PASSING BY THE NATURALISTIC TURN: ON QUINE'S *CUL-DE-SAC*

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1. *Naturalism*

Naturalism, it has been said, is *the* distinctive development in philosophy over the last thirty years. There has been a *naturalistic turn* away from the a priori methods of traditional philosophy to a conception of philosophy as continuous with natural science. The doctrine has been extensively discussed and has won considerable following in the USA. This is, on the whole, not true of Britain and continental Europe, where the pragmatist tradition never took root, and the temptations of scientism in philosophy were less alluring.

Contemporary American naturalism originates in the writings of Quine, the metaphysician of twentieth-century science. With extraordinary panache, he painted a large-scale picture of human nature, of language and of the web of belief. I believe that in almost every major respect, it is, like the picture painted by Descartes, the great metaphysician of seventeenth-century science, mistaken. But it evidently appeals to the spirit of the times. So it is worthy of critical examination and careful refutation. I shall argue that the naturalistic turn is a *cul-de-sac* – a turn that is to be passed by if we are to keep to the highroad of good sense.

Naturalism, like so many of Quine's doctrines, was propounded in response to Carnap. As Quine understood matters, Carnap had been persuaded by Russell's *Our Knowledge of the External World* that it is the task of philosophy to demonstrate that our knowledge of the external world is a logical construction out of, and hence can be reduced to, elementary experiences. Quine rejected the reductionism of Carnap's *Logischer Aufbau*, and found the idealist basis uncongenial to his own dogmatic realist behaviourism, inspired by Watson and later reinforced by Skinner. The rejection of reductionism and 'unregenerate realism', Quine averred, were the sources of his naturalism (FME 72). What exactly was this?

We can distinguish in Quine between three different but inter-related programmes for future philosophy: epistemological, ontological and philosophical naturalism.

Naturalized epistemology is to displace traditional epistemology, transforming the investigation into 'an enterprise within natural science' (NNK 68) – a psychological enterprise of investigating how the 'input' of radiation, etc., impinging on the nerve endings of human beings can 'ultimately' result in an 'output' of our theoretical descriptions of the external world. I shall argue that the failure of the Russell-Carnap programme in no way implies that epistemology should be naturalized; that the project of naturalized epistemology contributes nothing to the solution or dissolution of the problems traditional epistemology struggled with; that Quine's few forays into genuinely epistemological questions are failures; and that Quine's imaginary science of naturalized epistemology is of questionable intelligibility and of no philosophical utility.

Ontological naturalism is the doctrine that 'it is within science itself, and not in some prior philosophy, that reality is to be identified and described' (TTPT 21). It is up to science to tell us what there is, and it offers the best theory of what exists and of how we come to know what exists. The only difference between the ontological philosopher and the scientist, according to Quine, lies in the breadth of concern: the former being concerned, for example, with the existence of material objects or classes and the latter with wombats or unicorns. I shall not discuss this here in detail. But it should be noted that it is far from clear what it is to 'identify and describe reality'. If I identify a dandelion on the lawn, Beethoven's Opus 132 on the radio, a smell of onions in the kitchen, am I identifying 'reality'? And have I done so 'within science'?

In no ordinary sense of 'science' is science the sole and final arbiter on what exists (e.g.

Russell's childhood diaries, the pain in my leg, the Romantic movement, Mannerist style, international law, a plot to depose the king). There is no specific science that offers us the best theory of what exists, nor do the sciences collectively do so, for there is no such thing as a theory of everything that exists.

Philosophical ontology is not concerned with determining what exists in the sense in which biological taxonomy is concerned with determining, tabulating and classifying what living things exist. Nor is it differentiated from a science, e.g. physics, by generality of categories. It is not as if physics is concerned to establish that mesons or quarks exist, whereas philosophy is concerned to establish that material objects or events exist (*pace* Davidson). The task of ontology is to clarify, from one domain to another, what it means to say that such-and-such exists (e.g. a substance, a property, a possibility, a number, a concept, the meaning of a word, a law or legal system).[1]

Philosophical naturalism is the view that philosophy is 'not ... an a priori propaedeutic or groundwork for science, but [is] ... continuous with science' (NK 126). Quine claimed to have blurred the boundary lines between philosophy and science (NLWM 256). Although he elaborated little on this, his followers have shown no such reticence. In the USA it is widely held that with Quine's rejection of 'the' analytic/synthetic distinction, the possibility of philosophical or conceptual analysis collapses, the possibility of resolving philosophical questions by a priori argument and elucidation is foreclosed, and all *good* philosophers turn out to be closet scientists. This too cannot be discussed here in detail, but I shall make a few observations.

Attacks on the idea of analyticity could show that philosophy is continuous with science only if (i) they were successful, (ii) philosophy consists of statements (iii) these contrast with scientific statements by virtue of their analyticity. It is questionable whether Quine did successfully show that Carnap's distinction is untenable. Carnap did not think so, and explained why he did not.[2] Grice and Strawson did not either.[3] Quine never gave a satisfactory reply to these objections. Even in 'Two Dogmas' he did not deny synonymy, and hence analyticity, in cases of stipulation, but only in the cases of ordinary terms not thus introduced. In *Roots of Reference*, he himself offered an account of analytic truths. They are those truths everyone learns merely by learning to understand them (RR 79).

Even if Quine had successfully demolished Carnap's distinction between empirical truths and truths in virtue of meaning, it would not be true that he had shown *the* analytic/synthetic distinction to be untenable, for there is not one such distinction. There is Locke's distinction between 'trifling' or 'barely verbal' propositions, on the one hand, and non-trifling ones, on the other, as well as Kant's, Bolzano's, Frege's and Carnap's different distinctions between analytic and synthetic truths. Their extensions are not equivalent (Kant, for example, held truths of arithmetic to be synthetic a priori, whereas Frege held them to be analytic).[4] Some of these are epistemological distinctions, others are purely logical. But even

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[1] For elaboration of this claim, see P.M.S. Hacker, *Wittgenstein's Place in Twentieth-Century Analytic Philosophy* (Blackwell, Oxford, 1996), pp. 121f., 223-6.

[2] See R. Carnap, 'W.V. Quine on Logical Truth' in P.A. Schilpp ed. *The Philosophy of Rudolph Carnap* (Open Court, La Salle, Illinois, 1963), pp. 915-22, and 'Quine on Analyticity' in R. Creath ed. *Dear Carnap, Dear Van* (University of California Press, Berkeley, 1990), pp. 427-32.

[3] H.P. Grice and P.F. Strawson, 'In Defence of a Dogma', *Philosophical Review* 1956.

[4] Quine explicitly assimilated Frege's views and Carnap's (RR 78). But while Carnap held that the laws of logic were optional conventions and that analytic truths in general held in virtue of meaning (see, e.g. 'Meaning Postulates', repr. in *Meaning and Necessity* (University of

if someone were to demonstrate that *no* distinction similar to *any* of these is tenable, that would not show that philosophy is 'continuous with science'. Nor would it show that philosophy is not an a priori discipline. And it certainly would not show that conceptual analysis is impossible.[5]

If all distinctions between analytic and synthetic propositions are untenable, it does not follow that there is no distinction between a priori and empirical propositions. Even if mathematics is not analytic, it does not follow that it is not a priori. According to Quine, 'maths and logic are supported by observation only in the indirect way that those aspects [the most general and systematic] of natural science are supported by observation; namely as participating in an organized whole which, way up at its empirical edges, squares with observation' (PL 100). But this is misconceived. Propositions of mathematics and logic are not 'supported by observation'. They are demonstrated by deductive proofs. It is not as if confirmation of Newtonian mechanics by celestial observations made the theorems of the calculus better supported than before.[6] And in respect of a priority, what goes for mathematics and logic goes too for such propositions as 'red is more like orange than like yellow' or 'red is darker than pink'. As long as we can distinguish between a tautology and a non-tautologous proposition, *and* between the specification of a measure and the statement of a measurement – the statement of a rule and the application of a rule, we can readily distinguish between what is a priori and what is empirical.

The thought that if there is no distinction between analytic and synthetic propositions, then philosophy must be 'continuous' with science rests on the false supposition that what was thought to distinguish philosophical propositions from scientific ones was their analyticity. That supposition can be challenged in two ways. First, by showing that characteristic propositions that philosophers have advanced are neither analytic nor empirical (the claim of the older Wittgenstein as well as of the young Quine that there are no propositions that are true in virtue of their meanings may serve here as an example). Secondly, by denying that there are any philosophical propositions at all.

Strikingly, the Manifesto of the Vienna Circle, of which Carnap was both an author and signatory, pronounced that 'the *essence of the new scientific world-conception* in contrast with traditional philosophy [is that] no special "philosophic assertions" are established, assertions are merely clarified'.[7] According to this view, the result of good philosophizing is not the production of analytic propositions peculiar to philosophy. Rather it is the clarification of conceptually problematic propositions and the elimination of pseudo-propositions.

The later Wittgenstein too held that there are no philosophical propositions. The task

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Chicago Press, Chicago, 1956), pp. 222-9), Frege held that the laws of logic 'are boundary stones set in eternal foundations, which our thought can overflow, but never displace' (*Basic Laws of Arithmetic*, vol. i, Introduction, p. xvi), and his heroic attempt to prove the analyticity of arithmetic was certainly not an attempt to prove it to be true by linguistic convention.

[5] Wittgenstein too rejected the Carnapian idea that there can be truths in virtue of meanings, characterizing it as the conception of 'a meaning-body' (*Bedeutungskörper*). It is noteworthy, that there is virtually no invocation of the concept of analyticity in his later writings. But he certainly thought that the problems of philosophy and the methods of their resolution are a priori and categorially distinct from the problems and methods of the sciences.

[6] See D. Isaacson, 'Quine and Logical Positivism', in Gibson. ed. *The Cambridge Companion to Quine*, p. 254.

[7] *The Scientific Conception of the World: the Vienna Circle* (Reidel, Dordrecht, 1973), p. 18.

of philosophy is to resolve or dissolve philosophical problems. These are a priori conceptual problems. They are to be tackled by the elucidation of propositions, not by their analysis into more basic ones. This requires a perspicuous representation of the problematic concepts that illuminates the problems at hand. The resultant overview does not consist of analytic propositions. This conception of conceptual analysis informed Ryle's 'logical geography' of concepts and Strawson's 'connective analysis', both of which were less therapeutically oriented than Wittgenstein's philosophy. None of the many philosophers who pursued conceptual analysis in this vein produced (or purported to produce) sets of analytic propositions that belong to philosophy, any more than Quine produced sets of propositions that belong to science.

Whether or not Quine's criticism of Carnap's distinction hits its target, the possibility of conceptual analysis thus understood is in no way impaired. Philosophy has not lost its proper vocation – which is not armchair science. It is categorially distinct from science, both in its methods and its results. The a priori methods of respectable philosophy are wholly distinct from the experimental and hypothetico-deductive methods of the natural sciences, and the results of philosophy logically antecede the empirical discoveries of science. They cannot licitly conflict with the truth of scientific theories – but they may, and sometimes should, demonstrate their lack of sense. *One* task of philosophy is to set straight the conceptual confusions and incoherences of scientific theories. For philosophy is neither the Queen of the sciences nor their conceptual scullery-maid, but rather a tribunal before which scientific theory may be arraigned when it trepasses beyond the bounds of sense.

2. *Epistemology naturalized*

Quine held that the central problem of epistemology throughout the ages was to explain the relationship between evidence, traditionally understood as sensory experience, and knowledge of the world, which he idiosyncratically termed 'scientific knowledge'. He ascribed to Carnap an enterprise of constructing a 'first-philosophy', i.e. a form of Cartesian foundationalism, that purported to provide extra-scientific foundations for science. *Foundationalism* is the epistemological doctrine that all empirical knowledge rests ultimately on our knowledge of how things sensibly appear to us to be. Such knowledge does not itself stand in need of evidential support, but it is held to provide the evidence for all other judgements. Carnapian foundationalism was *reductive*, i.e. it alleged that statements concerning material things are translatable into statements concerning bare experiences, so statements about material things can be eliminated in favour of statements about sensible experiences. The failure of the Carnapian enterprise seemed to Quine to warrant the naturalization of epistemology.

The importance of Carnap's *Logischer Aufbau* was, according to Quine, akin to that of Russell's *Principia*. It showed, by its failure, that a particular conception of knowledge of the external world – namely the reductivist one – is mistaken. Unlike Austin, Ryle and Wittgenstein, Quine did not think that the enterprise of 'bridging the gap between sense-data and bodies' was a pseudo-problem (RR 2; cf. TTPT 22). The problem was real, but the purported solution hopeless, since verification is holistic. Strict reduction and consequent eliminability of material object statements failed, according to Quine, because a 'typical statement about bodies has no fund of experiential implications it can call its own. A substantial mass of theory, taken together' is required (EN 79). So there is no need to posit sense-data to account for illusions, etc., or to posit such intermediary sensory objects of apprehension in order to account for our knowledge of material objects. The 'relevance of sensory stimulation to sentences about physical objects', he declared in good behaviourist fashion, 'can as well (and better) be explored and explained in terms directly of the conditioning of such sentences and their parts to physical irritations of the subject's surfaces' (WO 235).

Carnap's subsequent compromise of non-eliminative reduction-sentences (Ramsey-sentences) seemed to Quine pointless, renouncing the last remaining advantage of rational reconstruction over straight psychology; namely translational reduction (EN 78). 'Why all this creative reconstruction, all this make-believe', he remonstrated, 'The stimulation of his sensory receptors is all the evidence anyone has to go 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).

What does 'settling for psychology' amount to? First, we abandon the goal of a first philosophy prior to natural science (FME 67). Our investigation, we are told, is itself part of and continuous with natural science. Secondly, we are called on to recognize that the sceptical challenges that epistemology has always been concerned with spring from 'rudimentary science'. The argument from illusion, according to Quine, owes its force to our knowledge that sticks do not bend by immersion, and examples of mirages, after-images, dreams and the rest are, he claimed, 'simply parasitic upon positive science, however primitive' (NNK 68). Consequently, in coping with these scientific problems of scepticism, we are free to use data from science and scientific knowledge (RR 3). So scientific discoveries can, without circularity or question-begging, be invoked in resolving sceptical worries. Thirdly, epistemology thus naturalized is a branch of psychology: it studies human beings and their acquisition of knowledge or, as he put it, of 'theory', investigating the relation between neural input and cognitive output (EN 83). Hence, fourthly, naturalized epistemology, like traditional epistemology, is concerned with the relation of evidence to theory. Science, Quine averred, 'tells us that our information about the world is limited to irritations of our surfaces' and the task of the scientific epistemologist is to explain how we 'can have managed to arrive at science from such limited information' (FME 72).

Before commenting on this new conception of epistemology, some of Quine's idiosyncratic usages are worth mentioning. For when one places pressure upon them, they become problematic.

First of all, he used the term 'science' with the promiscuity characteristic of members of the Vienna Circle. Sometimes 'science' means the totality of a person's knowledge of the external world; sometimes it means the totality of 'our' knowledge of the external world; sometimes it means natural science, with especial emphasis on physics, and at others it means all natural sciences; and occasionally it means all academic disciplines concerned with truth about the world, including social sciences and history. It is very important, from context to context, to be clear what sense of 'science' he had in mind. When Quine claimed that 'epistemology is concerned with the foundations of science' (EN 69), there is a presumption that he meant empirical knowledge in general. When he claimed rhetorically that 'science is the highest path to truth' (NLWM 261), he obviously did not. This equivocation is a source of confusion. My knowledge that there is a red book on the table over there, that my name is PMSH, or that I had a headache last night, is not part of science, of any particular science or of my knowledge of science. Furthermore, there is no such homogeneous discipline as 'science' – only a multitude of different empirical cognitive pursuits (physical sciences, life-sciences, social sciences, history, psychology, etc.) with widely different methods and canons of evidence. Quine, perhaps because of his Viennese methodological monism, deplored the (Aristotelian) artificiality of dividing the sciences into separate disciplines: 'Names of disciplines', he wrote, 'should be seen only as technical aids in the organisation of curricula and libraries' (AM 88). That explains but does not warrant the view that the segregation of the different sciences does not mark fundamental differences of method and forms of explanation that merit investigation (contrast physics with the life sciences, the natural sciences with history and the social sciences). So too, extending the term 'science' to match the German 'Wissenschaft' will not make history and the social sciences any more like physics

and chemistry than they are, i.e. not very – and mere assertion of the Viennese doctrine of the unity of science is no argument for its truth.

      Secondly, Quine used the expression 'the external world' quite literally to mean the totality of things or states of affairs external to a person's skin. This stands in contrast with the traditional abuse of the term to mean 'extra-mental'. But this laudable literalness involves a cost. For our knowledge of the state of our body, of whether it is disposed thus or thus, is in movement or at rest, breathless or tranquil, rested or weary, sober or drunk, hot or cold, this, and much more, is, presumably part of our knowledge of what Quine called 'the world', even if it is not knowledge of the *external* world. This apparent triviality has non-trivial consequences. For according to Quine, naturalized epistemology studies how a human being '*posits* bodies and projects his physics from his data' (NE 83; my italics). *All* statements concerning external bodies are *assumptions* in his view (TTPT 2, 8).[8] Indeed, he contended, 'all objects are theoretical' (TTPT 20). So the question arises whether my statements about my body and its parts are assumptions or posits too.

      Given Quine's willingness to talk about the body, we may confront him with a dilemma here. Either my body is a posit of mine, or it is not. If it is not, then I know of the existence of at least one material object and of some of its parts without positing anything. And if my foot is not a posit or assumption of mine, it is unclear why my sock and shoe must be. If my body and its parts *are* posits of mine, then what of me? Either I posit my own existence, or I know that I exist without positing or assuming it. For Augustinian and Cartesian reasons, it is not open to Quine to argue that my own existence is a posit or assumption, let alone that I am a 'theoretical object' in my 'theory of the world'. So, I know that I exist without positing or assuming my existence.[9] If so, and if my body does require positing, if it is a theoretical object, *what am I* ? Do I know of my own existence without knowing what I am? – that is not an option Quine could welcome ('no entity without identity'). Am I then a *res cogitans*? – this too is not a route Quine would wish to go down. Incoherence lurks in these Cartesian shadows, and it is not evident how to extricate Quine from them.

      Thirdly, Quine used the term 'theory' in an extended manner, and supposed that human beings have something called a 'theory of the world' (TTPT 21) or a 'scientific system of the world' (FME 71). It is unclear what a *theory* or *scientific system* of *the world* might be. What are the criteria of identity for such entities?   Is a scientific system of the world the sum of the theories of the natural sciences at any given time? Is a theory of the world the sum total

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[8] Quine claimed that all 'external objects' are 'assumed', but that 'the assuming of objects is a mental act, and mental acts are notoriously difficult to pin down ... Little can be done in the way of tracking thought-processes except where we can put words to them. ... If we turn our attention to the words, then what had been a question of assuming objects becomes a question of *verbal reference* to objects. To ask what the *assuming* of an object consists in is to ask what *referring* to the object consists in' (TTPT 2). But this is mistaken. To assume that the bridge is safe when one steps onto it is not to perform a mental act – it is to take something for granted (and so to *fail* to perform a mental act of reflecting on the matter). To ask what my assuming that the bridge was safe consisted in is certainly not to ask what my referring to the bridge consisted in. For I normally assume the safety of the bridge without referring to it, and I can refer to a bridge when I raise the question of whether it is safe without assuming that it is.

[9] I shall not challenge here the intelligibility of speaking of knowing that one exists (*a fortiori* of positing one's own existence). This Wittgensteinian route is not one Quine would have been willing to take.

of empirical truths a person may know, or think he knows, at a given time? Why should such an undifferentiated mass of information count as a single theory of anything? Why should the indefinitely many scraps of information that we all pick up count as part of any theory? If this is a theory, then we need a different word to refer to what used to be called 'theories', such as Newton's theory of gravity or Maxwell's electromagnetic theory. Quine's use of 'theory' creates a mere semblance of uniformity between the clutter of beliefs of Everyman and scientific theories, and wrongly suggests that the sum of our common or garden knowledge, as well as our commonsensical beliefs, constitute a theory.

3. *Epistemology denaturalized*
Quine held Carnap's Russellian attempt to reduce our knowledge of physical objects and of other people's states of mind to the 'unowned data' of elementary experience to be the culmination of traditional epistemology (FSS 13). Its failure, in his view, invited the abandonment of traditional epistemology. But no such conclusion follows. There were more variants of foundationalism than Carnap's reductivism, and *contra* Quine, there was more to traditional epistemology than foundationalism.

First, I doubt whether Carnap would have accepted Quine's description of his enterprise as an attempt to establish a 'first philosophy' that is extra-scientific and that provides a philosophical foundation of science. I suspect that he would be right. Moreover, one main reason Quine gave for the failure of Carnap's enterprise was that Carnap assumed propositional as opposed to holistic verification. But in fact Carnap quite explicitly cleaved to a holistic view of theory verification and falsification, and that in a manner far closer to Duhem's modest holism than Quine's.[10]

Secondly, it is true that Descartes, who used the Aristotelian term 'first philosophy', *was* proposing a metaphysical, extra-scientific, foundation for science. The foundation he proposed involved not only our knowledge of our own thoughts (*cogitationes*) regarding how things sensibly appear to us to be, but also truths of reason known by the natural light, knowledge of simple natures and a proof of the existence of God. But Descartes's foundationalism was in no sense reductive, and the failure of Carnapian reductivism is irrelevant to Cartesian foundationalism. Lockean foundationalism is different again, and is akin to inference from the data of sense, i.e. ideas, to the best explanation for such data. This too was not reductive, and its latter-day heirs (e.g. J. L. Mackie's account) are untouched by the failure of Carnapian reductivism. So the failure of Carnapian reductivist foundationalism in itself does not even imply the bankruptcy of other foundationalist enterprises, let alone the abandonment of traditional epistemology.

What *was* wrong with Cartesian and Lockean foundationalism was not reductivism (since they were not reductive), but the foundationalist base. This objection applies equally to Carnapian reductivism. The thought that the foundations of our knowledge of the external world lie in our knowledge of our own subjective experience, in how things subjectively seem to us to be or in the ideas with which the mind is furnished by experience, is misconceived.

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[10] Duhem's holism was confined to scientific theory properly speaking, and unlike Quine, he did not hold that 'most sentences apart from observation sentences, are theoretical' (EN 80). In his view, it is only sentences containing theoretical terms (e.g. 'voltage', 'electromotive force', 'atmospheric pressure') that face the tribunal of experience together with the whole theory to which they belong. He did not think that external objects are theoretical entities or that names of common or garden objects and properties are theoretical terms (see P. Duhem, *The Aim and Structure of Physical Theory* (Princeton University Press, Princeton, 1954), p. 147f.). Carnap's holism regarding falsification of theory is patent in *The Logical Syntax of Language* (Routledge and Kegan Paul, London, 1937), p. 318.

For the attempted philosophical justifications of 'our knowledge of the external world' in the foundationalist tradition involved radical misuses of a wide range of verbs of sensation, perception and observation, and their manifold cognates. Foundationalism presupposes the intelligibility of a logically private language. Moreover, it misconstrues the actual role of sentences of the form 'It seems to me just as if *p*' or 'It appears to be an M' and of the sentence-forming operators 'It seems that ...', 'It appears to be ...' and 'It looks as if ...'. Finally, the reductive base presupposes objective spatio-temporal reference and simultaneously makes it impossible. Foundationalism (reductive and non-reductive alike) is not, as Quine asserted, an intelligible failure for holistic reasons, it is an unintelligible endeavour rooted in Cartesian misconceptions about knowledge, doubt and certainty, and in mistaken Cartesian strategies of combating scepticism on ground of its own choosing – namely the quest for certainty.

So, foundationalism *is* to be rejected. But why should the naturalization of epistemology follow? The only reasons Quine gave are inadequate.

(1) Admitting that naturalized epistemology is 'a far cry from old epistemology', he held that it is an 'enlightened persistence' in the original problem (RR 3). The original problem was: how can we justify our claims to know anything extra-mental? The allegedly enlightened transform is: how does it come about that we know anything extra-somatic? That question, Quine held, is a question for psychology, which will explain how sundry irritations of our surfaces ultimately result in true statements of science. While Carnap attempted to show a complex pattern of *logical* relations between basic statements concerning the given ('unowned data'), 'autopsychological' statements, statements about material objects, and 'heteropsychological' statements, naturalized epistemology will be concerned with elaborating *causal links* between the 'input' of sensory stimuli and the output of statements describing the external world. The proper task of scientific epistemology must perforce be allocated to future neuropsychology. Quine himself sketched the bare behaviourist outline of what he took to be input and output, in what must be the most scintillating display of armchair learning-theory bereft of empirical evidence since Locke – but that was no contribution to naturalized epistemology.

It is mistaken to suppose that there is anything enlightened about substituting a causal question about the ontogeny of human knowledge for conceptual questions concerning the general categories of knowledge and the kind of warrant or justification that non-evident beliefs may require. The question of what *warrants* a claim to knowledge concerning objective particulars is not resolved by an explanation of what are the causal processes necessary for attaining any such knowledge. Indeed, the causal investigation *presupposes* that sceptical qualms can be laid to rest, but are no substitute for laying them to rest.

The sceptical qualms that, in Quine's view, are the source of traditional epistemology, arise, according to him, from 'science' (empirical knowledge), and in answering them, he claims, we are free to appeal to scientifically established fact (agreed empirical knowledge) without circularity (RR 3). That is mistaken. One may grant that Cartesian *methodological* scepticism, in at least some of its stages in which it is merely local, presupposes that we do have empirical knowledge (e.g. that square towers in the distance appear round, or that we sometimes dream). But global scepticism (e.g. Academic scepticism) that denies that we can attain objective knowledge, springs from the thought that we have no criterion of truth to judge between sensible appearances. Citing a further appearance, even one apparently ratified by 'science', i.e. common experience, will not resolve the puzzlement. Similarly, we have no criterion to judge whether we are awake or asleep, since anything we may come up with as a criterion may itself be part of the content of a dream. So the true sceptic holds that we cannot know whether we are awake or asleep. We are called upon to show *that* he is wrong and *where* he has gone wrong. To this enterprise neither common sense nor the

sciences can contribute anything. No sceptical qualm can be resolved by adducing scientific knowledge or fragments of common knowledge – since anything we may adduce will call forth the response that it could, for all we know, be part of the content of a dream. What we have to do is to show that the sceptic's arguments and presuppositions are awry.

Quine rarely ventured into the territory of epistemological scepticism, but when he did, his forays lacked penetration. To scepticism about dreaming, he responded: 'I am ruling the dream hypothesis out in the sense that I dismiss it as very unlikely'.[11] To the updated variant of dream-scepticism that one may be a brain in a vat, Quine responded: 'I would think in terms of naturalistic plausibility. What we know, or what we believe ... is that it would really be an implausible achievement, at this stage anyway, to rig up such a brain. And so I don't think I am one.'[12] I don't think that Quine quite understood the point. Scepticism is not a challenge to one of the planks in Neurath's boat. It is a challenge to the logical possibility of seafaring. And it cannot be answered by invoking 'scientific' facts or common sense, or by pointing out that boats do actually go to sea. (One cannot resolve Zeno's paradox by observing that Achilles can overtake the tortoise by putting one foot down after another.) The problems it raises are purely conceptual ones, and they are to be answered by purely conceptual means – by clarification of the relevant elements of our conceptual scheme. This will show what is awry with the sceptical challenge itself.

(2) The second reason Quine gave for opting for naturalized epistemology is that 'If all we hope for is a reconstruction that links science to experience in explicit ways short of translation, then it would seem more sensible to settle for psychology. Better to discover how science is in fact developed and learned than to fabricate a fictitious structure to a similar effect' (EN 78). But the failure of Carnapian reductive foundationalism has no such implication. If the reductive enterprise of displaying our knowledge of objects to be a logical construction out of our knowledge of our subjective experiences fails, the first thing that is called for is a *philosophical* investigation into the question addressed. (The deepest problems of philosophy are buried in the presuppositions of the questions. The greatest mistake in philosophy is commonly the attempt to answer, rather than to challenge, the question.) We need to probe the reasons for undertaking the foundationalist project in the first place. This investigation may reveal that the questions were based on fundamental misconceptions. Kant declared it a 'scandal to philosophy and to human reason in general that the existence of things outside us ... must be accepted merely on faith', and accordingly offered a proof of 'the objective reality of outer intuition'.[13] Quine held that the question of whether there is an external world is a bad question.[14] But, like Hume, he claimed that the question that replaces it is 'whence the strength of our notion that there is an external world?' (SLS 217). In his view, the existence of external objects in the physical world is an efficient posit. 'In a contest for sheer systematic utility for science', he wrote, 'the notion of physical object still leads the

[11] See R.J. Fogelin, 'Aspects of Quine's Naturalized Epistemology' in R.F. Gibson Jr. ed. *The Cambridge Companion to Quine* (Cambridge University Press, Cambridge, 2004), p. 43.

[12] Ibid., p. 44.

[13] Kant, *Critique of Pure Reason* B xl, fn. *a*.

[14] The existence of the external world, or 'that there is evidence of external objects in the testimony of our senses', cannot significantly be denied, according to Quine. The reason he gave for this claim was that 'to do so is simply to dissociate the terms 'reality' and 'evidence' from the very applications which originally did most to invest those terms with whatever intelligibility they may have for us' (SLS 216). Elaboration of the latter argument would, I think, lead Quine straight down the road of a priori conceptual analysis.

field' (WO 238).   The epistemological enterprise of trying to justify our knowledge of the external world in the face of sceptical challenges is to be replaced by a scientific explanation of the causal processes that lead to our positing objects and acquiring our 'theory of the world'.   That, I have suggested, is mistaken: we do not 'posit' objects, and we do not have a 'theory of the world'.   Other philosophers have argued sapiently that it is the sceptic's demand for justification of 'our knowledge of the external world' that needs to be scrutinized and its presuppositions exposed.   Its cogency will then be shown to be defective.[15]

It *is* correct that foundationalism in its various forms, is misconceived.   But it is incorrect to suppose that once it is rejected, there is nothing left for epistemology to do than become scientifically naturalized.   It would be a mistake to suppose that the sole driving force behind traditional epistemology was scepticism. Indeed, ancient epistemology did not centre on scepticism until the emergence of the Academic scepticism of Archesilaus and Carneades. Aquinas, one of the greatest of medieval writers on epistemology had no interest in sceptical questions.   There is a great deal more to epistemology than answering the sceptic.   Contrary to what Quine asserted, what prompted epistemology was not to see how evidence relates to theory.   It was, above all, to explain what knowledge is, what its characteristic marks are and what difference there is between knowledge and opinion.   It was to investigate the scope and limits of knowledge; to determine whether humanity can achieve any absolute knowledge or whether all knowledge is relative; to discover whether pure reason alone can attain any knowledge of the world; to decide whether absolute certainty is obtainable in any of the forms of knowledge attainable by us; to show whether moral knowledge is attainable, whether mathematical knowledge is more certain than perceptual knowledge, whether we can know that God exists or whether the soul is immortal. And so on.

Early epistemology focused on the different sources of knowledge and on the different kinds of knowledge that we can attain.   Despite Quine's avowals to the contrary, there are radical differences between mathematical knowledge and empirical knowledge, between self-knowledge and knowledge of others, between knowledge of objects and knowledge of scientific theory (e.g. of electricity, magnetism, ionic theory), between the natural and the social sciences, and so forth.   It would be a mistake to suppose that one can glibly say, knowledge is knowledge – it merely has different objects. Knowledge that Jack is taller than Jill is *categorially* unlike knowledge that red is darker than pink.   To know the difference between right and wrong is *radically* unlike knowing the difference between Coxes and Bramleys.   To know what I want is *epistemologically* unlike knowing what you want, and to know what I think about a given question is not akin to knowing what you think.   Could naturalized epistemology contribute to the clarification of such conceptual differences?   I think not – any more than mathematics naturalized could explain the differences between natural numbers and signed integers, or between rationals and irrationals.

Traditional epistemologists want to know whether knowledge is true belief and a further condition (as was supposed in mid-twentieth century), or whether knowledge does not even imply belief (as was previously held).   We want to know when knowledge does and when it does not require justification.   We need to be clear what is ascribed to a person when it is said that he knows something. Is it a distinctive mental state, an achievement, a performance, a disposition or an ability?   Could knowing or believing that p be identical with a state of the brain?   Why can one say 'he believes that p, but it is not the case that p', whereas one cannot say 'I believe that p, but it is not the case that p'?   Why are there ways, methods and means of achieving, attaining or receiving knowledge, but not belief (as opposed to faith)?   Why can

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[15] See, for example, P.F. Strawson, *Individuals* (Methuen, London, 1959), chap. 1.   Carnap, Heidegger and Wittgenstein, for various reasons, held related views on the question of validating our knowledge of the 'external world'.

one know, but not believe who, what, which, when, whether and how? Why can one believe, but not know, wholeheartedly, passionately, hesitantly, foolishly, thoughtlessly, fanatically, dogmatically or reasonably? Why can one know, but not believe, something perfectly well, thoroughly or in detail? And so on – through many hundreds of similar questions pertaining not only to knowledge and belief, but also to doubt, certainty, remembering, forgetting, observing, noticing, recognising, attending, being aware of, being conscious of, not to mention the numerous verbs of perception and their cognates. What needs to be clarified if these questions are to be answered is *the web of our epistemic concepts*, the ways in which the various concepts hang together, the various forms of their compatibilities and incompatibilities, their point and purpose, their presuppositions and different forms of context dependency. To this venerable exercise in connective analysis, scientific knowledge, psychology, neuroscience and self-styled cognitive science can contribute nothing whatsoever.

Quine rarely paid attention to such questions. But when he did his answers were *not* essays in naturalized epistemology, i.e. parts of empirically testable theories, but patently traditional philosophical claims. They were, equally patently, inadequate. I shall give three examples.

'Knowledge', Quine wrote, 'connotes certainty' (Q 109), and rightly hesitated before limiting knowledge to the absolutely certain. But knowledge does not connote certainty at all. Rather, it is improper *to claim to know* something if one has *doubts*. A legitimate claim to knowledge presupposes absence of doubt (not presence of certainty), but knowledge as such does not (we do not fail doctoral students in their oral examinations because of their uncertainty).

Faced with the Gettier counter-examples to the definition of 'knowledge' as justified true belief, Quine did not even try to show how they can be accommodated within an alternative account of knowledge[16], but rather concluded: 'I think that for scientific or philosophical purposes the best we can do is give up the notion of knowledge as a bad job and make do with its separate ingredients. We can still speak of belief as being true, and of one belief as firmer or more certain, to the believer's mind, than another (ibid.).' One wonders what philosophical or scientific purposes Quine had in mind. In truth the concept of knowledge is not an isolated dangler in our epistemic conceptual scheme that can be excised without collateral damage. Did Quine also want to give up the notion of memory (knowledge retained) as a bad job? Are neuroscientists investigating clinical aphasic syndromes following lesions to Wernicke's and Broca's areas in the cortex not investigating aspects of memory? Did Quine also wish to give up the notions of perceiving that p (in its various forms), being aware, being conscious, recognizing, noticing that p – all of which imply knowing that p? These cognitive concepts too are integral to cognitive neuroscience and experimental psychology.

If we are to give up the notion of knowing, at least we retain that of believing. What, according to Quine, is that? 'Belief', he claimed, 'is a disposition' (Q 18). The dispositions of which he holds the mind to consist 'are dispositions to behave, and those are physiological states'. Hence he ended up, he said, 'with the so-called identity theory of the mind: mental states are states of the body' (MVD 94). But this too is mistaken. Beliefs (i.e. believings) are not dispositions to behave. Dispositions are essentially characterized by what they are dispositions to do, beliefs are essentially characterized by reference to what is believed to be so. To explain human voluntary behaviour by reference to a disposition is to explain it by reference to the nature, temperament or personal traits of a person. To explain A's voluntary V-ing by reference to his belief that p is not to explain it by reference to his traits of character;

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[16] One way in which this can be done is displayed in O. Hanfling's *Philosophy and Ordinary Language* (Routledge, London, 2000), chapter 6.

but nor is it to explain it by reference to his behavioural habits, tendencies or pronenesses (which is what Quine meant by 'disposition'). It is to explain it in terms of what A took as his reason for V-ing. To know that A has a certain disposition (in Quine's sense) is to know that he is prone or liable to act or react in certain ways in response to certain circumstances. But one can know that A believes that p without knowing what, if anything, A is prone or liable to do. The utterance 'I believe that p but it is not the case that p' is a kind of contradiction. But 'I have a disposition (I tend, am inclined or prone) to V, but it is not the case that p' is not a contradiction of any kind. If A believes that p, then it follows that A is right if p and wrong if not-p, but no such thing follows from A's having a behavioural disposition, tendency or proneness.

Quine compounds his errors by identifying a disposition with its vehicle, claiming that the human dispositions are physiological states of the body or brain. But a disposition, no matter whether an inanimate one or a human one, is never identical with its vehicle, any more than an ability is identical with the structures that make it possible.[17] The horsepower of the car is not beneath its bonnet, the intoxicative power of whisky is neither lighter nor heavier than the constituent alcohol that is its vehicle, but it is not the same weight either; and the ability of a round peg to fit into a round hole is not round. So even if it were true that believing that p is a disposition, proneness or tendency, it would not follow that it is identical with a neural state. Maybe some specific neural state is a necessary condition for someone's believing that p, but his believing that p could not be identical with that neural state. Otherwise, inter alia, one *would* be able to say 'I believe that p (referring thus to one's neural state), but it is not the case that p'.

In short, the alternative to Carnapian reductionism is not naturalized epistemology. Naturalized epistemology does not answer the great questions of epistemology and is no substitute for their answers. However, the question remains: does Quine's project make sense?

4. *Quine's project*
Having rejected Carnap's project, Quine declared that epistemology simply becomes a chapter of psychology that studies knowledge acquisition:

epistemology still goes on, though in a new setting and a clarified status. Epistemology, or something like it, simply falls into place as a chapter of psychology and hence of natural science. It studies a natural phenomenon, viz. a physical human subject. This human subject is accorded a certain experimentally controlled input – certain patterns of irradiation in assorted frequencies, for instance – and in the fullness of time the subject delivers as output a description of the 3 dimensional external world and its history. The relationship between the meagre input and the torrential output is a relationship that we are prompted to study for somewhat the same reasons that always prompted epistemology; namely, in order to see how evidence relates to theory, and in what ways one's theory of nature transcends any available evidence. (EN 83)

This passage purports to be a fanfare for the new subject of naturalized epistemology. But in fact it is no more than another song of the sirens.

Quine saw a continuity between the traditional question of how we can attain knowledge of the 'external world' and naturalized epistemology because, in his view, 'the stimulation of his sensory receptors is all the evidence anyone has to go on, ultimately, in arriving at his picture of the world' (EN 75). He explained that his concern was 'with the relation of scientific theory to its sensory evidence', that by 'sensory evidence' he meant

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[17] See A.J.P. Kenny, *Will, Freedom and Power*, (Blackwell, Oxford, 1975), pp. 10f. and *The Metaphysics of Mind* (Clarendon Press, Oxford, 1989), pp. 72f.

'stimulation of sensory receptors' (EC 24), and that he was concerned with 'how this sensory input *supports* ... physical theory' (ibid., emphasis added). In general, he contended, 'It is our understanding, such as it is, of what lies beyond our surfaces, that shows our evidence for that understanding to be limited to our surfaces' (SLS 216). But this is mistaken. The stimulation of sensory receptors is not *evidence* that a person employs in his judgements concerning his extra-somatic environment, let alone in his scientific judgements. My evidence that there was bread on the table is *that there are crumbs left there*. That there are crumbs on the table is something I see to be so. But that I see the crumbs is not my evidence that there are crumbs there. Since I can see them, I need no evidence for their presence – it is evident to my senses. That the cones and rods of my retinae fired in a certain pattern is not my evidence for anything – neither for my seeing what I see, nor for what I see, since it is not something of which I normally have any knowledge. For *that something is so* can be someone's evidence for something else only if he knows it.

Quine contends that 'science itself tells us that our information about the world is limited to irritations of our surfaces, and then the epistemological question is in turn a question within science: the question how we human animals can have managed to arrive at science from such limited information' (FME 72). But itches and tickles apart, neither the 'irritations of our surfaces' nor that they occur are the *information* we have to go on in making judgements about our surroundings; they are at most causal conditions for making such judgements. That something plays some causal role in belief formation does not make it evidence for the belief formed. Light waves impinging on our retinae and sound waves agitating our eardrums are mischaracterized as 'unprocessed information', since they are not information at all. What you tell me when you tell me that *p*, what I read when I read that *p*, may be information, but the stream of photons and soundwaves are not. The proposition that *p* may then be a premise in my reasoning inductively to the conclusion that *q*, but neither the stream of photons involved in my reading that *p* nor a proposition describing this stream of photons could be my evidence that *q*. Science does *not* tell us that all our information about the world is limited to irritations of our surfaces. What science (neuroscience) may tell us is that, were there no 'irritations', we should acquire no information.

Since Quine described the input in terms of irradiations, etc., the output (i.e. the output that interests him – expressions of what he called 'theory') should be characterized in terms of sound waves. If the output is to be described in terms of intelligible verbal assertions and theorizings, the input should be described in terms of intelligible perceptions of our environment and the intelligible utterances of our teachers and fellow human beings. Otherwise it would make no sense to claim, either truly or falsely, that the resultant 'theory' *outstrips* the evidence.

The patterns of irradiation in assorted frequencies to which we are subject are not *meagre* at all. What would Quine want to make them less meagre – more noise and flashing of lights? More heat and less cold? Would that make our acquisition of knowledge and its verbal expression more intelligible or less surprising to Quine? Similarly, the 'output' is not *torrential* – save in the case of compulsive chatterboxes. Any appearance of paucity in input relative to output is generated by describing the input in terms of radiation and then describing the output in terms of descriptive utterance rather than in terms of sound waves. For only thus described will any *disparity* strike one. The questionable claim that theory must be underdetermined by evidence should not be confused with the quite different and patently false claim that the evidential basis for theory is stimulation of sensory receptors.

The psychology of learning studies how children acquire knowledge in response to what they see and hear; it studies the *practices* they are taught and their consequent responses in *acting on* their environment – not how they make assertions in response to irritations of their nerve endings. Quine's behaviourist conception of input of irradiation (stimulus) and output

of descriptive, theoretical, utterances (response) is cousin to the classical empiricist conception of corpuscularian input and output of judgements about the world – for it remains a picture of knowledge *receptivity*, not of knowledge *acquisition*. But the child is not merely an observer, he is also an *actor*. He is not only a spectator, receiving neural stimuli and emitting sound waves, perceiving his environment and describing it, but also an inveterate and incurable *experimenter* – acting upon the objects he finds around him in order to discover what they do when pushed or pulled, dropped or thrown. From very early on, the child not only perceives his own body, but also controls it, moves, and moves his limbs, at will. In touching, handling, and manipulating things, perception and *action* are united. The child learns to see himself as an active self-moving agent in a world of intentional agents – and that is neither a theory nor a posit.[18] These features are absent from Quine's tale – to its detriment.

Quine's envisaged discipline is supposed to track the neural stimuli of irradiations of our surfaces, through the brain, to the point of the verbal expression of judgements concerning reality, ranging from such utterances as 'The cat is on the mat' to 'The DNA molecule is a double helix'. Such a science does not exist. Whether or not it is conceivable, it is not necessary for the purposes of explaining the genesis and development of theory. What renders the discovery of the structure of DNA intelligible *is not* and *could not be* a description of the irradiation of the surfaces of Crick and Watson and the consequent neural events in their brains, no matter how necessary these may have been to their triumphant insights. But one can read the well-documented accounts of the *history* of the actual discoveries and so find out how they came about.

Even if such an imaginary science were to come into existence, it would not be able to shed any light on the evidential support for theories. If one wants to understand the relation between evidence and theory in this case, one had better study the papers disclosing the discovery of the structure of DNA and providing the evidential grounds for it. No description of irradiations of nerve endings *could* shed light on the evidential reasoning that *warranted* Crick and Watson's theory.

This imaginary science is no substitute for epistemology – it is a philosophical *cul-de-sac*. It could shed no light on the nature of knowledge, its possible extent, its categorially distinct kinds, its relation to belief and justification, and its forms of certainty. Nor is the investigation of the relationship between irradiations and cognitive utterances a subject for philosophers. For philosophy is neither continuous with existing science, nor continuous with an imaginary future science. Whatever the post-Quinean status of analyticity may be, the status of philosophy as an a priori conceptual discipline concerned with the elucidation of our conceptual scheme and the resolution of conceptual confusions is in no way affected by Quine's philosophy.

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[18] This theme was explored by Stuart Hampshire in his *Thought and Action* (Chatto and Windus, London, 1959). See P.M.S. Hacker, 'Thought and Action: a Tribute to Stuart Hampshire', *Philosophy* 80 (2005), pp. 175-97.

Abbreviations

AM – 'On Austin's Method', repr. in *Theories and Things*

EC – 'Empirical Content', repr. in *Theories and Things*

EN – 'Epistemology Naturalized', in *Ontological Relativity and Other Essays* (Columbia University Press, New York, 1969).

NNK – 'The Nature of Natural Knowledge' in S. Guttenplan ed. *Mind and Language* (Clarendon Press, Oxford, 1975).

NLWM – 'Naturalism; or, Living Within One's Means', *Dialectica* 49 (1995).

MVD – 'Mind and Verbal Dispositions' in S. Guttenplan ed. *Mind and Language* (Clarendon Press, Oxford, 1975).

FME – 'Five Milestones of Empiricism' , repr. in *Theories and Things*

FSS – *From Stimulus to Science* (Harvard University Press, Cambridge, Mass., 1995).

PL – *Philosophy of Logic* (Prentice-Hall, Englewood Cliffs, N.J., 1970).

Q – *Quiddities: An Intermittently Philosophical Dictionary* (Penguin Books, London, 1990).

RR – *Roots of Reference* (Open Court, La Salle, Illinois, 1974).

SLS – 'Mr Strawson on Logical Theory', repr. in Quine's *The Ways of Paradox and Other Essays* (Random House, New York, 1966).

TT – *Theories and Things* (Harvard University Press, Harvard, Cambridge, Mass., 1981).

TTPT – 'Things and their Place in Theories', repr. in *Theories and Things*

WO – *Word and Object* (MIT Press, Cambridge, Mass., 1960).