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Quine: Underdetermination and Naturalistic Metaphysics

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Adrian Moore seems to have his finger on a point of uncertainty in Quine. Quine as we know had little taste for metaphysical speculation, for 'transcendental' speculation as he tended to call it. His 'insofar as I succeed in making sense of it' (Quine 1981: 22) suggests either derision or, if not simple modesty, a reluctance to talk the talk of Kant or Leibniz, from his point of view so reckless in comparison with the careful language he sought for the expression of his official views. He did take positions on lesser metaphysical questions, insofar they are continuous with science, or rather arise amid the regimentation of scientific doctrine: are there properties? (no); propositions? (no); abstract objects? (yes); and so on. But in response to what emerges within his philosophy as a maximally general question of reality, a really big metaphysical question, his answers are brief and disconcertingly metaphorical. The question is not just whether there are, in Moore's terms, alternatives to our way of making sense of things—there are, or could be, in Quine estimation—but what is to be inferred from this, how the situation is to be conceived, interpreted, or explained. Does that positive answer not imply the existence of something like a Kantian thing-in-itself, in some sense reality but forever unknowable? If so, then how are we to respond?

I'll sketch how I think Quine might have expanded on this, picking up on some points Moore raises. The answers inevitably will not satisfy anyone who takes that question seriously; and I think like Moore that almost anyone with a rational bone in their body—or any such person who is also sympathetic to empiricism—will take it seriously, with the result a certain familiar Kant-like *aporia*, that of being forced to pose questions which one knows to be unanswerable. I venture that Quine—even if he grants that the posing of such questions is an inevitable feature of reason in some sense—takes such curiosity to be strictly speaking a mistake, something like that of thinking there must be a single truth-predicate for all levels of Tarski's hierarchy. It's a mistake because it represents a necessarily unsatisfiable craving, an unscratchable itch. If that is his position, then it might be regarded as remnant of high-positivism; I'll close with some remarks about this.

First, however, I'll explain briefly how the question arises for Quine, and try to clear up certain misinterpretations of Quine—McDowell's and Campbell's—which Moore follows but fortunately do not affect what he says on the points that it seems are his real interest.

1. Quine divides the realm of declarative sentences into the occasion sentences and the standing sentences. Unlike standing sentences, occasion sentences are those that are sometimes true, sometimes false. A certain subset of these latter are the famous observation sentences. Observation sentences are occasion sentences to which a given speaker is disposed to assent just in case some set of the speaker's exteroceptors—their sensory nerves that are sensitive to stimulation at the surface ('outside') the body—are activated, and similarly for dissent (other occasion sentences have no such correlation). Theoretical sentences are standing sentences. The simplest type of theoretical sentence is the observation categorical, such as 'If smoke, fire'; these (not observation sentences themselves) are what a scientist tests; the scientist contrives or looks for the truth of the antecedent, and checks for the truth-value of the consequent.¹ Obviously 'RNA is less stable than DNA', 'E=mc²' and so on are more complicated, especially in their not being composed of observation sentences, but also are ultimately sensitive to observation: partly through their sharing

of vocabulary with observation sentences, and more broadly though their systematicity and generality, through their logical linkages to observation categoricals and to each other.²

By a theory's 'empirical content' Quine means the sum of its observation categoricals. This is explicit in 'Empirical Content' of 1981 (28; also 1991: 16-18). The immediate *evidence* for a speaker's theory is not the sensory stimulations themselves—and not the objects and events perceived and not sense-data—but a certain subset of observation sentences such that each is paired with an actual context in which the subject has the disposition to assent to it or dissent from it (Quine 1969: 69-90; 1991: 1-18; 1995: 16-26). The effect is thus a standing sentence (or an 'eternal' sentence as in 1969, or a 'pegged' observation sentence as in 1981). The stimulation perchance *causes* the disposition to assent to an observation sentence, but, in Quine's scheme, it is not in general part of the evidence or the empirical content of a theory; causation of dispositions to assent to observation sentences is something noted only by a very few souls working in the specialized reaches of theory (see Quine 1981: 40). The evidence delivered by 'It's warm' is that it's warm for a certain speaker at certain time and place: an observation sentence plus matters of context. This is not meant as an analysis of the concept of evidence (or of that of observation); rather it's meant to show that questions of the relation of evidence to theory can be made satisfactory sense of by recourse to the official Quinean story of observation *sentences* and their relation to the rest of theory (Quine 1991: 2). Likewise the idea of the empirical content of a theory.

Confusion over Quine's position on this can perhaps be traced to a certain overreaction to the famous 'Epistemology Naturalized' of 1969 (first delivered in 1965). There and elsewhere Quine describes the relation of evidence to theory in terms of one's being bombarded with stimulation with the eventual result that one comes out with a theory. This is what Quine thinks is a legitimate task for epistemology once the dream of articulating a sensory basis from which science could be derived is given up. The task is one of explanation, not justification; any scientific finding may legitimately be appealed to, including ones of biology. But 'evidence' is a word of ordinary language, and as such it is a bit of a weasel-word; it is in a sense true that 'all one has to go on' is the stimulation of one's senses as Quine famously says (1960: 27; 1969: 75)—that is, by empiricism, one's evidence is so restricted. But in another sense, one's evidence is what one perceives or observes, something suitable for expression by uttering observation sentences. By 1981, the year of 'Empirical Content', and more unequivocally by 1990 when he published the first edition of *Pursuit of Truth*, he was aware of the potential confusion:

Observation then drops out as a technical notion. So does evidence, if that was observation. We can deal with the question of evidence for science without help of 'evidence' as a technical term. We can make do instead with the notion of observation sentence. (1990: 2; see also 1981: 25).

Both McDowell and Campbell make the same mistake, with Moore following, of misconstruing the role of the concept of evidence in Quine's official, technical philosophical doctrine; maybe Quine could be read in such a way in 1960—the year of *Word and Object*—but the matter was clarified later as just described. Moore writes:

... an objection to which John McDowell has given celebrated expression (see esp. McDowell (1996), Afterword, Pt I, §3). It pertains to Quine's naturalistic construal of our evidence for

our current beliefs. On Quine's account, this evidence is a matter of impacts on our sensory receptors, patterns of ocular irradiation, and suchlike. (2012: 325)

And following Campbell:

the ... objection is that, by construing our evidence for our current beliefs in terms that depend so heavily on those very beliefs, Quine has violated his own crucial insight that the beliefs are underdetermined by the evidence (see §3 above). '[Given that] patterns of ocular irradiation have to be described in terms of the physics of the day,' writes Campbell, 'how . . . could they be consistent with some rival to the physics of the day?' (Campbell (2002), Ch. 11, §5). (2012: 325)

Again, that evidence—in the sense in which the word is employed by McDowell and Campbell—consists of ocular irradiations, was never part of Quine's official story, and in the passage quoted above from *Pursuit of Truth* he even went to the rather extreme lengths of expunging the word 'evidence' from the story, thus finessing the issue. If we insist that a role be accorded to the concept of evidence, then the evidence for a theory consists of actual occasions when speakers have a disposition with respect to an observation sentence, showing up in a theory most immediately as its empirical content, that is, in the theory's observation categoricals.

So McDowell's problem doesn't get a grip. Of Campbell's, Moore writes:

Now one might think that Quine has a perfectly satisfactory riposte to Campbell's rhetorical question. What matters, one might think, is not how the patterns of ocular irradiation are to be described, but what their content is... Is this a legitimate reply on Quine's behalf to Campbell's rhetorical question? Only granted one absolutely crucial proviso: that Quine is entitled to talk about the 'content' of the patterns of ocular irradiation. But that, of course, brings us back to the first objection. The first objection was precisely that Quine is not entitled to talk in such terms. That was why patterns of ocular irradiation were deemed unsuitable to play the role of evidence. (2012: 326)

If what Moore is after is the content—the meaning—of an observation sentence, rather than the content of the patterns of ocular irradiation (what would that be?), then *Word and Object* gives an affirmative answer: to translate an observation sentence we are to find an observation sentence of our own language that matches it in point of stimulus meaning (1960: 31-67).³ The *content* could be identified with the set of observation sentences of the subject's own language(s) that so match it (that are stimulus-synonymous to it). So Campbell is answered. But even if this answer were felt unsatisfactory, it would not run us back into a problem of McDowell's making; there is no such problem as just explained.

There are other problems that might be raised, of course. One is in Quine's view not a real problem. It's that most observation sentences don't seem at first blush to be evidentially (that word again) basic. It's rather 'subjective' sentences—occasion sentences such 'feels warm', 'looks blue'—that seem basic in the order of warrant or justification. Way back in 'Two Dogmas' (1961 [1953]) Quine explains his reasons for his view that that appearance is false: to accept it is to buy into foundationalism, into first philosophy, which as Moore stresses is the opposite of Quine's naturalism. Again, his main interest is in explaining how theories work, not in justifying them. From

that point of view, it is not a problem to explain subjective sentences ('Seems to be milk!') as presupposing a mastery of observation sentences ('Milk!'). Another problem, a real one, is that of intersubjectivity. I haven't mentioned it, but it was a requirement on observation sentences in *Word and Object* (1960) through at least *Theories and Things* (1981) that they must be such that any other member of the linguistic community would agree with the subject's verdict if he were to undergo the same stimulation. As time went on, Quine relaxed this requirement, for it presupposes something that ought not to matter, namely that the relevant subjects are neurologically similar (1992: 40-44; 1995: 21-21). Can the requirement be relaxed or simply dropped? Elsewhere I've tried to defend Quine's late attempts to get round the problem.⁴

2. Yet all of this is by the bye. Moore's fundamental question is completely independent of any stake in McDowell or Campbell.

We can start by considering what Moore says about Quine's distinction between the underdetermination of theory and the indeterminacy of translation. It's important that we pay attention to the changes to the two doctrines he made in the last decade of his life. The former is the fanciful possibility that two theories (understood as straightforwardly individuated by their grammar and lexicon, as 'theory formulations') of the entire universe might be empirically equivalent—should imply precisely the same set of observation categoricals—and be logically compatible, but we, as it happens, can find no way of reconciling the two, no way to translate theoretical sentences of the one into equivalent or analogous sentences of the other (Quine 1991: 95-102; cf. 2008 [1975]: 228-43.⁵ Quine's response, in *Pursuit of Truth*, is as Moore says a *sectarian* one as opposed to an *ecumenical* one (Quine 1992: 98-101). The latter involves accepting both theories, perhaps in single inclusive language, perhaps as one giant theory. Such a move is recommended by empiricism, since one accepts that the two are empirically equivalent. But this acceptance, on the other hand, is gratuitous: all that theory without a whit of added coverage of observables. Obeying Ockam's dictum, the *sectarian* by contrast settles for a frank dualism: one is free to speak in terms of one or the other, but not both simultaneously, and is bound by the principles of the theory one happens to be using. And—this is a crucial point added by Quine's naturalism—one *must* assume one or the other; no factual claim, indeed no claim, can be made independently of accepting some theory or other. The *sectarian* holds that one theory is counted true so long one uses it, while the other must be counted untrue (in fact, at the moment of using the one, the terms of the other must be reckoned meaningless; 1992: 100).

Quine expressed the thesis of the indeterminacy of translation in a variety of ways, but a way which was very prominent especially in the 1960s was as follows: Even if we accepted a complete theory of everything—that covers all the physical facts—materially different yet empirically correct translations of a given language would nevertheless be possible which are equivalent with respect to those facts (Quine 2008 [1970]: 209-10; 1969: 302-4; cf. 1992: 102). So the difference is not a difference of facts reported by two translations; it's just a difference in ways of representing those facts, a practical difference at most. Later, Quine exchanged this formulation for a more psychological one, saying merely that the two cannot be used interchangeably—changing translation method sentence by sentence—without creating bafflement on the part of ordinary users of the language into which the translation is made (2008 [1994]: 447-4).

Moore responds to the spectre of indeterminacy by saying, in essence, that the conclusion merely shows the limits of naturalism. He writes:

Quine is able to see the scientific way of making sense of things as the only way of making sense of things because he presupposes a narrow conception of what it is to make sense of things. (2012: 326)

As noted it is important to keep in mind the later, non-ontological way of characterising indeterminacy. It's why the complaint is not merely about physicalism, but more fundamentally about naturalism itself: Science does not show why this translation is better than that, in the sense of being more natural, of making more sense, as we say; so science does not tell us everything.

Now Moore lodges this complaint ostensibly on the basis of the objections of McDowell and Campbell, the misfiring of which I've just pointed out. But I think it evident that it signals a general dissatisfaction with Quinean naturalism that stands independently of that. With respect to the indeterminacy of translation itself, Quine and his defenders can just say that some differences in modes of understanding, or making sense of things, or making sense of making sense of things, just don't make a difference for the way that things *are*. They're just different ways of stating the same facts, or even of saying the same thing, as we can intuitively say. Psychology can investigate why some translations strike one as better than others, even if the translations are equally empirically adequate (this is the place for Chomsky-inspired research programmes). In other words we just repeat our naturalism, perhaps adding our admission that in some respects naturalism is not the natural view.

But this strains one's allegiance when we turn to the underdetermination of theory. With respect to this, we can't say that it's two ways of saying the same thing, of stating the same facts; by hypothesis the two ways are factually different. It appears that we have to imagine jumping back and forth between two Neurathian ships, of 'shifting from one foot to the other' as Quine puts it (1992: 100). Or, in his most extended remarks on this issue, Quine writes:

Fare these conventions as they may, the rival theories describe one and the same world. Limited to our human terms and devices, we grasp the world variously. I think of the disparate ways of getting at the diameter of an impenetrable sphere: we may pinion the sphere in calipers or we may girdle it with a tape measure and divide by pi, but there is no getting inside. (1992: 101).

But of course one wants to ask: Who is this enigmatic geometer? What system does the geometer accept that facilitates the judgement that the answers coincide? If none, then by Quinean naturalism, no such answer makes sense; if we grant the geometer a system, then that is transcendental, or least not naturalistic. Or back to Neurath's image: Who is this person who jumps? What does this being think while jumping? Officially, according to Quinean naturalism, nothing; such a being—insofar as it's a rational being—cannot literally be made sense of. Such a being can be rational only insofar as they stand on a particular ship. Moore writes:

... I suggested that Quine's lax sectarianism, which is laxer than his naturalism warrants, exhibits a dim recognition that only something less extreme is ultimately sustainable. For in his lax sectarianism Quine allows himself to step back from the scientific way of making

sense of things, which is the only way of making sense of things that the extreme view sanctions, and tries to make sense of that way of making sense of things without simply redeploying it. (2012: 324)

And then:

... Quine's extreme naturalism has fallen foul of the following fundamental fact: the (naturalistic-scientific way to make sense of things is not the way to make sense of making sense of things. But what then of Neurath's image (§2), which suggests that all sense-making is of a piece? The image works well for scientific sense-making. If the ship in its current state represents what I called in §2 'our current beliefs', in other words those beliefs that we have arrived at so far by using the scientific way of making sense of things, then the image helpfully indicates what is required of us if we are to continue to use that way of making sense of things to arrive at new beliefs. But this does not preclude our using some quite different way of making sense of things to arrive at a conception of the beliefs themselves. We can jump overboard: we can look at the ship from outside. It is just that, if we do, we must remember to modify our procedures in an appropriate way – by treading water, say. (2012: 324)

Is Moore right? Not Quine himself, perhaps, but a Quinean wearing his official naturalistic badges, would say something like: 'All naturalistically conceivable knowers have limits to what they can directly sense. Therefore, we can assume, there will always be underdetermination of theory, time without end. And the judgement that there are empirically equivalent rivals to one's theory is one that is made on the basis of one's current theory. So it *not* true that the truly Neurathean Neurathean sailor has to jump overboard: one's judgement is always from the point of view of some ship or other'.

Perhaps such a Quinean can stick to his guns on the question of whether his naturalism falls short of making sense of making sense of things. But it is distinctly unsatisfying, and one even questions the coherence of the position as emerged in the image of the geometer. The problem can perhaps be made clearer if we shift from Moore's way of speaking momentarily to the explicitly Kantian question of the thing-in-itself, and attempt to pose it without metaphors of Neurathean sailors and transcendental geometers.

Quine insists with Austin that words like 'reality', 'fact', and 'object', and presumably phrases such as 'the world', are meaningful only thanks to the contexts in which they are learned. Fair enough; they don't signify in a magical way, they don't reach the supernatural or anything; they have only such significance as is implicit in such lessons as that the North Pole is real, Santa Claus not. But it is difficult not to think that such vocabulary does not change much in its import depending on what total theory of the universe we have in view. On the whole they're invariant. We can ask for the *ontology* of a theory, for what it takes to *real*, without supposing that the answers will somehow change the sense of the question. Similarly for truth, even if we must swallow the reminder that some such expedient as Tarski's is needed to avoid inconsistency. No wonder that these are the concepts of intuitive metaphysics.

Thus, if we suppose that there are two factually different but empirically equivalent theories of the world, it looks as if they are indeed competing theories of the *same world* (there is only one),

differing in the entities they take to be *real*, how those entities combine, and so forth (though without explicit disagreement). As we might say, they afford different *perspectives* or *stances* on that selfsame world. The only way to object to that way of speaking is to deny the theory-neutrality of the terms ‘the world’, ‘reality’, and so on, or any rate to deny that they retain enough meaning across theories for the inter-theoretic comparisons to make sense. As just indicated, that seems manifestly unconvincing. A better response is to admit—as anyone who has any sympathy with empiricism must—that knowing beings must have limits, but the limits are limits to the knower’s relation to reality, to the world, which is therefore known incompletely. This is something we know—even if dimly and shakily—independently of the particular scientific theory we happen to espouse; it looks like knowledge that is non-naturalistic in Quine’s sense, even transcendental.⁶

Does that way of conceiving the issue offend against what still lives and breathes of the impulse towards positivism, which I take it most of us do recognise? It would if we said that even though they’re empirically equivalent, at most one of these theories is *absolutely true* (True). Not only is that not allowed by naturalism, we can’t describe what it would be to know that just one of these theories is True. There speaks the living vestige of positivism. Not that we could not get up a conception: We could go back to some form of the correspondence theory of Truth. But if we were to continue to accept underdetermination, then we’d have to accept that at most one of these empirically equivalent theories somehow shares the structure of reality whereas others do not, even though it’s impossible to say which. That means gratuitous scepticism, or rather defeatism. The structure of the situation is an old one: One of Bishop Berkeley’s better arguments against Locke’s metaphysic of material substance was not that we in fact don’t know material substance, not that as it happens we can’t know it, but that it is impossible to describe what it would be to know it (all we get is just more ideas)—a sign that something is wrong with the idea of material substance to begin with.

The conclusion of two paragraphs ago seems more satisfactory: As knowing beings we must accept our limits, be humble in the Humean way, not shrink the world down to suit our faculties in the Berkeleyan way. But we cannot articulate adequately that humbleness within naturalistic bounds, as Quine understands them. Returning to Moore’s way of speaking, the limits of the way to make sense of things—assuming it’s Quine’s naturalistic way—can legitimately be transcended in the way to make sense of the way to make sense of things. It has to be that way, merely in order to have this conversation, the one started by the underdetermination thesis.

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¹ Actually the story of observation categoricals is more complicated. Strictly they are *not*, in themselves, ontologically committing, for the same reason that observation sentences are not: reference to objects is not required to explain them (reification emerges only with quantifiers). Logically, in themselves, their form does involve quantification or variables (a creature with only observation sentences and categoricals would not be a referring creature). Psychologically, 'If smoke, fire' etc. express conditional expectations, our 'first faltering scientific laws', Quine calls them (Quine 1995: 25); see 1992: 9-13.

² Except for 'outliers', those well-formed sentences containing only theoretically respectable vocabulary whose truth-value is empirically immaterial. Quine cites as examples certain sentences of higher set theory such as the Continuum Hypothesis. According to Quine, we accept such sentences as part of our theory, hence legitimizing the debate over them, because the alternative would involve a 'prohibitively complex gerrymandering' of our conceptual scheme (Quine 2008: 432; see also 169, 468). Quine view of mathematics in general of course is that it is ultimately empirical, via the idea of holism advanced in 'Two Dogmas of Empiricism' (1961: 20-46).

³ But see the paragraph below and note 4.

⁴ Kemp (2012) and (2010); Quine final position is that the requirement can indeed be dropped, once one recognizes that we are genetically endowed with the capacity to respond similarly to the environment. Quine calls this 'pre-established harmony' (Quine 1995: 19-21. and 2008: 473-6). The problem, if it really is one, is that there is strictly speaking no content of an observation sentence which typically reaches across different language users. Pre-established harmony explains why, despite that fact, we succeed in communicating.

⁵ I will as Moore does simply set aside the bearing on this issue of other theoretical desiderata such as simplicity, conservatism, and fecundity; empirically equivalent theories might differ widely on these other scales. See Quine 1991: 14-18; 95-6.

⁶ And it is not knowledge that is merely unavailable to us, as for example the number of grains of sand on Mars on January 1st 1900 at 12:01am G.M.T; in the name of bivalence Quine grants that there is an unknowable fact of the matter, which in another sense is the way the world transcends our ability to know it (Quine 2008: 492). But the fact falls squarely within our naturalistic conceptual scheme.