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WHERE THINGS NOW STAND WITH THE ANALYTIC-SYNTHETIC DISTINCTION*

1. THE SIGNIFICANCE OF THE DISTINCTION

The philosophy of language can be viewed as a branch of the theory of knowledge. It concerns itself with a special case in epistemology, linguistic knowledge, and the questions about such knowledge that it tries to answer have the form of classical epistemological questions, namely, what do we know about a natural language and how do we come to know it.

It is no surprise, then, to find that theories about linguistic knowledge, like theories about knowledge in general, are either rationalist or empiricist. Rationalist theories like Chomsky's claim that acquisition of the complex competence of a fluent speaker must be explained as a process in which innate schemata expressing the general form of a grammar become differentiated and realized as hypotheses about the character of the particular grammar underlying a sample of speech. On a rationalist theory, the primary role of a linguistic environment is to stimulate such differentiation and to confirm or disconfirm the hypotheses resulting from these schemata. Rationalism also claims that the principles expressing these innate schemata are synthetic *a priori* because they constitute the framework within which environmental stimulation can be interpreted as evidence bearing on the learner's hypotheses about the grammar.[1]

Empiricist theories like Quine's claim that an explanation of language acquisition needs nothing more complex or sophisticated in the way of an assumtion about innate capacities than a system of inductive procedures for forming generalizations from the limited regularities in the learner's linguistic experience. On an empiricist theory, experience plays the central role that innate schemata play on a rationalist theory. Experience teaches the language learner both the form and content of grammatical rules. Accordingly, for the empiricist, even the principles that express the invariant form and content of grammars, the linguistic universals, are synthetic *a posteriori*. They could have been otherwise and would have

been had our linguistic experience been different. Thus, answers to 'How do we come to acquire linguistic knowledge and what is its nature?' are rationalist or empiricist depending on whether they construe language learning to be more like theory construction or more like inductive generalization from sample regularities.

This question about language learning must be sharply distinguished from the question 'What do we know about language L?' This latter question is about a particular language. Its answer is a grammar, a theory about the phonological, syntactic, and semantic structure of the sentences of L. Grammars too can be rationalist or empiricist, like theories about their acquisition. Grammars can ascribe properties to the language that make it either easier or more difficult to explain the acquisition of their phonological, syntactic, and semantic structure on the basis of inductive procedures. The labels 'rationalist' and 'empiricist' thus apply to grammars in a derivative sense. If a putative grammar ascribes properties to the language that would make an empiricist theory the simplest and most natural explanation of how speakers acquired their fluency, then the grammar is empiricist. If a putative grammar ascribed properties that would make a rationalist theory the better explanation, then the grammar is rationalist.

A standard transformational grammar ascribes an underlying as well as a surface structure to a language.[2] Such grammars represent the surface structure of English sentences to be so structurally impoverished that no adequate generalizations about their deep structure can be obtained by induction from surface structures. A rationalist account of acquisition with rich innate schemata is required to compensate for the poverty of surface structure.[3] Thus, standard transformational grammars are 'rationalist'. On the other hand, a taxonomic grammar that does not posit underlying structure or a transformational grammar that posits an underlying structure that differs only trivially from surface structure makes it plausible to think that the language can be learned by extrapolation of regularities observable in surface structure. Such grammars are 'empiricist'.

Now, by the same token, components of grammars can be either rationalist or empiricist. Compare the conception of the phonological component that Chomsky calls "Taxonomic Phonemics" with the conception he calls "Systematic Phonemics". Or compare the conception of

the syntactic component in the Bloomfieldian tradition, called "Immediate Constituent Analysis", with Chomsky's own conception.[4]

The semantic component, too, can be either. Early in the development of transformational theory,[5] it was suggested that the semantic representation of a sentence explicates its logical form. This is fairly widely accepted now. There is even wide agreement that the notion of 'logical form' is to be understood as the structure of a sentence by virtue of which it enters in valid arguments. Thus most people would define the notion as in (D).

(D)   The logical form of a sentence S is that part of S's semantic structure that would be formally represented in a complete account of the application of a set of optimal inference rules, *inter alia,* ones that would permit us to obtain the consequence set for S.

But agreement stops here. Rationalists and empiricists disagree about what features of the semantic representation of a sentence are required to account for its consequence set. Such disagreement is unavoidable because, depending on the kind of semantic representations required, the semantic component will turn out either rationalist or empiricist. The semantic component will be rationalist if semantic representations of sentences characterize logical form in a way that entails the existence of sentences expressing necessary truths. This is because empiricist theories of the acquisition of grammars cannot explain the existence of necessary truth and therefore must deny there is any such thing.[6]

Grammars describe what speakers have learned that enables them to understand the meaning of any sentence in addition to its pronunciation and syntactic form. If the best grammar on the available linguistic evidence says that speakers know the meaning of sentences that express necessary truths whose truth is determined solely by their meaning in the language, then empiricist theories of language acquisition are in trouble. Such theories, by definition, lack strong enough machinery to explain how speakers could acquire semantic rules that determine a class of necessary truths.[7] Empiricists like Quine "... see no higher or more austere necessity than natural necessity; and in natural necessity, or our attributions of it, ... only Hume's regularities'.[8] Since they design their theory's acquisition machinery on the basis of their conception of what is acquired, their machinery consists of purely inductive procedures for

extrapolating Humean regularities from experience.[9] But no matter how frequent the repetition of the contiguity or how highly rewarded the extrapolation, experienced co-occurrences and inductive extrapolation cannot provide necessary connections. Such machinery can only provide contingent connections of varying strength, comparable to degrees of confirmation. It cannot provide connections with the 'super strength' of necessity. That is, no inductive inference from co-occurring events in this world can, in principle, provide a connection between them that holds in every possible world. If the connection is Humean, there is always a possible world in which the regularity does not hold. Accordingly, such empiricists can accept only grammars with an extreme empiricist semantic component. Anything else would saddle them with explaining linguistic phenomena that are unexplainable on their theory of how languages are acquired.

Therefore, Quine's position in 'Two Dogmas of Empiricism'[10] repesents the "optimal position" for pure empiricists. Every statement, on this position, including those of logic and mathematics, is synthetic *a posteriori*. There are some empirical circumstances under which any statement is open to revision. Statements of logic and mathematics are different from other statements only in the extremity of the circumstances under which we would revise them. This is because they are more general, cutting across discipline boundaries; more systematic, entering into a wider class of inferences, and farther from direct observation, involving more auxiliary assumptions for their verification.[11] But they are not different in kind. "... no statement," writes Quine, "is immune to revision. Revision even of the logical law of excluded middle has been proposed as a means of simplifying quantum mechanics".[12] This is, basically, Mill's position, with something more in the way of an explanation of the greater certainty of logical and mathematical truths than other truths.[13]

Quine does not, however, stick to this optimal position when discussing translation. On the one hand, Quine claims that logical and mathematical truths are revisable; on the other hand, he refuses to accept as intelligible any statement that contradicts a logical truth. We may pose this inconsistency sharply by asking what Quine would say if a physicist *actually* asserted the denial of the law of excluded middle. Would Quine welcome this as a new empirical discovery, pointing out that he had long ago observed that there is no difference in kind between logical laws and

empirical laws, and consequently, that the shift to a theory of quantum mechanics in which the law of excluded middle is false is no different in kind from the shift "whereby Kepler superseded Ptolemy, or Einstein Newton, or Darwin Aristotle"?[14] Or would Quine simply refuse to translate the physicist's sentence as a denial of the law of the excluded middle? Recently, Quine reiterated his blanket refusal to accept any translation that renders a statement as inconsistent with a logical truth:

... I have insisted unconditionally that translation not conflict with any logical truths. ... our convention 'Save logical truth' ... safeguards logical truth, nominally, against or through all behavioral vicissitudes.[15]

Our hypothetical physicist would thus try in vain to get Quine to accept such a new 'empirical' discovery. Quine would take the physicist to be talking nonsense. If the approach suggested by this side of Quine's thinking were correct, then laws of logic would be immune from revision, contrary to the optimal empiricist position as expressed in 'Two Dogmas of Empiricism'.

Without trying to resolve this paradox, we may observe that a 'modified position' is the natural position to retreat to if it becomes necessary to abandon the optimal position. The modified position is somewhere between the optimal position and Carnap's "Logical Empiricism". The Carnapian position, to put it in Quinian terms, holds that translation also cannot confict with analytic truths. Carnap's position represents some sort of halfway house between extreme empiricism and extreme rationalism. As he himself put it:

Since empiricism had always asserted that all knowledge is based on experience, this assertion had to include knowledge in mathematics. On the other hand, we believe that with respect to this problem the rationalists had been right in rejecting the old empiricist view that the truth of '$2 + 2 = 4$' is contingent upon observation of facts ... Our solution ... consisted in asserting empiricism only for factual truth.[16]

The modified empiricist position is developed in the part of Quine's work dealing with logic. As Quine states it, the logical form of a sentence is determined exclusively by "its composition in respect to truth functions, quantifiers, and variables".[17] The logical implications between sentences are wholly determined by the logical form of the two sentences. This sense of 'logical form' is based on the distinction between the connectives, quantifiers, and variables of a language, the so-called 'logical vocabulary', and the nouns, verbs, adjectives, etc., the so-called 'extra-logical vocabu-

lary'. Logical truths are just those truths in which items from the logical vocabulary occur essentially – logic itself being characterized as the field concerned with stating logical truths and truths about them.[18]

Now, where does the analytic-synthetic distinction come in? The significance of this distinction is that, if it can be drawn, then even the modified optimal position has to be abandoned. The retreat from the optimal position introduced a narrow range of necessary truths, those associated with the logical vocabulary of the language.[19] Drawing the analytic-synthetic distinction would obliterate the distinction between the logical and extra-logical vocabulary.[20] Thus, the range of necessary truths would be extended to encompass a wide range of necessary truths, those associated with the entire vocabulary of the language. Carnap's concession to rationalism would be vindicated.

If the analytic-synthetic distinction exists, sentences like (1)

(1)   Nightmares are dreams

express necessary truths on a par with sentences like (2), and there is,

(2)   Either Socrates is mortal or Socrates is not mortal

then, no rationale for distinguishing the so-called logical vocabulary from the so-called extra-logical vocabulary (on grounds that make the latter non-logical). It follows that all meaningful words contribute to the inference potentialities of the sentences in which they occur. Thus, the notion of logical form has to be broadened appropriately, so that the implication (3)–(4)

(3)   Socrates had a nightmare

(4)   Socrates had a dream

holds by virtue of the logical forms of (3) and (4). Finally, the conception of logic as a subject concerned with stating the logical truths that derive from the notion of logical form based exclusively on the logical vocabulary would have to be replaced by a new conception of logical form based on a rationalist theory of semantic representation. This conception would maximize the difficulties for empiricist accounts of language acquisition by claiming that *every* semantic connection between expressions in the language determines logical connections between its sentences. Thus, the class of truths of logic would be expanded to include analytic truths.[21]

2. LOGICAL FORM, SEMANTIC SKEPTICISM, AND THEORIES OF GRAMMAR

Quine's argument against the analytic-synthetic distinction is thus a defense of empiricism, not an attack on its dogmas. It is actually a criticism of that 'portion' of logical empiricism which makes a concession to rationalism. The doctrine underlying this criticism, which we may call 'semantic skepticism' is that the notion of meaning is occult, unexplanatory, and scientifically unacceptable: it is thus rational to believe that there are no meanings. The traditional intentionalist theory on which the meaning of an expression in a natural language is a concept and the meaning of a sentence is a proposition is, therefore, as dubious as demonology.

Semantic skepticism does not, of course, extend to constructs like 'stimulus meaning' or to graded properties and relations like stimulus analyticity and stimulus synonymy. But these, as Quine has observed,[22] do not provide conditions of identity for concepts and propositions. Moreover, such constructs provide exactly the rationale that the modified position requires to motivate the distinction between the logical and extra-logical vocabulary. For if the relation between 'nightmare' and 'dream' is simply an associative bond, as it is on the theory of stimulus meaning, then the truth of (4) is at best only highly likely given the truth of (3) and inferences that turn on relations between items in the 'extra-logical' vocabulary cannot be necessary inferences. The fact that such relations do not support necessary inferences provides the otherwise missing principle on which to separate the vocabulary items these relations hold among from the items in the logical vocabulary.

What is Quine's case for semantic skepticism? Two questions face us. First, is semantic skepticism all there is to Quine's criticism of meaning? What about indeterminacy, on the one hand, and his criticism of Carnap's explications of semantic notions, on the other? Second, are Quine's arguments for semantic skepticism sound?

These questions have short and long answers. The short answers are my claims, the long answers my arguments. The short answer to the first question is that Quine's whole case amounts to nothing more than his arguments for semantic skepticism. Indeterminacy depends on semantic skepticism and Quine's criticisms of Carnap cannot be generalized to

other explications of semantic notions without presupposing semantic skepticism. The short answer to the second question is that the arguments for semantic skepticism are not sound. They turn out to be based on the Bloomfieldian, taxonomic theory of grammars, and this theory has been shown to be false by transformational linguistics. The standard conception of logical form rests on Quinian skepticism about meaning which, in turn, rests on an empirically discredited theory of grammar.

Semantic skepticism appears explicitly as a premise in the argument for indeterminacy of translation.[23] It appears at the point where Quine tries to show that we cannot reassure ourselves about translational synonymy by saying that it is no worse off than truth in physics. Quine argues as follows. Truth in physics is a reasonable scientific ideal because there is a *theory neutral reality* for hypotheses in physical theories to correspond to. Truth in translational synonymy is not such an ideal because there are no *language neutral propositions* for sentences and their translations to express. For an hypothesis in linguistics like 'S_1 is the translation of S_2' to be true there has to be some proposition P such that S_1 and S_2 both express P. But, argues Quine, there is no language neutral meaning such that S_1 and S_2 are merely "diverse verbal embodiments" of it, at least not for many highly theoretical sentences like (5).

(5)   Neutrinos lack mass

For them, there is nothing "over against their verbal embodiments".[29] "Such sentences", writes Quine, "... lack linguistically neutral meaning".[25] "The discontinuity of radical translation tries our meanings: really sets them over against their verbal embodiments, or, more typically finds nothing there".[26]

There is no further argument for indeterminacy that does not also rest on semantic skepticism. Consider the argument:

We could equate a native expression with any of the disparate English terms 'rabbit', 'rabbit stage', 'undetached rabbit part'., etc., and still, by compensatorily juggling the translation of numerical identity and associated particles, preserve conformity to stimulus meanings of occasion sentences.[27]

All that needs to be shown to show that this argument, too, depends on semantic skepticism is that if semantic skepticism is false, the choice of an English equivalent for a "native expression" becomes a matter of empirical evidence, to be decided by customary standards for the acceptability

of hypotheses. Thus, suppose semantic skepticism is false. Now instead of conformity to stimulus meaning, we can impose the stronger condition of conformity to meaning. On this condition we can show that one analytical hypothesis for translating 'gavagai' is preferable on the basis of linguistic evidence. For example, we might query a billingual as to whether 'gavagai' is synonymous with 'undetached rabbit parts', just as we might query an English speaker about whether 'tummy' and 'stomach' are synonymous. Alternatively, we might ask for the intuitions of bilinguals about whether 'gavagai' is similar in meaning to expressions like 'branch', 'arm', 'heal'. etc. or to expressions like 'tree', 'body', 'shoe', etc. Their responses would provide evidence about whether 'gavagai' belongs in the semantic category 'Object' together with 'rabbit' or in the semantic category 'Part of an Object' together with 'undetached rabbit part'. There will be indefinitely many more such questions so long as we can avail ourselves of semantic properties and relations like 'synonymy', 'semantic similarity', etc.[28] Thus, the only thing that prevents us from obtaining linguistic evidence by such questions about the semantic properties and relations of sentences is the same semantic skepticism which makes the use of these properties and relations suspect. Hence, the existence of alternative, nonsynonymous translations for a native expression on the condition of "conformity to stimulus meaning" merely shows the limitations of such a condition. A stronger intensionalist condition would provide a conception of linguistic evidence on which, in principle, a best translation hypothesis always exists.

To show that semantic skepticism must be assumed for Quine's criticisms of Carnap's explications to carry over to other attempts to explicate semantic notions, I will show that they do not apply to my own attempt to explicate analyticity without this assumption. Quine makes two main criticisms of Carnap. One, which I'll call the 'generality criticism',[29] says that there is no way on Carnap's theory of meaning postulates to generalize from the finite class of examples of analytic sentences in a language L_i to all of the other analytic sentences in L_i and to those in other languages. Carnap fails to explicate 'S is analytic in L' for variable 'S' and 'L'. The other, which I'll call the 'explanation criticism',[30] says that no explanation is offered for the property attributed to the sentences listed as analytic. "We understand what expressions the rules attribute

analyticity to, but we do not understand what the rules attribute to those expressions".[31]

On my account of intensionalism, meanings are entities which a scientific theory connects to linguistic forms. In this theory, meanings are treated as the language neutral cognitive content of the language dependent, idiosyncratic sound patterns (or gesture patterns) in each natural language. The theory is framed as part of the theory of grammar, so that the representation of the meaning of a sentence is generated as part of its description in the grammar. Within such a framework, the notion 'sentence of L' is characterized in terms of the notion 'string in the output of an optimal generative grammar of L'. The notion 'optimal generative grammar of L' is characterized by a set of constraints, both linguistic and methodological, on systems of formal rules. The notion 'language' is characterized in terms of an equivalence class of grammars.[32]

Accordingly, the notion 'S is analytic in L' is defined, in the theory of grammar, in terms of the semantic representation of S in an optimal grammar of L.[33] We may sketch this definition as follows. The semantic representation of a simple declarative sentence describes the proposition it expresses as having three components: a *condition* of the form $C_{x_1,...,x_n}$ a *presupposition* taking the form of a requirement that each of a sequence of readings $r_1, ..., r_n$ designate an appropriate object, and an *assertion operator* expressing a (sequential) satisfaction relation defined over the designata of $r_1, ..., r_n$ and the condition $C_{x_1 ..., x_n}$. The definition of 'S is analytic in L' says that 'analytic' applies just in case the semantic representation of S describes the closed condition $C_{r_1, ..., r_n}$ as a proper part of the structure of some r_i, $1 \leqslant i \leqslant n$. Consider (1) as an illustration. If we represent the sense of "nightmare" as 'frightening dream', then the semantic representation of (1) will describe its subject as in (6) and its predicate nominal as '(Dream)', so

(6) $r_1 = ((\text{Frightening}) ((\text{Dream})))$

that the closed condition is (7).[34]

(7) $C_{r_1} = (\text{Dream}) ((\text{Frightening}) ((\text{Dream})))$

Since the definition is satisfied, (1) is marked analytic.

This definition avoids the generality criticism because 'analytic' is specified for variable 'S' and 'L'. The definition applies to semantic

representations that are universal. The scheme for representing language neutral meanings represents the proposition expressed by a sentence in terms of the same formal notation no matter what the sentence or the language is. On the assumption that there is an optimal grammar for each language and that every sentence of a language receives a semantic representation in an optimal grammar, the definition of '*S* is analytic in *L*' applies solely by virtue of universal features of grammatical descriptions. Although Carnap's explication had no means to generalize beyond the list of conditional sentences set down as meaning postulates, our explication provides a means in the form of a definition of analyticity which applies to recursively generated universal semantic representations.[35]

The explanation criticism is also avoided. The inclusion of meaning required by the definition of analyticity is between presupposition and truth condition. Thus, marking a sentence as analytic by this definition says that the presupposition of the sentence contains its truth condition. Thus, if the presupposition of an analytic sentence is satisfied, its truth condition is satisfied, too. Hence, if it makes any statement at all, it makes a true statement. Accordingly, the deficiency that made Carnap's explication vulnerable to Quine's explanation criticism is not present here: the property attributed to a sentence marked analytic is security against falsehood.[36]

The point we have been making is that semantic skepticism rests completely on the arguments Quine gave concerning the scientific status of the concept of meaning, that there is nothing else in Quine's philosophy of language to support it. We have seen that his use of indeterminacy to support semantic skepticism would beg the question because the argument for indeterminacy itself rests on semantic skepticism. We have also seen that Quine's criticisms of Carnapian explications of semantic properties and relations do not carry over to explications that fully exploit intensionalist assumptions.

Quine's physicalism is also irrelevant. Intensionalist semantics can receive a throughgoing physicalistic interpretation (or reduction) in which meanings are construed as classes of brain states.[37] Furthermore, Quine's behaviorism offers no support for semantic skepticism because this behaviorism is fully compatible with the mentalism on which we base intensionalism. As Quine states his doctrine:

... semantics is vitiated by a pernicious mentalism as long as we regard a man's seman-
tics as somehow determinate in his mind beyond what might be implicit in his disposi-
tion to overt behavior.[38]

Quine's condition that what is determinate in a person's mind must be
"implicit in his dispositions to overt behavior" is so broad that it is
indistinguishable from the uncontroversial requirement that mentalistic
posits are methodologically unsound unless, in principle, it is possible to
confirm them on the basis of overt behavior. Thus, Quine's behaviorism
is fully compatible with a mentalism like ours which construes meanings
as hypothetically inferred from behavior, as what must be part of the
speaker's complex system of dispositions to respond in order for verbal
behavior to have the characteristics it has. Since such a mentalism regards
meanings as implicit in the speaker's dispositions, it is hardly pernicious.

Finally, there is the one example Quine cites in support of indeter-
minacy that is not equivalent to the 'rabbit case'. This is the case of alter-
native explications of 'natural number'. But this, too, turns out to offer
no support for indeterminacy or semantic skepticism, since the case is
about the mathematical concept of a number and the criteria relevant to
choosing between competing explications are restricted to the domain of
mathematics.[39] We could easily admit that Frege's, Zermelo's and Von
Neumann's explication each satisfies *all* the mathematical criteria for an
adequate explication of 'natural number' without implying anything about
whether there are alternative, equally good hypotheses for translating the
English word 'number'. Such an implication requires a further premiss,
one that asserts that the meaning of a word in a natural language can be
equated with the theoretical concept that explains the properties of the
designatum of that word. But there is no reason to think that this premiss
is true generally. After all, the concept of the tissue layer that forms the
external coating of an animal's body cannot explain the properties of
skin. And furthermore we have no reason to think that the meaning of
'number' is the same as the mathematician's concept of a number.[40]

Even if the premiss were true, it would not follow that there is no way
to choose the best explication of 'number' from the set of alternative
analytical hypotheses. For if semantic skepticism is not assumed, then
this very equation of the meaning of 'number' with the mathematician's
concept of a number undercuts the claim that the available criteria fail
to choose between Frege's, Zermelo's, Von Neumann's, and other explica-

tions. The available criteria are no longer restricted to mathematical criteria, since this equation introduces new criteria from linguistics and these might well make up for the inconclusiveness of the mathematical criteria. It is an open question whether the study of semantic properties and relations of sentences from natural language in which the word 'number' occurs would provide evidence about which explication of the concept of number is preferable. Since such considerations cannot be ruled out *a priori*, the only thing that keeps them from entering the picture is semantic skepticism.

We come now to the long answer to our question about the grounds for semantic skepticism. Quine is quite clear concerning what he is skeptical about, and why he is skeptical about it. A meaning is "the mental counterpart of a linguistic form" and appeal to meanings in linguistics is like

... the appeal in Molière to a *virtus dormitiva*, [it] engenders an illusion of having explained something. And the illusion is increased by the fact that things wind up in a vague enough state to insure a certain stability or freedom from further progress.[41]

Quine's claim is this: just as it is *no* explanation of why some medicine causes sleep to say that it has soporific powers, so it is no explanation of why two expressions are synonymous to say that their meanings are the same.

This, of cource, is quite right. But the critical question, one which has been ignored in philosophy of language, is *why* such an appeal is no explanation. Quine's interpretation is that the entities appealed to are somehow occult. But there is another interpretation: such an appeal is no explanation because explanation stops there: nothing further is said about soporific powers, in the one case, and meanings, in the other.

Suppose one were not to stop but to go on and say that the soporific power in the medicine is its chemical structure which causally operates on certain centers in the brain to produce sleep. Then an appeal to such powers would constitute an initial phase of a quite legitimate explanatory argument. This initial phase, as seen from its role in the overall explanation, would serve to locate the feature of the situation that functions as the causal antecedent of the effect to be explained. Thus, appeal to the soporific power of the medicine rules out other possible causal agents, such as hypnotic power, as for example in an explanatory argument on which the medicine merely served as a signal to a hidden hypnotist who caused the person to fall asleep.

Likewise, saying that (8) and (9) are synonymous because

(8)   highball

(9)   drink made of diluted spirits served in a tall glass with ice

they have the same meaning is, by itself, no explanation. But if it serves as the initial phase of an explanatory argument as to why (8) and (9) are synonymous, then, as in the previous case, it can have a legitimate function in the full context of the overall explanation. For instance, appeal to the meaning of the expressions (8) and (9) rules out other possible linguistic features, such as, for example, distributional or phonological ones. Thus, the appeal indicates that the explanation will proceed on the basis of features of the senses that make up the meaning of (8) and (9) rather than the features of the sort that permit (8) but exclude (9) in frames such as '———— glass'. Therefore, if the full explanatory argument shows that (8) and (9) automatically receive the same semantic representation on the basis of *general* rules for determining the semantic representations of complex constituents from the semantic representations of their syntactic parts and their syntactic relations, then we would no more be willing to accept Quine's criticism here than we are to accept it in connection with soporific powers in a physio-chemical explanation of someone's falling asleep.

Quine's semantic skepticism is precisely the thesis that these cases are *not* comparable, that, in the case of semantics, there can, in principle, be no such further argument that qualifies as a genuine explanation in linguistics. To prove this thesis, however, requires an examination of linguistics that shows that the true theory of grammatical structure in this science precludes such semantic arguments from counting as explanations of linguistic phenomena.

Quine's early paper 'The Problem of Meaning in Linguistics'[42] attempts to provide just such a proof. He tries to show that the theory of grammatical structure dominant in linguistics in the fifties, the Bloomfieldian, taxonomic theory of grammar, precludes semantic notions from having any explanatory role in the science of language. In this, Quine is, largely, successful, but this success matters little unless it can *also* be shown that taxonomic theory is the *correct* theory of grammatical structure. Nonetheless, since it was the *only* theory at the time Quine surveyed linguis-

tics, he had some justification for thinking that semantic skepticism had been established. Quine's argument to prove the explanatory vacuity of semantic notions was always, logically speaking, vulnerable to theories of grammatical structure with a stronger claim to being the better scientific theory, but until transformational theory came along, this vulnerability could have been dismissed with the reply that, although semantic skepticism is no better supported than the theory of grammatical structure on which it rests, it rests on the best available theory. Now, however, after transformational theory has conclusively undercut the empirical foundations of taxonomic theory and superseded it in linguistics, semantic skepticism is left wholly unsupported.

No theory could have been more suited to Quine's skeptical purposes than the Bloomfieldian taxonomic theory of grammar. The basic structure of this theory excludes the notion of meaning from any role in scientific explanations of grammatical structure. Taxonomic theory conceives of grammatical description as segmentation and classification of actual utterances.[43] The procedures of segmentation and classification at the initial stage of grammatical analysis apply exclusively to observable features of an acoustic signal. At subsequent stages, they exclude information not strictly definable in terms of distributional properties of the physical segments of utterances. The grammatical description of a sentence on this theory is strongly analogous to the cataloguing of books in a library. Corresponding to the individual pages are the smallest segments of significant sound in utterances, the phonemes. Corresponding to the groupings of pages into sections, chapters, prefaces, indexes, and appendices are the groupings of sentential constituents like clauses, phrases, nouns, verbs, morphemes, prefixes, and suffixes. Corresponding to the general library categories for classifying books such as fiction, literature, poetry, novels, science fiction, adventure, non-fiction, science, physics, chemistry and history are the general syntactic categories for classifying sequences of phonemes such as declarative sentence, interrogative sentence, imperative sentence, simple sentence and compound sentence. Thus, like library classification, taxonomic description begins with physical entities and proceeds by classifying them at successively more and more general levels. But the classificational principles allow only elements reducible to physical aspects of the acoustic signal to enter in the account of grammatical structure at any level of the analysis.

It is plain to see why Quine finds this conception of grammatical description attractive. Because nothing that is not a part of the physically observable acoustic features of utterance can appear as part of their taxonomic description, meaning is *ipso facto* excluded from grammatical structure. Phonological and syntactic structure are legitimate parts of the grammar of sentences because they are 'out there' in the disturbances of the air but meanings are not because they are not part of the noise produced in articulation. [44] This exclusion of semantic structure from the grammatical structure provided Quine with exactly the reason he required to argue that semantic notions play no role in scientific explanations of grammatical phenomena.

The true significance of the transformationalist revolution for philosophy is that it deprives Quine of this reason for claiming that meanings are not explanatory concepts. On Chomsky's formulation of transformational theory,[45] grammatical analysis is not a data-cataloguing process but simulation of the competence by virtue of which a speaker is fluent in the language. Because a grammar is now conceived of as a theory put forth to explain the speaker's mastery of the language, it is not required to represent only structure that is as public and intersubjective as books in a library. Grammarians can posit unobservable aspects to competence and justify such posits as the simplest hypotheses that enable us to derive predictions of linguistic behavior. Indeed, the very source of transformational theory's empirical superiority over taxonomic theory was its hypotheses about underlying phonological and syntactic structure. These made it possible to explain various grammatical phenomena outside the scope of taxonomic theory.[46]

Accordingly, on this conception, meaning can be construed as an inherent part of grammatical structure and thus semantics is reinstated as a legitimate part of grammar. Grammars can contain semantic rules that describe meaning as "the mental counter-part of linguistic forms",[47] since these rules can be systematically related to the rules that describe syntactic and phonological structure and the grammar as a whole can be thought of as a formal simulation of the knowledge that speakers employ to relate sound and meaning. Since transformational theory provides a natural place for semantic structure in grammatical structure, semantic notions can no longer be ruled out *a priori* as a *virtus dormitiva*.

Now there is only one further argument of Quine's that stands in the

way of our treating meaning as a legitimate part of attempts to explain grammatical phenomena in linguistics. If semantic notions are to have explanatory power, then they will enter into explanations of semantic properties and relations of sentences, such as analyticity and synonymy. Quine's further argument purports to show that there are no semantic properties and relations to explain. His argument tries to show that the ordinary, everyday notions of 'has a meaning' and 'same in meaning', which it takes to be the basic semantic notions, cannot be explicated in a coherent, non-circular way, preserving their intensional character. This argument, too, can be shown to depend on taxonomic assumptions that were discredited by the transformational critique of Bloomfieldian grammar.

The first step in Quine's argument is to delimit the class of semantic properties and relations that need to be considered.[48] If no delimitation to some (small) specified number of cases were given, there would be no guarantee that the criticism would be conclusive, since the argument will fail to show that *no* semantic property or relation can receive a satisfactory explication. Quine uses the criterion that the cases that need to be considered are just those semantic properties and relations that appear in the practice of taxonomic grammarians.[49] These turn out to be the property of meaningfulness and the relation of synonymy, the former appearing in discussions of taxonomic syntax and the latter appearing in discussions of lexicography.[50] Quine's method of delimitation from the outset rests the entire argument on Bloomfieldian linguistics. Its questionable assumption is that the practice of Bloomfieldian linguists can be relied on to tell us what semantic properties and relations would be treated in an *optimal* account of linguistic structure.

The assumption is more than questionable, however. First, as a premiss in an argument against the possibility of a mentalistic, intensionalistic theory of grammar, it makes the argument circular, since the linguistic practice taken as the frame of reference is explicitly guided by anti-mentalistic and anti-intensionalist principles. Second, it can be shown, although I will not bother to repeat the argument here,[51] that this delimitation badly underestimates the actual range of semantic properties and relations, and thus, Quine's argument must fall short of conclusiveness.

Quine's treatment of "has a meaning" simply adopts wholesale the treatment of this notion in taxonomic theory where it is assimilated to the

notion of 'well-formed (grammatical) sequence'. Since taxonomic grammars, by their nature, exclude semantic structure from grammatical structure, this assimilation means that the definition of 'well-formed (grammatical) sequence', and hence 'has a meaning', will be formulated without reference to meaning.

The legitimacy of such an assimilation is immediately open to doubt in transformational theory since in this theory it is an open question whether or not there is one set of sentences in the language that are ill-formed because they violate some purely syntactic restriction on constituent co-occurrence and another set that are semantically deviant because they violate some purely semantic restriction on the combinatorial process by which meanings of whole sentences are formed. The assimilation is based on nothing more than the taxonomic grammarian's assumption that linguistic phenomena referred to under the description 'meaningful' can be handled by the syntactic principles of constituent concatenation in grammars. But, besides being gratuitous, this assumption is disconfirmed by evidence that the set of semantically deviant, syntactically well-formed sentences is not null.

An example of the evidence against the assumption is the fact that the deviance of (10) and the non-deviance of (11) cannot

(10)   I counted the boy
(11)   I counted the boys

be accounted for on the grounds that the object in (11) is plural and the object in (10) is singular.[52] This syntactic difference will not explain why (12) is non-deviant. The only thing that seems to explain this is the semantic property of 'crowd' that

(12)   I counted the crowd.

it means a (large) number of people.[53]

Quine claims that the notion "same in meaning" cannot be clarified satisfactorily because any attempt to explicate it ends in circularity. This has been one of the most influential arguments for semantic skepticism. We will examine it closely. To determine the form of explication appropriate to notions like synonymy, Quine appeals directly to taxonomic methodology:

So-called substitution criteria, or conditions of interchangeability, have in one form or another played central roles in modern grammar. For the synonymy problems of sentences such an approach seems more obvious still.[54]

Quine has in mind here the distributional tests that taxonomic linguists employed to determine such things as which elementary sound segments to assign to the same phoneme class. Briefly, such a test consists in asking speakers whether one elementary segment is substitutable for another in a particular 'word environment' without changing the word. For example, one might ask whether the sound [p] is substitutable for the sound [b] in the word 'bin' without changing the word. If speakers say 'yes', [p] and [b] are assigned to the same phoneme class. If speakers say that this substitution changes "bin" to the different word, "pin", then [p] and [b] are assigned to different phoneme classes.

Once the form of explication is fixed, Quine argues that any attempt to explicate "same in meaning" in this way must fail because there is no non-circular specification for the property that remains invariant under substitution of synonymous expressions. Quine shows, quite convincingly, that the only property preserved when an expression is replaced by a synonymous one (but not otherwise) is synonymy itself, or some trivially interdefinable property like analyticity.[55] His conclusion is that, since we have to appeal to the unexplicated concept of synonymy in order to explicate it, the prospects for a scientifically acceptable explicandum for "same in meaning" are nil.

Quine's argument has the form of a *reductio* in which the *absurdum* is the necessarity of circular explication. The argument pins the *absurdum* on the hypothesis that an adequate explication can be obtained: we assume we can find an acceptable relation to play the same role as 'same word as' plays in the case of phonemic identity tests, but this leads to circularity. But the argument is fallacious. There is an alternative on which the *absurdum* might also be pinned which Quine does not rule out. This is the assumption that distributional tests of the kind employed in taxonomic phonology are the proper method of explicating linguistic concepts. Quine's argument might with equal justice be taken as a refutation of his claim that the status of semantic concepts depends on whether appropriate substitution criteria can be supplied for them.

One further comment. I have so far supposed, along with Quine, that there is really an *absurdum* in the first place. There is, however, no real

reason to grant this. Just because a family of concepts are not definable outside the family circle is no basis for concluding that the members are unclear or occult concepts. After all, the entire vocabulary of a language is not thought to be unclear or occult. Moreover, clarity and scrutability do not plausibly seem to be properties that depend on the size of the circle, and even if they are, Quine cannot reply that the analyticity-synonymy circle is too small for clarity or scrutability, since the only reason that it looks small is that Quine himself, as observed above, restricted the class of semantic properties and relations to these few.

What has made Quine's argument seem plausible to philosophers is, I think, a combination of three factors, the absence of any specific method of clarifying semantic concepts, widespread suspiciousness concerning semantic notions, and complete ignorance of the controversy in linguistics between taxonomic and generative theories of phonological structure.[56] Even a slight acquaintance with this controversy is enough to shake one's faith in substitution tests. Generative phonologists have produced counter-examples showing that these tests fail even in their home area of phonemics. For example, such tests would classify [ɛ] and [e] into distinct phoneme classes because replacing the latter in 'beat' by the former changes this word into 'bet', but they would also classify these phones into the same phoneme class because substituting the latter for the former in 'economics' does not produce another word.

But such classificational inconsistencies are not the worst consequence of the assumption that explication by substitution test can be a standard of conceptual clarity. Applying such tests to concepts that we would never dream of giving up leads to the same result as their application to phonemic or semantic concepts. If we required that the concept 'same number as' had to be explicated by a substitution test, then we would again find no non-circular property that remains invariant under the substitution of identities. A substitution test would take x and y to be the same number just in case the substitution of the former for the latter in $a + x + b$ preserves sameness of number, that is, just in case $a + y + b$ is the same number as $a + x + b$. Nothing other than this circular appeal or an equally circular one (to some trivially interdefinable numerical property) will offer an adequate extensional characterization of the relation 'x is the same number as y'. Hence, Quine's argument proves too much.

As this counter-example from mathematics shows, the alternative to

substitution tests is a theory. Theories explicate concepts in terms of their interrelations to other concepts within the theory rather than in terms of a covariance with an independent observable property. This alternative is, of course, exactly the one pursued in the framework of transformational grammar. The semantic theory within transformational grammar explicates the synonymy of expressions in terms of their representations at the semantic level in transformational grammars, and similarly, other semantic properties and relations are explicated in terms of these representations. The success of this alternative depends on how revealing the semantic representations become. The rationalist hope is that they will someday become as revealing as the chemical explication of the soporific powers of medicines.

3. HARMANIZING WITH QUINE

Quine's skepticism, as we have seen, takes the view that semantic constructs cannot, in principle, be explanatory in the manner of other constructs from scientific fields. Harman, the most zealously anti-intensionalist of Quine's disciples, bases his version of semantic skepticism on the weaker view that meanings are not, as a matter of fact, explanatory. Harman, too, wishes to argue for the unscientific status of meanings and analyticity, and he has the same empiricist axe to grind in so arguing, but he leaves open the possibility that meanings might turn out to explain something, arguing instead that in fact they do not explain. Thus, Harman's position, because it is weaker than Quine's, is not jeopardized by the advances of transformational grammar that cut the ground out from under Quine's Bloomfieldian assumptions.

Harman argues that meanings and analyticity are like witches.[57] He tries to show that the evidence in the case of intensionalist semantics is like the evidence we have against witchcraft: in the latter case, we can account for the alleged magical phenomena well enough without having to invoke witches, and in the former, we can account for the alleged semantic phenomena well enough without having to invoke meanings and analyticity. Harman's argument to establish this rests on the supposition that the only reason why we postulate meanings and analyticity is "... to explain why we cannot imagine certain things not being true".[58] Therefore, his rebuttal to the intensionalist is that "A better postulate is that we are

not good at imagining things",[59] since we can imagine the falsity of so-called analytic sentences if we really try.

Harman's supposition that the analytic-synthetic distinction is introduced to explain why we cannot imagine such things as married bachelors, female men, or nightmares that are not dreams is misleading in a number of ways. First, this supposition makes it look as if the whole justification for the distinction, or at the very least the primary justification, rests on the role of the distinction in such an explanation. This, of course, is not the case. We construct a grammar to assign a representation of analytic structure to some sentences and a representation of synthetic structure to others in order to make true predictions about them. To say what is true about their propositional form. This sort of reason cannot, I recognize, have much appeal to a Quinian, who believes that truth in semantics is a "mistaken ideal", but, nonetheless, it is somewhat less than proper for Quinians to construct their criticisms of intensionalists on suppositions that pretend as if something else were the basic reason for introducing the analytic-synthetic distinction.

Second, the supposition makes it look as if analyticity is offered as the justification for *any* case where something is difficult to imagine; the difficulty of imagining the falsity of (1), (13), and (14) is put on a par with the difficulty of imagining the falsity of non-analytic cases like (15) and (16).[60]

(13)   Cats are animals
(14)   Women are female
(15) $7+5=12$
(16) $F=ma$

Harman ignores the intensionalist's distinction between certainties whose truth is a matter of meaning alone and those whose truth is to do with other matters as well. For the intensionalist there are many things that are just as difficult to imagine as false analytic sentences but which have no bearing whatever on semantics. For instance, it is just as difficult to imagine that events take place without causal antecedents, that cubes have less than twelve edges, that there is more than one even prime, and so on, yet in none of these cases does the intensionalist want to say that considerations of meaning alone suffice to explain the failure of imagination. Again, this sort of thing can have little appeal to a Quinian, who

makes no sharp distinction between matters of meaning and matters of other kinds, but again, criticism of intensionalism that simply assumes no such distinction is less than proper. By lumping cases like (16) together with *bona fide* analytic sentences, Harman makes his claim that we can imagine the falsity of analytic sentences more initially plausible, since, after all, cases like (16) are not so hard to imagine false.[61]

Harman's supposition ignores the traditional, Kantian account of the distinction between analytic and synthetic sentences, on which what distinguishes them is that the former have an *explicative* connection between subject and predicate while the latter contain an *ampliative* one. Ignoring this is rather strange insofar as Harman has to argue against the intensionalist's explanation of the difficulty of imagining false analytic sentences and on this explanation the difficulty is attributed to the explicative character of their subject-predicate connection. The intensionalist's explanation of this difficulty is the impossibility of falsely predicating something that is one of the constituent concepts of the subject (since these concepts standardly pick out the thing the predication is made of). Thus, it is strange, to say the least, that Harman has lumped sentences which predicate concepts not found among the constituent concepts of the subject together with explicative sentences under the heading 'analytic'.

It is thus misleading for Harman to characterize the problem in terms of accounting for the difficulty of imagining that cases like (1), (13), and (14) as well as (15) and (16) are false. Rather, the problem should be posed in terms of sentences with explicative predicates exclusively. What is to be explained is, first, their explicative structure, and second, why sentences with such a structure cannot be false. Our explanation, sketched in the previous section, is that the answer to the former has to do with how the meanings of the constituents of the sentence combine compositionally to produce an analytic sense, that is, one whose presuppositional structure includes its truth condition, and that the answer to the latter has to do with the fact that, because the truth condition of an analytic sense is part of its condition for statementhood, it is secured against expressing a false statement.[62]

Furthermore, the problem is ridiculously simplified in Harman's framework because it omits the host of systematic reasons for constructing a grammar so that it assigns semantic representations expressing

explicative structure to some sentences and ones expressing ampliative structure to others. The mistake comes about as the result of the same neglect of the possibility of theory construction in semantics that we found Quine guilty of at the end of the previous section.

Given a theoretical interconnection between analyticity and other semantic properties and relations, the apparatus for explaining the analyticity of sentences will enter into the explanation of the semantic anomaly, the ambiguity, and other semantic properties and relations of indefinitely many different sentences. This comes about in the following way. The semantic representation of an analytic sentence exhibits the formal structure by virtue of which the definition of analyticity (in linguistic theory) marks the sentence as analytic. This formal structure, however, derives compositionally from the semantic representations of the constituents of the sentence. These constituents also occur in other sentences whose semantic representations are, therefore, derived from the same semantic representations that determined the analyticity of the original sentence. Hence, the overlap of semantic representations of constituents, from sentence to sentence, and the compositional projection of the semantic representations of sentences from the semantic representations of their constituents constitute a rich system of theoretical interconnections which provides a common basis for predicting different semantic properties and relations of different sentences. Consequently, intuitions that confirm the prediction that a particular sentence is analytic, or ambiguous, or something else, are not the only confirmation for this prediction. The intuitions that confirm the predictions that other sentences have other semantic properties and relations indirectly confirm it, too, since they all derive from a common basis. Therefore, contrary to Harman's supposition, there are a host of reasons for representing a sentence as analytic that are entirely overlooked when the grounds for introducing analyticity is restricted to explaining why certain sentences cannot be false.

We may illustrate such theoretical interdependency with a few examples.

(17)   You don't have to be rich to live a rich life
(18)   You don't have to be happy to live a happy life
(19)   You don't have to be financially rich to live a financially rich life.

(17), (18), and (19) illustrate the interconnections between ambiguity and contradiction. The contradictoriness of (18) and (19) and the non-contradictoriness of (17) require 'rich' to be ambiguous and the two environments it appears in to select different senses. (20) illustrates the connection between analyticity and these former semantic properties. (21), (22),

(20)   You have to be financially rich to live a financially rich life
(21)   The naked are completely nude
(22)   Ned is a naked nude

(23), and (24) illustrate the connection between analyticity, redundancy,

(23)   Henry is naked
(24)   Henry is completely nude

and semantic entailment. (25) and (26) illustrate the connection between

(25)   Southpaws are left-handed pitchers
(26)   The coach looked for a southpaw to relieve Smith, but chose a left-handed pitcher instead

analyticity and semantic anomaly.

Even were it true that the entire case for the analytic-synthetic distinction rests on the success of analyticity as an explanation for the failure to imagine certain things not being true, Harman's argument would not have any force. Harman writes:

A common example of a supposedly analytic statement is *bachelors are unmarried*. This shows how philosophy becomes tied to an outmoded morality. As non-philosophers know, in this era of unstable marriages there are many bachelors who are still technically married. Another common example is *women are female*, although recently the Olympic committee barred a woman from competition on the grounds that she had too many Y chromosomes to count as female.[63]

He adds, for good measure:

It *is* is true that cats are animals, another commonly cited analytic truth. But Putnam points out that inability to imagine this false is a matter of lack of imagination. Imagine the discovery that all of the furry things we've been calling cats are really made of plastic and are radio-controlled spy devices from Mars. What we have imagined is the discovery that cats are not animals.[64]

Harman's argument that there is nothing for the notion of analyticity to explain, and hence, no reason to postulate it in the first place, is that we can imagine cases where analytic sentences are false. But the cases that

Harman and others have come up with in trying to imagine married
bachelors, male women, robot cats, etc. do not have the form of a
counter-example to the sentences they are supposed to disprove. Con-
sider Putnam's alleged counter-example to (13).[65] Since this sentence is of
the form 'X's are Y', a counter-example to it is something that is X but
not Y. Thus, if 'cat' is defined in terms of the concept 'Animal', plastic
spy devices are not cats and Putnam's example is a case of something
that is not-X and not-Y. On the other hand, if 'cat' is not defined in terms
of 'Animal', then (13) was not analytic to begin with, insofar as there was
no explicative connection between its subject and predicate, and the case
does not contradict an analytic sentence.[66] Either way, this is not a case
where someone has imagined an example where an analytic sentence is
false.

Likewise, someone who imagines a married man who carries on as
though he weren't married is not imagining a married bachelor. Such
exemplars of contemporary morality may be called 'bachelors', but this is
a metaphorical usage similar to use of "pigs" by college students in the
late sixties to refer to disliked establishment figures. Such 'bachelors' are
no more true bachelors than such establishment figures were actual mem-
bers of the biological genus swine. Finally, there is no reason to think that
the criterion used by the Olympic Committee to decide who counts (for
them) as female has anything to do with who 'female' applies to. Does
some crime commission's 'XYY' criterion for criminality represent the
proper condition for the application of English expressions like 'potential
criminal'?[68] Moreover, on Harman's view it is a total mystery how ordi-
nary people without the benefit of training in modern genetics are sup-
posed to determine the application of 'female'. But, even if the proper
number of chromosomes were the condition for applying 'female', there
would still be no counter-example to (14) here. In this case, the committee
would have barred a woman just in case the definition of 'woman' con-
tains *no* condition of femaleness in this chromosomic sense. But, if
'woman' does not contain such a condition, then, of course, (14) was not
analytic in the first place, and there is no counter-example to an analytic
sentence. Likewise, if the relevant condition of 'bachelor' is that of
behaving like a charter member of the playboy's club rather than that of
being unmarried, then, here too, there was no analytic sentence in the
first place, and hence no counter-example.

Harman's other argument against intensionalism is directed against its claim that meanings are language independent concepts and propositions, to be represented by universal semantic representations. This argument and the previous one correspond to Quine's explanation and generality criticisms of Carnapian and other intensionalist explications of analyticity. Like Quine, Harman wants to argue that such explications are neither suitably explanatory nor suitably general. We have just found the former criticism to be mistaken because it neglects theory in semantics and the options that theory provides. Now we will see that the latter criticism is mistaken for the same reasons.

To define analyticity and synonymy in sufficiently general terms, their explications would have to be stated for variable 'S' and 'L'. To provide such explications, it is necessary to base them on the assumption that the underlying structure of every past, present, future, and possible language – any value of 'L' – contains the same system of language independent meanings, and that any sentences – any values of 'S' – which are analytic have isomorphic meanings in this system and any which are synonymous have the same meaning in this system. If there is no reason to think that there is such a system of language independent meanings, then there will be no basis for explications of semantic properties and relations defining them for variable 'S' and 'L'.

Harman's second argument is that there is no reason to postulate such a system of language independent meanings because they are postulated solely in order to account for translation and they fail in this. As in the case of the previous argument, not only is Harman's reasoning fallacious but he neglects other reasons that intensionalists have for their postulation. Besides translation, language independent meanings are postulated to account for part of what is acquired in learning a language, in particular, the acquisition of the dictionary. The reasoning behind the postulation here is this. The acquisition of the meanings of linguistic forms cannot be explained as something acquired by inductive generalization from experience. Among other things, an inductive model would make the absurd prediction that children end up with indefinitely many incompatible concepts as the meaning of any linguistic form.[68] Moreover, the argument that shows this absurdity also shows that some system of primitive concepts and principles for the generation of complex concepts must form part of the innate basis for language acquisition.[69] If so, then

it seems reasonable to make the simplest assumption that this system is the same in every child, regardless of the language(s) she or he eventually learns to speak. Hence, the problem of dictionary acquisition at the semantic level is posed as the question of how the syntactically structured sound clusters which children learn to imitate are connected with the inner representations of meanings that can be generated within the innate system of concepts and propositions.

Another reason for postulating language independent meanings is that such a postulate makes it possible to connect theorizing about the information content of linguistic forms with theorizing about the cognitive capacities of non-linguistic creatures, e.g., non-speakers such as infants and deaf-mutes and animals. That is, if we can assume the existence of a language independent set of concepts and propositions, then we can assume further that all intelligent creatures draw the elements of their cognitive systems from this set and this provides us with the framework within which to compare and contrast the intelligent behavior of organisms at different levels on the phylogenetic scale and at different stages of growth and disability at any one stage.[70] Again, we are not arguing that such applications are proof of the validity of the postulate of language independent meanings but only that there are other reasons for the postulation, from which it follows that Harman's argument is at best incomplete.

Ignoring this incompleteness, is Harman's argument sound? According to Harman's argument, the facts of translation (i.e., synonymy) can be accounted for without postulating language independent meanings, so that such a postulate is unwarranted. This is because the criterion for judging putative translations of a sentence is that one is better than another

... to the extent that it is simpler, preserves dispositions to accept sentences under analysis in response to observation, and preserves similarity in usage.[71]

Harman observes that a translation relation that is constrained no further than this permits pairs of sentences to count as translations that are not absolutely the same in meaning but only very similar in meaning. Then, he goes on to point out that translation is consequently a matter of degree and thus 'x is a translation of y' is not a transitive relation. He concludes that since 'x has the same semantic representation as y' is transitive, we cannot explain translation in a theory that assigns translations the same

semantic representation. "This", says Harman, "is where the defender of the analytic-synthetic distinction has gone wrong; he fuses a similarity relationship with an equivalence relationship".[72]

The argument is unusual in being both a non-sequitur and begging the question. First, the conclusion that language independent meanings are unnecessary in no way follows even granting what Harman says about the translation relation, since his argument does not exclude the possibility that the postulate of language independent meanings is part of the best explanation of similarity in meaning. Sentences that count as translations by Harman's criterion might very well turn out to be semantically similar enough to count precisely because they have a sufficiently large overlap of universal semantic concepts, and sentences that do not count as translations might, correspondingly, be too dissimilar just because their overlap contains too few elements from the system of language independent meanings. The situation might be somewhat analogous to the case of size or shape: no two objects in the world are exactly the same in size or shape, but this is not taken as a reason for thinking that a universal system for representing sizes or shapes is irrelevant to determining similarity in size or shape.

Second, the argument also begs the question. The crucial claim of this argument is that the facts of translation to be explained are only similarities, never identities. "The only sort of sameness of meaning we know is similarity in meaning, not exact sameness of meaning."[73] This is crucial because the defender of the analytic-synthetic distinction is clearly making the opposite claim. But, now, the criterion that Harman assumes as a measure for correctness of translation is merely the methodological version of this claim: it judges translation by no stronger standard than preservation of dispositions and usage similarities. It is thus no trick to argue from such a criterion to the view that the facts of translation are as Harman takes them to be. The intensionalist is certainly going to offer an alternative criterion, one that is the methodological expression of the intensionalist claim that sentences are translations of one another just in case they are identical in meaning, namely, (C). Since Harman gives

(C)   One translation T_1 of S is better than another T_2 if, and only if, T_1 has more semantic properties and relations in common with S than T_2.[74]

no argument for his criterion, and since the acceptability of his criterion is just what is in question in the issue over the transitivity of the translation relation, Harman's argument against the defender of the analytic-synthetic distinction begs the question.

Harman does not even consider an alternative criterion like (C). The nature of his own criterion suggests that he conceives of meaning in so broad a manner that any difference in beliefs or in usage counts against the claim that the expressions in question are the same in meaning. For example, if I believe that accepting a sentence in which the king is referred to under the description 'male monarch' will bring about my execution, whereas accepting one in which he is referred to under the description 'king' will result in my receiving a royal gift, Harman's criterion will construe my prudent behavior as counting against the hypothesis that 'male monarch' is synonymous with 'king'. Again, since there is a difference in usage between 'rabbit' and 'bunny' – usage of the latter is confined to contexts in which the speaker is a small child or is addressing a small child – Harman's criterion will construe such differences to count against the synonymy of 'rabbit' and 'bunny'.

Harman's notion of meaning is one in which beliefs of all kinds, about the world, proper usage, etc., enter on a par with, and are undifferentiated from, the kind of beliefs about the information content of linguistic forms that intensionalists take as their notion of meaning. He makes this clear also in what he says about change of meaning:

> Proponents of the analytic-synthetic distinction claim that we cannot give up basic analytic principles without changing the meaning of our words. This presupposes a real distinction between changing our view and only appearing to change it by changing the meaning of words used to state it. But that distinction is only a matter of degree. Any change of belief can be considered a change of meaning...[75]

What is ignored in Harman's argument, then, is the *possibility* of such an intensionalist alternative to his notion of meaning, which distinguishes meaning from beliefs about the world, usage, etc., and thus makes a criterion like (C) more plausible than Harman's. What is ignored, in short, is a *mentalistic* notion of meaning, on which meaning is the aspect of grammatical structure that determines semantic properties and relations,[76] as opposed to Harman's *behavioristic* notion.

A criterion for change of meaning that separates it sharply from change of belief falls out of the intensionalist notion automatically. The general

form of the intensionalist criterion for synchronic meaning is roughly the following: an expression or sentence K has the meaning M just in case the hypothesis that K means M is the best explanation of the semantic properties and relations of K and of every syntactic construction in which K appears as a constituent.[77] We can say a change in the meaning of K has occurred in the history of the language from stage L_i to stage L_j just in case the best explanation of the semantic properties and relations of K and every syntactic construction in which K appears at L_i is that K means M whereas the best explanation of these properties and relations at L_j is that K means N, $M \neq N$. A change of belief (about the world, usage, etc.) has taken place, rather than a change in meaning, just in case the best explanations at both stages assign K the same meaning but systematic differences in the use of K are found from one stage to the next. Hence, *only* on the behavioristic notion of meaning to which Harman subscribes is it the case that the distinction between change of meaning and change of belief is "only a matter of degree" and that "change of belief can be considered a change of meaning".

Therefore, the basic reason why Harman's arguments fail is that they simply assume the broader, behavioristic notion of meaning on which translation is not transitive and ignore the narrower one on which it is. The situation is parallel in essential respects to that of theoretical constructs in idealizations in other sciences. Concepts in an idealization in physics, e.g., ideal gas, perfectly rigid rod, complete vacuum, etc., give rise to transitive relations, whereas their counter-parts in actual experience are not transitive. For example, in the idealization of physical theory, if A has the same mass as B, and B has the same mass as C, then A and C have the same mass, but in experience we employ a notion of mass whose logic is more like Harman's notion of identity coming down to things being 'roughly the same',[78] and with such a notion of mass, of course, A and C need not be the same in mass. Harman seems to have gone wrong by confusing an equivalence relationship with a similarity relationship.

4. WHERE THINGS NOW STAND

One way to indicate where things now stand is to observe that semantic skepticism – whether Bloomfield's, Quine's, or Harman's – comes down to an empiricist effort to avoid drawing the competence-performance

distinction in the area of semantics. The distinction between the broader, behavioristic notion of meaning and the narrower, mentalistic notion is the form that the competence-performance distinction takes at the semantic level of grammar. Harman's notion of meaning is a performance notion in that it counts each factor that influences how speakers actually use words as semantic. Ours is a competence notion in that it idealizes away from grammatically irrelevant factors such as acceptance patterns and social habits influencing usage. As Chomsky expressed it:

Linguistic theory is concerned primarily with an ideal speaker-listener, in a completely homogeneous speech-community, who knows its language perfectly, and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic) in applying his knowledge of the language in actual performance.... We thus make a fundamental distinction between *competence* (the speaker-hearer's knowledge of his language) and *performance* (the actual use of language in concrete situations).[79]

Accordingly, on our (competence) notion of meaning, the fact that 'bunny' and 'rabbit' have different patterns of usage or that 'king' and 'male monarch' produce different acceptance patterns for otherwise comparable sentences can be taken consequences of grammatically irrelevant conditions. Thus, we would be explaining the competence facts that 'rabbit' and 'bunny' are synonymous and that 'king' and 'male monarch' are synonymous without sacrificing an explanation of the performance facts in question. These explanations would parallel Chomsky's explanation of the competence fact that sentences like (27) are grammatical and the performance fact that such sentences are unacceptable (i.e., unlikely

(27)   The man who the boy who the students recognized pointed out is a friend of mine

to be used, difficult to comprehend, clumsy, etc.).[80]

Why do empiricists try so hard to avoid drawing this distinction when it would seem that doing so has the advantage of enabling one to explain two kinds of facts instead of just one? Why is it that empiricists countenance only graded, experiential concepts, whereas rationalists accept the reality of both ideal (competence) concepts and graded (performance) concepts? This question bring us full circle round to the beginning of this essay. The answer is that the empiricist has no adequate apparatus to explain how people acquire ideal, absolute concepts from their experience, whereas the rationalist's richer postulate about innate endowment

encounters no theoretical objection to the adequacy of its apparatus for explaining how our graded, experiential concepts develop as a function of the projection of ideal concepts onto situations which depart from the idealization on various identifiable parameters of belief, psychological state, habits of usage, and other performance variables.

Where do we stand? Hopefully, on the verge of a rebirth of rationalist semantics. In syntactic theory, it was the distinction between competence as a mentalistic construct and performance as a behavioristic one that brought down the empiricist theory of taxonomic grammar. In fact, this was the essential step that Chomsky took in developing his rationalistic theory of syntactic structure out of the empiricistic, taxonomic, but nonetheless, transformational theory of Zellig Harris.[81] As I see it, the rationalist revolution in linguistics will remain unfinished and its full impact on philosophy and logic will remain unfelt until the basis for rationalistic semantics is erected by an extension of the competence-performance distinction from phonology and syntax into semantics.

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NOTES

[1] Inductive procedures also function as the framework within which experience becomes relevant in the empiricist's account. Thus, in claiming that linguistic universals are synthetic *a priori* principles, which cannot themselves be confirmed or disconfirmed by experience of the language learner, we are making no stronger claim for them than the empiricists should make for induction.
[2] Chomsky, N., *Language and Mind*, Harcourt, Brace, & World, New York, 1968.
[3] Katz, J. J., *The Philosophy of Language*, Harper & Row, New York, 1966, pp. 240–282.
[4] Cf. Chomsky, N., *Current Issues in Linguistic Theory*, Mouton, The Hague, 1964, pp. 60–110; Postal, P., 'Constituent Structure', *International Journal of American Linguistics*, 30, No. 1, (1964).
[5] Katz, J. J., 'The Relevance of Linguistics to Philosophy', *The Journal of Philosophy*, 62, (1965), 594–602.
[6] Leibniz makes roughly this point. See *Leibniz Selections* (ed. by P. P. Wiener), Charles Scribner's & Sons, New York, 1951, pp. 402–403.
[7] Harman's "resourceful empiricism", which contains as rich a stock of innate prin-

ciples concerning the nature of grammars as any rationalism, is only empiricism in name. Harman, G., 'Psychological Aspects of the Theory of Syntax', *Journal of Philosophy* **64** (1967), p. 85. Cf. Chomsky, N., 'Linguistics and Philosophy', in *Language and Philosophy* (ed. by S. Hook), New York University Press, 1969, pp. 89–91.

[8] Quine, W. V. O., 'Necessary Truth', in *The Ways of Paradox*, Random House, New York, 1966, p. 56.

[9] According to Quine, "the child's early learning of a verbal response depends on society's reinforcement of the response in association with the stimulations that merit the response". *Word and Object*, MIT Press, Cambridge, 1960, p. 82.

[10] Quine, W. V. O., *From a Logical Point of View*, Harvard University Press, Cambridge, 1953, pp. 20–46.

[11] Quine, W. V. O., *The Philosophy of Logic*, Prentice-Hall, Englewood Cliffs, 1970, p. 100.

[12] Quine, W. V. O., *From a Logical Point of View*, p. 43.

[13] Quine, W. V. O., 'Carnap and Logical Truth', pp. 385–386.

[14] Quine, W. V. O., *From a Logical Point of View*, p. 43.

[15] Quine, W. V. O., 'Reply to Stroud', pp. 289–290.

[16] Carnap, R., 'Intellectual Autobiography', in *The Philosophy of Rudolf Carnap* (ed. by P. A. Schilpp), Open Court, 1963, p. 64.

[17] Quine, W. V. O., *Philosophy of Logic*, p. 49.

[18] Quine, W. V. O., *Mathematical Logic*, pp. 1–8.

[19] It is not clear that the optimal position succeeds in accounting for the certainty of logical truths. The matter is clouded by Quine's unhelpful labeling of logical truths as "conventions" (in his reply to Stroud), which, as I've pointed out elsewhere is no better than Carnap's uninformative label 'analytic' for which Quine rightly criticized him. See Katz, J.J. and Nagel, R.I., 'Semantic Theory and Meaning Postulates', *Foundations of Language*, in press.

[20] It is questioned in Katz, J. J., *Semantic Theory*, Preface and Chapter 3, Section 4, but also Tarski, A., *Logic, Semantics, and Metamathematics*, Clarendon Press, Oxford, 1956, pp. 418–419. More recently, Katz, J. J., 'Logic and Language: An Examination of Recent Criticisms of Intensionalism', *Minnesota Studies in the Philosophy of Science*, Vol. 6, eds. K. Gunderson and G. Maxwell, in press. Also, Katz, J.J., 'The Dilemma between Orthodoxy and Identity', *Bar-Hillel Festschrift*, ed. A. Kasher, to appear.

[21] How significant a rationalist victory this would be remains to be seen. The position described above is not as strong as logical empiricism unless it turns out that mathematical truths are linguistic truths in a narrow enough sense for their necessity to be explained within a semantic theory of a natural language. Katz, J. J., 'Some Remarks on Quine on Analyticity', *Journal of Philosophy* **64** (1967), 51–52. It seems to me that a semantic theory will characterize logical truths in a way that draws the distinction between them and mathematical truths on the basis of the difference between languages like English, French, Chinese, etc. and mathematical systems, that such systems rest on axioms like mathematical induction. Nonetheless, the victory would be significant since both the optimal position for empiricists and the position that represents the modification of it that is most widely accepted would be shown inadequate.

[22] Quine, W. V. O., *Word and Object*, p. 204. Semantic skepticism also questions absolute semantic properties and relations like analyticity and synonymy. Presumably, expressions and sentences have the semantic properties and relations they do by virtue of their meaning, so that if nothing could be said against such properties and relations, criticisms of the notion of meaning could not have much weight. Moreover, if scien-

tific sense could be made of semantic properties and relations, we could provide identity conditions for concepts and propositions.

23 Quine, W. V. O., *Word and Object*, pp. 75–77.

24 Quine, W. V. O., *Word and Object*, p. 76.

25 Quine, W. V. O., *Word and Object*, p. 76.

26 Quine, W. V. O., *Word and Object*, p. 76. In an earlier publication, Katz, J. J., *Semantic Theory*, pp. 289–291, I argued that, given the use to which Quine puts indeterminacy in his attack on intentionalism in *Word and Object*, his argument against meanings there is circular. That is, in his discussion of propositions as meanings, Quine, W. V. O., *Word and Object*, pp. 205–206, Quine uses indeterminacy to show that there can be no criteria for the identity of propositions – because their existence is inconsistent with indeterminacy, but he also assumes that there are no propositions in order to argue, as described above, for indeterminacy. I still think he assumes no 'language neutral meanings' and then goes on to use a consequence of this assumption to argue that it is untenable to countenance them, but I no longer think his argument forms so small a circle. I now think that he was relying on the doctrine of semantic skepticism when he straight-off asserted that there exists no language neutral meanings for sentences like (5) to be the verbal embodiments of.

27 Quine, W. V. O., *Word and Object*, p. 54.

28 In 'Some Remarks on Quine on Analyticity', pp. 50–51, I showed that the occurrence of the terms 'synonymous', 'analytic', etc. in the questions put to native speakers is dispensable.

29 Katz, J. J., 'Some Remarks on Quine on Analyticity', p. 44.

30 *Ibid.*, pp. 44–45.

31 Quine, W. V. O., 'Two Dogmas of Empiricism', p. 33.

32 Chomsky, N., *Aspects of the Theory of Syntax*, MIT Press, Cambridge, 1965, pp. 3–62.

32 Katz, J. J., *Semantic Theory*, pp. 171–197.

34 This account is, of course, highly simplified; for a fuller, more formalized version see Katz, J. J., *Semantic Theory*, pp. 174–180. We note here that, although our illustration is of a simple subject-predicate sentence, the definition applies to more complex subject-predicate sentences and, more significantly, to non-subject-predicate sentences, such as (i) 'Harry believes everything he is certain of' and (ii) 'George sells books to those who buy them from him'. We assume the semantic analysis of 'certain' is something like 'believes with complete confidence'. Since the semantic representation of (i) would describe the proposition as having two terms r_1 = the reading of the subject of (i), i.e., 'Harry', and r_2 = the reading of the object of (i), i.e., 'everything he (= 'Harry') is certain of', and a condition C_{x_1, x_2} = a reading representing the relation of someone believing something, on this assumption, the sentence (i) is marked analytic. (ii) works out the same way on the assumption that 'sell' and 'buy' are converses, and as such, have a common predicate structure.

We note also that the bracketing in (6) represents a further specification of the information expressed by the semantic marker '(Dream)'. Cf. Katz, J. J., *Semantic Theory*, pp. 165–167.

35 We make no attempt to characterize 'S is analytic in L' by means of a list of cases or in terms of the closure of such a list together with the logical axioms under the consequence relation. This point was first made in Katz, J. J., 'Some Remarks on Quine on Analyticity', p. 44. Quine's reply to this paper misunderstood the point, confusing an example of a behavioral elicitation technique for the definition of 'S is

analytic in L' (which was to be what is confirmed or disconfirmed by the results of the technique), cf. Quine, W. V. O., 'On a Suggestion of Katz', pp. 52–54. Katz, J. J., 'Unpalatable Recipes for Butter Parsnips'. examines Quine's misunderstanding. Thus, it is disheartening to find Quine recently (Cf. Quine, W. V. O., 'Methodological Reflections on Current Linguistic Theory', p. 393) making the same confusion between sentences prepared as stimulus material for elicitation procedures and an abstract definition.
[36] In the case of certain sentences, e.g., generics, the requirement for statementhood of a satisfied presupposition is relaxed. Thus, a sentence like 'The American bachelor is male' is necessarily true (rather than necessarily non-false), cf. *Semantic Theory*, pp. 177–178.
[37] Cf. Katz, J. J., 'Mentalism in Linguistics', *Language* 40 (1964), 124–137.
[38] Quine, W. V. O., *Ontological Relativity and Other Essays*, Columbia University Press, New York, 1969, p. 26.
[39] *Ibid.*, p. 43.
[40] See my *Semantic Theory*, Chapter 8, Section 5, for a discussion of the difference between meanings in natural language and concepts in scientific theory.
[41] Quine, W. V. O., *From a Logical Point of View*, p. 48.
[42] Quine, W. V. O., *From a Logical Point of View*, pp. 47–64.
[43] Chomsky, N., *Current Issues in Linguistic Theory*, Mouton & Co., The Hague, 1964.
[44] Bloomfield himself once put it:
"Non-linguists (unless they happen to be physicalists) constantly forget that a speaker is making noise, and credit him with the possession of impalpable 'ideas'. It remains for linguists to show, in detail, that the speaker has no 'ideas', and that the noise is sufficient...".
    Bloomfield, L., 'Language or Ideas', *Language*, 1936, p. 93.
[45] But not on Harris'; cf. Katz, J. J. and Bever, T. G., 'The Fall and Rise of Empiricism', Indiana University Linguistics Club, Bloomington, Indiana, 1974; also to appear in *Toward an Integrated Theory of Linguistic Ability*, eds. T. G. Bever, T. D. Langendoen, and J. J. Katz, Intex/Chandler, New York.
[46] This, for example, is what cases like 'John is easy (eager) to please' and cases like 'Flying planes can be dangerous' show.
[47] Of course, as already suggested, these rules can be interpreted as describing brain mechanisms in the production and recognition of speech if one insists that unobservable linguistic structures have a physicalistic basis.
[48] Quine, W. V. O., 'The Problem of Meaning in Linguistics', p. 49.
[49] *Ibid.*, pp. 48–49.
[50] *Ibid.*, pp. 49–56.
[51] See Katz, J. J., 'Logic and Language: An Examination of Recent Criticisms of Intensionalism', in *Minnesota Studies in the Philosophy of Science*, Vol. 6, ed. by K. Gunderson and G. Maxwell, in press.
[52] From McCawley, J., 'The Role of Semantics in Grammar', *Universals in Linguistic Theory* (ed. by E. Bach and R. T. Harms), Holt, Rinehart & Winston, New York, pp. 134–135.
[53] The sense of 'count' relevant here is 'determine the number of things in the collection' rather than 'include in the sum'.
[54] Quine, W. V. O., *From a Logical Point of View*, p. 56.
[55] Quine, W. V. O., *From a Logical Point of View*, pp. 27–32.
[56] Chomsky, N., *Current Issues in Linguistic Theory*, pp. 60–110.

[57] Harman, G., *Thought*, Princeton University Press, Princeton, 1973, pp. 100–111.

[58] *Ibid.*, p. 104.

[59] *Ibid.*, p. 104.

[60] *Ibid.*, pp. 102–103.

[61] Harman uses the heterogeneity of the resulting set to argue against intensionalists that the only thing that analytic sentences have in common is that they seem analytic to those who believe in analyticity (p. 103). It is certainly illegitimate for Harman, first, to lump such cases together, and then, to complain that analytic sentence (now in the sense of the concocted set consisting of cases like (15) and (15) in addition to cases like (1), (13), and (14)) have nothing in common – except perhaps their seeming analytic to the faithful.

[62] See pages 292–293 of this essay.

[63] Harman, *op cit.*, p. 105.

[64] *Ibid.*, p. 105.

[65] Putnam, H. 'Is Semantics Possible?', *Metaphilosophy* 1 (1970), 187–201. My reply is developed more fully in Katz, J. J., 'Logic and Language'.

[66] Although 'cat' doesn't literally apply to such devices, in the science fiction story we are imagining true, people referred to these devices with the word 'cat' prior to learning the truth. But this is no more a mystery than the fact that Nixon is referred to with 'that honest man in the White House'. Again, cf. 'Logic and Language'.

[67] Thompson, R. F., *Introduction to Biopsychology*, Albion Publishing Company, San Francisco, 1973, pp. 154–155.

[68] Cf. the versions of this argument in Katz, J. J., *The Philosophy of Language*, pp. 261–268, and in Fodor, J. A., *The Language of Thought* (to appear).

[69] Goodman's own solution to the new riddle makes sense only if what he has to say about the old riddle is correct. On this, see Katz, J. J., *The Problem of Induction and Its Solution*, University of Chicago Press, Chicago, 1962, pp. 46–49.

[70] It may be worth pointing out that we can make sense of statements such as that I and my dog have the same belief, e.g., that its food is behind the door, and further, that the behavior of animals, deaf-mutes, and infants sometimes enables us to infer that they are comparable to normal humans in cognitive ability; cf. Lenneberg, E. H., *Biological Foundations of Language*, John Wiley & Sons, New York, 1967, pp. 357ff.

[71] Harman, *op. cit.*, pp. 107–108.

[72] *Ibid.*, pp. 109–110.

[73] *Ibid.*, p. 109.

[74] Two sentences are the same in meaning just in case they have all semantic properties and relations in common.

[75] *Ibid.*, pp. 108–109.

[76] Similarly, pronunciation and the deep levels of phonological structure can be taken as that aspect of grammatical structure that determines properties and relations like rhyme, alliteration, meter, etc.,

[77] Katz, J. J., *Semantic Theory*, pp. 76–77, pp. 285–286.

[78] Harman, *op. cit.*, p. 109.

[79] Chomsky, N., *Aspects of the Theory of Syntax*, MIT Press, Cambridge, 1965, pp. 3–4.

[80] *Ibid.*, pp. 10–15.

[81] Katz, J. J. and Bever, T. B., 'The Fall and Rise of Empiricism'.