, there are no unanswerable questions and no inherently mysterious propositions. Anything about which we can speculate is a topic of scientific inquiry. Since philosophy isn’t a science, philosophers are restricted to clarifying thought and language. Paradoxically, they are not to do this by discovering how language is related to the world. According to the *Tractatus*, there are no such truths to discover. Rather, since ordinary language disguises thought, they must strip off the disguise. This was the linguistic turn in philosophy.

The message resonated in Vienna. After operating informally for years, the Vienna Circle announced its existence in a manifesto dedicated to Moritz Schlick written by Rudolf Carnap, Hans Han and Otto Neurath in 1929. Proclaiming an epochal new beginning in philosophy, the manifesto ended by listing members of the circle – including, in addition to the authors plus Schlick, Gustov Bergman, Herbert Feigl, Philipp Frank, Kurt Gödel, Viktor Kraft, Friedrich Waismann, and four others. It also listed those sympathetic to the circle, including Kurt Grelling, F. P. Ramsey, Hans Reichenbach, and seven others. Albert Einstein, Bertrand Russell, and Ludwig Wittgenstein were hailed as leading representatives of the scientific world-conception.

The initial upshot was the phenomenalistic rendering of the *Tractatus* sketched by Kraft. Wittgenstein identified [atomic propositions] with the propositions he called ‘elementary propositions.’ They are propositions which can be immediately compared with reality, i.e. with the data of experience. Such propositions must exist, for otherwise language would be unrelated to reality. All propositions which are not themselves elementary propositions are necessarily truth functions of elementary propositions. Hence all empirical propositions must be reducible to propositions about the given.\(^\text{12}\)

\(^{12}\) Page 117 of Kraft (1950).
With this conception in the background, the logical empiricists hoped to unify all science – i.e., to systematize all fact-stating discourse into a single integrated system. The primary activity of the philosopher was to be the logical analysis of the concepts of science and the structure of scientific theories. The first and most ambitious attempt to demonstrate the possibility of a unified science was Carnap (1928). It identified four domains: the *autopsychological* or phenomenal domain of a single mind, the physical domain, the *heteropsychological* domain of all psychological facts, and the broader cultural domain. Carnap claimed it was possible to reduce all domains to the autopsychological, and also to reduce all domains to the physical -- where the direction of reduction was *not* supposed to confer metaphysical prominence on the chosen base. The reduction to the autopsychological, to which he devoted by far the most attention, was hopeless.\(^{13}\) The metaphysical neutrality he attributed to the different imagined reductions was more significant, signaling an implicit holistic verificationism that was later to become prominent.\(^{14}\)

The search for a precise, acceptable, statement of the *empiricist criterion of meaning* preoccupied the logical empiricists for decades. Significant milestones included Popper, (1935), Ayer (1936), Carnap (1936-37), Ayer (1946), Church (1949), Hempel (1950), and Quine (1951). Since natural science had to count as cognitively meaningful, it was quickly recognized that neither conclusive verifiability (entailment of S by a consistent set of observation statements), conclusive falsifiability (in (entailment of the negation of S by a consistent set of observation statements), nor the disjunction of the two were necessary and

\(^{13}\) See Friedman (1987) and section 5 of chapter 6 of Soames forthcoming.

\(^{14}\) See sections 2 and 3 of chapter 6 of Soames forthcoming.
sufficient for S’s meaningfulness.\textsuperscript{15} Attention then focused on the idea that empirically meaningful statements earn their keep by contributing to the observational entailments of theories containing them. When tests of the meaningfulness of individual statements based on this idea were shown in Church (1949) and Hempel (1950) to fail spectacularly, the conclusion, drawn in Quine (1951), was that since confirmation is holistic, meaning must also be, \textit{if cognitive meaning is to be identified with confirming experience}.\textsuperscript{16} Unfortunately for verificationism, the appeal to holism was insufficient to block reconstructed versions of the problems of non-holistic verificationism.\textsuperscript{17} Thus, the attempt to use philosophically inspired theories of meaning as all purpose philosophical weapons suffered a setback.

The logical empiricists’ attempt to reduce apriority and necessity to truth by convention suffered a similar fate. The linguistic theory of the \textit{a priori}, advocated in Hahn (1933), held that \textit{a priori} truths, paradigmatically those of logic, are both true and knowable without appeal to justifying experience because they are stipulated to true by linguistic conventions adopted by speakers. Quine (1936) observed that since proponents recognize infinitely many such truths, they can’t hold that speakers adopt a separate convention for each. Rather, they must maintain that speakers adopt finitely many conventions from which infinitely many \textit{a priori} truths follow logically. But that won’t do. Either the required logic is itself \textit{a priori}, in which case what is supposed to be explained is presupposed, or the logic isn’t \textit{a priori}, in which case nothing it is used to derive is either.\textsuperscript{18} The attack on the conception of necessity as analyticity in Quine (1951) was similarly effective against logical empiricists, who

\textsuperscript{15} See chapter 13 of Soames (2003a).
\textsuperscript{16} Ibid., chapter 13.
\textsuperscript{17} Ibid., chapter 17.
\textsuperscript{18} For related criticism, see Soames (2013).
maintained that necessity was problematic and incapable of being accommodated by empiricists unless it was explained as analyticity, which was assumed to be unproblematic.\textsuperscript{19}

With these results, the key tenets of logical empiricism unraveled, and the analytic tradition entered its third stage, when it was divided between two main groups -- one led by Quine, and the other led by Wittgenstein, Gilbert Ryle, John Austin, and Paul Grice. The first group tended to reject necessity, apriority, and the conception of philosophy as linguistic analysis, in favor of the idea of philosophy as continuous with science. The second group continued to characterize philosophy as linguistic analysis, while insisting that the analysis was not logical analysis.

Neither group fared very well. Quine’s skepticism about necessity, apriority, and analyticity extended to a host of other intensional, and intentional, notions. Challenged in Grice and Strawson (1956), which argued that sameness of meaning can’t be repudiated without repudiating translation and meaning too, Quine obliged in Word and Object (1960). Challenged in Carnap (1955), which argued that meaning and reference are scientifically on par, Quine repudiated reference in Quine (1969), leading, as I argue in Soames (2013), to an inadvertent reductio of his radically eliminativist position of intension and intention.

Ordinary-language philosophers suffered from two main difficulties. The first, which crippled the anti-Cartesian, analytic behaviorism of Ryle (1949, 1953) while also undermining what might have been a salvageable insight behind the paradigm case argument in Malcolm (1942), was their inability to distinguish necessity from apriority and analyticity.\textsuperscript{20} The second difficulty was their anti-theoretical approach to language. One

\textsuperscript{19} Soames (2003a) chapter 16. See also Soames (2013).

\textsuperscript{20} See chapters 3, 4, and 7 of Soames (2003b), and also Soames (2007).
can’t successfully maintain that all philosophical problems are linguistic confusions that can be eliminated by understanding what words mean, without having an informative, well-confirmed theory of meaning. The slogan *Meaning is use!* isn’t enough, since factors other than meaning affect our use of words. When this lesson was established in Grice (1967), the multiple failures to neglect it – illustrated by Strawson’s performative theory of ‘true’, 21 Hare’s performative theory ‘good’, 22 and Austin’s argument that empirical knowledge is sometimes possible without empirical evidence 23 – triggered a collective realization that a more theoretical approach to language was needed.

Some found it in Davidson (1967a,b), which advocated finitely axiomatized theories the theorems of which are material biconditionals stating the truth conditions of sentences. For many philosophers, including some friendly to the ordinary-language school, this idea connected them to a logical tradition they had once disdained. Tarski (1935) showed how to define truth for formal languages of mathematics; Tarski (1936) showed how to define *logical truth* and *logical consequence* for such languages. Following this, his is work was routinely used to provide interpretations for formal languages. To give such an interpretation is to identify a domain of objects a language is to be used to talk about, to assign each name an object in the domain, each 1-place predicate a subset of the domain, and so on for all non-logical vocabulary. The interpretations of sentences are then derived from the interpretation of the vocabulary using recursive clauses encoding meanings the logical vocabulary. The results are instances of the schema ‘S’ is a true sentence of L iff P.

21 Strawson (1949), critiqued in chapter 5 of Soames (2003b).
22 Hare (1952), critiqued in chapter 6 of Soames (2003b)
23 Austin (1962), critiqued in chapter 8 of Soames (2003b).
This conception of interpretation was familiar to logicians and philosophers from the 30s through the 60s. It was the simplest such conception that arose in the decades of unprecedented advances in logic that preceded Davidson. Among those advances was the establishment of “classical,” logic. Looking back at the heyday of logical empiricism, one finds that although there were many informal descriptions of philosophical analysis as *logical analysis*, the real study of logic and its relation to mathematics was largely independent of other philosophical concerns. Those were the years when logic and metamathematics were transformed by Gödel, Tarski, Church, and Turing. With the emergence of model theory (of the first and second-order predicate calculi), and of recursive function theory, as mature disciplines, logic and metamathematics separated themselves from earlier, more epistemological and metaphysical, conceptions by focusing on rigorously defined scientific domains of study.

At the same time, a new logical sub discipline, often called “philosophical logic,” was born. Whereas classic logic arose from the desire to advance our knowledge of the timeless, non-contingent subject matter of mathematics, philosophical logic arose from the desire to extend logical methods to new domains. The first steps were to formalize reasoning about the temporal and contingent. Proof-theoretic systems of the modal propositional calculus were given in Lewis and Langford (1932), followed by extensions to include quantification and, finally, the addition of model theories. Milestones included Marcus (1946), Carnap (1946, 1947), and Kripke (1958, 1963a, 1963b). Prior (1967) pioneered tense logic.

Modal logic introduced an operator, ‘□’, the prefixing of which to a classical logical truth produces a truth. Apart from initial confusion about precisely which notion was to be captured – logical truth, analyticity, or metaphysical necessity – the needed formal ideas
soon emerged. Since the new operator is defined in terms of truth at *model-like elements*, logical models for modal languages had to contain them, now dubbed *possible world-states*, thought of as *ways the world could have been*. This development strengthened the Fregean idea that for a (declarative) sentence S to be meaningful is for S to represent the world as being a certain way, which is to impose conditions the world must satisfy if S is to be true. With the use of modality, truth conditions were for the first time strong enough to approximate meanings. To learn *what the world would have to be like* to conform to how S represents it is to learn something approximating S’s meaning. This proved to be significant. Now we had a putative answer to the question *What is the meaning of a sentence?* plus a new way of studying linguistic meaning.

This is roughly where the philosophical study of linguistic meaning stood in the mid 1960s, when the analytic tradition was moving into its next historical stage. The arrival of that stage was decisively signaled by the revival of normative theory in John Rawls (1971) and the articulation, in Kripke (1972), of a philosophically important conception of necessity that was both non-linguistic and non-coextensive with aprioriority. From then on, philosophy was seldom identified with linguistic analysis. Today, what remains of the original impulses of the analytic tradition isn’t a set of doctrines, but a pattern of interests and ways of philosophizing. All the original interests—in logic, language, mathematics, and science—continue in new forms. Although logic and linguistic analysis are still important tools in advancing traditional concerns, the main philosophical interest in language lies in contributing to the foundations of the emerging science of language and information. Whereas in earlier days of the tradition, language was often viewed as an easily grasped

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means to antecedent philosophical ends, today it is seen as the complex subject matter of a young science to which philosophers have already made great contributions, and to which they continue to add new ideas.

From the early 60s to the present, philosophers and theoretical linguists have expanded the framework provided by intensional semantics to cover large fragments of human languages. The research program that started with the predicate calculi has been enriched to include more and more natural-language constructions. Familiar modal operators now include *it is necessarily the case that*, *it could have been the case that*, and *if it had been the case that ___*, then it would have been the case that ___. Operators involving time and tense have been treated along similar lines. Generalized quantifiers have been added, along with adverbs of quantification, and propositional attitude verbs such as *believe*, *expect*, and *know*. Philosophical logicians have also given us accounts of adverbial modifiers, comparatives, intensional transitives, indexicals, and demonstratives. At each stage, a language fragment for which we had a truth-theoretic semantics was expanded to include more features of natural language. As the research program advances, the fragments of which we have a good truth-theoretic grasp become more fully representative of natural language. Although one may doubt that all aspects of natural language can be squeezed into some version of this paradigm, there is little doubt that key elements of it will eventually find their place in a mature science of language and information.

Despite this progress, it would be wrong to think that the foundations of this science are already in place. If all that remained were to fill gaps in systems of intensional semantics and to flesh out the empirical details of applying them to natural languages, philosophers would already have done most of what they needed to do to secure firm foundations for the
aspiring science. But we haven’t reached that point. While we have used truth conditions to model representational contents of sentences, we haven’t paid enough attention to the demands that sentences place on their users. Given the history of formal semantics, it could hardly have been otherwise. When the chief goal was to capture the logical, analytic, and necessary consequences of mathematical and scientific statements, there was little need to focus on agents’ use of their language for cognitive and communicative purposes, or to individuate thoughts beyond necessary equivalence. Now that the goal is a genuine science of language and information, there is.

It is well known that the identification of the proposition semantically expressed by S at a context C, its semantic content at C, with a function from circumstances of evaluation (pairs of times and world-states) to the truth value of S at C (and those circumstances) is too course grained to accommodate propositional attitudes and other hyperintensional constructions.\textsuperscript{25} It is also known that quick fixes haven’t worked.\textsuperscript{26} It is less well known that this lack of success is related to conceptual issues about truth and representation. Meanings and semantic contents are interpretations of (uses of) sentences on which speakers and hearers expect each other to converge. As such, they can’t, on pain of regress, depend on further interpretation.

But interpretation is what sets of truth-supporting circumstances, or functions from such to truth values, require.\textsuperscript{27} Is the set containing only world-states 1, 2, 3 true or false? Since it doesn’t represent anything as being this way or that, it isn’t either one. We could, if we

\textsuperscript{25} Soames (1987, 2008b).

\textsuperscript{26} Soames (1987, 2005a, 2006)

\textsuperscript{27} Soames (2010a)
wished, interpret it as representing the actual world-state as being in the set, and so as being true iff no state outside it were instantiated. We could also interpret it as representing the actual world-state as not being in the set, and so as being true iff no state inside it was instantiated. Without interpretation by us, neither the set, nor the related function, represents anything, or has truth conditions. Since propositions are primary bearers of truth, they aren’t these sets or these functions.28

Truth is, as Aristotle intimated, the property a proposition p has when the world is as p represents it. It is a property which, when predicated of p, gives us a claim we are warranted in accepting, believing, or doubting iff we are warranted in accepting, believing, or doubting p. Since we have to presuppose propositions to explain truth, truth isn’t something from which propositions are constructed.29 The same can be said about world-states, which are properties of making complete world-stories, the constituents of which are propositions, true. Since both truth and world-states are conceptually prior to propositions, they aren’t building blocks from which propositions are constructed.30

For these reasons propositions aren’t what intensional semantics have said they are. Nor is the two-place predicate true at w the undefined primitive it has been taken for. If it were, then nothing about the meaning of S would follow from the theorem For all world-states w, S is true at w iff at w, the earth moves, just as nothing follows from the pseudo-theorem For all world-states w, S is T at w iff at w, the earth moves. To say that S is true at

28 See chapter 3 of King, Soames, and Speaks (2014), also chapter 1 of Soames (2015a).
29 Ibid.
30 See chapter 5, Soames (2010b).
w is to say that S expresses a proposition that would be true if w were actual (instantiated).\(^{31}\) To understand *true at w* in this way is to presuppose prior notions of *the proposition S expresses* and *the monadic notion of truth* applying to it. Employing these, we appeal to the schema, \(\text{If S means, or expresses, the proposition that } P, \text{ then necessarily the proposition expressed by S is true iff } P\) plus the theorem \(\text{S is true at w iff at w, the earth moves}\) to derive that S means, or expresses, some proposition necessarily equivalent to the proposition that the earth moves.\(^{32}\) In short, intensional semantics requires a conceptually prior notion of proposition, if it is to provide any information about meaning at all.\(^{33}\)

For all these reasons, the next major philosophical contribution to the foundations of a science of language and information must be an empirically defensible, naturalistic conception of propositions as primary bearers of truth conditions, objects of attitudes, meanings of some sentences, and contents of some mental states. By a *naturalistic* conception, I mean one capable of explaining both the relations all cognitive agents bear to them and the knowledge of them that normal humans have. By an *empirically defensible* conception, I mean one that offers new solutions to (at least) some currently intractable problems -- such as Frege’s puzzle,\(^ {34}\) Kripke’s puzzle about belief,\(^ {35}\) Perry’s problem of the essential indexical(s),\(^ {36}\) Jackson’s problem about knowing what red things look like,\(^ {37}\)

\(^{31}\) It won’t do take the claim that \(S\) is *true at w* to say that *if w were instantiated, then S would be true*, because S might fail to exist, or it S might exist but *not* mean what it actually means, at some world-state at which the earth moves.

\(^{32}\) Here ‘S’ is a metalinguistic variable over sentences and ‘P’ is a schematic letter.


\(^{34}\) See Salmon (1986).

\(^{35}\) See Kripke (1979).


\(^{37}\) See Jackson (1986).
Nagel’s problem about what it’s like to be a bat,\textsuperscript{38} and Fine’s problem about recognizing recurrence.\textsuperscript{39, 40} Fortunately, work along these lines is underway. Although no consensus has yet been reached, several similar, and largely complementary, research programs are pursued in King (2007), King, Soames, and Speaks (2014), Soames (2015a), Hanks (2015), Jesperson (2010, 2012, forthcoming a, draft), and Moltmann (forthcoming).

Another foundational issue receiving attention is the distinction between two senses of meaning: the \textit{semantic content} of an expression \( E \) vs. what is required to fully \textit{understand} \( E \). The semantic content of \( E \) is what one’s use of it must express or designate, if that use is to conform to \( E \)’s meaning in the language. If, like the natural kind terms ‘water’ and ‘gold’, \( E \) isn’t context-sensitive, then, ambiguity aside, a use of \( E \) is normally expected to contribute its semantic content – e.g., the kinds \( \text{H}_2\text{O} \) and \( \text{AU} \) – to the illocutionary force of utterances of sentences containing \( E \). If, like indexicals ‘I’ and ‘now’, \( E \)’s semantic content is relativized to contexts, then one’s use of it in a context will standardly be expected to stand for its semantic content there – e.g., oneself and the time of utterance. Part of understanding \( E \) is, of course, having the ability to use it in conformity with its semantic content. But this isn’t all there is to understanding \( E \). Nor is knowing, of the semantic content of \( E \), that it is \( E \)’s content. In fact, that knowledge isn’t always either necessary or sufficient for understanding \( E \). It’s not necessary, because when a proposition \( p \) is the semantic content of

\textsuperscript{38} See Nagel (1974).
\textsuperscript{39} See Fine (2007) and Salmon (2012).
\textsuperscript{40} All these problems are addressed by the theory of propositions in Soames (2015a).
a sentence S, understanding S doesn’t require making p an object of thought.\textsuperscript{41} It’s not sufficient, since understanding S often requires a different sort of knowledge.\textsuperscript{42}

To understand a word, phrase, or sentence is to be able to use it in ways that meet the shared expectations that language users rely on for effective communicative interactions. This involves graded recognitional and inferential capacities on which the efficacy of much of our linguistic communication depends. Not only do ‘water’ and ‘H\textsubscript{2}O’ have the same kind k as content, one can know, of k, that ‘water’ stands for it, and know of ‘k’ that ‘H\textsubscript{2}O’ stands for it, without understanding either term, or knowing that they designate the same kind. Understanding each involves knowing the body of information standardly presupposed in linguistic interchanges involving each. This, I argue in Soames (2015a), can be used to solve recalcitrant instances of Frege’s puzzle.

A third foundational issue receiving attention is the relationship between the information semantically encoded by (a use of) a sentence (in a context), on the one hand, and the assertions it is there used to make, the beliefs it is there used to express, and the information it is there used to convey, on the other. In the past, it has often been assumed that the semantic content of a sentence is identical, or nearly so, with what one who accepts it thereby believes, and with what one who utters it thereby asserts. But there is a growing recognition that this is far too simple. As observed in Sperber and Wilson (1986), Recanati (1989), Bach (1994), Carston (2002) -- and discussed at length in chapter 7 of Soames (2010b) -- the contextual information available to speaker-hearers is much more potent in combining with the semantic content of the sentence uttered to determine the (multiple)

\textsuperscript{41} Soames (2015a) chapters 2 and 4.
\textsuperscript{42} Soames (2015a) chapter 4.
propositions asserted by an utterance than was once imagined. Although the semantic content of S always contributes to the propositions asserted by utterances of S, that content isn’t always itself a complete proposition, and even when it is, that content isn’t always one of the propositions asserted. This, I believe, has far-reaching consequences for our understanding of the semantics and pragmatics of indexicals, demonstratives, incomplete definite descriptions, first-person and present-tense attitudes, perceptual and linguistic cognition, recognition of recurrence, and other aspects of language and language use.43

If my list of foundational issues needing urgent attention isn’t daunting enough, remember that I have so far raised them only for representational uses of language, which are not the only uses to which words are put. In addition to using declarative sentences to assert propositions, we use interrogative sentences to ask questions and imperative sentences to issue orders or directives. Although these are neither true nor false, they are illocutionary contents of linguistic performances that are closely related to assertive utterances that express propositions. Somehow the different sorts of contents – propositions, questions, and orders/directives -- fit together as seamlessly as do uses of the interrogative, imperative, and declarative sentences that express them. Attention must also be paid to uses of declaratives that may have non-representational, or expressive, dimensions – e.g., epistemic modals and moral, or other evaluative, sentences. Needless to say, we don’t yet have a unified theory of all this, but we are beginning to assemble the pieces.

In sum, the story of language in analytic philosophy since 1879 is one with several chapters. In chapter 1, language becomes, along with the new logic, the object of systematic philosophical inquiry aimed first at advancing the philosophy of mathematics and then at

transforming metaphysics and epistemology. In chapter 2, vastly oversimplified models of language are mistaken for the real thing and used as philosophical weapons to sweep away metaphysics, normativity, and much of the traditional agenda of philosophy, in favor of a logico-linguistic conception of the subject. In chapter 3, ordinary language philosophers retain the conception of philosophy as linguistic analysis, while divorcing the latter from logical analysis, and continuing to identify epistemic and metaphysical modalities with linguistic modalities. At the same time, Quine and his followers retain the scientific spirit of the logical empiricists while rejecting the intensional and the intentional, along with the meaning, reference, and analyticity. In chapter 4 the belief that language is the heart of philosophy finally dies and language again becomes just one of many objects of philosophical study. Only this time there is a difference. Thanks in part to philosophers such as Gottlob Frege, Bertrand Russell, Alfred Tarski, Alonzo Church, Saul Kripke, Richard Montague, and David Kaplan, the now mature disciplines of formal logic, philosophical logic, and computation theory, have helped launch empirical sciences of language and information and their application, in theoretical linguistics, to natural languages. This is the enterprise that today’s philosophers of language hope to advance. Having made so much progress, and fought through so many errors, we must expect the road ahead to be as challenging as the road behind, and the goal to be achieved – a mature science of language and information – to be as glorious as the mature disciplines -- classical logic, philosophical logic, and the theory of computation -- that have already achieved that status.
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