

## HOW TO READ "EPISTEMOLOGY NATURALIZED"\*

W.V. Quine is well known for urging the abandonment of epistemology, as traditionally pursued, in favor of the scientific project he calls "naturalized epistemology."<sup>1</sup>

Epistemology, on Quine's view, is a branch of natural science;...[it] should not concern itself with how we should form beliefs but with how we do in fact form them.<sup>2</sup>

[Quine] is generally credited with having started the move toward naturalism in epistemology.... Quine's view appears to leave no room for normative evaluations in epistemology.<sup>3</sup>

**N**o one, to my knowledge, would dispute these characterizations of the burden of Quine's "Epistemology Naturalized"<sup>4</sup> and its role in "the move toward naturalism in epistemology." Yet every student of Quine knows that as early as "Two Dogmas of Empiricism"<sup>5</sup> and as late as *Pursuit of Truth*<sup>6</sup> he pursued normative epistemological investigations that cannot sensibly be seen as falling within the purview of natural science or, more particularly, psychology. Hilary Putnam, the only philosopher I know to have considered how this glaring conflict might be resolved, was forced to throw up his hands; although Quine repeatedly assured him that he did not mean to "rule out the normative," Putnam could find no way of reading "Epistemology Naturalized" except as a proposal to do exactly that.<sup>7</sup> Eventually,

\* I dedicate this essay to the memory of Willard van Orman Quine.

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<sup>1</sup> Ernest Sosa and Jaegwon Kim, eds., *Epistemology: An Anthology* (Malden, MA: Blackwell, 2000), p. 289.

<sup>2</sup> Sven Bernecker and Fred Dretske, eds., *Knowledge: Readings in Contemporary Epistemology* (New York: Oxford, 2000), p. 233.

<sup>3</sup> John L. Pollock and Joseph Cruz, eds., *Contemporary Theories of Knowledge* (Lanham, MD: Rowman and Littlefield, 1999, 2d ed.), p. 165.

<sup>4</sup> In Quine's *Ontological Relativity and Other Essays* (New York: Columbia, 1969), pp. 69–90; hereafter EN.

<sup>5</sup> In Quine's *From a Logical Point of View* (Cambridge: Harvard, 1961, rev. ed.), pp. 20–46.

<sup>6</sup> Cambridge: Harvard, 1992, rev. ed.

<sup>7</sup> Putnam, "Why Reason Can't Be Naturalized," Howison Lecture, University of California, 1981; published in *Realism and Reason*, volume 3 of his *Philosophical Papers* (New York: Cambridge, 1983), pp. 229–47.

Quine gave the world at large the same assurance, and even sketched his views of the fundamental norms of epistemology and how they are rightly arrived at,<sup>8</sup> but no one has yet done better than Putnam in seeing how the essay can be squared with that assurance or with Quine’s undiminished interest in normative questions.

I take it as a given that the universal reading of “Epistemology Naturalized” as a proposal to “surrender the epistemological burden to psychology” is *wholly* mistaken, since the alternative—that Quine, in mid-career and without so much as a “by your leave,” delivered himself of a proposal whose implementation would have required him to abandon some of his deepest lifelong concerns, and that he failed for decades to detect the conflict—is utterly absurd. Here I shall offer a reading of the essay on which its central proposal is consistent with his fundamental views, and briefly discuss a few related matters. On my reading, not only does Quine not urge the abandonment of epistemology as traditionally pursued, but, whatever inspirational role “Epistemology Naturalized” may have played in the move toward “naturalism in epistemology,” its central proposal is actually antithetical to a good deal of what is nowadays done under that heading.

The universal misreading of Quine’s essay is unquestionably a bizarre phenomenon, and so, fittingly, is its explanation: the fault lies not in the universal incompetence of the essay’s readers, but rather in a disastrous failure of its author’s outsized gifts as an expositor of his own views. No one familiar with Quine’s work could arrive lightly at such an assessment of any part of it, nor have I done so in this case; in trying to understand how things went wrong I have, however, been buoyed by one truth I take to be beyond peradventure: better expository failure than perdurable blindness to blatant conflict between principle and practice.

We begin at ground zero. After noting some milestones in the history of attempts to “account for the external world as a logical construct of sense data,” including Rudolf Carnap’s efforts at rational reconstruction, which, if successful, “would have enabled us to translate all sentences about the world into terms of sense data, or observation, plus logic and set theory,” Quine asked his now famous questions:

[W]hy all this creative reconstruction, all this make-believe? The stimulation of his sensory receptors is all the evidence anybody has had to go

<sup>8</sup> See Quine, “Reply to Morton White,” in Lewis Edwin Hahn and Paul Arthur Schilpp, eds., *The Philosophy of W.V. Quine* (LaSalle, IL: Open Court, 1986), pp. 664–65, and *Pursuit of Truth*, p. 19. I will return to this point later.

on, ultimately, in arriving at his picture of the world. Why not just see how this construction really proceeds? Why not settle for psychology (EN 75)?

Here Quine muddies the water at the very outset. The reader could easily take him to be contrasting two projects with identical starting points—a subject's experiences—and equivalent endpoints: two versions of a single picture of the world. That is, he might seem to be suggesting that there is a way, not necessarily "rational," in which subjects *actually* construct their pictures of the world from their experiences, and a way, sketched by Carnap, in which those pictures *could be rationally (re)constructed* from those same experiences, and proposing that we settle for the former. But Carnap's project was *not* to construct rational routes from a subject's data to his picture of the world; rather, it was to devise (re)constructions of our ordinary physicalistic *concepts* that would allow us to "translate all sentences about the world into terms of sense data, or observation, plus logic and set theory." Even if his project had succeeded, no subject would have been in a position to infer the Carnapian translation of a typical physicalistic sentence from his experiences by tracing some Carnapian path from the one to the other. One reason is elementary: the translation of a typical sentence about the world would have referred to vastly more observations than any subject could possibly make, a point Quine illustrated by noting that "The most modest of generalizations about observable traits will cover more cases than its utterer can have had occasion actually to observe" (EN 74). A deeper and more theoretically illuminating reason is that *there could not in principle be* any such translations of most sentences, since "the typical statement about bodies has no fund of experiential implications it can call its own" (EN 79).

In the terms of Quine's broad framework in "Epistemology Naturalized," subjects' constructions of their world-pictures and Carnap's efforts at rational reconstruction fall on opposite sides of his division of epistemology into doctrinal and conceptual studies. Subjects engaged in constructing pictures of the world are developing "doctrines" that are the objects of *doctrinal* studies, which concern, *inter alia*, the justifiability of those doctrines; Carnap's efforts at reconstruction are *conceptual* studies aimed at showing that the everyday concepts employed in *formulating* those doctrines are theoretically dispensable in favor of sense data, or observations, plus logic and set theory.

But if Quine is not contrasting the individual subject's actual construction of his picture with a hypothetical Carnapian parallel, then what *is* he contrasting it with? What, exactly, is the study he proposes to abandon in favor of the study of psychology? The answer to these

questions should have been unmistakable, though everyone seems in fact to have mistaken it: “all this creative reconstruction, all this make-believe,” that is, the conceptual studies pursued by Carnap and others. This means that the question—“Why not settle for psychology [rather than pursue the project of creative reconstruction]?”—is quite peculiar; it would make clear rhetorical sense only if the two projects were at least roughly parallel, or comparable. That Quine should have posed this odd question is itself mildly unfortunate, but in doing so he also set the stage for something much worse: the principal expository blunder responsible for the misreading of his essay. Having proposed to settle for psychology in place of “creative (rational) reconstruction,” he went on to *describe* such a settling as “a surrender of *the epistemological burden* to psychology” (EN 75; my emphasis); given that description, his readers can hardly be faulted for having read him as proposing to abandon *epistemology itself* in favor of psychology.

Nevertheless, that reading is as mistaken as the description is misleading. Note first that the description, as it would be understood by any well-informed reader, is absurd; while epistemology *includes* efforts at rational reconstruction, it certainly does not *consist of* them, so that abandoning them would hardly amount to abandoning the entire discipline. The extraordinary description is explained by an equally extraordinary fact: as Quine uses the term ‘epistemology’ in “Epistemology Naturalized,” that discipline *does* consist of efforts at rational reconstruction—or, more broadly, attempts to discover or establish logical, translational or rational-reconstructive links between observation and theory. This is readily confirmed simply by rereading the essay; I shall cite only two passages in whose conjunction it is starkly evident:

The old epistemology aspired to...*construct* [natural science] somehow from sense data (EN 83; my emphasis).

Philosophers have rightly despaired of *translating* everything into observational and logico-mathematical terms.... And some philosophers have seen in this *irreducibility* the bankruptcy of *epistemology*....

But I think that at this point it may be more useful to say rather that epistemology still goes on.... Epistemology, or something like it, simply falls into place as *a chapter of psychology*... (EN 82; my emphases).

In short, discovering the impossibility of reduction, or translational reconstruction, *would have* meant the bankruptcy of epistemology were it not that it could be *reconceived* as a chapter of psychology.

Quine’s idiosyncratic use of “epistemology” explains another oddity as well. In briefly sketching a few salient points in the history of modern epistemology, he restricts his attention entirely to efforts of

a logical or quasi-logical sort by philosophers from Hume to Carnap; one will search in vain, in “Epistemology Naturalized” or elsewhere in his writings, for any substantial discussion of what might be called “mainstream” efforts by numerous epistemologists to show that belief in the external world is, or can be, justified in the *absence* of such logical or quasi-logical links. Indeed, he appears at times to be entirely oblivious of those efforts:

In the old epistemological context the conscious form [of observation, namely, conscious three-dimensional apprehension] had priority, for we were out to *justify our knowledge of the external world by rational reconstruction*, and that demands awareness. Awareness *ceased* to be demanded when we *gave up* trying to justify our knowledge of the external world by rational reconstruction (EN 84; my emphases).

The suggestion that awareness is not demanded by any conceivable effort *other* than rational reconstruction to justify our belief in the external world would have come as news to those many epistemologists who thought (as many still do) both that some role for awareness is demanded for epistemic justification and that such justification is possible in the *absence* of rational-reconstructive links between evidence and theory.<sup>9</sup>

Given, then, that what Quine proposes to abandon is only the project of rational reconstruction, we can reformulate his stage-setting questions as follows: “Why all this searching for logical or quasi-logical connections between evidence and theory? Why not just see how we construct our theories from our evidence? Why not settle for psychology?” An apparent lacuna in “Epistemology Naturalized,” one that prompted a second question from Putnam, is made even more glaring by this reformulation: Why did Quine not consider the possibility of finding an *inductive* evidence/theory connection, once he became convinced that no deductive, or quasi-deductive, one was to be found? But philosophers puzzled by this (as I certainly was) have presumably failed to register the fact that, as early as “Two Dogmas of Empiricism,” he had rejected the idea that any such connection existed:

[Physical objects are *myths* on the same footing with abstract entities]

<sup>9</sup> This is the more remarkable in light of the fact that Quine counted C.I. Lewis and Roderick Firth, two of the century’s staunchest defenders of classical foundationalism, among his Harvard colleagues for many years.

and gods, *neither better nor worse except for* differences in the degree to which they expedite our dealings with sense experiences.<sup>10</sup>

It follows from this—and I take it that only Quine’s distaste for redundancy kept him from making the point explicitly—that the myth of physical objects is no more *probable* relative to our evidence (whether experiences, sense data, observations, or stimulations), is no more *justified by* that evidence, than is the myth of the Homeric gods; the *only* relevant difference between the two is that the former better expedites our dealings with sense experiences.

In *Word and Object* he made the point explicitly:

[T]he statements [‘Brutus killed Caesar’ and ‘The atomic weight of sodium is 23’]...are justifiable *only* by *supplementing* observation with scientific method...<sup>11</sup>

To indulge again in redundancy, observations alone cannot justify theories.

His clearest and most emphatic statement of the point came in *Pursuit of Truth*, in one of the few places where he can sensibly be read as at least alluding to foundationalists’ contentions that our experience provides support for our belief in an external world:

Traditional epistemology sought grounds in sensory experience capable of implying our theories about the world, or at least of endowing those theories with some increment of probability. Sir Karl Popper has long stressed, to the contrary, that observation serves only to refute theory and not to support it. We have...been seeing in a schematic way why this is so.

...It is clearly true...that one continually reasons not only in refutation of hypotheses but in support of them. This, however, is a matter of arguing logically or probabilistically from other beliefs already held.... Some of those supporting beliefs may be observational, but they contribute support *only in company with* others that are theoretical. *Pure observation lends only negative evidence*....<sup>12</sup>

<sup>10</sup> “Two Dogmas of Empiricism,” p. 45; my emphases. Perhaps it is worth noting that “expediting our dealings with sense experiences” is not solely a matter of enabling us to get the predictions right; considerations of simplicity, economy, and so forth enter in.

<sup>11</sup> *Word and Object* (Cambridge: MIT, 1960), p. 24; my emphases. For a defense of the idea that this was the heart of Hume’s skeptical argument concerning inductive inference, see Colin Howson, *Hume’s Problem* (New York: Oxford, 2000), pp. 10–21.

<sup>12</sup> *Pursuit of Truth*, pp. 12–13; my emphases.

How is this position to be squared with Quine’s numerous references in “Epistemology Naturalized” to sensory or observational evidence, including his remark that “[W]hatever evidence there is for science is sensory evidence” (EN 75)? Given that supporting evidence, in general, enhances a theory’s probability, such remarks seem clearly to imply that relevant observations, in particular, do so.

Quine's position, then, is that there are neither deductive, nor rational-reconstructive *nor inductive* links to be found between evidence and theory, and that if we want to understand how the two are related we should settle for psychology—we should study how *we relate* the two, that is, how we actually construct our theories from our evidence.<sup>13</sup>

Before considering where he thinks such an investigation would lead, we need to address an obvious preliminary question about its viability. Quine is clearly proposing that we study *the* way subjects construct their pictures of the world, not countless idiosyncratic ways in which individual subjects may do so. But how could he sensibly suppose that there is a single such way, given that subjects with comparable stimulation histories construct widely varying, even conflicting, world pictures?

Quine could do so because he thought he had long since identified that way. In his view, our constructions have two stages, each characterized by a uniform method: in the first stage we construct our proprietary versions of “the immemorial doctrine of ordinary enduring middle-sized physical objects”<sup>14</sup> (our “doctrines of an external world”); in

First, and most importantly, all of the remarks in question are perfectly compatible with his contention that sensory evidence enhances the probability of theory *only in conjunction with* (other) theory. Second, the fact that the issue is at best tangential to the central thrust of “Epistemology Naturalized” may well have been reason enough for Quine, that paragon of expository economy and elegance, to allow it to remain unstated. Indeed, it is presumably such considerations that explain how even here (*Pursuit of Truth*), where the Popperian point is at center stage, he could write the following:

We were undertaking to examine the evidential support of science. That support, by whatever name, comes now to be seen as a relation of stimulation to scientific theory....

Observation sentences are thus the vehicle of scientific evidence, we might say.... Insofar as observation sentences bear on science at all, affording evidence... (pp. 2–7).

Finally, there is of course his never-abandoned view that a theory positing physical objects is epistemologically superior to one positing gods *only* in contributing more effectively to the prediction of experience.

<sup>13</sup> We should perhaps note Quine's suggestion that “something like...rational reconstruction” might still be worth pursuing for heuristic reasons—“imaginative constructions can afford hints of actual psychological processes” (EN 83)—and the possibility that he continued to think, with Nelson Goodman and others, that efforts at partial reconstruction can be of intrinsic interest. See Quine's “On What There Is,” *Review of Metaphysics*, 11 (1948): 21–38, reprinted in *From a Logical Point of View* (New York: Harper and Row, 1961), pp. 1–19, and Goodman's *The Structure of Appearance* (Cambridge: Harvard, 1951), along with sections 1–3 of his “The Revision of Philosophy,” in Sidney Hook, ed., *American Philosophers at Work* (New York: Criterion Books, 1956), reprinted in his *Problems and Projects* (Indianapolis: Bobbs-Merrill, 1972), pp. 5–23.

<sup>14</sup> *Word and Object*, p. 11.

the second we construct our (more or less) comprehensive theories about that world.

Relative to our interests, the most significant difference between the two stages is that, unlike our comprehensive theories, our doctrines of an external world are essentially uniform, so that there is no obvious difficulty with the idea that we have a common way of constructing them. Not only did Quine suppose that there was such a way, but from *Word and Object* to *Pursuit of Truth* he speculated brilliantly and in some detail about a number of its stages.

Our principal interest lies in understanding his view of our second-stage constructions, which turns out to be the key to understanding why his proposal to naturalize epistemology does not involve abandoning the normative. It is clearly these constructions that he has in mind when he says that his aim is “to understand the link between observation and *science*” (EN 76, my emphasis), or that “We are studying how the human subject of our study posits bodies and projects his *physics* from his data” (EN 83, my emphasis), or that “There is thus reciprocal containment...: epistemology in science and *natural science* in epistemology” (EN 83, my emphasis); and it is here that we reencounter our original problem: How can Quine suppose that we have a uniform way of constructing these theories, given that conflict among them is rife?

There is a second problem here as well. Quine is quite naturally read as suggesting that, for purposes of studying the relation between observation and theory, subjects’ relevant output consists of their first-order scientific theories. But in many cases that output also includes second-order theories concerning the assessment of first-order ones, and three things are worth noting about these metatheories: they embody their subjects’ own views about the very relation between evidence and theory that we are trying to understand; they play a role—along with observation—in determining which first-order theories those subjects hold; and they, too, will vary widely, even among subjects with comparable stimulation histories. Though taking into account this additional output might not render the proposed project incoherent, it would certainly make it considerably more challenging, even without considering the specter of yet higher levels of theory. (Imagine that our subjects included theorists from Bacon, Bayes, and Mill to Karl Popper, Bruno deFinetti, and Nelson Goodman.)

Given these difficulties with the idea that we share a common method of second-stage construction, we might ask how Quine himself attempted to identify it. Did he, in accordance with his own apparent proposal in “Epistemology Naturalized,” implement any new psychological investigation? Never; neither there nor in any of his subsequent

writings did he initiate any new line of inquiry, psychological or otherwise, that could conceivably be seen as an attempt to identify that method. What are we to make of this? How are we to understand his apparent failure to take up his own proposal? These questions are wrong headed, and simply evaporate once we realize that “Epistemology Naturalized” does not contain any such proposal. Quine’s aim in that essay was not to launch a new line of investigation, but rather to persuade his readers to join in an *old* one in which he had long been engaged. If we want to locate the *origins* of his efforts to naturalize epistemology, we have to look *backward* from “Epistemology Naturalized.”

At least as early as *Word and Object*, Quine had carefully considered the relation between subjects’ inputs and outputs, and discovered a good deal about how those subjects relate evidence to theory:

[S]implicity considerations in some sense may be said to determine even the least inquisitive observer’s most casual acts of individual recognition. For he is continually having to decide, if only implicitly, whether to construe two particular encounters as repeated encounters with an identical physical object or as encounters with two distinct physical objects. And he decides in such a way as to minimize, to the best of his unconscious ability, such factors as multiplicity of objects, swiftness of interim change of quality and position, and, in general, irregularity of natural law.

...The deliberate scientist goes on in essentially the same way...and a law of least action remains prominent among his guiding principles. Working standards of simplicity, however difficult still of formulation, figure ever more explicitly.<sup>15</sup>

Reflection on the most elementary facts about the nature of subjects’ inputs and outputs revealed that even the least inquisitive among us conform in our theorizing to some version, or proto-version, of scientific method; it revealed that our second-stage method is that of constructing theory from evidence in conformity with a norm of maximizing simplicity.

Is this, then, at least a broad-brush, preliminary version of Quine’s proposed project and the knowledge to be acquired by pursuing it? On the universal reading of “Epistemology Naturalized,” it is; in the

<sup>15</sup> *Word and Object*, p. 19. Here Quine mentions only simplicity, or “least action,” considerations as entering into theory choice, but elsewhere he notes other “systematic” considerations—notably conservatism (conserving as much as possible of one’s existing body of beliefs in revising it to accommodate recalcitrant data), but also generality, refutability, and modesty (roughly, limiting one’s ontological commitments to the minimum needed to account for one’s data). See “Hypothesis,” chapter 5 of Quine and J.S. Ullian, *The Web of Belief* (New York: Random House, 1970),

language of the quotations with which this paper began, the project described is certainly a “scientific” one, it does “not concern itself with how we should form beliefs, but with how we do in fact form them,” and it seems to have no place for “normative evaluations”—it issues simply in a description of how we do in fact construct our theories from our evidence. But if Quine’s idea were simply that we should abandon normative questions in favor of scientific ones, then why psychology in particular? Why not, say, geology? There must be *some* significant relation between rational reconstruction and psychology if the suggestion that we “settle for” the latter in place of the former is to be at all sensible, and indeed there is: both promise to illuminate the relation between evidence and theory. It is Quine’s revolutionary conviction that by learning the psychological truth that *we relate* evidence to theory in conformity with scientific method, we learn the philosophical truth that evidence *is related* to theory by scientific method. This is a point he had long since advertised:

[S]cientific method, whatever its details, produces theory whose connection with all possible surface irritation [evidence] consists solely in scientific method itself, unsupported by ulterior controls.<sup>16</sup>

To put his point even more starkly, *the only connections there are* between our evidence and our theories are *those we make* in accordance with scientific method. (To avoid any suggestion that this method is independent of us—something we have discovered, rather than devised—it might better have been called “our” scientific method, but for the latter’s suggestion that it is one among others.)

But how, then, can Quine claim that by learning how *we relate* evidence to theory we learn how evidence *is related* to theory? He can do so because in his view the former determines the latter, which is a corollary of his more general view that there is no exile from theory. By the latter he means, *inter alia*, that there is no vantage point from which our comprehensive method of devising theories to explain past observations and predict future ones can be evaluated in the relevant respect: we have no independent way of identifying true theories that would allow us to consider whether our method of theorizing tends, or tends better than would alternative methods, to yield true theories: “[W]e can never do better than occupy the standpoint of some theory or other, the best we can muster at the time.”<sup>17</sup> In terms of Quine’s favorite simile, borrowed from Otto Neurath, our comprehensive

<sup>16</sup> *Word and Object*, p. 23.

<sup>17</sup> *Word and Object*, p. 22.

theory is like a boat at sea, and we have no alternative to staying on board if we want to stay afloat, that is, to think rationally at all; if we want to find out how to arrive at the truth on the basis of our evidence—if, that is, we want to understand how evidence relates to theory—we have no alternative but to take (our best understanding of) the way we do arrive at theory as the way we are to arrive at theory. It is, of course, an all-important fact that any part of our comprehensive theory—including any statement about how evidence relates to theory—can be modified or repaired, that “no statement [belief] is immune to revision”:<sup>18</sup>

[W]e own and use our beliefs of the moment, even in the midst of philosophizing, until by what is vaguely called scientific method we change them here and there for the better.<sup>19</sup>

We have now arrived at an entirely new picture of Quine’s principal efforts in “Epistemology Naturalized”; so far is he from proposing to abandon the normative that he is proposing instead to *discover* the norms that govern theorizing by discovering the norms that we conform to in our theorizing. This means that his talk of surrendering the burden of epistemology to psychology is unfortunate in a second respect as well. What he is actually proposing is to *enlist the aid* of psychology in addressing the burden of epistemology: psychology will identify the norms we adhere to, and philosophy will tell us that, *by virtue* of their being the ones we adhere to, they are the ones we *are* to adhere to. He himself later put the point in much the same way:

The channels by which, having learned observation statements, we acquire theoretical language, are the very channels by which observation lends evidence to scientific theory....

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*.<sup>20</sup>

Several loose ends need tidying up. First, the question, “Why not settle for psychology?” is at best a bit peculiar if we have no alternative—if, that is, there are no connections between observation and theory other than those we make, hence none for us to discover—and I can see no way of reading it so as to obviate this peculiarity altogether.

<sup>18</sup> “Two Dogmas of Empiricism,” p. 43; my emphasis.

<sup>19</sup> *Word and Object*, pp. 24–25.

<sup>20</sup> Quine, “The Nature of Natural Knowledge,” in Samuel Guttenplan, ed., *Mind and Language* (New York: Oxford, 1975), pp. 67–81; quote from pp. 74–75, my emphases.

Yet there is an important point to be made about it. We have seen that for Quine settling for psychology does not mean settling for mere description; getting the relevant psychological descriptions right is only the first step in arriving at an understanding of the norms of epistemology. Thus I suggest that Quine may have had in mind something like the following question: “Why not settle for the justification that we can see we already enjoy, rather than search for a further justification via rational reconstruction (especially since none is to be had)?” This question captures the central thrust of his essay, to wit, that we should stop beating a dead horse—stop trying to devise some ingenious story about how our beliefs are justified by virtue of some intrinsic relation in which they stand to our evidence—and remind ourselves that the only possible account of epistemic justification, hence the one for which we should “settle,” is one framed in terms of the scientific method to which psychology tells us we conform, which simply *is* “the way to truth.”<sup>21</sup>

A second loose end concerns the original apparent obstacle to the idea that there is a single way in which we construct our comprehensive theories: If we all construct them in accordance with scientific method, then what explains the fact that subjects with comparable stimulation histories arrive at conflicting theories? The explanation is that, although we all rely on the scientific method, we arrive at different judgments about *which theories are sanctioned* by that method. The relevant principle of scientific method runs something like this: *ceteris paribus*, Theory *T* is superior to Theory *T'* if it is simpler, or more general, or stronger than *T'* relative to the combination, or some weighted combination, of the various “systematic virtues,” *or* adopting *T* would require abandoning, or modifying, fewer, or less fundamental, previously held beliefs than would adopting *T'*, *or*... Not only is there an enormous amount of “slack” in this “principle,” but we differ in our weightings of the various systematic virtues, and these considerations might well suffice to account even for ideally rational agents’ arriving at conflicting theories on the basis of comparable bodies of evidence.<sup>22</sup>

Finally, I want to consider briefly the passages mentioned earlier in which Quine offered his assurances that he was not proposing to

<sup>21</sup> *Word and Object*, p. 23.

<sup>22</sup> For a striking illustration of individual differences in weighting, see Freeman Dyson’s sketch of Einstein’s and Poincaré’s differing degrees of receptivity to radical theory change in his “Clockwork Science,” *New York Review of Books* (November 6, 2003): 42–44.

abandon the normative, since they contain what might seem to be yet another puzzle about his conception of naturalized epistemology:

Naturalization of epistemology does not jettison the normative and settle for the indiscriminate description of ongoing procedures. For me normative epistemology is a branch of engineering. It is the technology of truth-seeking, or, in a more cautiously epistemological term, prediction. Like any technology, it makes free use of whatever scientific findings may suit its purpose.<sup>23</sup>

[N]aturalized epistemology on its normative side is occupied with heuristics generally—with the whole strategy of rational conjecture in the framing of scientific hypotheses.<sup>24</sup>

What is new and puzzling here is Quine's use of the term 'engineering', and his apparent suggestion that while engineering is normative (in that it attempts to construct the best device for a given purpose), science is descriptive (and provides engineers with its "findings"). But compare this with two of many similar antecedents in his writings:

As an empiricist I continue to think of the conceptual scheme of science as a tool, ultimately, for predicting future experience in the light of past experience.<sup>25</sup>

A sentence's claim to scientific status rests on what it contributes to a theory whose checkpoints are in prediction.<sup>26</sup>

Here *scientific theories* yield predictions. Of course, in *deriving* those predictions we are constrained by logical norms, but this is obviously not what Quine has in mind by the "technology" of prediction. What has happened, I suggest, is simply that he has adopted new terminology for making familiar points. What he here calls engineering is simply theorizing—thought of now as devising/constructing scientific theories designed to maximize predictive efficacy. As for the scientific "findings" made use of in such projects, they are simply whatever theories we take for the nonce to have been established—in accordance with our normative scientific method—along with our observations, especially those that are currently inexplicable or have falsified earlier theories. On this reading, normative epistemology does indeed fall into place as a part of science; its distinctive tasks are to identify, formulate, evaluate, and perhaps modify the most general norms that

<sup>23</sup> "Reply to Morton White," pp. 664–65.

<sup>24</sup> *Pursuit of Truth*, p. 19.

<sup>25</sup> "Two Dogmas of Empiricism," p. 44; my emphasis.

<sup>26</sup> *Pursuit of Truth*, p. 20.

guide our scientific theorizing, and to evaluate our theories in light of those norms; even in its new clothing and setting, this is unmistakably epistemology as traditionally pursued.

Given my proposed reading of “Epistemology Naturalized,” several points about the relationship between epistemology and psychology, and Quine’s view of it, deserve brief consideration.

Despite its reputation, the essay contains little that is new; it is largely a sustained argument for the idea that much if not all of what goes on under the name of epistemology can be seen to be part of the scientific enterprise broadly—and rightly—conceived. We have seen, however, that, even so conceived, Quine’s proposal about how the nature of the evidence/theory relation should be determined is best described as a matter of enlisting the aid of psychology in that investigation. This is certainly a striking example of the occasional direct relevance of psychology to philosophy, and in this it resembles John Rawls’s reliance, in developing his theory of justice, on psychological hypotheses about what the agents in his “original position” would do; but neither Quine nor Rawls is aptly described as having surrendered a philosophical burden to psychology.<sup>27</sup>

At the conclusion of his essay, Quine mentions several theoretical endeavors that, he suggests, might be furthered by “rubbing out the boundaries” between epistemology and science (psychology and linguistics, in particular), but his suggestions are quite puzzling. He mentions the possibilities of (i) determining whether there is an “alphabet” of perceptual norms toward which we tend unconsciously to rectify all perceptions, which “could be taken as epistemological building blocks, the working elements of experience,” (ii) determining whether various features of our cognitive processes can be explained on the basis of their survival value, and (iii) “clarifying” induction by appeal to evolution. I simply do not understand what he can have in mind in suggesting that (i) or (ii), as interesting as they are, might be furthered by rubbing out disciplinary boundaries, though (i) might be another case of psychology’s being an important aid to an epistemological investigation. As for (iii), Quine himself once attempted a justification of induction by appeal to evolutionary theory, but abandoned it (whether rightly or wrongly does not matter here) in the face of Goodman’s new riddle of induction, and later described a different role for that theory:

[Appealing to Darwinian biology to justify induction] would be circular,

<sup>27</sup> See Rawls, *A Theory of Justice* (Cambridge: Harvard, 1974), especially chapter III, sections 24–26.

since biological knowledge depends on induction.... I am granting the efficacy of induction, and then observing that Darwinian biology, if true, helps explain why induction is as efficacious as it is.<sup>28</sup>

There is nothing to dispute here, but neither is there anything to suggest that rubbing out boundaries promises theoretical progress. Of course Quine may have had in mind something else altogether, but I am at a loss to imagine what that might be. In sum, it is hard to see in his brief remarks any promise of theoretical progress to be made as a result of eliminating this boundary.<sup>29</sup>

Finally, while many, perhaps most, philosophers have seen in "Epistemology Naturalized" the original impetus toward various views now often grouped under the title "naturalized epistemology," and while various such views were doubtless inspired by that essay as it has hitherto been read, not only do some of them have no discernible relation to the proposals actually contained in it, but Quine would have objected vigorously to them.

Given his enormous influence on epistemology, it can come as something of a surprise to realize that he had virtually no interest in much of the work that held center stage in that discipline during his lifetime. We have already noted his lack of interest in mainstream traditional theories, and two related phenomena deserve highlighting: when he suggested ways in which progress might result from rubbing out the boundary between epistemology and psychology, he did not so much as hint at the possible development of "naturalistic" or "psychologistic" accounts of either knowledge or justification, and in later years he showed no interest at all in the proliferating "externalist" accounts of those concepts.

Concerning knowledge, or what he once referred to as "our so-called knowledge,"<sup>30</sup> he had next to nothing to say; such little thought as he gave it may well have been captured in his response to the question, "How can we know that [one complete physical theory] is true and [another] false?":

There is an obstacle in the verb "know." Must it imply certainty, infallibility? Then the answer is that we cannot. But if we ask rather how we are

<sup>28</sup> "The Nature of Natural Knowledge," p. 70.

<sup>29</sup> Earlier in the essay, Quine suggests that one result of "seeing epistemology in a psychological setting" (which may or may not amount to rubbing out the boundary between the two) is that "What to count as observation now can be settled in terms of the stimulation of sensory receptors, let consciousness fall where it may" (EN 84). Certainly it *could* be, but it is by no means obvious that it *must* be; this matter, too, seems to be independent of the issue of disciplinary boundaries.

<sup>30</sup> "Two Dogmas of Empiricism," p. 42.

better warranted in believing one theory than another, our question is a substantial one. A full answer would be a full theory of observational evidence and scientific method.<sup>31</sup>

There is no reason to suppose that Quine had any interest whatever in the concept of knowledge, much less that he saw his proposals in “Epistemology Naturalized” as bearing on its proper explication.

As for justification, we have already seen one perfectly adequate explanation for his lack of interest in contemporaneous accounts of it: he thought he had already specified the right account in terms of scientific method. However, there is an equally important, and deeply ironic, point to be made about how he would have viewed externalist accounts of it framed in terms of such things as reliable processes and causal relations: *he would have faulted them for abandoning the normative in favor of the descriptive.*

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<sup>31</sup> Quine, *Theories and Things* (Cambridge: Harvard, 1981), p. 180.