Ontology and science: Quine

McX. In 'On what there is' Quine aims to give us a sketch of his ontological views. He does it, in the first place, by contrasting them with other views. One such view is attributed to 'McX'—namely, the view that we can't speak of nothing, and we can't refer to nothing.

It may initially be unclear how the debate develops. Let's try to unpack it as follows. Consider a series of statements: [1]

(16-1) a. Pegasus is a mythical flying horse.

b. Pegasus is a mythical horse, but it doesn't exist.

c. Pegasus is a non-existent entity.

d. Pegasus doesn't exist.

Suppose I begin by saying (16-1a). Then it seems that I'm speaking *about* something, predicating certain properties of that something. It doesn't help if I amend my statement as in (16-1b): I'm still speaking of something. Indeed, adding that *it* doesn't exist seems paradoxical. Similarly in (16-1c) I'm acknowledging that Pegasus *is* an entity, after all. The most laconic (16-1d) is difficult too, since how can I properly think of, or refer to, something that is not there?

From such considerations McX draws the conclusion that Pegasus must exist—perhaps as a mental entity. Quine counters that our reasonings about Pegasus aren't about a certain mental entity, at least not all of them. For example, we wish to accept (16-1d). That's how the debate started, after all. But if Pegasus is a mental entity, we would rather say that Pegasus *does* exist and reject (16-1d). [2]

WYMAN'S WAY. To salvage McX's ideas we can reject (16-1d). Perhaps we should be more discerning about the meaning of 'exist': Pegasus doesn't exist in one sense, but does exist in another. So when people accept (16-1d), they accept just one version of it. We might say instead: [3]

(16-2) Pegasus doesn't actually exist, but it possibly exists, or 'subsists'.

That's the way taken by Wyman. Some of Quine's most famous rhetorical points are made against Wyman: 'ruining the meaning of "exist"', 'preference for desert landscapes'. The substantive objections seem to be as follows. Merely possible objects have no criteria of identity. We can't differentiate between one possible fat man from another possible fat man. But to be able to speak of an entity, we have to speak of *that* particular entity. [3–4]

Later theorists addressed these issues, and Quine himself alludes to Carnap's discussion of individual concepts. He claims, however, that the problems are too great and are better solved by abandoning quantification over possibilia. We should only be permitted to use modality *de dicto*, as an operator over whole statements. He acknowledges the need for a semantic analysis of such statements, but insists that possibilist quantification is still theoretically indefensible. [4]

The second objection is about the impossibles. If we are so lax about admitting merely possible objects into our universe, why not to admit impossible ones too? So next to flying horses we may also have black red horses. Wyman responds that a statement like: [4–5]

(16-3) A black red horse doesn't (actually) exist

is meaningless. Because it's meaningless, we don't have to introduce possible black red horses. Quine complains that we have no effective test of meaningfulness, and therefore, no test of impossibility so understood. [5]

There are large issues here. Let's mention now only that, with the discovery of metaphysical necessities, Quine's critique gets even more bite. If metaphysical necessity is *the* right kind of necessity to lean on in the discussion of existence, then there's certainly no effective test. Previously, it was thought that water could have been XYZ, or that Caesar could have been born after Jesus. But these are now shown to be metaphysically impossible. It's not clear that there is any general rule to delimit the range of metaphysical impossibles. In fact, it is argued that flying horses *too* are impossible (not just non-actual). We'll return to these issues later on.

QUINE'S PROPOSAL. The problems with McX and Wyman began with a puzzle over proper names. We said: How can we talk about entities—that is, name them—without there being any such entities?

Quine suggests that names are dispensable. This is done in two stages. First, we translate a name like 'Pegasus' into a definite description 'the thing that pegasizes'. The role of the artificial predicate is just to perform the trick and rid ourselves of names. After all, why *should* we use names at all? We might have used predicates uniquely associated with individuals.

Once names are replaced by descriptions, we then turn to Russell's theory of them where the main idea is that descriptions are camouflaged existential statements. Roughly, we have this:

(16-4) 'The second Russian president is bad' is translatable into: 'There is a unique thing that has the property of being the second Russian president and he/she/they/it is/are bad.'

From (16-4) we see that the criterion of existence, that earlier we assigned to proper names, is now associated with existential quantification. To ask whether Pegasus exists is now to ask whether a certain existential statement is true. Or as he, again famously, put it, 'To be is to be the value of a variable.'

Quine is emphatic that this principle, on its own, gives us no clue as to what in fact exists. The ontic criterion (in the slogan form just mentioned) is useful to navigate disputes. If we can paraphrase, say, McX's ontic claims into existential statements, we could see clearly what he is committed to, and what we should, therefore, reject.

But ontology itself, Quine says with a nod to Carnap, can't be a matter of language alone. Quine's next claim, therefore, is that the adoption of a particular follows on the heels of the adoption of a scientific theory. And which theory to prefer is decided by its ability to fit and arrange experience.

Remark 1. This relates to Davidson's discussion we saw earlier.

THINGS AND THEORIES. The idea that our ontology should be read off scientific theories—at least when these theories are put in the regimented form of the first-order logic—may be understood as an advice to drop the ontological enquiry altogether and simply look up to science for instruction. It turns out, however, that Quine's proposal is more complex than that, even if the advice is congenial. He wishes to make *philosophical* claims about the ontic commitments of science. One such claim is the source of our belief in the body—in the material objects.

Now why, actually, should any such question arise? Why would Quine, of all people, worry about the status of scientific ontic claims? If we begin with a premiss of scientism and the authority of science (physics, in particular), why can't we be content with transferring our ontological responsibilities entirely to science/physics?

I think we might reconstruct Quine's concern as follows. We trust a scientific theory T (a logical product of all reputable theories) because, unlike scientology, astrology, or anthroposophy, it 'manages' our experience so well. Suppose we accept whatever entities T is committed to as real. Then we are, in effect, back in Carnap's corner. Different frameworks/theories are more or less useful. Our ontology is *arbitrary*, tracking the most useful theory out there. Quine's complaint, as we saw, is that this reasoning misrepresents the role of the initial step. The trust we put in T is itself scientific (and so is part of T itself!), even if it doesn't superficially look like science. So we need to look more closely into the mechanics of this acceptance. We need to explain how exactly the theory T negotiates our observations.

The fundamental unity between the initial step and the later steps in scientific development leads to a further, stronger claim involved—that the commitments we incur in our everyday innocent theorisings (before we become scientifically sophisticated) must be continuous with the commitments incurred in the more sophisticated theorising. For example, if it happens that T is committed to a rather esoteric class of entities X, we can't say, with Carnap, that Xs exist, and close the shop. We must also say why the existence of Xs is continuous with the existence of our more familiar objects. In effect, we'll conduct an 'ontodicy' of scientific theories.

ONTOLOGY AS ROOTED IN ORDINARY LANGUAGE. Ontological commitment is a product of selectivity. Once we notice salient features of the environment, 'concentrate' on them, we celebrate them in predication, such as in 'Milk is white.' Individuative words come about as a result of higher selectivity, higher attention. Second, we introduce relative clauses 'that', 'which', 'who'. Only after this essentially linguistic development reference and objectual talk fully mature.

Ontology and reference are philosophical inventions. Ordinary language has no special concern with ontology, and the idea of ontological commitment is vague. First, there are no precise criteria of identity for objects. Without such criteria, ontology flounders. Secondly, it is not even clear, from the analysis of ordinary speech, which ontological assumptions an ordinary speaker is making.

SOME SUGGESTIVE QUOTATIONS. Sometimes it is best to let Quine speak for himself. So:

Bodies: We can see how natural it is that some of the occasion sentences ostensively learned should have been such as to foreshadow bodies, if we reflect on the social character of ostension. The child learns the occasion sentence from the mother while they view the scene from their respective vantage points, receiving somewhat unlike presentations. The mother in her childhood learned the sentence in similarly divergent circumstances. The sentence is thus bound to be versatile, applying regardless of angle. Thus it is that the aspects of a body in all their visual diversity are naturally gathered under a single occasion sentence, ultimately a single designation. (235)

Ontology by analogy: Does every noun demand some array of denotata? Surely not; the nominalizing of verbs is often a mere stylistic variation. But where can we draw the line? It is a wrong question; there is no line to draw. Bodies are assumed, yes; they are the things, first and foremost. Beyond them there is a succession of dwindling analogies. (236)

Ontology and laymen: Scientists and philosophers seek a comprehensive system of the world, and one that is oriented to reference even more squarely and utterly than ordinary language. Ontological concern is not a correction of a lay thought and practice; it is foreign to the lay culture, though an outgrowth of it. (236)

Identity: Our liberal notion of physical objects brings out an important point about identity. Some philosophers propound puzzles as to what to say about personal identity in cases of split personality or in fantasies about metempsychosis or brain transplants. These are not questions about the nature of identity. They are questions about how we might best construe the term 'person.' (238)

Abstracta: So we assume abstract objects over and above the physical objects. For a better grasp of what this means, let us consider a simple case: the natural numbers. The conditions we need to impose on them are simple and few: we need to assume an object as first number and an operator that yields a unique new number whenever applied to a number. In short, we need a progression. (241)

So, when we feel the need of ratios and irrationals, we can simply reach for appropriate subclasses of one of the progressions of classes. We need never talk of numbers, though in practice it is convenient to carry over the numerical jargon. Numbers, then, except as a manner of speaking, are by the board. We have physical objects and we have classes. (241)

A physical object, one feels, can be pinned down by pointing—in many cases, anyway, and to a fair degree. But I am persuaded that this contrast is illusory. (242)

Ultimate ontology: A field theory in which states are ascribed directly to place-times may well present a better picture, and some physicists think it does. At this point a further transfer of ontology suggests itself: we can drop the space-time regions in favor of the corresponding classes of quadruples of numbers according to an arbitrarily adopted system of coordinates. We are left with just the ontology of pure set theory, since the numbers and their quadruples can be modeled within it. There are no longer any physical objects to serve as individuals at the base of the hierarchy of classes, but there is no harm in that. (243)

Inscrutability: The conclusion I draw is the inscrutability of reference. To say what objects someone is talking about is to say no more than how we propose to translate his terms into ours; we are free to vary the decision with a proxy function. The translation adopted arrests the free-floating reference of the alien terms only relatively to the free-floating reference of our own terms, by linking the two. The point is not that we ourselves

are casting about in vain for a mooring. Staying aboard our own language and not rocking the boat, we are borne smoothly along on it and all is well; 'rabbit' denotes rabbits, and there is no sense in asking 'Rabbits in what sense of "rabbit"?' Reference goes inscrutable if, rocking the boat, we contemplate a permutational mapping of our language on itself, or if we undertake translation. (245)

Scepticism: Radical skepticism stems from the sort of confusion I have alluded to, but is not of itself incoherent. Science is vulnerable to illusion on its own showing, what with seemingly bent sticks in water and the like, and the skeptic may be seen merely as overreacting when he repudiates science across the board. Experience might still take a turn that would justify his doubts about external objects. Our success in predicting observations might fall off sharply, and concomitantly with this we might begin to be somewhat successful in basing predictions upon dreams or reveries. At that point we might reasonably doubt our theory of nature in even fairly broad outlines. But our doubts would still be immanent, and of a piece with the scientific endeavor. (247)

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