I do consider myself as behavioristic as anyone in his right mind could be.

—W. V. Quine, “Linguistics and Philosophy”

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I. INTRODUCTION

Willard Van Orman Quine (b. 1908) is one of the most influential analytic philosophers of the twentieth century, placing him squarely in the company of Bertrand Russell, Ludwig Wittgenstein, and Rudolf Carnap. Beginning in the
early 1930s, Quine has published countless journal articles and some 21 books, including *Word and Object* (1960), *Roots of Reference* (1974), *From a Logical Point of View* (1980a), *Theories and Things* (1981c), *The Time of My Life* (an autobiography, 1985b), *Pursuit of Truth* (1992), and *From Stimulus to Science* (1995). He has made contributions to logic and set theory, philosophy of logic and set theory, philosophy of language, philosophy of mind, metaphysics, epistemology, and, even, ethics. However, it would not be amiss to say that over the past six decades Quine has been preoccupied with exploring the relations obtaining among mind, world, and language. Moreover, he has done so from a behavioristic point of view. In this chapter, my chief concern is to ascertain the nature and scope of that point of view. But before doing so, I would do well to set the stage by looking at some of the general features of Quine's philosophy, in particular at his naturalism, physicalism, empiricism, and fallibilism. As we shall see, Quine's empiricism and his behaviorism are intimately connected.

**II. STAGE SETTING**

Quine is a staunch advocate of naturalism, a view comprised of two theses: (1) *there is no adequate first philosophy*—that is, no apriori or experiential ground outside of science upon which science can either be justified or rationally reconstructed, as was the wont of traditional epistemologists; (2) *science is the measure of what there is* as well as *the measure of how we come to know what there is*.

If there is no adequate first philosophy, as the naturalist maintains, then epistemologies as disparate as Descartes's and Carnap's fail of their purpose. While Descartes sought to deduce the truths of nature from a foundation of clear and distinct ideas, (early) Carnap sought to rationally reconstruct scientific discourse from a foundation of elementary experiences. Quine advances a series of philosophical arguments and considerations designed to establish the untenability of Descartes-like and Carnap-like epistemic programs. In short, Quine argues that Descartes-like efforts fail because not even the truths of arithmetic, let alone all the truths of nature, can be deduced from a foundation of clear and distinct ideas, and Carnap-like efforts fail because a theory's theoretical terms cannot be defined, even contextually, in observation terms (See Quine and Ullian, 1978). Such reductionism is impossible if, as Quine maintains, many or most individual sentences of scientific theories do not possess their own observable confirming and infirming conditions in terms of which such reductive definitions must be framed (See Quine, 1980a). The negative (naturalistic) conclusion Quine draws from all this is that traditional, foundationalist epistemology must be abandoned; the quest for a nonscientific epistemic ground for science is a will-o-the wisp.

However, all is not lost with the passing of first philosophy, for natural science remains, and, according to Quine, natural science offers not only the currently best theory of what exists (ontology), it also offers the currently best the-
ory of how we come to know what exists (epistemology). In particular, the currently best theory of what exists supports physicalism, while the currently best theory of how we come to know what exists supports empiricism.

Quine's advocacy of physicalism means different things in different contexts. In philosophy of language it indicates his repudiation of mentalistic semantics; in philosophy of mind it indicates his repudiation of mind–body dualism; in ontology it indicates his acceptance of the doctrine that "nothing happens in the world, not the flutter of an eyelid, not the flicker of a thought, without some redistribution of microphysical states" (Quine, 1981b, p. 98). Still, Quine's ontological physicalism countenances more than physical states; it also countenances the abstract objects of applied mathematics, namely, classes. Quine's ground for admitting these abstract objects to his physicalist ontology is that science simply cannot proceed without them.

Quine's advocacy of empiricism endorses the following two tenets: "whatever evidence there is for science is sensory evidence . . . [and] all inculcation of meanings of words must rest ultimately on sensory evidence" (Quine, 1969, p. 75). These two tenets of empiricism are, according to Quine, findings of science: "Science itself teaches that there is no clairvoyance; that the only information that can reach our sensory surfaces from external objects must be limited to two-dimensional optical projections and various impacts of air waves on the eardrums and some gaseous reactions in the nasal passages and a few kindred odds and ends" (Quine, 1974, p. 2).

So, Quine's commitments to physicalism and to empiricism are both based on current scientific findings. But Quine is also a fallibilist regarding science; he recognizes that science is changeable and, therefore, it conceivably might someday withdraw its support for physicalism and/or empiricism. Thus, Quine's commitments to physicalism and to empiricism are, at the same time, firm but tentative.

As we have seen, Quine rejects traditional epistemology (i.e., first philosophy). However, he does not abandon epistemology altogether. Rather, he advocates "an enlightened persistence . . . in the original epistemological problem" (Quine, 1974, p. 2), the problem of relating evidence to theory. Quine calls this enlightened persistence naturalized epistemology. The naturalized epistemologist is enlightened because, having given up the quest for a first philosophy outside of science, he or she recognizes the legitimacy of using the findings of psychology and allied sciences (e.g., neurology, genetics, psycholinguistics) for constructing an answer to the central question of epistemology, namely, "How do we acquire our overall theory of the world and why does it work so well?"

One final bit of stage setting remains: It is very important to understand that, for Quine, natural science and empiricism reciprocally contain one another. Natural science contains empiricism on at least three grounds: (1) empiricists presuppose (they do not prove) the existence of the external world; (2) the two tenets of empiricism (noted previously) are themselves findings of natural science; and (3) sensory receptors, the human subject's contact points with the
world (according to empiricists) are themselves physical objects belonging to the ontology of natural science, that is, to anatomy and physiology. Natural science is contained in empiricism in the sense that the ontology of natural science is a projection from the very same kind of sensory data (e.g., light rays, molecules, nerve endings, and so on) accorded to the human subject of the epistemologist’s study. But this last reflection, Quine notes:

Arouses certain logical misgivings: for is not our very talk of light rays, molecules, and men then only sound and fury, induced by irritation of our surfaces and signifying nothing? The world view [ontology] which lent plausibility to this modest account of our knowledge is, according to this very account of our knowledge [empiricism], a groundless fabrication. (Quine, 1976b, p. 229)

Such a conclusion is nothing short of a reinstatement of the starting point of first philosophy (or the ending point of skepticism), and nothing could be farther from the spirit of Quine’s naturalism: “the recognition that it is within science itself, and not in some prior philosophy, that reality is to be identified and described” (Quine 1981d, p. 21). Thus, in pursuing their account of the relation between evidence and theory, naturalized epistemologists are free to talk of light rays, molecules, nerve endings, and so on, for these things belong to the ontology of current science. Moreover, their epistemological findings regarding the sensory evidence for science do not as a matter of course repudiate the initial ontological lore within which those considerations are articulated: “On the contrary, our initially uncritical hypothesis of a physical world gains pragmatic support from whatever it contributes towards a coherent account of lorebearing or other natural phenomena” (Quine, 1976b, p. 230).

In sum, Quine repudiates foundationalist epistemology, rationalist or empiricist, traditional or contemporary. In its place he advocates the scientifically informed study of the acquisition of science. Thus, for the Quinian naturalist, science not only settles the question of what exists (ontology), it provides the evidential constraints for any account of how we come to know what exists (epistemology). Moreover, the currently best ontology is physicalism, the currently best epistemology is empiricism. Keeping this perspective in mind, we are now prepared to explore the role that behaviorism plays in Quine’s exploration of the relations obtaining among mind, world, and language.

III. QUINE’S BEHAVIORISM/EMPIRICISM

Not only does Quine articulate more or less philosophical arguments and considerations in support of naturalism, physicalism, empiricism, and fallibilism, he goes on to sketch a more or less scientific (empiricistic) account of the relation of evidence to theory. It is in regard to this epistemological endeavor that he pro-
fesses to be as behavioristic as anyone in his right mind could be. But what, precisely, does Quine mean by behaviorism? As we shall see, he construes the term broadly; in particular, he does not define behaviorism in terms of conditioned response:

When I dismiss a definition of behaviorism that limits it to conditioned response, am I simply extending the term to cover everyone? Well, I do think of it as covering all reasonable men. What matters, as I see it, is just the insistence upon couching all criteria in observation terms. By observation terms I mean terms that are or can be taught by ostension, and whose application in each particular case can therefore be checked intersubjectively. Not to cavil over the word "behaviorism," perhaps current usage would be best suited by referring to this orientation to observation simply as empiricism; but it is empiricism in a distinctly modern sense, for it rejects the naïve mentalism that typified the old empiricism. It does still condone the recourse to introspection that Chomsky has spoken in favor of, but it condones it as a means of arriving at conjectures or conclusions only insofar as these can eventually be made sense of in terms of external observation. (Quine, 1976a, p. 58)

And what is this distinctly modern sort of empiricism to which Quine alludes?

Empiricism of this modern sort, or behaviorism broadly so called, comes of the old empiricism by a drastic externalization. The old empiricist looked inward upon his ideas; the new empiricist looks outward upon the social institution of language. Ideas dwindle to meanings, seen as adjuncts of words. The old inner-directed empiricists—Hobbes, Gassendi, Locke, and their followers—had perforce to formulate their empiricist standard by reference to ideas; and they did so by exalting sense impressions and scotching innate ideas. When empiricism is externalized, on the other hand, the idea itself passes under a cloud; talk of ideas comes to count as unsatisfactory except insofar as it can be paraphrased into terms of dispositions to observable behavior. (Quine, 1976a, p. 58)

Quine’s construal of behaviorism (broadly so called) as externalized empiricism is closely connected to his views regarding the nature of the explanation of human behavior. He distinguishes “three levels of purported explanation, three degrees of depth: the mental, the behavioral, and the physiological” (Quine, 1975a, p. 87). Of these three, the mental is the most superficial, “scarcely deserving the name explanation. The physiological is the deepest and most ambitious, and it is the place for causal explanations” (Quine, 1975a, p. 87). But, for the present, it is the behavioral level that Quine thinks is the most useful in theorizing about language and mind:

Until we can aspire to actual physiological explanation of linguistic activity in physiological terms, the level at which to work is the middle one; that of dispositions to overt behavior. Its virtue is not that it affords causal explanations but that it is less likely than the mentalistic level to engender an illusion of being more explanatory that it is. The easy familiarity of mentalistic talk is not to be trusted. (Quine, 1975a, p. 95)

As this quotation makes clear, Quine regards behavioral explanation as a temporary measure that might hasten the day when (if ever) actual physiological explanation becomes available.
Competent in six languages, and familiar with others, Quine always has had a passion for languages and for their study, antedating even his passion for philosophy. Even so, Quine’s writings on meaning, synonymy, analyticity, language-learning, reference, and translation emanate more from his passion for epistemology than from his passion for languages and linguistics. Furthermore, his approach to the study of these topics is consistently behavioristic; indeed, he argues that one has no choice in the matter:

In psychology one may or may not be a behaviorist, but in linguistics one has no choice. Each of us learns his language by observing other people’s verbal behavior and having his own faltering verbal behavior observed and reinforced or corrected by others. We depend strictly on overt behavior in observable situations. As long as our command of our language fits all external checkpoints, where our utterance or our reaction to someone’s utterance can be appraised in the light of some shared situation, so long all is well. Our mental life between checkpoints is indifferent to our rating as a master of the language. There is nothing in linguistic meaning beyond what is to be gleaned from overt behavior in observable circumstances. (Quine, 1992, pp. 37–38)

The last sentence of this quotation from Pursuit of Truth expresses a behavioristic corollary of the equally behavioristic opening lines from the preface to Word and Object: “Language is a social art. In acquiring it we have to depend entirely on intersubjectively available cues as to what to say and when” (Quine, 1960, p. ix). In Word and Object Quine set out to see just how much behavioristic sense can be made of meaning, synonymy, analyticity, language-learning, reference, and translation. Thus, we can best glean a sense of the role that behaviorism plays in Quine’s philosophy of language by surveying some of his findings.

A. MEANING, SYNONYMY AND ANALYTICITY

Prior to the publication of Word and Object, Quine scrutinized various intensional accounts of meaning, synonymy, and analyticity in his celebrated “Two Dogmas of Empiricism” (1980b) and found them wanting. Therein he dismissed meanings construed as entities on the grounds that such posits are unexplanatory and even obfuscating. He went on to dismiss synonymy (sameness of meaning) and analyticity (true in virtue of meaning) because of their lack of clarity. True, synonymy and analyticity can be explained in terms of one another, but neither can be explained in terms of dispositions to verbal behavior. When critics complained that Quine’s standard of clarity for analyticity and synonymy are unreasonably high, he responded by saying that he asks “no more, after all, than a rough characterization in terms of dispositions to verbal behavior” (Quine, 1960, p. 207). Consistent with his brand of behaviorism, Quine insists merely on a rough characterization and not a full definition of analyticity or synonymy in terms of dispositions to verbal behavior.
Quine's treatment of semantics is not only negative, it is also constructive. In *Word and Object* (and in several subsequent writings), Quine articulates a scientific (behavioristic) semantics (See Quine, 1981e). The cornerstone of this scientific semantics is the behavioristic method of querying sentences for a subject's assent or dissent. "Without this device there would be no hope of handing language down the generations, nor any hope of breaking into newly discovered languages. It is primarily by querying sentences for assent and dissent that we tap the reservoirs of verbal disposition" (Quine, 1975a, p. 88).

Quine calls the class of patterns of a person's activated nerve endings that would prompt a person's assent to a queried sentence the affirmative stimulus meaning (for that sentence, person, and time). The class that would prompt dissent he calls the negative stimulus meaning (for that sentence, person, and time). The ordered pair of affirmative and negative stimulus meanings for a sentence constitutes its stimulus meaning simpliciter (for a person, at a time). Note, too, that the affirmative and negative stimulus meanings for a sentence do not determine one another; there will be stimulus patterns belonging to neither; in other words, the query of some sentences, under certain stimulus conditions, would prompt neither assent nor dissent.

Quine divides, again along behavioristic lines, the class of declarative English sentences into standing sentences and occasion sentences. Roughly, standing sentences are those to which a subject would assent or dissent each time they are queried without their being accompanied each time by a prompting nonverbal stimulus. For example, most English speakers would assent to each query of "There have been black dogs?" without being prompted each time by some black dog–presenting pattern of stimulation. Not so for the occasion sentence "That dog is black"; here each elicited assent must be accompanied anew by a prompting, black dog–presenting pattern of stimulation.

Among the class of standing sentences are those Quine calls eternal sentences. The defining characteristic of such sentences is that their truth values remain permanently fixed:

- An eternal sentence may be general in import, or it may report a specific local event. In the latter case it will gain its specificity through explicit use of names, dates, or addresses.
- The eternal sentences most characteristic of scientific theory are of course general.

(Quine, 1974, p. 63)

Among the class of occasion sentences are those Quine calls observation sentences. Quine has offered different characterizations of observation sentences at different times, but in *Word and Object* he wrote: "In behavioral terms, an occasion sentence may be said to be the more observational the more nearly its stimulus meanings for different speakers tend to coincide" (Quine, 1960, p. 43).

Given his behavioristic notion of stimulus meaning and his behavioristic classification of sentences, Quine goes on to construct his scientific semantics. He fashions, so far as is possible, behavioristic parodies of the repudiated intensional notions of meaning, synonymy, and analyticity. For example, Quine explains that two occasion sentences are cognitively synonymous for a person if
whenever he would assent or dissent to the one he would do likewise to the other (i.e., when the two occasion sentences have the same stimulus meaning for that person). Two such sentences are cognitively synonymous for the entire linguistic community if found to be cognitively synonymous for each member of the community. Also, "a sentence is analytic if everybody learns that it is true by learning its words" (Quine, 1974, p. 79). However, Quine is the first to point out that none of these behavioristic parodies will bear the philosophical weight that some traditional epistemologists wanted the parodied intensional forerunners to bear. For example, Quine's behavioristic notion of analyticity cannot explain the putative necessity of mathematics—as the intensional notion of analyticity was thought by some logical positivists to do (See Quine, 1992).

As already noted, Quine has characterized observation sentences differently in different places. For example, In *Roots of Reference* he wrote:

> A sentence is observational insofar as its truth value, on any occasion, would be agreed to by just about any member of the speech community witnessing the occasion . . . . What is worth noticing is that we have here a behavioral criterion of what to count as an observation sentence (Quine, 1992, p. 39).

In "On Empirically Equivalent Systems of the World" (1975c), he wrote: "The really distinctive trait of observation terms and sentences is to be sought not in concurrence of witnesses but in ways of learning. Observational expressions are expressions that can be learned ostensively" (Quine, 1975c, p. 316). In "Empirical Content" (1981), he wrote:

> An observation sentence is an occasion sentence that the speaker will consistently assent to when his sensory receptors are stimulated in certain ways, and consistently dissent from when they are stimulated in certain other ways. If querying the sentence elicits assent from the given speaker on one occasion, it will elicit assent likewise on any other occasion when the same total set of receptors is triggered; and similarly for dissent. This and this only is what qualifies sentences as observation sentences for the speaker in question, and this is the sense in which they are the sentences most directly associated with sensory stimulation (Quine, 1981a, p. 25).

Critics have claimed that some of these characterizations of observation sentences are inconsistent with one another. For example, Lars Bergström points out that according Quine's 1981 characterization,

> a sentence may be observational for every speaker in a community, even though the speakers disagree about its truth value on many occasions. For example, some people may assent to "It's cold" and "That's a rabbit" on occasions when others dissent from these sentences. (People are not equally sensitive to cold, and many of us might easily mistake a hare for a rabbit.) In earlier writings, Quine had a different conception of an observation sentence: he required precisely that "its truth value, on any occasion, would be agreed to by just about any member of the speech community witnessing the occasion." However, this requirement is hardly consistent with his examples, and he has since claimed that the "really distinctive trait of observation terms and sentences is to be sought not in concurrence of witnesses but in ways of learning. Observational expressions are expressions that can be learned ostensively" (Bergström, 1990, p. 39).
Getting clear on the nature of observation sentences is an important matter for Quine, since they play crucial roles in his scientific semantics and in his epistemology (See Quine, 1993). In his semantics, they are the kind of sentences that can be learned in isolation and whose meanings are pretty well captured by stimulus meaning (“all inculcation of meanings of words must rest ultimately on sensory evidence”). In his epistemology, they are the kind of sentences that state the intersubjectively appreciable evidence for science (“whatever evidence there is for science is sensory evidence”).

Quine responded to Bergström in “Three Indeterminacies” (1990b) and, more fully, in Pursuit of Truth, where he wrote:

As for the lacuna that Bergström noted . . . I retain my 1981 definition of observation sentence for the single speaker, and then account a sentence observational for a group if it is observational for each member and if each would agree in assenting to it, or dissenting, on witnessing the occasion of utterance. We judge what counts as witnessing the occasion . . . by projecting ourselves into the witness’s position. (Quine, 1992, p. 43)

This talk of projecting ourselves into the witness’s position,—that is, talk of empathy or Verstehen—has always been a part of Quine’s thinking about language-learning and the propositional attitudes. Only recently, however, has he emphasized the role that empathy plays in scientific semantics. This is a point to which we shall return in discussing language-learning and translation.

B. LANGUAGE-LEARNING

According to Quine, “language is a social art. In acquiring it we have to depend entirely on intersubjectively available cues as to what to say and when” (Quine, 1960, p. ix). In Word and Object Quine sketches a largely Skinnerian theory of early language-learning, wherein babbling, mimicry, conditioning, innate quality spaces, and ostension each play a role. When exposed to a linguistic environment, the normal child (who is endowed with instincts for babbling and mimicry, as well as a set of innate quality spaces needed for detecting and systematizing salient features of his environment, and who is motivated by stimulations encoded with pleasure and pain) begins learning his first language.

The initial method of his learning is ostension. Through babbling or mimicry, the child utters a sound, say that of “mama,” when Mama is present. Mama rewards this chance occurrence with a coo, a smile, or even a pat or a hug. The child is thus reinforced to repeat the performance. Such learning requires observationality. For example, in learning (or in teaching) ostensively the one-word sentence “Fido,” both the teacher and the pupil must see Fido’s present ostended surface, and at least one of them must also see that the other sees Fido’s surface at the time. Meeting this latter condition involves empathy, or Verstehen.

Before long, by observing his elders’ overt behavior under intersubjectively appreciable environmental cues, the child catches on to the unconscious trick of associating sentences (as unstructured wholes) with his own appropriate nonver-
bal stimulations. In short, the child learns, inductively, the range of stimulus conditions governing the correct use of particular sentences. The psychological mechanism underlying the method of ostension approximates direct conditioning. However, the conditioning involved is not the simplest kind, for the child does not utter "Mama" or "Fido" whenever he sees, respectively, Mama or Fido. However, once having learned "Mama" and "Fido" he would assent to them when queried in Mama's or Fido's respective salient presences.

Once the child reaches this stage, his further learning of language becomes independent of operant behavior . . . ; and then, with little or no deliberate encouragement on the part of his elders, he proceeds to amass language hand over fist. (Quine, 1960, p. 82)

Quine acknowledges that

Skinner, whose ideas the foregoing sketch is meant to follow in essential respects is not without his critics. But, at worst we may suppose that the description, besides being conveniently definite, is substantially true of a good part of what goes into the first learning of words. Room remains for further forces. (Quine, 1960, p. 82)

These further forces allow for a second general method for learning language, what Quine calls analogic synthesis. Sentences learned by this method are built up from learned parts by analogy with the ways in which those parts have previously been noticed to occur in other sentences—sentences that themselves may or may not have been learned as unstructured wholes. However, unlike the case of ostension, virtually nothing is known about the further psychological mechanisms underlying analogic synthesis.

In “Linguistics and Philosophy,” Quine emphasizes various features of the behavioristic theory of language-learning he had sketched in Word and Object eight years earlier. First, he emphasizes that behaviorism and nativism are not incompatible:

The behaviorist is knowingly and cheerfully up to his neck in innate mechanisms of learning-readiness. The very reinforcement and extinction of responses, so central to behaviorism, depends on prior inequalities in the subject's qualitative spacing, so to speak, of stimulations. . . . Innate biases and dispositions are the cornerstone of behaviorism, and have been studied by behaviorists. (Quine, 1976a, p. 57)

Second, he reiterates features of his 1960 theory, namely, that quality space is innate, but that more innate structure is required to explain language-learning: "The qualitative spacing of stimulations is as readily verifiable in other animals, after all, as in man; so the language-readiness of the human infant must depend on further endowments" (Quine, 1976a, p. 57). These further "as yet unknown innate structures, additional to mere quality space, that are needed in language-learning, are needed specifically to get the child over the great hump that lies beyond ostension, or induction" (Quine, 1976a, p. 58). And what, according to Quine, is the fate of behaviorism should the processes involved turn out to be very unlike the classical process of conditioning? "This would be no refutation of behaviorism, in a philosophically significant sense of the term; for I see no
interest in restricting the term ‘behaviorism’ to a specific psychological schematism of conditioned response” (Quine, 1976a, p. 57).

Six years after “Linguistics and Philosophy,” in Roots of Reference, Quine further refines and extends his 1960 theory of language-learning. Talk of patterns of activated nerve endings gives way to talk of global episodes of activated nerve endings and of the receptual similarity of episodes; talk of quality spaces gives way to talk of the perceptual similarity and of the behavioral similarity of episodes. Moreover, Quine extends his 1960 theory by speculating on the psychological mechanisms underlying analogic synthesis, mechanisms by which a child could learn to refer to substances, bodies, physical objects, and, eventually, abstract objects. More precisely, he speculates on how a child, or the race, could acquire first-order predicate logic and set theory. First-order predicate logic encapsulates in pristine form the referential mechanisms of English, and sets are abstract objects (or universals) par excellence. In extending his theory in Roots of Reference in this way, Quine does not abandon his behavioristic scruples, but he acknowledges that in the final—speculative—third of the book “the behaviorism dwindles” (Quine, 1990a, p. 291) but he adds reflectively:

Where I have insisted on behaviorism is in linguistics, because of how language is learned. I would hope and expect that behavioristic rigor could also be brought in pretty much along the course of the story sketched in Roots of Reference, but I was struggling with what I felt were more significant problems. I expect also that some notions would resist full reduction to behavioral criteria. I would never, early or late, have aspired to the ascetic adherence to operational definitions that Bridgman envisaged. Science settles for partial criteria and for partial explanation in terms of other partially explained notions. (Quine, 1990a, p. 291)

Thus, Quine’s speculations in Roots of Reference about how referential language emerges (for the individual or the race) do not represent a real retreat from his previous commitment to behaviorism in the study of language-learning.

C. TRANSLATION AND INDETERMINACY

In Chapter 2 of Word and Object, Quine articulates his famous thought experiment of radical translation where a linguist is confronted with the task of translating a totally alien human language. All that the linguist has to go on in constructing his Native-to-English translation manual is the natives’ behavior, verbal and otherwise. A rabbit scurries by, apparently prompting a native to utter “Gavagai,” the linguist forms the tentative inductive hypothesis that “Gavagai” can be translated as “Rabbit.” Since it is assumed that the linguist has already ascertained the native expressions for assent and dissent, the linguist can query “Gavagai” of the native as appropriate occasions present themselves. If, upon further testing all goes well, then the linguist might learn that the native’s stimulus meaning for “Gavagai” is approximately the same as his own for “Rabbit.” If, however, upon further testing they tend to diverge, then the linguist may have to
give up his inductive hypothesis and try out some other candidate as translation of “Gavagai.” It would appear that the question whether the stimulus meanings for a pair of observation sentences, such as “Gavagai” and “Rabbit,” are or are not approximately the same is an objective, empirical matter of fact. But there is a rub.

Let us assume that the translation of the sentence “Gavagai” as “Rabbit” has held up under testing. What theoretical sense can be made of the claim that the native’s stimulus meaning for “Gavagai” is approximately the same as the linguist’s stimulus meaning for “Rabbit”? In *Roots of Reference* Quine calls this the homology question. Answering this question is problematic because stimulus meaning is defined relative to each individual’s own nerve endings and no two people’s nerve endings are even approximately the same. In *Roots of Reference* Quine deals with the homology question as follows:

In practice, of course, psychologists find no difficulty in such intersubjective equating of stimulus situations; they simply see that there are no physical differences that are apt to matter. We shall do well to take the same line, having just noted in passing that there is more to the equating of stimulations than meets the eye, or indeed perhaps rather less than seems to do so. (Quine, 1974, p. 24)

But as theorists, what are we to do apart from practice? There the homology question continued to rankle until Quine addressed the issue in “Three Indeterminacies” and, more fully, in *Pursuit of Truth*. In these writings Quine modifies his thought experiment of radical translation so as to avoid raising the homology question. Thus, instead of saying that the native’s stimulus meaning of “Gavagai” is approximately the same as the linguist’s for “Rabbit,” one can make do with talking solely of the linguist’s stimulus meaning:

The observation sentence ‘Rabbit’ has its stimulus meaning for the linguist and ‘Gavagai’ has its for the native, but the affinity of the two sentences is to be sought in the externals of communication. The linguist notes the native’s utterance of ‘Gavagai’ where he, in the native’s position, might have said ‘Rabbit.’ So he tries bandying ‘Gavagai’ on occasions that would have prompted ‘Rabbit,’ and looks to natives for approval. Encouraged, he tentatively adopts ‘Rabbit’ as translation. (Quine, 1992, p. 42)

In short, the native’s stimulus meaning for “Gavagai” is dropped, and the linguist’s empathy with the native’s perceptual situation is added. The homology question is rendered otiose. Moreover, this tact renders the linguist’s imagined strategy in the thought experiment of radical translation both more realistic and more in tune with Quine’s long-held view of the child’s strategy in the normal language-learning context:

Empathy dominates the learning of language, both by child and by field linguist. In the child’s case it is the parent’s empathy. The parent assesses the appropriateness of the child’s observation sentence by noting the child’s orientation and how the scene would look from there. In the field linguist’s case it is empathy on his own part when he makes his first conjecture about ‘Gavagai’ on the strength of the native’s utterance and orientation, and again when he queries ‘Gavagai’ for the native’s assent in a promising subsequent situation. We all have an uncanny knack for empathizing another’s perceptual situa-
tion, however ignorant of the physiological or optical mechanisms of his perception. (Quine, 1992, p. 42)

Where does this new wrinkle, this talk of the role that empathy plays in radical translation, leave Quine’s behaviorism? Recall that Quine has steadfastly maintained that his form of behaviorism (externalized empiricism) condones recourse to introspection as a means of arriving at conjectures or conclusions only insofar as these can eventually be made sense of in terms of external observation. Are the linguist’s reliance on empathy to translate a native sentence and the parent’s reliance on empathy to teach the child a sentence such forms of introspection? Can the linguist and the parent, even in principle, objectively test their respective conjectures? Each such “test” would seem always to rely on a further instance of empathy.

Be that as it may, soon in his task of constructing a Native-to-English translation manual, the linguist rises above such inductive hypotheses regarding translations of native observation sentences such as “Gavagai” and formulates analytical hypotheses that allow for translating native words and theoretical sentences that are remote from stimulus meanings. Quine maintains that, unlike inductive hypotheses (real hypotheses), analytical hypotheses are nonfactual. Still, it is empathy, again, that guides the linguist in formulating his analytical hypotheses; “though there he is trying to project into the native’s associations and grammatical trends rather than his perceptions. And much the same must be true of the growing child” (Quine, 1992, p. 43).

With the advent of these nonfactual analytical hypotheses, translation of theoretical sentences becomes indeterminate. Different linguists formulating different sets of analytical hypotheses could construct different Native-to-English manuals of translation such that the manuals might be indistinguishable in terms of any native behavior that they give reason to expect, and yet each manual might prescribe some translations that the other translator would reject. Such is the thesis of indeterminacy of translation. (Quine, 1987, p. 8)

As Quine makes explicit, there is a behavioristic source of the indeterminacy thesis:

Critics have said that the thesis is a consequence of my behaviorism. Some have said that it is a *reductio ad absurdum* of my behaviorism. I disagree with this second point, but I agree with the first. I hold further that the behaviorist approach is mandatory. In psychology one may or may not be a behaviorist, but in linguistics one has no choice. Each of us learns his language by observing other people’s verbal behavior and having his own faltering verbal behavior observed and reinforced or corrected by others. We depend strictly on overt behavior in observable situations.

...,

There is nothing in linguistic meaning, then, beyond what is to be gleaned from overt behavior in observable circumstances. (Quine, 1987, p. 5)
Since "the only facts of nature that bear on the correctness of translation are speech dispositions" (Quine, 1986a, p. 429), then "even a full understanding of neurology would in no way resolve the indeterminacy of translation" (Quine, 1986b, p. 365).

And not only is there indeterminacy of theoretical sentences, there is also indeterminacy of reference (or, inscrutability of reference). The point here is that stimulus meaning does not fix reference. Knowing that the native's occasion sentence "Gavagai" is translatable into English as the occasion sentence "Rabbit" does not settle the question whether "gavagai" is a native term, and if it is, what it refers to. The only way to settle these issues is against a background of some nonunique set of analytical hypotheses (which, as already noted, are by their very nature nonfactual). Thus, consistent with the speech dispositions of all concerned, one linguist might translate "gavagai" as a concrete general term denoting rabbits, while another linguist translates "gavagai" as an abstract singular term designating rabbithood. And, just as with the indeterminacy of translation of theoretical sentences, both of these translations of "gavagai" are fully correct. The question of which (if either) of these translations captures what the native intended by "gavagai" is spurious; there is simply no fact of the matter.

In sum, Quine's behaviorism permeates his philosophy of language. It shapes his treatment of meaning, synonymy, analyticity, language-learning, reference, and translation. Moreover, it shapes his general epistemology. We have noted that he rejects foundationalist epistemology (first philosophy), but he remains interested in the empirical study of the epistemological relation of evidence to theory. Breaking with the empiricist tradition, though, Quine calls for externalizing that study—that is, for construing the relation of evidence to theory as a relation between observation sentences and theoretical sentences. For the externalized epistemologist, the theory of language-learning takes on added significance:

We see, then, a strategy for investigating the relation of evidential support, between observation and scientific theory. We can adopt a genetic approach, studying how theoretical language is learned. For the evidential relation is virtually enacted, it would seem, in the learning. This genetic strategy is attractive because the learning of language goes on in the world and is open to scientific study. It is a strategy for the scientific study of scientific method and evidence. We have here a good reason to regard the theory of language as vital to the theory of knowledge. (Quine, 1975b, pp. 74–75)

Hence my earlier claim that Quine's writings on meaning, synonymy, analyticity, language-learning, reference, and translation emanate more from his passion for epistemology than from his passion for languages and linguistics.

V. PHILOSOPHY OF MIND

If Quine's interest in epistemology shapes his philosophy of language, so his philosophy of language shapes his philosophy of mind. Quine says in "Mind and Verbal Dispositions" that he believes in the affinity of mind and language,
though he wants to keep the relation right side up. John B. Watson’s theory of thought, namely that most thought simply is incipient speech, however inadequate, has matters right side up: “A theory of mind can gain clarity and substance, I think, from a better understanding of the workings of language, whereas little understanding of the workings of language is to be hoped for in mentalistic terms” (Quine, 1975a, p. 84). And, after surveying his theories of language-learning and linguistic meaning, Quine concludes “Mind and Verbal Dispositions” with an endorsement of the identity theory of mind:

Mind consists in dispositions to behaviour, and these are physiological states. We recall that John B. Watson did not claim that quite all thought was incipient speech; it was all incipient twitching of muscles, and mostly of speech muscles. Just so, I would not identify mind quite wholly with verbal disposition; with Ryle and Sellars I would identify it with behavioural dispositions, and mostly verbal. And then, having construed behavioural dispositions in turn as physiological states, I end up with the so-called identity theory of mind: mental states are states of the body. (Quine, 1975a, p. 94)

Quine’s philosophy of mind can be briefly summarized as follows: Most everyday uses of mentalistic terms (e.g., belief, desire, and so on) have empirical content, though many uses of the same terms do not. We apply mentalistic terms having empirical content to persons other than ourselves largely (but not always) on the basis of those persons’ behavioral symptoms. This follows from the way such terms are learned: “such terms are applied in the light of publicly observable symptoms: bodily symptoms strictly of bodily states. . . . Without the outward signs to begin with, mentalistic terms could not be learned at all” (Quine, 1985a, pp. 5–6). However, such behavioral symptoms are neither necessary nor sufficient for ascribing mentalistic terms to other persons in particular instances since mental states do not always manifest themselves in behavior and since mentalistic terms are vague. “Other grounds for ascribing beliefs [for example] may be sought unsystematically by probing the subject’s past for probable causes of his present state of mind, or by seeing how he will defend his purported belief when challenged” (Quine, 1985a, p. 7). On the other hand, in ascribing mentalistic terms to ourselves we can rely on introspection: “introspection may be seen as a witnessing to one’s own bodily condition, as in introspecting an acid stomach, even though the introspector be vague on the medical details” (Quine, 1960, pp. 264–265). (Thus does Quine’s brand of behaviorism reserve a role of introspection in both his philosophy of language and his philosophy of mind.)

When mentalistic ascriptions (grounded on either behavioral symptoms or introspection) have empirical content, they do not refer to behavior; rather, they refer to dispositions, mostly verbal ones. And, since Quine construes such dispositions as physiological states of the organism, “it is these states that the [contentful] mental terms may be seen as denoting” (Quine, 1985a, p. 6).

Quine has called this theory of mind the identity theory, but he has also referred to it as the repudiation theory. What is the difference? None, according to Quine: “In either case the states of nerves are retained, mental states in any other
sense are repudiated, and the mental terms are thereupon appropriated to states of nerves” (Quine, 1985a, p. 6). Even so, Quine prefers the repudiation theory over the identity theory. He does so because the identity theory is so easily abused:

For, product though the identity theory is of hard-headed materialism, we must beware of its sedative use to relieve intellectual discomfort. We can imagine someone appealing to the identity theory to excuse his own free and uncritical recourse to mentalistic semantics. We can imagine him pleading that it is after all just a matter of physiology, even if no one knows quite how. This would be a sad irony indeed, and the repudiation theory has the virtue, over the identity theory, of precluding it. (Quine, 1975a, p. 95)

However, even accepting the repudiation theory there are some dispositions to behavior that are more explanatory than others. “The ones that we should favour, in explanations, are the ones whose physiological mechanisms seem likeliest to be detected in the foreseeable future” (Quine, 1975a, p. 95).

Even though Quine accepts the repudiation theory, in which contentful mental states refer to physiological states, “there is no presumption that the mentalistic idioms would in general be translatable into anatomical and biochemical terminology of neurology, even if all details of the neurological mechanisms were understood” (Quine, 1985a, p. 6). The uniform structure of the idioms of the propositional attitudes, for example, mask the great heterogeneity of the empirical evidence and neural mechanism. Thus, Quine concludes that “even those of us who do not acquiesce in a metaphysical dualism of mind and body must take the best of what [Donald] Davidson has called anomalous monism” (Quine, 1985a, p. 7).

VI. CONCLUSION

Quine’s brand of behaviorism is less rigorous than some. For example, he rejects any definition of behaviorism that limits it to conditioned response. He is even willing to give up the term as descriptive of his methodology in epistemology, philosophy of language, and philosophy of mind in favor of the term externalized empiricism. Terminology aside, what matters to Quine is that theorists maintain empiricist discipline, couching all criteria for ascribing intensional terms in observation terms—terms that can be taught by ostension. As a further departure from stricter behaviorism, Quine admits roles for introspection and empathy to play in his philosophies of language and mind.

As Quine remarks, one may or may not choose to be a behaviorist in psychology, but one has no choice but to be a behaviorist in linguistics (Quine, 1992). The reason he believes that one has no choice is based on the empirical claim that people learn their language by observing the behavior of other people amid intersubjectively appreciable circumstances. The corollary to this empirical claim about language-learning is the semantical claim that there is nothing to linguistic meaning that cannot be manifested in behavior. But if this is so, then
ascriptions of intensional terms generally can sometimes extend vacuously beyond the behavioral facts. This can happen in theoretical as well as in practical contexts. And, when theories of language-learning, or of semantics, or of mind routinely incorporate such lapses of empiricist discipline, Quine regards them as unscientific. Such is the chief moral of Quine’s right-minded behaviorism.

REFERENCES