## Analytic Philosophy of Language: From First Philosophy to Foundations of Linguistic Science

#### The Initial Analytic Turn to Logic and Language

In 1945, the turn to logic and language that initiated the analytic tradition in philosophy was sixty six years old. The tradition was founded in 1879 when Gottlob Frege invented the predicate calculus as a necessary prerequisite to his goal of deriving all mathematics (except geometry) from logical axioms and definitions of mathematical concepts. His aim -- to identify what numbers are and explain our knowledge of them -fit what he, Bertrand Russell, and G.E. Moore then took to be the main tasks of philosophy -- to give a general description of reality, to explain what, and how, we know about it, and to discern moral facts capable of guiding action.<sup>1</sup> One part of reality, numbers, were, for Frege, whatever they had to be to explain our arithmetical knowledge. His explanation was based on taking natural numbers to be sets of concepts the extensions of which can exhaustively be paired off, without remainder. Related definitions of arithmetical notions allowed him to derive the axioms of Peano Arithmetic from what he took to be self-evident logical axioms, without which thought might prove impossible. In this way, he thought, he could reduce arithmetical knowledge to logical knowledge.

Unfortunately, his system embedded naïve set theory, which generated a contradiction found by Russell in 1903, after which he inherited the ask of reducing arithmetic to logic. By 1910, Russell was mathematically successful, though at some philosophical cost.<sup>2</sup> Whereas Frege dreamed of deriving mathematics from self-evident

A detailed description of these aims is given in lecture 1 (delivered in 1910) of Moore (1953).

<sup>&</sup>lt;sup>2</sup> Chapter 10, sections 4 and 5, of Soames (2014). See also the reply to Pigden in Soames (2015b).

logical truths, today we recognize some of Russell's principles to be neither self-evident nor truths of logic. Although the simple type theory of Ramsey (1925) improved Russell's product, we now recognize that the systems to which mathematics was then reduced weren't logical principles governing all reasoning; they were versions of a foundational mathematical theory now called "set theory." This, however, is hindsight; it wasn't widely evident then.

Consequently Russell's reduction, along with the theory of descriptions in Russell (1905), enhanced the reputation of logical analysis as a powerful philosophical tool. Building on this reputation, Russell applied his reductionist program to material objects and other minds.<sup>4</sup> The result was an epistemically driven metaphysical system of logical atomism in which apparent talk of mind and matter was reduced talk of momentary instantiations of simple n-place perceptual properties.<sup>4</sup> The relation between that system and our pre-philosophical knowledge of the world was, he thought, like the relation between the "logical" system to which *Principia Mathematica* reduced arithmetic and our ordinary arithmetical knowledge. Just as the later reduction aimed not at giving us new arithmetical knowledge, but at validating the knowledge we already had, and connecting it to other sorts of knowledge, but at validating it and revealing its internal structure.

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.<sup>3</sup>

<sup>&</sup>lt;sup>3</sup> Russell (1914, 1918-19)

<sup>&</sup>lt;sup>4</sup> For discussion see pp. 621-629 of Soames (2014).

<sup>&</sup>lt;sup>5</sup> Russell (1914) p. 33

[P]hilosophical propositions ...must be *a priori*. A philosophical proposition must be such as can neither be proved or disproved by empirical evidence...[P]hilosophy is the science of the possible...Philosophy, if what has been said is correct, becomes indistinguishable from logic.<sup>6</sup>

Since for Russell *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 mind and matter as recurring occurrences of perceptible simples. But, since his *analysans* weren't even approximately equivalent his *analysanda*, the term *analysis* that he used was misleading. 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 the traditional questions of metaphysics and epistemology.

## The Emergence of Analytic Philosophy as First Philosophy

The logical atomism of the *Tractatus Logico-Philosophicus* sprung from a different philosophical vision. Whereas Russell gave us an epistemologically grounded metaphysics, Wittgenstein gave us a theory of intelligibility. Whereas Russell was driven by a vision of what *reality* must be like if it is to be *knowable*, Wittgenstein was driven by a vision of what *thought* and *language* must be like if they are to *intelligibly represent* reality. For Russell conceptual were logical connections; for Wittgenstein metaphysical and epistemic possibilities were logical possibilities. Russell believed the aim of philosophy was to discover logical truths and devise definitions which, when applied to statements of science and everyday life, would reveal their true contents; Wittgenstein

<sup>&</sup>lt;sup>6</sup> Russell (1917) quoted at page 111 of the 1917 reprinting.

believed there are no philosophical truths or informative philosophical contents to identify.

Wittgenstein's conclusions were grounded in a conception of language in which every intelligible statement S falls into one of two categories: either (i) S is true at some world-states and false at others, in which case S is a truth-function of elementary (i.e., atomic) statements and knowable to be true, or false, only by empirical investigation, or (ii) S is a tautology or contradiction that can be known to be so by purely formal calculations. From this he concluded that there are no unanswerable questions and no inherently mysterious propositions. In the *Tractatus*, anything about which we can speculate is a scientific topic. Since philosophy isn't science, its job is limited to clarifying thought and language. Because Wittgenstein believed that everyday language disguises thought by concealing true logical form, he left philosophy the job of stripping away the disguise and illuminating the form. With this, it seemed, traditional philosophy had come to an end.

The message was well received by the Vienna Circle, which initially gave the *Tractatus* the phenomenalistic reading described by one of its members, Viktor 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.'

After operating informally for years, the Vienna Circle announced its existence in a manifesto, Carnap, Hahn, and Neurath (1929), dedicated to Moritz Schlick. Hailing

<sup>&</sup>lt;sup>7</sup> Page 117 of Kraft (1950).

Einstein, Russell, and Wittgenstein as exemplars of *the scientific world-conception*, it proclaimed a new philosophical vision, *logical empiricism*, that would systematize all fact-stating discourse into a single, unified, scientific system. The primary activity of the philosopher was to give the logical analyses of scientific concepts and theories.

The first and most ambitious effort of this sort was the attempt to demonstrate the possibility of a unified science given in Carnap (1928). In this work Carnap 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's central claim was that it is 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. Unfortunately, the only reduction developed in detail was the autopsychological, which proved to be hopeless.<sup>6</sup> The metaphysical neutrality attributed to the imagined reductions was more significant, signaling an implicit holistic verificationism that was later to become prominent.<sup>9</sup>

After this beginning, the search for a precise, acceptable statement of the *empiricist criterion of meaning* preoccupied 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 (entailment of the negation of S by a consistent set of observation statements), nor the disjunction of the

<sup>&</sup>lt;sup>s</sup> See Friedman (1987) and section 5 of chapter 6 of Soames in press.

<sup>&</sup>lt;sup>9</sup> Sections 2 and 3 of chapter 6 of Soames in press.

two were necessary and sufficient for S's meaningfulness.<sup>10</sup> Attention then focused on more holistic approaches in which S could be deemed meaningful by its place in a larger system of meaningful sentences even if S was not itself conclusively verifiable or conclusively falsifiable.

One such proposal was presented in Carnap (1936-37), which suggested that S is empirically meaningful if and only if it can be translated into what Carnap then defined to be "an empiricist language." Although this idea had some attractive features that earlier proposals lacked, it too failed to recognize many obviously meaningful scientific statements, as shown in Hempel (1950)." A different, and initially more intriguing proposal, was offered in Ayer (1946). The idea here was that non-analytic, noncontradictory statements are empirically meaningful if adding them to a set N of nonobservational claims already certified to be empirically meaningful would result in entailments of observational statements (predictions) not entailed by N alone. 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, if cognitive meaning is to be identified with confirming experience.<sup>12</sup> Unfortunately for verificationism, the appeal to holism was insufficient to block reconstructed versions of the problems of non-holistic verificationism.<sup>13</sup> Thus, the attempt to use philosophically inspired theories of meaning as all purpose philosophical weapons suffered a setback.

<sup>&</sup>lt;sup>10</sup> See chapter 13 of Soames (2003a).

<sup>&</sup>quot; For further detailed discussion and criticism see chapter 11, section 5 of Soames, in press.

<sup>&</sup>lt;sup>a</sup> Section 4 of chapter 11 of Soames in press explains and extends the Church and Hempel critiques.

<sup>&</sup>lt;sup>13</sup> This is shown in chapter 17 of Soames (2003a), which explains and criticizes Quine's holistic verificationism.

The attempt to reduce apriority and necessity to truth by convention suffered a similar fate. The linguistic theory of the *a priori*, advocated in Hahn (1933), held that *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. However, Quine (1936) raised a problem. He observed that since proponents of the linguistic theory of the *a priori* recognize infinitely many *a priori* truths, they can't hold that speakers adopt a separate convention for each one. Rather, he argued, they must maintain that speakers adopt finitely many conventions from which infinitely many truths logically follow. But this was no solution. Since appealing to logic presupposed the very apriority it was supposed to explain, Quine's attack threatened to deny linguistic theory of the *a priori*.<sup>14</sup> The attack on the conception of necessity as analyticity in Quine (1951) was similarly effective against logical empiricists, who maintained that necessity was problematic and incapable of being accommodated by empiricists unless it was explained as analyticity, which was assumed to be unproblematic.<sup>46</sup>

## Philosophy, Logic, and the Logical Analysis of the Language of Science

Looking back at the role of logic and language in analytic philosophy from 1879 to the end of the second world war, one is struck by its fluidity. Initially, advances in logic, and the ideas about language and linguistic meaning accompanying them, fueled the belief philosophical logic and philosophy of language philosophical tools needed to solve, not dissolve, traditional problems in metaphysics and epistemology. After the tractarian reverse, in which traditional philosophical problems were to have been shown

<sup>&</sup>lt;sup>14</sup> For related criticism, see Soames (2013).

<sup>&</sup>lt;sup>15</sup> See Soames (2003a) chapter 16. See also Soames (2013).

to be illusory, logical empiricists like Carnap saw philosophy as providing tools needed to unify the sciences and articulate an all-encompassing scientific worldview.

That part of the work of philosophers which may be held to be scientific in nature – excluding the empirical questions that can be referred to empirical science – consists of logical analysis. The aim of logical syntax is to provide a system of concepts, a language, by the help of which the results of logical analysis will be exactly formulable. *Philosophy is to be replaced by the logic of science* – that is to say, by the logical analysis of the concepts and sentences of the sciences, for *the logic of science is nothing more than the logical syntax of the language of science*.<sup>16</sup>

Nearly all of Part 5 of Carnap (1934, 1937) is given over to translations designed to reveal the explicitly linguistic content of the study of *the logic of science*, which was to be the enterprise that "*takes the place of the inextricable tangle of problems which is known as philosophy*."<sup>17</sup> In effect, it was to be an empirical science of applied logic, the subject matter of which is the logical structure of the several sciences, and of science itself.

In contrast to this sort of highly contentious philosophizing about logic and its relation to philosophy, the era's lasting achievements in logic came from its philosophically minded logicians. In 1935 Alfred Tarski defined truth for formal languages of mathematics; in Tarski (1936) he defined *logical truth* and *logical consequence* for such languages. Following this, his work was routinely used to interpret formal languages.<sup>44</sup> To give such an interpretation is to identify a domain of objects the 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 that vocabulary

<sup>&</sup>lt;sup>16</sup> My emphasis, Carnap (1934, 1937), p. xiii of the 1937 version.

<sup>&</sup>lt;sup>17</sup> Ibid., p. 363.

<sup>&</sup>lt;sup>16</sup> The complex and conflicted relationship between Tarski's project of *defining* truth for formal languages and the use of his work in giving *interpretations* of those languages is discussed in chapter 9 of Soames, in press.

using recursive clauses encoding meanings the logical vocabulary. This allows the interpreter to derive an instance of the schema 'S' is a true sentence of L iff P for each sentence of L, where instances arise by replacing 'P' with a paraphrase of the sentence replacing 'S'.

This conception of interpretation remained dominant for many decades. In all, the period from the early 1930s through the early 1960s was one of unprecedented advance in logic. Looking back at 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 independent of more flamboyant philosophical concerns. Those were the years when logic and metamathematics were transformed by Gödel, Tarski, Church, and Turing. With the emergence of model theory and recursive function theory as mature disciplines, logic and metamathematics separated themselves from earlier, more epistemological and metaphysical, investigations by focusing on rigorously defined domains of study.

At the same time, a new 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, ' $\Box$ ', prefixing of which to a classical logical truth produces a truth. Apart from initial confusion about 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* and 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 it must satisfy if S is to be true. With this, 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. At this point we had a putative answer to the question *What is the meaning of a sentence?* plus a new way of studying it. Two Views of Language and Its Relation to Philosophy in the Post War Period

Philosophical activity in the analytic tradition immediately following World War II was centered in two main groups -- one led by Quine and the other led by Wittgenstein, Gilbert Ryle, Peter Strawson, John Austin, and Paul Grice. The first tended to reject necessity, apriority, and philosophy as linguistic analysis, in favor of a conception of philosophy as continuous with science. The second continued to identify philosophy with linguistic analysis, while insisting that analysis is 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

<sup>&</sup>lt;sup>19</sup> See Burgess (1998, 1999).

without repudiating *translation* and *meaning* too, Quine in *Word and Object* (1960) by repudiating both. Challenged in Carnap (1955), which argued that meaning and reference are scientifically on par, Quine repudiated reference in *Ontological Relativity* (1969). Together, these joint repudiations led, as argued in Soames (2013) to an inadvertent *reductio* of his eliminativism on intension and intention.

Ordinary-language philosophers suffered from two main difficulties. The first was the inability to distinguish necessity from apriority and analyticity -- which crippled the anti-Cartesian, analytic behaviorism of Ryle (1949, 1953) and undermined what might have been a salvageable insight behind the paradigm case argument in Norman Malcolm (1942).<sup>20</sup> The second difficulty was their anti-theoretical approach to language. One can't successfully maintain that philosophical problems are linguistic confusions to be eliminated by understanding ordinary meaning, without having a well-confirmed theory of meaning. The slogan *Meaning is use!* isn't enough, because factors other than meaning affect our use of words. When this lesson was established in Grice (1967), the multiple failures caused by neglecting it – illustrated by Strawson's performative theory of 'true',<sup>20</sup> R.M. Hare's performative theory 'good',<sup>20</sup> and Austin's argument that empirical knowledge is sometimes possible without empirical evidence<sup>30</sup> -- triggered the realization that a more theoretical approach to language was needed.

# Philosophical Foundations of a Science of Language and Information

<sup>&</sup>lt;sup>20</sup> See chapters 3, 4, and 7 of Soames (2003b), also Soames (2007).

<sup>&</sup>lt;sup>21</sup> Strawson (1949), critiqued in chapter 5 of Soames (2003b).

<sup>&</sup>lt;sup>22</sup> Hare (1952), critiqued in chapter 6 of Soames (2003b).

<sup>&</sup>lt;sup>23</sup> Austin (1962), critiqued in Ayer (1967) and chapter 8 of Soames (2003b).

Some found it in Donald Davidson (1967a,b), which advocated finitely axiomatized theories the theorems of which are material biconditionals stating the truth conditions of sentences. Davidson's innovation was to extract the structure of Tarski's *definition* of truth for formalized languages, and to reinterpret it to play the role of an *empirical theory* of meaning for spoken human languages. In so doing, he connected many philosophers, particularly those friendly to the ordinary-language school, to a logical tradition they had once disdained. However his advance didn't go far enough.<sup>21</sup> At the same time, a more powerful approach, growing out of Saul Kripke's semantics for quantified modal logic, was being applied to the empirical study of linguistic meaning by philosophers and logicians including Richard Montague, David Kaplan, Hans Kamp, David Lewis, and Robert Stalnaker.

This was when philosophical interest in language decisively turned to laying the foundations of the empirical science of linguistic meaning, and the analytic tradition entered its next stage. This new stage was also 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 is both nonlinguistic and noncoextensive with apriority. From this point on, philosophy was seldom identified with linguistic analysis. Today, what remains of the original turn to language and logic in 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

<sup>&</sup>lt;sup>24</sup> Soames (2008b), discusses the attractions, as well as the shortcoming's, of Davidson's program.

foundation of the emerging science of language and information. Whereas in earlier days of the tradition, language was often viewed as an easily-grasped means of achieving 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.

Recent progress in this effort extends from the mid-sixties to the present. During this period philosophers and theoretical linguists have expanded the original framework provided by Kripkean possible-world semantics to cover large fragments of human languages. 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 S, then it would have been the case that S. 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 step, a language fragment for which we had a truth-theoretic semantics has been expanded to include more natural-language constructions. As the program advances, the fragments of which we have a good truththeoretic 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 the program will eventually find their place in a mature science of language and information.

Despite this progress, it would be a mistake to think that the foundations of this science are now in place. If all that remained were to fill gaps in systems of possible-

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world semantics and to flesh out details of applying them to natural languages, philosophers would already have done most of what was required to secure the foundations of the aspiring science. But there is much more to be done. To date, we have used truth conditions to *model* representational contents of sentences, but we haven't paid enough attention to the demands 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 the cognitive and communicative aspects of language use, 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 taking the proposition semantically expressed by S at a context of use C – its *semantic content at C* -- to be a function from circumstances of evaluation (pairs of times and world-states) to the truth value of S at C (and those circumstances) creates intractable problems for accommodating propositional attitudes and other hyperintensional constructions.<sup>35</sup> It is also known that quick fixes haven't worked.<sup>36</sup> 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 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.<sup>27</sup> Is the set containing only world-states 1, 2, 3 true or false?

<sup>&</sup>lt;sup>25</sup> Soames (1987, 2008c).

<sup>&</sup>lt;sup>26</sup> Soames (1987, 2005a, 2006)

<sup>&</sup>lt;sup>27</sup> Soames (2010a)

The question is bizarre. Since no set of world-states represents anything as being any way, no set of world-states is true or false. We could, if we wished, decide to take the set containing worlds 1-3 to represent the actual world-state as being in the set, and so as being true iff no state *outside* it were instantiated. We could also decide to take it as representing the actual world-state as not being in the set, and so as being true iff no state *outside* it were instantiated were instantiated. We could also decide to take it as representing the actual world-state as not being in the set, and so as being true iff no state *inside* it were 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, which have their truth conditions intrinsically, they aren't these sets or these functions.<sup>44</sup>

Truth is, as Aristotle intimated, the property a proposition p has when the world is as p represents it. It is also a property which, when predicated of p, gives us a claim, *that p is true*, which we are warranted in accepting, believing, or doubting if and only if we are warranted in accepting, believing p. Since we have to *presuppose* propositions to explain what truth is, propositions are conceptually prior to truth.<sup>29</sup> Propositions are also conceptually prior to world-states, which are properties of making sets of propositions that tell complete world-stories true. Hence truth and world-states aren't the building blocks out of which propositions are constructed.<sup>30</sup>

For these reasons propositions aren't what possible-worlds semantics have said they are. Nor is the two-place predicate *true at w* the undefined primitive it has been taken to be. 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 if and only if at w, the earth moves*, just as nothing

<sup>&</sup>lt;sup>28</sup> See chapter 3 of King, Soames, and Speaks (2014), also chapter 1 of Soames (2015a).

<sup>&</sup>lt;sup>29</sup> Soames (2015a).

<sup>&</sup>lt;sup>30</sup> See chapter 5 of Soames (2010b) and chapter 1 of Soames (2015a).

follows from the pseudo-theorem For all world-states w, S is T at w if and only if at w, the earth moves (when no explanation of 'T' is presupposed). To say that S is true at w is to say that S expresses a proposition that would be true if w were actual (instantiated).<sup>31</sup> 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 notions, we appeal to the triviality, *If S means, or expresses, the proposition that so-and so, then necessarily the proposition expressed by S is true if and only if so-and-so* plus the theorem S is true at w if and only if at w, the earth moves to derive that S means, or expresses, some proposition necessarily equivalent to the proposition that the earth moves.<sup>32</sup> In short, possible-worlds semantics requires a conceptually prior notion of proposition, if it is to provide any information about meaning at all.<sup>33</sup>

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 like belief and assertion, meanings of some sentences, and contents of some mental states. To articulate a *naturalistic* conception, one must provide a conception of propositions that allows us to explain relations, like belief, that all cognitive agents bear to them, as well the knowledge of propositions that normal humans have, but some less sophisticated cognitive agents e.g. infants and animals -- don't. To provide an *empirically defensible* conception of propositions, one must show that it offers new solutions to currently

<sup>&</sup>lt;sup>a</sup> It won't do take the claim that *Sentence 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.

<sup>&</sup>lt;sup>22</sup> Here 'S' is a metalinguistic variable over sentences and 'so-and-so' functions as a schematic letter.

<sup>&</sup>lt;sup>33</sup> Soames (2015a), pp. 12-13.

intractable problems -- such as Frege's puzzle,<sup>34</sup> Kripke's puzzle about belief,<sup>35</sup> Perry's problem of the essential indexicals,<sup>36</sup> Jackson's problem about knowing what red things look like,<sup>37</sup> and Nagel's problem about what it's like to be a bat.<sup>38</sup> Fortunately, work along these lines is well underway. Although no consensus has yet emerged, largely complementary research programs are pursued in King (2007), King, Soames, and Speaks (2014), Soames (2015a), Hanks (2015), Jesperson (2010, 2012, in press), and Moltmann (in press).

Another foundational issue receiving attention is the distinction between two senses of meaning: the *semantic content* of an expression E vs. what is required to fully *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 the linguistic conventions governing E. 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 natural kinds H<sub>i</sub>O and AU – to the illocutionary contents 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 designate, not its linguistic meaning, but its semantic content there – e.g., the user of the first-person pronoun or the time at which the temporal indexical is uttered.

Part of *understanding* E is being able to use it with its semantic content. But that isn't the whole story. Nor is it either necessary or sufficient for understanding to know, of

<sup>&</sup>lt;sup>34</sup> See Salmon (1986).

<sup>&</sup>lt;sup>35</sup> See Kripke (1979).

<sup>&</sup>lt;sup>36</sup> See Perry (1977, 1979, 2001a, 2001b).

<sup>&</sup>lt;sup>37</sup> See Jackson (1986).

<sup>&</sup>lt;sup>38</sup> See Nagel (1974).

the semantic content of E, that it is E's content. It's not necessary, because when a proposition p is the semantic content of a sentence S, understanding S doesn't require making p an object of one's thought.<sup>39</sup> It's not sufficient, because understanding S often requires a different sort of knowledge.<sup>40</sup>

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 communication. This involves graded recognitional and inferential capacities on which the efficacy of much of linguistic communication depends. Not only do 'water' and 'H<sub>2</sub>O' have the same kind k as content, one can know, of k, that 'water' stands for it, while knowing, of k, that 'H<sub>2</sub>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.<sup>4</sup>

A third foundational issue 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), Soames (2002, 2010b chapter 7, 2015a, chapters 2-5, 9) the contextual information available to speaker-hearers is much more

<sup>&</sup>lt;sup>39</sup> Soames (2015a) chapters 2 and 4.

<sup>&</sup>lt;sup>40</sup> Ibid. chapter 4.

<sup>&</sup>lt;sup>41</sup> Ibid. chapter 4.

potent in combining with the semantic content of the sentence uttered to determine the (multiple) 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 itself one of the propositions asserted. This 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, and other aspects of language and language use.<sup>4</sup>

Additional foundational issues needing attention involve the 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. We don't yet have a unified theory of all this, but we are beginning to assemble the pieces.

### The Multiple Roles of Language in Analytic Philosophy

To sum up, the story of the philosophy of language in analytic philosophy has been one of dramatic change. Initially, in the hands of Frege and Russell, language became, along with the new logic, the object of systematic philosophical inquiry aimed, first at

<sup>&</sup>lt;sup>a</sup> See Soames (2002, 2005b, 2005c, 2008a, 2009c, 2010a, and chapters 2-6 of 2015a).

advancing the philosophy of mathematics, and then at transforming metaphysics and epistemology. Later, vastly oversimplified models of language were mistaken for the real thing and used as philosophical weapons in attempts to sweep away metaphysics, normativity, and much of the traditional agenda of philosophy, in favor of a logicolinguistic conception of the subject. When this vision failed, ordinary language philosophers attempted to 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. During the same period, Quine and his followers went to the opposite extreme, retaining, in their philosophy, the scientific spirit of the logical empiricists while rejecting the very possibility of an empirical science of linguistic meaning, reference, and the intensional contents of mental states of language users. When these two competing mid-twentieth century philosophical visions came to grief, the relationship between language and philosophy had to be rethought yet again. No longer the heart of philosophy, nor a disorderly collection of empirical phenomena to be studied, if at all, without using mentalistic notions like meaning and reference, language again became just one of many important 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, David Lewis, Robert Stalnaker, Hans Kamp, and David Kaplan, the now mature disciplines of formal logic, philosophical logic, and computation theory, have helped launch the empirical sciences of language and information and their application to natural languages. This is the emerging scientific enterprise to which today's analytic philosophers of language are contributing.

Finally, it must be remembered that the relevance of philosophy of language to other aspects of philosophy has always transcended the programmatic pronouncements made for it at the time. Many effective uses of philosophical insights gained from the investigation of language have come, not in advancing programmatic goals, but in criticizing prominent philosophical doctrines of the day. One early example is the critique in Russell (1910) and Moore (1919-20) 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 indissoluble whole every part of which is essential to every other part. As Moore and Russell showed, that argument suffered from a classic Russellian scope ambiguity involving a modal operator. On one resolution the argument is logically invalid; on the other it is question begging.<sup>43</sup> Another example can be found in Moore (1903). There Moore criticizes the doctrine that to exist is to perceive or be perceived, which Idealists' used to support their claim that nothing exists outside of consciousness, and hence that reality is spiritual. Their key mistake, according to Moore, was based on an ambiguity in their talk of sensory experience that lead them to confuse the object of perception -- e.g. the color blue that we see -- with their seeing it.

The mistake is similar to one that still has some currency today -- namely that of confusing pain, which is a fallible internal perception of bodily damage, with the object of that perception. As persuasively argued in Byrne (2001) many philosophers make this mistake (in part) because we ordinarily speak of pain both as *what we experience* and as *our experience of it.*<sup>44</sup> We speak of it as something we feel, just as we speak of blue as something we see, an explosion as something we hear, a stone as something we touch,

<sup>&</sup>lt;sup>43</sup> Soames (2014), pp. 414-19.

<sup>&</sup>quot; See in particular pp. 227 – 30 of Byrne (2001).

and food as something we taste. The object of these perceptual verbs – 'see', 'hear', 'touch', and 'taste' -- is the thing perceived, just as the object of 'feel 'seems to be *the pain one's leg*. But we also speak of pain, not as the thing felt but as the feeling itself. We say that pain is a *feeling*, even though we don't say that colors are *seeings*, explosions are *hearings*, stones are *touchings*, or foods are *tastings*. Because we speak of pain both as *the thing that we feel* and as *our feeling of it*, we take the idea of unfelt pains to be absurd, just as Idealists took the idea of unseen colors to be absurd.

Unfelt pains are absurd, but not because pains are things we perceive that couldn't exist without being perceived. Unfelt pains are absurd, because pains are perceptual experiences, and it is absurd to speak of unexperienced experiences. It's not absurd that the objects of pain perceptions – the damage they report – might exist without being perceived. That occurs when we are given a pain-killing -- i.e. a perception-of-damage-killing -- anesthetic. Similarly it's not absurd that the patch of blue seen by the Idealist continues to exist when it isn't perceived. Idealists missed this point because they used the same word, *sensation*, to cover both what is perceived and our perceiving it. Examples like this, which don't invoke questionable linguistic doctrines to advance predetermined philosophical ends, are as relevant today as they ever were.

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