Metametaphysics

New Essays on the Foundations of Ontology

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Being, Existence, and Ontological Commitment[1]

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I

Ontology is a very old subject, but 'ontology' is a relatively new word. (*Ontologia* seems to have been a seventeenth-century coinage.[2]) After the passing of the Wolff-Baumgarten school of metaphysics, and before the twentieth century, 'ontology' was never a very popular word, except, perhaps, among the writers of manuals of scholastic philosophy. Currently, however, the word is very fashionable, both among analytical philosophers and philosophers in the existential-phenomenological tradition. Its popularity with the former is due to Quine, and its popularity with the latter is due to Heidegger.[3]

Quine uses 'ontology' as a name for the study that attempts to answer the 'ontological question': What is there? Quine's conception of this study belongs to an identifiable tradition in the history of thinking about being. Most analytical philosophers would probably point to Kant and Frege and Russell as Quine's most important predecessors in that tradition, and would probably find its roots in the attempts of various philosophers to come to terms with the ontological argument for the existence of God. Heidegger and his followers, however, see the tradition Quine represents—but they would

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[1] This essay is an adaptation of the first chapter of *Being: A Study in Ontology*, a work in progress which, if fate is kind, will one day be published by Oxford University Press. A much shorter essay, adapted from an earlier version of the first chapter of *Being*, was published as 'Meta-ontology' in *Erkenntnis* 48 (1998), pp. 233–50. ('Meta-ontology' is reprinted in Peter van Inwagen, *Ontology, Identity, and Modality: Essays in Metaphysics* (Cambridge: Cambridge University Press, 2001).) The material on Hilary Putnam's *Ethics without Ontology* (see n. 28 below for publication details) is adapted from 'What there is', a review of that book which appeared in *The Times Literary Supplement*, 29 April 2005, pp. 11–12.

[2] See the article 'Ontology' by Alasdair MacIntyre in *The Encyclopedia of Philosophy*, Vol. 5, pp. 542–3.

[3] For a discussion of another tradition in twentieth-century philosophy that has appropriated the term 'ontology' to its own philosophical concerns, see the discussion of 'B-ontology' in the 'Introduction' to van Inwagen, *Ontology, Identity, and Modality*.

be unlikely to identify it by reference to Quine—as much older and more pervasive. (So pervasive, in fact, as to have been for a long time now the *only* tradition, its adherents being no more aware of it than a fish is of water.) According to Heidegger, who takes Hegel to mark the point of its highest development, this tradition may be summarized in three theses, which he describes as 'prejudices':

- Being is universal. (That is, being is the only category such that nothing could possibly fall outside it.)
- Being is indefinable. (Since there is no more general category than being, and *definitio fit per genus proximum et differentiam specificam*.)
- Being is self-explanatory. (Since an understanding of being pervades all our judgments, we understand being if we understand anything at all.)

(This summary is itself summarized in an incidental remark of Hegel's: Being is the most barren and abstract of all categories.) For Heidegger, the word 'ontology' represents a confrontation with this tradition. The task of 'ontology' is to lead us back to the question, 'What is being?', to enable us actually to *ask* this question. For, owing to the current pervasiveness, the utter inescapability, of the view of being embodied in the 'prejudices', we are unable to ask it, since we lack the requisite concepts and habits of thought. Indeed, the tradition embodies, as one might say, a self-fulfilling prophecy: the word *being* is now empty in just the way the tradition says it is. The emptiness of being is an artifact of philosophy. It is, however, possible for us to come to realize this and to attempt to remedy the situation. The remedy is 'ontology'. For Heidegger, ontology is a partly phenomenological and a partly historical study. That is, phenomenological and historical investigation can each provide us with the materials for a reopening of the question of being. Phenomenology can reopen the question of being, because, although the *word* 'being' has lost its meaning, what the Greeks were enquiring about under the rubric *to on* (before Plato led them astray) is present as an essential ingredient in consciousness and can be investigated phenomenologically. And, of course, since our present forgetfulness of being is the outcome of an historical process, there is the possibility that we may be able to work our way back through the history of thought—with, as Milton says, 'backward mutters of dissevering power',—to a point at which the question of being once more becomes open to us.

It is this sort of study that Heidegger calls 'ontological'. To ontological studies he opposes 'ontic' studies, studies whose objects are beings, but not beings considered as *beings*, things that *are*, but only beings considered as representatives of some particular category such as 'material object' or 'knowing subject' or

'theoretical entity'. The materialist, for example, tells us that there *are* only material objects, and tells us, perhaps, how to reduce things like thoughts that apparently belong to other categories to things in his favored category, but he tells us nothing about this 'are' of which that category is the only representative. (We might compare Heidegger's disdain for the unreflectiveness of 'merely ontic' thinkers to the disdain some early twentieth-century moral philosophers felt for the unreflective ethical thinking of victims of 'the naturalistic fallacy'. The materialist says that all beings are material. But, surely, his position is not that 'a material thing' and 'a being' are identical in meaning; he is not, one supposes, telling us that all material things are material things. But what, then, is the *meaning* of this count-noun 'being' whose extension is, he says, identical with the extension of 'material thing'? He does not say. He does not know that there is anything *to* say.)

What Quine calls 'the ontological question' ('What is there?') Heidegger would dismiss as merely the most general ontic question. It is true that Quine has said something that could be construed as an answer to the question, 'What is being?': 'To be is to be the value of a bound variable.' But, from a Heideggerian point of view, this 'answer' is merely a refinement of the first of the three prejudices that define the tradition of the forgetfulness of being. It is not an answer to the question but to the parody of the question that our obliviousness of being has left us with. (This obliviousness is nicely illustrated by Descartes's use of the figure of the 'tree of the sciences', the roots of which are metaphysics—the most general ontic study, the study productive of theses like materialism and idealism—the trunk of which is physics, and the branches of which are the special sciences. But the roots of a real, living tree must be embedded in something. The fact that Descartes did not think it necessary to fill in the part of his figure corresponding to that aspect of a real tree suggests that—despite his preoccupation with what would one day be called the ontological argument—it had never occurred to him to ask whether there was a study that did not stop with discourse about particular *sorts* of beings like mental and material substances.)

This essay is written from within the tradition that Heidegger proposed (as the Germans say) to overcome. In a way it is an answer to Heidegger. (But it is not primarily a 'thematic' answer: although I shall make some remarks about Heidegger at various points, explicit criticism of his philosophy is not my purpose.) I believe that this tradition can be fully self-conscious. That is, the tradition can be fully aware of, and able to articulate, its presuppositions. It can, in fact, be better aware of and better able to articulate its presuppositions than Heidegger was his. It is my position that the questions Heidegger wishes to make once more available to us were never really there, and that a philosopher

working within the tradition Heidegger deprecates, and commanding thereby a deeper understanding of being than Heidegger had available to him, will be able to see this with perfect clarity.[4]

In this essay, I elaborate the traditional answer to the question, What is being? An important part of this elaboration of the traditional answer will take the form of an account of quantification. We may say that if 'ontology' is the study that attempts to answer the question 'What is there?', the subject of the present essay is 'meta-ontology'.[5] (The distinction I draw between meta-ontological and properly ontological questions corresponds roughly to Heidegger's distinction between ontological and ontic questions. But, in my view, just as meta-philosophy is a part of philosophy, meta-ontology is a part of ontology.)

The meta-ontology presented in this essay is essentially Quine's.[6] I will present it as a series of five theses. (The first of them does not correspond to anything that Quine has explicitly said, but he would certainly have accepted it.) The reader may find it instructive to compare this list with Heidegger's list of traditional prejudices.

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[4] The serious student of Heidegger's philosophy will see that my knowledge of Heidegger is superficial. It is based mainly on English translations of the 'Introduction' to *Being and Time* and of the lecture 'On the Way Back into the Ground of Metaphysics'. I have not attempted to make any distinction between 'the Heidegger of *Being and Time*', 'the Heidegger of the thirties' (the author of 'On the Way Back into the Ground of Metaphysics'),'' and 'late Heidegger'. I, nevertheless, make no apology for the sentence to which this note is attached or for the paragraph of which that sentence is the conclusion. It is my view that Heidegger's philosophy of being is so transparently confused that no profound knowledge of his writings is a prerequisite for making judgments of the sort that paragraph contains. I must remind the reader that these judgments apply to Heidegger's philosophy of being (*Sein*) and not to his philosophy of human being (*Dasein*). It may be that there is much of philosophical value in Heidegger's investigations of *Dasein*. If so, I would nevertheless insist, what is valuable in these investigations will better reveal its value if his philosophical vocabulary is 'de-ontologized', if they are rewritten in such a way that all occurrences of words related to *Sein* (and *Existenz*) are replaced with 'non-ontological' words. (I have no doubt that all committed students of Heidegger will tell me that it is impossible to 'de-ontologize' Heidegger's investigations of *Dasein*. They may be wrong. If they are right, however, Heidegger's investigations of *Dasein* are irremediably vitiated by the radical confusions that are an essential component of his philosophy of *Sein*.)

[5] I spell this word with a hyphen to take account of the fact that in Greek the final vowel of the prefix 'meta' would be absorbed by the initial vowel of 'ontologia'; one might therefore maintain that 'metontology' would be the correct form. I learn from Dr Franca D'Agostini that Heidegger actually has coined the word 'Metontologie'.

[6] A complete bibliography of the works in which Quine presents his meta-ontology (or presents parts of it or makes important incidental comments on various of its aspects) would contain scores of items. Here is a short list of relevant texts. 'On What There Is', in W. V. Quine, *From a Logical Point of View* (Cambridge, Mass.: Harvard University Press, 1953), pp. 1–19; Chapter 7 ('Ontic Decision', pp. 233–76) of W. V. Quine, *Word and Object* (Cambridge, Mass.: MIT, 1960); 'Ontological Relativity', in W. V. Quine, *Ontological Relativity and Other Essays* (New York and London: Columbia University Press, 1969), pp. 26–68; 'Existence and Quantification', ibid., pp. 91–113.

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Thesis 1. Being is not an activity

Many philosophers distinguish between a thing's being and its nature. These philosophers seem to think of, e.g., Socrates' being as the most general activity Socrates engages in. Suppose, for example, that at some moment Socrates is conversing about the meaning of 'piety'. That implies that he is conversing, a more general activity than conversing about the meaning of 'piety'; and that, in its turn, implies that he is speaking; and *that* implies that he is producing sounds. … It would seem that such a chain of implications cannot go on for ever. At any moment, it must be that some of the activities in which Socrates is then engaged imply or entail no other activity—that some of the activities he is then engaged in must be *terminal* activities. Might there be, for every time at which Socrates is engaged in any activity, some *one* activity that is then his only terminal activity?—one and only one activity that is entailed by all the activities he is then engaged in? And might it be that it is *always the same one*? The philosophers I am thinking of would answer Yes to both questions. They would say that this activity, Socrates' most general activity, was his *being*. And, of course, they would say the same thing about Crito and Plato and everyone else.

Would they say the same thing about every*thing* else? I believe that at least some philosophers in the existential-phenomenological tradition would not. As I interpret Sartre, for example, he would say that your and my most general activity (*être pour-soi*) is not the same as the most general activity of a table (*être en-soi*). Heidegger is a more difficult case, but there is something to be said for the thesis that he would contend that there is a most general activity engaged in by conscious beings (*Dasein*), an activity not engaged in by any non-conscious being. (But he would certainly not offer this as a *definition* of *Dasein*; *Dasein* is to be approached by a phenomenological analysis that does not presuppose a subject of consciousness.)

Thus Sartre can say that the table and I have different kinds of *être*, since the most general thing the table does (just standing there; undergoing externally induced modifications) is not the most general thing I do (being conscious of and choosing among alternative possibilities; acting for an end I have chosen from a motive I have created). There is no God, Sartre contends, for precisely the reason that God's being would be an impossible amalgam of *être en-soi* (God is immutable and eternal) and *être pour-soi* (God is a free, conscious agent).

From the point of view of the Quinean meta-ontology, this is all wrong. On this issue, the Quinean will happily, if uncharacteristically, quote J. L. Austin. What Austin said of 'exist'—we shall consider the relation between 'exist' and

'be' presently—he might equally well have said of 'be': 'The word is a verb, but it does not describe something that things do all the time, like breathing, only quieter—ticking over, as it were, in a metaphysical sort of way.'[7] If there is a most general activity that a human being (or anything else that engages in activities) engages in—presumably it would be something like 'living' or 'getting older'—it is simply wrong to call it 'being'. And it is equally wrong to apply to it any word containing a root related to '*être*' or '*esse*' or '*existere*' or '*to on*' or '*einai*' or '*Sein*' or 'be' or 'am' or 'is'. One cannot, of course, engage in this most general activity (supposing there to be such an activity) unless one *is*, but this obvious truth is simply a consequence of the fact that one can't engage in any activity unless one is: if an activity is being engaged in, there has to be something to engage in it.

There is, of course, a vast difference between free, conscious agents like ourselves and mere inanimate objects. I believe this quite as firmly as Sartre does.[8] But to insist, as I do, that this difference does not consist in the one sort of thing's having a different sort of being from the other's is not to depreciate it.[9] The vast difference between me and a table does not consist in our having vastly different sorts of being (*Dasein, dass sein*, 'that it is'); it consists rather in our having vastly different sorts of *nature* (*Wesen, was sein*, 'what it is'). If you prefer, what the table and I are *like* is vastly different. This is a perfectly trivial thing to say: that a vast difference between A and B must consist in a vast difference in their natures. But if a distinction can be made between a thing's being and its nature, this trivial truth is in competition with a certain statable falsehood. And if one denies the trivial at the outset of one's investigations, there is no hope for one later on.[10]

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[7] J. L. Austin, *Sense and Sensibilia* (Oxford: at the Clarendon Press, 1962), p. 68 n.

[8] In fact, as readers of my book *Material Beings* will know, in one way I see the difference between ourselves and inanimate objects as 'vaster' than even Sartre does, for I think that (although there are such things as ourselves), there are no inanimate objects—or at any rate no large, visible ones like artifacts or boulders. But if I *did* think that there were artifacts and boulders I *should* think that they were vastly different from ourselves. And I do think that there are beetles and oysters, and, like Sartre, I think that such mindless, non-sentient organisms are vastly different from ourselves. (I can think of only two differences that are 'vaster' than the difference between mindless organisms and rational organisms: the difference between Creator and creature and the difference between abstract things and concrete things.)

[9] It is not my present purpose in any way to dispute Sartre's theory of the nature of conscious, acting beings; it may well be that the essentials of his theory could survive translation into a vocabulary that made no reference to being or existence. This remark is parallel to my remark in note 4 about the possibility of 'de-ontologizing' Heidegger's investigation of *Dasein*.

[10] The confusion of ascribing to a thing's being what properly belongs to its nature is not confined to the existential-phenomenological tradition. See, for example, the opening sentence and the closing paragraphs of Ch. 9 ('The World of Universals') of Russell's *The Problems of Philosophy*. (And Russell is following Meinong on this point. See n. 16.)

Sartre and Heidegger and all other members of the existential-phenomeno-logical tradition are, if I am right, guilty of ascribing to the 'being' of things features of those things that should properly be ascribed to their natures. That is why they deny that being is the most barren and abstract of all categories. That is why they have, so to speak, a 'thick' conception of being—as opposed to the 'thin' conception of being that I believe to be the correct conception of being.[11]

Those who have a 'thick' conception of being are bound to regard what I have said (and all that I shall say) as jejune, simplistic and deserving of all the other deprecatory terms writers on 'fundamental ontology' would apply to analytical philosophers who venture to say anything about being if they mentioned them at all. I cannot hope to convert them to an allegiance to a thin conception of being. But I will say something to anyone who may be hesitating between adopting a thick and a thin conception of being.

Let us consider the Martians. The Martians (this fact deserves to be more widely known among philosophers) speak a language very much like English, but certain common words and phrases of English are not to be found in Martian. There are in Martian no substantives in any way semantically related to '*être*' or '*esse*' or '*existere*' or '*to on*' or '*einai*' or '*Sein*' or 'be' or 'am' or 'is'. (In particular, Martian lacks the nouns 'being' and 'existence'. More exactly, the noun 'being' is to be found in the Martian lexicon but only as a count-noun—in phrases like 'a human being' and 'an omnipotent being'—and the present participle 'being' occurs only in contexts in which it expresses predication or identity: 'being of sound mind, I set out my last will and testament'; 'being John Malkovich'.) There is, moreover, no such verb in Martian as 'to exist' and no adjectives like 'existent' or 'extant'. Finally, the Martians do not even have the phrases 'there is' and 'there are'—and not because they use some alternative idiom like 'it has there' or 'it gives' in their place.

How do the Martians manage without any words of the sort we English-speakers might describe as 'words for talking about existence and being'? They manage rather well. Let us consider some examples. Where we say, 'Dragons do not exist' they say, 'Everything is not a dragon'. Where we say 'God exists' or 'There is a God,' they say 'It is not the case that everything is not a (a) God'. Where Descartes says 'I think, therefore I am,' his Martian counterpart says 'I think, therefore not everything is not I.' Where we say, 'It makes me strangely uneasy to contemplate the fact that I might never have existed' or 'It makes

me strangely uneasy to contemplate the fact that someday I shall not exist but a world will still exist,' they say 'It makes me strangely uneasy to contemplate the fact that it might have been the case that everything was always not I' and 'It makes me strangely uneasy to contemplate the fact that someday it will be the case that everything is not I but not the case that everything is not (identical with) anything.' Where we say, 'It is a great mystery why there should be anything at all,' they say, 'It is a great mystery why it is not the case that everything is not (identical with) anything.'

Is there anything we can say or think that the Martians cannot say or think? It seems plausible to suppose that there is not.[12] It seems plausible to suppose that no work of 'fundamental ontology' in the continental style (*Sein und Zeit*, for example) could be translated into Martian. But if the Martians can say everything we can say, it must be that works of 'fundamental ontology' consist in large part of sentences that do not succeed in saying anything, sentences that are only words.[13]

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[12] Meinongians (who say that there are things such that there are no such things) and neo-Meinongians (who say that there are things that do not exist) will disagree. (Suppose the Queen of Mars is studying English. She says, 'I think I'm getting the hang of this verb "to exist". When you people say, "Dragons do not exist" that just means "Everything is not a dragon." ' A terrestrial philosopher replies, 'No, Your Majesty, that's not right. For dragons *don't* exist, but Fafnir *is* a dragon, so it's not true that everything is not a dragon.' This will simply puzzle her. She will respond to this statement in some such words as these: 'But surely everything is not Fafnir. In your idiom, Fafnir does not exist or there is no Fafnir. If you labeled everything, everything would lack the label "Fafnir".') We shall consider the neo-Meinongian thesis that there are things that do not exist presently (under the rubric 'Thesis 2'.) For a discussion of 'paleo-Meinongianism', see my essay 'Existence, Ontological Commitment, and Fictional Entities', in *The Oxford Handbook of Metaphysics*, Michael Loux and Dean Zimmerman (eds), (Oxford: Oxford University Press, 2003), pp. 131–57. For the moment, let us say that if there are no things that aren't and if there are no things that do not exist, then it seems plausible to suppose that there is nothing we can say that the Martians can't. (Certainly a 'thick conception of being' in no way depends on an allegiance to Meinongianism.)

[13] Here is an example. Could there be a verb 'to not' or 'to noth' ('*nichten*') that was, so to speak, the negative image of 'to be'? (I am of course thinking of '*Das Nichts nichtet*'.) How should we explain this verb to a Martian? Perhaps like this:

Let us introduce the verb 'to be' (its present tense, third-person-singular form is 'is') by the following definition:

x is =$_{df}$ not everything is not *x*.

Now let the verb 'to not' be, as one might say, the negative image of 'to be'.

I would expect the Queen of Mars to say that this attempt at definition left her pretty much in the dark. Let us suppose that this is so: You *can't* explain 'to not' to a native speaker of Martian: no matter how hard you try, they just don't get it. Here is the question: Is Martian a kind of ontological Newspeak, a language in which certain thoughts simply cannot be expressed (and no wonder, for it's a language invented by someone—myself—who very much wants to believe that there are no such thoughts), or is it a language whose ontological clarity makes certain semantical delusions impossible for its speakers?

Parmenides famously said, 'Being is,' and 'Not Being is not.' 'Das Nichts nichtet' was Heidegger's addendum to these two theses: If being is what Being does, and what Not Being or Nothing doesn't do, nothing (noth-ing, the present participle of the verb 'to noth') is what Nothing does do and Being

Thesis 2. Being is the same as existence

Many philosophers distinguish between being and existence.[14] That is, they distinguish between what is expressed by sentences like 'There are dogs' and 'There was such a person as Homer,' on the one hand, and 'Dogs exist' and 'Homer existed' on the other. I have chosen 'being' and 'existence' as the abstract nouns that represent the terms of the distinction these philosophers want to make. Perhaps this is a bad choice of words. My choice of 'being' for this purpose could certainly be faulted as parochial. In English, in expressing the proposition that there are dogs, one uses a form of the verb 'to be' and likewise in Latin (*sunt*) and Greek (*eisi*). In French, however, one uses '*il y a*' and in German '*es gibt*'.[15] But the distinction is made, and I need some way to refer to it in the material mode.

Following Quine, I deny that there is any substance to the distinction: to say that dogs exist is to say that there are dogs, and to say that Homer existed is to say that there was such a person as Homer. In general, to say that things of a certain sort exist and to say that there are things of that sort is to say the same thing. To say of a particular individual that it exists is to say that there is such a thing as that individual. (Talk of the existence of particular individuals may be suspect; but, if that is so, talk of the being of particular individuals is suspect, and for the same reasons.) These things may seem obvious, but on reflection they can seem less obvious. Suppose I am discussing someone's delusions and I say, 'There are a lot of things he believes in that do not exist.' On the face of it, I appear to be saying that there are things—the poison in his drink, his uncle's malice, and so on—that do not exist. To take a rather more metaphysical example, I have read a letter to the editor of a newspaper, the author of which presents what he intends to be a *reductio* of the argument that

does not do. It is worthy of remark that that 'Being is' and 'Not Being is not' would be very nearly as hard to explain to a Martian as 'Nothing noths' or 'Not Being nots'. I can think of four ways in which one might try to translate 'Being is' into Martian. I will not burden the reader with the four lengthy candidates for translation into the Martian of 'Being is.' I will rather remark that the four Martian sentences I have in mind are the Martian equivalents of the following four sentences: (i) Everything that is is, (ii) Everything is, (iii) Something is, and (iv) The attribute *being* is. (And similarly for 'Not being is not': Everything that is not is not; It is false that everything is not; It is false that something is not; The attribute *not-being* is not.) The Martians would regard the first two sentences in each group as logical truths and the third in each group as either a logical truth or at any rate as obviously true. Whether a Martian regarded the fourth sentence in either group as true or false would depend on that Martian's ontology of attributes or properties—and Martian opinion on the matter of nominalism and realism is as various as terrestrial opinion. I am certain that if Parmenides were somehow a party to this conversation, he would say that, owing to the inadequacies of their language, the Martians were unable to understand what he meant by 'Being is' and 'Not Being is not.'

[14] See, for example, Terence Parsons, *Nonexistent Objects* (New Haven: Yale University Press, 1980).

[15] It is nevertheless clear that in French, '*être*' is the abstract noun for what is expressed by '*il y a*' and that in German, '*Sein*' is the abstract noun for what is expressed by '*es gibt*'.

abortion is wrong because it deprives an unborn person of life: those who are opposed to abortion on this ground ought to be even more strongly opposed to contraception, since abortion deprives the unborn person only of the *remainder* of his life, while contraception deprives the unconceived person of the *whole* of it, of his very existence. Whatever one may think about this argument, it is clear that one of its premises is there *are* unconceived people, people who might have existed but who, owing to various acts of contraception, do not exist: people waiting in the existential wings, as it were. Perhaps someone who reflects on these examples will conclude that it is not obvious that to be is the same as to exist. But whether or not it is obvious, it is true. There *is* no nonexistent poison in the paranoid's drink. There *are* no unconceived people. (And, therefore, there is no one whom contraception has deprived of existence.) In sum, there are no things that do not exist. This thesis seems to me to be so obvious that I have difficulty in seeing how to argue for it. I can say only this: if you think there are things that do not exist, give me an example of one. The right response to your example will be either, 'That does too exist,' or 'There is no such thing as that.'

Some philosophers recognize another sort of distinction between being and existence than that endorsed by Terence Parsons and other neo-Meinongians. Philosophers who would resolutely deny that there are unconceived children or non-existent poison in the paranoid's drink have nevertheless held that there is a distinction between being and existence. I have in mind philosophers who hold that the word 'exist' is applied, or should be applied, to objects in one particular ontological category and to objects in that category alone. Meinong himself held this view (a view independent of the views for which he is specially notorious): he held that only spatially extended objects exist (*existieren*).[16] According to Professor Geach, a similar position was taken by Rush Rhees, who wrote that 'we use the word "exist" mainly in connection with physical objects'.[17] If Meinong and Rhees, are right, then it would seem that 'there is' and 'exist' do not mean the same thing, since 'there is' can obviously be applied to things in any ontological category. However this may be, the thesis that 'exist' applies only to spatial or only to physical objects

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[16] If we are willing to suppose that Meinong would have been comfortable with the present-day distinction between 'abstract' and 'concrete' objects, we can describe his position this way: there are two kinds of being, existence (*Existenz*), the mode of being of concrete objects and subsistence (*Bestand*), the mode of being of abstract objects. Meinong thus (in my view) is guilty of the fallacy, noted earlier, of attributing to the being of a thing what properly belongs to its nature—the fallacy of supposing that the (admittedly vast) difference between abstract and concrete objects consists not in their having vastly different natures but in their enjoying different kinds of being.

[17] See P. T. Geach, Review of Rush Rhees *Without Answers, The Journal of Philosophy* 68 (1971), pp. 531–2.

is simply false. Commenting on Rhees, Geach says, 'The nearest newspaper shows the contrary. "Conditions for a durable agreement do not yet exist" and the like is the commonest currency of journalism.' And this is obviously right.[18]

Thesis 3. Existence is univocal

Many philosophers have thought that 'exists' has different meanings when it is applied to objects in different logical or ontological or metaphysical categories ('tangible object', 'mental object', 'abstract object' …).[19] From the position of Meinong and Rhees on the meaning of 'exists' to this position is a short step. If a philosopher who had held the former view has come to believe that no rule of English usage is violated by statements like 'There exists a very real possibility that the recession will last till the next election' and 'No link between the attack on the World Trade Center and Iraq has been shown to exist,' the most natural thing for him to conclude—the position closest to his former position that accommodates this new datum—would be that when 'exists' is applied to things like possibilities and causal links, it means something different from what it means when it is applied to tangible objects.

That 'exists' has different meanings when it is applied to objects in different categories is evidently an attractive position. Attractive or not, it is false. Perhaps the following argument will show why it is, if not false, then at least not obviously true. No one, I hope, supposes that number-words like 'six' or 'forty-three' mean different things when they are used to count objects of different sorts. The essence of the applicability of arithmetic is that numbers can count anything, things of any kind, no matter what logical or ontological category they may fall into: if you have written thirteen epics and I own thirteen cats, the number of your epics *is* the number of my cats. But existence is closely allied to number. To say that unicorns do not exist is to say something very much like this: the number of unicorns is 0; to say that horses exist is to say essentially this: the number of horses is 1 or more. And to say that angels or ideas or prime numbers exist is to say—more or less—that the number of angels, or of ideas, or of prime numbers, is greater than 0. The univocacy of number and the intimate connection between number and existence should convince us that there is at least very good reason to think that existence is univocal.

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[18] For a fuller discussion of being and non-being, see my essay 'Existence, Ontological Commitment, and Fictional Entities', in *The Oxford Handbook of Metaphysics*, Loux and Zimmerman (eds), pp. 131–57.

[19] The meaning of the phrase 'logical or metaphysical category' is far from clear. I will not attempt to clarify it. As long as it is supposed to have some meaning, the precise meaning it has is not relevant to the question whether objects in different 'categories' exist in different senses of 'exist'. (And, of course, if it has no meaning, so much the better for Thesis 3.)

I am, of course, indebted to Frege for one of the premises of this argument (that 'existence is closely allied to number'), but I do not reproduce his doctrine of the relation between number and existence exactly. Frege has said, '[E]xistence is analogous to number. Affirmation of existence is in fact nothing but denial of the number zero,'[20] and these words express my thought exactly. But there is a difference between what Frege meant by them and what I would mean by them. The difference lies in Frege's deservedly controversial idea (perhaps derived from Kant's diagnosis of the failure of the ontological argument) that existence is what some have called a 'second-level' predicate, that existence is in a certain sense a predicate of concepts rather than of objects. If Frege is right, to say that 'Horses exist' is a rather misleading way of saying 'The cardinal number of the extension of the concept *horse* is not zero' (misleading because it certainly appears that when one says 'Horses exist,' one is making a statement about horses and not a statement about the concept *horse*).

When I say that affirmation of existence is denial of the number zero, I mean only that to say that Fs exist is to say that the number of Fs is not zero. For example, in my view, 'Horses exist' is equivalent to 'The number of horses is not zero.' It is, of course, true that the two statements

The number of horses is not zero

and

The cardinal number of the extension of the concept *horse* is not zero

are equivalent. (At any rate they are equivalent if there are such things as concepts;[21] it is not my purpose to dispute the existence of concepts). And to say that the cardinal number of the extension of the concept *horse* is not zero is indeed to ascribe a property to the concept *horse*. But it does not follow from these things I have conceded that the predicate 'the number of … is not zero' is a predicate of concepts. I would say that, on a given occasion of use, it predicates of certain *things* that *they* number more than zero. Thus, if one says, 'The number of horses is not zero,' one predicates of *horses* that they number more than zero. 'The number of … is not zero' is thus what some philosophers have called a 'variably polyadic' predicate. But so are many predicates that can

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[20] *The Foundations of Arithmetic*, 2nd edn (Harper and Row: New York, 1960), p. 65. (This is J. L. Austin's translation of *Die Grundlagen der Arithmetik*.)
[21] Frege would no doubt say that the sentence 'There are such things as concepts' is meaningless because it presupposes that phrases like 'the concept *horse*' denote objects. Since I do not understand how anyone can, as Frege does, make general statements about concepts and *not* treat 'the concept *horse*' as a phrase that denotes an object, I cannot reply to this objection.

hardly be regarded as predicates of concepts. The predicates 'are ungulates' and 'have an interesting evolutionary history', for example, are variably polyadic predicates. When one says, 'Horses are ungulates' or 'Horses have an interesting evolutionary history' one is obviously making a statement about horses and not about the concept *horse*. These two predicates are not at all like such paradigmatic predicates of concepts as 'is a concept', 'has an extension whose cardinal number is not zero', and 'can be expressed in English'. My argument for the univocacy of existence, therefore, does not presuppose that 'exists' is a second-level predicate, a predicate of concepts rather than objects, a view I in fact reject.[22]

To the argument for the univocacy of existence from the univocacy of number, we may append a similar argument (I seem to remember that this argument is due to Carnap, but I have been unable to find it in his writings) from the univocacy of the logical particles. The operator 'there exists' is intimately related to disjunction: given a complete list of names for the members of a finite class, we may replace existence-statements pertaining to members of that class with disjunctions. For example, we may replace the statement that there exists a prime number between 16 and 20 with the statement that 17 is prime or 18 is prime or 19 is prime. Now we cannot suppose that 'or' means one thing when it is used to connect sentences about numbers and another when it is used to connect sentences about, say, people. (If it did, what should we do with 'Either there is no greatest prime or Euclid was wrong'?) But if 'or' means the same thing in conversations about any subject-matter, why should we suppose that 'there exists', which is so intimately related to 'or', varies in meaning with the subject-matter of the sentences in which it occurs?

This argument, however, requires an important qualification. 'There exists a prime number between 16 and 20' is equivalent to '17 is prime or 18 is prime or 19 is prime' only given that 17, 18, and 19 are *all* the numbers between 16 and 20'. Since Carnap's point (if Carnap's it is) really requires an appeal to the concept 'all' or 'every', it would seem to have no more force than the following simpler argument: 'exists' is univocal owing to the interdefinability of 'there exists' and the obviously univocal 'all'. But this is a powerful argument, for, surely, 'all' means the same in 'All natural numbers have a successor' and 'All Greeks are mortal'? I should perhaps note, in connection with this point, that 'there exists' cannot be defined in terms of 'all'/'every' alone; negation is also required: 'there exists an F' is equivalent to 'It is not the case that everything

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[22] In Chapter 2 of his book *Logical Properties* (Oxford: the Clarendon Press, 2000), Colin McGinn seems to suppose that any view that could be expressed by the words 'existence is denial of the number zero' must treat existence as a predicate of concepts. I hope I have shown that this is wrong.

is not an F.' (The 'Martian' language I imagined earlier—in connection with the 'thin' and 'thick' conceptions of being—is based on this equivalence.) But the negation-sign is, if anything, even more obviously univocal than 'all'. 'It is not the case that' does not mean one thing in a geology textbook and another in a treatise on number theory.

I have presented arguments for the conclusion that existence is univocal. What arguments are there for the conclusion that existence is equivocal?

Perhaps the most famous argument for this conclusion is Ryle's:

It is perfectly proper to say, in one logical tone of voice, that there exist minds and to say, in another logical tone of voice that there exist bodies. But these expressions do not indicate two different species of existence, for 'existence' is not a generic word like 'colored' or 'sexed'. They indicate two different senses of 'exist', somewhat as 'rising' has different senses in 'the tide is rising', 'hopes are rising', and 'the average age of death is rising'. A man would be thought to be making a poor joke who said that three things are now rising, namely the tide, hopes and the average age of death. It would be just as good or bad a joke to say that there exist prime numbers and Wednesdays and public opinions and navies; or that there exist both minds and bodies.[23]

Why does Ryle think that the philosopher who believes that 'exist' can be applied in the same sense to objects in different logical categories thereby endorses the proposition that existence comes in 'species'? Why should the philosopher who rejects the view that 'exist' is equivocal (like 'rising') be committed to the view that 'exist' is a 'generic' word (like 'colored')? Perhaps the argument is something like the following. Consider the word 'rising'. If this word meant the same thing when it was applied to, e.g., tides and hopes, one could meaningfully compare the rising of tides and the rising of hopes. And if the rising of tides and the rising of hopes can be meaningfully compared, the result of comparing them must be the discovery that these two things are not much alike. Since tides and hopes are very different kinds of thing, the rising done by the former must be a very different kind of rising from the rising done by the latter. (Fortunately, however, we do not have to accept the absurd idea that there are species of rising or species of existence. For, Ryle assures us, 'rising' does *not* mean the same thing when it is applied to tides and hopes, and we therefore need not say that the rising done by tides is a very different kind of rising from the rising done by hopes. In fact, we *cannot* say it, just as we cannot say—'except as a joke', a standard postwar-Oxford qualification—that the banks of the Isis are banks of a very different kind from the banks in the High Street. And the case is the same with the existence of minds and the existence of bodies.)

[23] Ryle, *The Concept of Mind* (London: Hutchinson, 1949), p. 23.

If this is Ryle's argument for the thesis that 'exists' is a generic word if it is univocal, it does not seem to me to be a very plausible one. The argument rests on an analogy between the rising of tides and the rising of hopes (on the one hand) and the existence of minds and the existence of bodies (on the other). If this analogy is to make any sense, however, it must be that the existence of a thing is an activity of that thing (something that that thing *does*)—for 'the rising of one's hopes' is a thing that one's hopes *do*, and 'the rising of the tides' is something (a very different thing) that the tides *do*. I am willing to grant—but we are straining at the bounds of meaning here—that if 'the existence of one's body' (or 'one's body's existing') is something that one's body does, and 'the existence of one's mind'/'one's mind's existing' is something that one's mind does, then these two things, the thing that one's body does and the thing that one's mind does, must be things of very different kinds. As we have seen, however, existence or existing is *not* an activity. (Or have we seen this? I have at any rate asserted it: that it is so is simply Thesis 1.) I contend, therefore, that Ryle's argument rests on a false analogy. If existence is not an activity, but is rather to be understood in terms of number, no parallel argument can be used to show that if existence is univocal, existence comes in species. The reason is simple: number is univocal and number does not come in species. We cannot, for example, derive from the premise that the word 'two' is univocal (across 'logical categories') that duality or two-ness comes in species. The word 'two' means the same thing in the statements 'Mars has two moons' and 'Homer wrote two epics,' but this does not imply that the moons of Mars exhibit one species of duality and the epics of Homer another.

The thesis of the univocacy of existence, therefore, does not imply that existence comes in species or that 'existent' is a 'generic' word like 'colored' or 'sexed'. This thesis does not imply that there are or could be 'species' words that stand to the generic 'existent' as 'red' and 'green' stand to 'color' and as 'male' and 'female' stand to 'sexed'. It does not follow, however, that Ryle's main thesis is wrong—that is, his thesis that the meaning of the word 'exist' varies as the logical categories of the things to which it is applied vary. But *should* we accept this thesis? Why?

The passage I have quoted may be read as endorsing a second argument for the systematic ambiguity of 'exists' (an argument independent of the argument that the univocacy of 'exists' implies the false thesis that 'exists' is a generic word). We might call this second argument the 'syllepsis' argument—a syllepsis being a syntactically correct expression that requires that a word it contains be simultaneously understood in two senses ('Miss Bolo went home *in* a flood of tears and a sedan chair'). There is, Ryle tells us, something decidedly odd about saying things of the form 'X, Y, and Z exist' when the subject terms

of the assertion denote things in different logical categories. His example, you will remember, was this: 'A man would be thought to be making a poor joke who said that three things are now rising, namely the tide, hopes and the average age of death. It would be just as good or bad a joke to say that there exist prime numbers and Wednesdays and public opinions and navies; or that there exist both minds and bodies.'

The syllepsis argument, in my judgment, is wholly without merit. There are two reasons why it sounds odd to say, 'There exist prime numbers and Wednesdays and public opinions and navies,' and they have nothing to do with fact that someone who said this odd thing would be applying 'exist' to objects in different logical categories. For one thing, 'There exist Wednesdays' and 'There exist public opinions' sound pretty odd all by themselves (surely 'public opinion' can't be pluralized?). Secondly, it is hard to think of any excuse for mentioning all these items in one sentence, no matter what one might say about them. I invite you to try to devise a sentence about prime numbers and Wednesdays and public opinions and navies that does *not* sound odd. (Well, there's one and perhaps it doesn't sound odd; but my sentence avoids oddness only by, in effect, quoting and commenting on the oddness of someone else's odd list.)

If we restrict ourselves to just two of the items in Ryle's list, we can easily find sentences that should be odd if he is right—and odd in a particular way: sentences that should exhibit the same kind of oddness as the 'Miss Bolo' sentence—but which are not odd at all. For example: 'The Prime Minister had a habit of ignoring the existence of things he didn't know how to deal with, such as public opinion and the Navy.' But we need not make up examples. Here is a real one.

In the U.S.S.R. … as we know, there is a prohibition on certain words and terms, on certain phrases and on entire … parts of reality. It is considered not only impermissible but simply indecent to print certain combinations of graphemes, words, or ideas. And what is not published somehow ceases to exist. … There is much that is improper and does not exist: religion and homosexuality, bribe-taking and hunger, Jews and nude girls, dissidents and emigrants, earthquakes and volcanic eruptions, diseases and genitalia.

Later in the same essay, the author says,

In the novel of a major Soviet prose writer who died recently the main characters are blinded and start to suffocate when the peat bogs around Moscow begin burning. The peat bog fires actually exist, but then so does Brezhnev's regime.[24]

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[24] The quotations are taken from an essay by the Lithuanian essayist and scholar, Tomas Venclova ('The Game of the Soviet Censor', *New York Review of Books*, 31 March 1983. The two quoted passages occur on p. 34 and p. 35). In 1983, Venclova was what was then called a Soviet dissident.

Or consider the following gibe by the physicist Sheldon Glashow: 'Of course superstring theory is much more glamorous than the standard theory [of elementary particles]. The standard theory is formulated in boring, old-fashioned eighteenth-century mathematics. Superstring theory requires mathematics so new it doesn't even exist yet.'[25] Can anyone suppose that 'exist' in this remark means something different from what it means in the following imaginary but exactly parallel joke: 'The lab equipment described in our rivals' grant proposal is so new it doesn't even exist yet'?

I conclude that Ryle has made no case for the thesis that existence is equivocal.

I will at this point make two remarks that need to be made somewhere, and which I have not been able to find any other place for.

First, Morton White has contended that Ryle's arguments about the relation between mind and body do not actually require multivocalism about existence.[26] This may very well be true. It is not a part of my present project to attack Ryle's philosophy of mind. (Cf. my earlier remarks about Heidegger and Sartre.) As a general rule, I think it is a mistake for philosophers whose interests lie in the area of human subjectivity to introduce vocabulary borrowed from ontology into their researches in that area.

Secondly, philosophers who distinguish 'objectual' from 'substitutional' quantification might want to maintain that 'there is' is equivocal and therefore that 'exists' is equivocal—although in a rather different way from the way in which Ryle maintained that 'exists' was equivocal. One and the same person might say 'in one logical tone of voice', 'There are no gods or other supernatural beings' and in another, 'There are several gods in the Babylonian pantheon who have no counterparts in the Greek pantheon.' A discussion of substitutional quantification lies outside the scope of this paper. I refer interested readers to my essay, 'Why I Don't Understand Substitutional Quantification.'[27]

I will consider one other argument for the conclusion that 'exists' is used in many senses, an argument presented in Hilary Putnam's recent book

[25] I quote from memory. I cannot now remember where I came across this remark. I apologize to Professor Glashow if I have misquoted him. And perhaps I should mention that he has come to hold a higher opinion of superstring theory than he did when he made this quip.

[26] See Ch. 4 ('The Use of "Exists"', pp. 60–80) of Morton White, *Toward Reunion in Philosophy* (Cambridge, Mass.: Harvard University Press, 1956).

[27] *Philosophical Studies* 39 (1981), pp. 281–5 (reprinted in *Ontology, Identity, and Modality*). I will remark that I would treat the sentence about the Greek and Babylonian pantheons as a case of quantification over 'creatures of myth'. Cf. my 'Creatures of Fiction', *American Philosophical Quarterly* 14 (1977), pp. 299–308 (reprinted in *Ontology, Identity and Modality*). See also 'Existence, Ontological Commitment, and Fictional Entities'.

Ethics without Ontology.[28] (The argument applies both to 'exists' and 'there is': Putnam's position is that both expressions are equivocal—and in exactly the same way.) He contends, in fact, that the Quinean approach to ontological questions is vitiated by the fact (he supposes it to be a fact) that what I am calling Thesis 3—that 'there is' and 'exist' have only one meaning—is false. If we assume this, he says, 'we are already wandering in Cloud Cuckoo Land'.

To see why Putnam thinks that Thesis 3 is false, let us consider the case of universals—properties or attributes. If we like, if we find it useful to do so, we can (Putnam tells us) adopt a *convention* to the effect that phrases like 'whiteness' and 'malleability' denote objects. If we do this, we are deciding to adopt a *conventionally extended* sense of 'there is' according to which this phrase applies to universals. A debate about whether there *really are* universals (or any of the other things whose existence is debated by philosophers engaged in 'ontology': mathematical objects, propositions, unrealized possibilities, …) is as silly as a debate about whether '0 cm/sec' *really is* a velocity or whether a straight line-segment *really is* a special kind of ellipse or whether a corporation *really is* a person.[29] Just as we can, by convention, extend the meanings of 'velocity' or 'ellipse' or 'person' in such a way that they apply to items they did not apply to when they were used in their original or everyday senses, so we can extend the meaning of 'there is' to apply to any of the things of the sorts whose existence ontologists have wasted their time arguing about (provided only that the rules governing the new, extended sense of 'there is' can be stated without contradiction). The whole enterprise of 'ontology'—at least insofar as ontology is that project whose foundational document is 'On What There Is'—is an illusion that has arisen because philosophers have mistaken questions of convention ('Is it useful to adopt a convention according to which "there are" universals?') for questions of fact ('Are there really universals?').

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[28] Cambridge, Mass.: Harvard University Press, 2004. The book contains two series of lectures. The argument I shall address is presented in the series that gives the book its title. The lectures entitled 'Ethics without Ontology' are a repudiation of the Quinean position that Putnam had defended in *Philosophy of Logic* (New York: Harper and Row, 1971). Although Putnam's lectures do have something to say about ethics and ontology, they are an attack on ontology root and branch, and the central points of the attack have nothing to do with ethics. '*Everything* without Ontology' would have been a better title.

[29] Putnam's position seems to be similar to, perhaps the same as, the position defended by Carnap in 'Empiricism, Semantics, and Ontology', *Revue internationale de philosophie* 11 (1950), pp. 20–40. I say 'seems to be' because I cannot claim to understand Carnap's argument (or, as will transpire, Putnam's argument). Insofar as I have anything to say about 'Empiricism, Semantics, and Ontology', it would be along the same lines as what I am going to say about 'Ethics without Ontology'.

But why is this supposed to be true? Putnam's argument for his central thesis, the thesis that ontologists have mistaken questions of convention for questions of fact, is based on an example, the example of mereological sums.

It would, Putnam contends, be silly to debate about whether sums—for example, the object composed (exactly) of the Nelson Column and the Arc de Triomphe—*really* exist. If we find it useful to do so, we can make it *true by definition* that, for any two physical objects, there is a thing that is their sum. Those who have so extended the meaning of 'there is' can say, and say truly, 'There is a large stone object that is partly in London, partly in Paris, and not even partly anywhere else.' Those who, for whatever reason, do not adopt the imagined definitional extension of 'there is' can say, and say truly, 'There is *no* large stone object that is partly in London, partly in Paris, and not even partly anywhere else.' But, in uttering these two sentences, the people I have imagined will not contradict each other, for the simple reason that they mean different things by 'there is' (and 'object'). (Their case is like this case, which I borrow from Geach: An American who has witnessed a traffic accident says, 'The dead man was lying on the pavement'; a Briton who has witnessed the same accident says, 'The dead man was not lying on the pavement.')[30] And, Putnam maintains, *all* the disputes of 'ontology' are of this sort: once one sees that they're not about matters of fact (like disputes about whether there is a God or whether there is a huge cache of biological weapons somewhere in Iraq), but about matters of verbal convention, one sees that they were simply silly.

This argument seems to me to be very weak. Let us grant Putnam the premise that it's silly to debate about whether there are 'sums'. (I think it isn't silly, but why I think that is a rather long story.[31] I'm willing to concede that when Putnam says that a debate about the existence of sums is silly, he's saying something that is at least plausible.) Granted the silliness of the debate, I don't see that he's given an intelligible account of its silliness. (And, in the absence of an account of the silliness of a debate about the real existence of sums, the silliness of that debate is not an argument for the conclusion that it's silly to debate about the real existence of numbers or universals; perhaps a debate about sums is silly for some reason peculiar to sums, a reason that does not apply to other ontological debates.) I say this because I don't see how the meaning of 'there is' can possibly be 'extended by convention'. Suppose

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[30]   That is, was not lying on what the American would call the 'sidewalk'.

[31]   For the long story see my essay, 'The Number of Things', *Philosophical Issues* Vol. 12: *Realism and Relativism*, 2002, pp. 176–96.

one is contemplating extending the meaning of a term by adopting new conventions governing its use; let's say that one is contemplating extending the meaning of 'person' in such a way that corporations are to be called 'persons'. One will, presumably, contemplate such a thing only if one believes that *there is* at least one corporation for 'person' to apply to. Similarly (I should think) one will contemplate extending the meaning of 'there is' in such a way that 'there is' applies to sums only if one believes that *there is* at least one sum for 'there is' to apply to. But if one thinks that there is a sum (or number or universal) for 'there is' to apply to, one *already* thinks that 'there is' applies to at least one sum (number, universal), and the purpose of the contemplated convention has therefore been accomplished antecedently to adopting it. Extending the meaning of a term so that that term will apply to objects beyond those it already applies to is precisely analogous to extending a geographical boundary: you can extend a geographical boundary to encompass new territory only if that territory is already there. A single, 'fixed in advance' meaning for 'there is' (Putnam in several places describes the thesis he opposes as the thesis that there is a single, 'fixed in advance' meaning for 'there is') seems to be a presupposition of any attempt to extend the meaning of any term by convention: you need a fixed-in-advance sense of 'there is' to express your belief (a belief you must have if you are contemplating such a convention) that the class of 'new' things that the term is to apply to is not empty.

This objection to Putnam's argument is not profound. (In the matter of profundity, it's very like this famous objection: 'But that man isn't wearing any clothes!') Neither is it particularly original. Similar objections have been raised by several philosophers.[32] (Putnam has presented the 'sums' argument in other books; in those books he called the conclusion of his argument 'conceptual relativity', and did not explicitly contend that 'conceptual relativity' implied that ontology was a province of Cloud Cuckoo Land.) He devotes pp. 39–51 of *Ethics without Ontology* to a reply to the objection. (The reply begins with the words, 'My critics typically say.') But I have to say that I don't understand the reply to the objection any better than I understand the original argument. I invite those interested in Putnam's thesis to read those pages and to decide whether they understand them. If these pages do make sense, then he's on to something (and something of considerable philosophical importance), and I've missed it because my ability to follow a philosopher's reasoning falls short of the level of comprehension required by Putnam's text (or perhaps because I am

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[32] I raised an objection of the same sort in 'The Number of Things'. See also Ernest Sosa, 'Putnam's Pragmatic Realism', *The Journal of Philosophy* 90 (1990), pp. 605–26.

so strongly prejudiced against the idea that the meaning of 'there is' can be a matter of convention that I have managed to convince myself that Putnam isn't making sense when he's making perfect sense). And, of course, if those pages don't make sense, he's not on to anything. I leave it to the reader to judge.[33]

I know of no other argument for the thesis that 'exists' is equivocal that is even faintly plausible. We must therefore conclude that existence is univocal, for the two clear and compelling arguments for the univocacy of existence given above (the argument from the intimate connection between number and existence and the argument from the interdefinability of the word 'exist' and the words 'all' and 'not') are unopposed.

3

Thesis 4. The single sense of being or existence is adequately captured by the existential quantifier of formal logic

I will defend Thesis 4 by presenting an account of quantification, the account that is endorsed by Quine's meta-ontology. I will show how to introduce variables and the quantifiers into our discourse as abbreviations for phrases we already understand. It will be evident that the quantifiers so introduced are simply a regimentation of the 'all' and 'there are' of ordinary English.

I begin by considering two ways in which count-nouns can be used. Suppose I witness the following incident: my dog Jack encounters a cat and proceeds to chase it. Immediately thereafter, I say two things. I describe the incident I have witnessed, and I go on to describe a deplorable general feature of Jack's behavior that this incident illustrates. I say these two things (rather woodenly) by uttering these two sentences:

1. Jack saw a cat and he chased that cat
2. If Jack sees a cat, he chases that cat.

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[33] It is not clear how Putnam would reply to the 'univocacy of number' argument. Would he say that number-words meant one thing when they were used to count, say, mathematicians, and another when they were used to count the objects of which their discipline treats? If so, we may ask him how he would deal with the following problem: We have fourteen differential equations (of equal apparent difficulty of solution) that need solving, and seven mathematicians in our employ who are equally good at solving differential equations; how many equations shall we assign to each mathematician to work on? I know what I would do to solve this problem: I would divide fourteen, the number of equations, by seven, the number of mathematicians, and treat the resulting number, two, as the number of equations to be assigned to each mathematician. But what reason could one have for thinking that this was the right way to solve the problem if one believed that 'fourteen' and 'seven' and 'two' meant one thing when they were applied to mathematicians and another when they were applied to equations? 'The essence of the applicability of arithmetic is that numbers can count anything.'

When I utter sentence 1, my words 'a cat' and 'that cat' refer to a particular cat (that is, they refer to a cat: all cats are particular cats), the cat I have just seen Jack chase. When I utter sentence 2, however, my words 'a cat' and 'that cat' do not refer to (designate, denote, name) anything. (However other philosophers may use these semantical terms, I use them to mark out a relation that holds between, and only between, a term and a single object, the relation that holds between 'π' and the ratio of the circumference of a circle to its diameter or between 'the twenty-third president of the United States' and Benjamin Harrison.) But my use of 'a cat' and 'that cat' when I utter sentence 2 is not a case of *failure* of reference; it is not like this case: perhaps under the influence of some hallucinogen, I say, 'Jack saw a unicorn, and he chased that unicorn.'

When I utter sentence 2, I (perhaps) say something true. But how can this be, given that my words 'a cat' and 'that cat' do not refer to anything? And what is the connection between the superficially identical but logically very different occurrences of 'a cat' and 'that cat' in sentences 1 and 2? I know of no answers to these questions that are of any philosophical interest: *Si nemo ex me quaerat, scio; si quaerenti explicare velim, nescio.* Nevertheless, it cannot be denied that sentence 2 is meaningful, and it cannot be denied that what it expresses could well be true.

Let us say that when I utter sentence 1, I use the words 'a cat' and 'that cat' *referentially*. (If I uttered the 'unicorn' sentence, I should be using the words 'a unicorn' and 'that unicorn' referentially as well: one uses 'an N' and 'that N' referentially in cases of failure of reference.) And let us say that when I utter sentence 2, I use the words 'a cat' and 'that cat' *generally*.

In both sentence 1 and sentence 2, the phrase 'that cat' may be replaced by the third-person-singular pronoun:

1a. Jack saw a cat and he chased it
2a. If Jack sees a cat, he chases it.

In each of these sentences, the pronoun 'it' inherits the logical properties of the phrase it replaces. If I uttered sentence 1a in the context I have imagined, I should be using the word 'it' referentially, for the pronoun would refer to the cat Jack chased. If I uttered sentence 2a in the context I have imagined, however, I should be using the word 'it' generally.

Following common usage, let us say that in both (1a) and (2a), 'a cat' is the *antecedent* of the pronoun 'it'. As a sort of first approximation to the truth, we may say that every occurrence of the third-person singular pronoun requires an antecedent—although that antecedent need not be, and often is not, in the same sentence. ('As a sort of first approximation to the truth'—there are lots of real or apparent exceptions to this rule: 'Jack thinks it's a sin not to

chase cats'; 'It can't be disputed that Jack chases cats'; 'If it's feline, Jack chases it'. … I do not propose to try to sort these out.) But in sentences that are more complex than (1*a*) and (2*a*), it will not always be clear what the antecedent of a particular occurrence of 'it' is. For example:

A dog will chase a cat till it is exhausted

If a cat and a dog live in the same house, it will sometimes grow fond of it.

It is evident that these sentences are ambiguous. There are various ways to remove this kind of ambiguity. Here is a familiar and unlovely device:

A dog will chase a cat till it (the dog) is exhausted.

One way of resolving such ambiguities would be to attach some sort of label to some of or all the phrases that could be antecedents of the various occurrences of the third-person-singular pronoun in a sentence (or larger piece of discourse) and to attach to each occurrence of 'it' the same label as its intended antecedent. If we are interested only in written language, subscripts are handy labels:

A dog_1 will chase a cat till it_1 is exhausted

A dog will chase a cat_1 till it_1 is exhausted

If a cat_x and a dog_y live in the same house, it_x will sometimes grow fond of it_y

If a cat_x and a dog_y live in the same house, it_y will sometimes grow fond of it_x.

We can, if we wish, associate labeled occurrences of pronouns with their antecedents without labeling the antecedents. We need only *some* unambiguous way of associating all and only the pronouns bearing a given label with a particular antecedent. One way to do this is simply to adopt the convention that all the occurrences of 'it' that bear the same label have the same antecedent; their common antecedent is the first phrase to the left of the first of them that is suitable for being their antecedent. For example, to find the common antecedent of the occurrences of pronouns bearing the subscript 'x' in a sentence,[34] find the first occurrence of 'it_x' in that sentence; reading backward from that occurrence of 'it_x', mark the first occurrence you come to of a phrase that is suitable for being the antecedent of 'it'; that phrase will be the antecedent of every occurrence of 'it_x' in the sentence. With a little syntactical juggling and shuffling, this can be made to work:

If it is true of a cat that it_x is such that it is true of a dog that it_y is such that it_x and it_y live in the same house, it_x will sometimes grow fond of it_y

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[34] We shall be concerned only with cases in which occurrences of pronouns in a sentence have antecedents in that same sentence.

If it is true of a cat that it_x is such that it is true of a dog that it_y is such that it_x and it_y live in the same house, it_y will sometimes grow fond of it_x.

In both sentences, all occurrences of 'it' with the subscript 'x' have 'a cat' as their antecedent and all occurrences of 'it' with the subscript 'y' have 'a dog' as their antecedent.

If we associate occurrences of the third-person-singular pronouns with their antecedents by this method (that is, by labeling occurrences of 'it' and labeling nothing else), we have come very close to introducing variables into our language, for the way occurrences of variables function and the way occurrences of the third-person-singular pronoun function—when they function 'generally'—are essentially the same. The main, and the only important, difference between variables and the third-person-singular pronoun (when it is functioning 'generally') is this: there is only one (all-purpose) third-person-singular pronoun, and there are lots of variables.[35]

If we have come close to introducing variables, however, we have come less close to introducing the universal quantifier, for what we have in the above examples is more like a special-purpose universal quantifier for cats and another for dogs—'it is true of a cat that', 'it is true of a dog that'—than it is like an all-purpose universal quantifier. But the step to the single all-purpose quantifier—the single all-purpose existential quantifier as well as the single all-purpose universal quantifier—is not a difficult one.

In 'Meta-ontology' I showed how to take this step by the use of tagged pronouns of the sort introduced above[36] and 'universal quantifier phrases' (e.g., 'It is true of everything that it_z is such that') and 'existential quantifier phrases' (e.g., 'It is true of at least one thing that it_y is such that').[37] These expressions are not 'special purpose' quantifier phrases like 'it is true of a cat that it_z' and 'it is true of a dog that it_x' but fully general quantifier phrases, vehicles suitable for expressing the ideas 'everything' and 'at least one thing'. Sentences expressing universal and existential theses are formed by adding expressions of the type

[35] 'He', 'she', 'him', and 'her' are special-purpose third-person-singular pronouns. And I suppose I'll have to concede, if you press me, that even 'it' falls short of being an all-purpose third-person-singular pronoun: one cannot say, "If we hire a philosopher of mind, it will have to be able to teach epistemology." (But this matter is complicated. Consider, for example, the sentence, 'If Alice praises anything, it will be either a mountain or a poet'.)

[36] In that essay, I treated 'it_x', 'it_y', and 'it_z' as three different third-person-singular pronouns. I now believe this to have been a mistake. In the present account of quantification, occurrences of, e.g., 'it_y', and 'it_z' in a sentence are regarded as two occurrences of the one pronoun 'it', occurrences in which 'it' bears different tags.

[37] These formulations of universal and existential quantifier phrases reflect the assumption that 'everything' and 'at least one thing' are syntactically suitable antecedents for the third-person-singular pronoun.

'it$_y$ is such that it$_x$ and it$_y$ live in the same house' to a string of quantifier phrases. In such sentences, we suppose that each quantifier phrase is followed by a pair of brackets that indicate its 'scope'. The brackets are often omitted in practice.

Using this apparatus we express (for example)

Anyone who acts as his own attorney has a fool for a client

as

It is true of everything that it$_x$ is such that (if it$_x$ is a person, then if it$_x$ acts as the attorney of it$_x$, then it is true of at least one thing that it$_y$ is such that (it$_y$ is a client of it$_x$ and it$_y$ is a fool)).

The rule for finding the antecedent of the occurrence a subscripted pronoun is this: The antecedent of any occurrence of a pronoun will be an occurrence of one or the other of the two 'pronoun antecedents', 'everything' and 'at least one thing'; each occurrence of a pronoun antecedent will be followed by 'that it$_x$' or 'that it$_y$'… and so on; to find the antecedent of a particular occurrence of 'it', find the 'inmost' pair of 'scope' brackets containing that occurrence; find the first occurrence of a pronoun antecedent to the left of that pair of brackets that is immediately followed by an occurrence of 'that it' in which the pronoun bears the same subscript as the occurrence of the pronoun whose antecedent is being sought; that occurrence of a pronoun antecedent will be the antecedent of the occurrence of 'it' in question. For example (the antecedent of the bold-face occurrence of a pronoun is in bold-face):

It is true of **everything** that it$_x$ is such that (if it$_x$ is a person, then if it$_x$ acts as the attorney of it$_x$, then it is true of at least one thing that it$_y$ is such that (it$_y$ is a client of **it$_x$** and it$_y$ is a fool)).

It is true of everything that it$_x$ is such that (it$_x$ is self-identical) and it is true of **at least one thing** that it$_x$ is such that (**it$_x$** is material).

We now have a supplemented and regimented version of English. (The only features of the sentences of this new 'version' of English that keep them from being sentences of ordinary English are the subscripts and the brackets. If we were to delete the subscripts and the brackets from these sentences, the sentences so obtained would be perfectly good sentences of ordinary English—perfectly good from the grammarian's point of view, anyway; no doubt most of them would be stilted, confusing, ambiguous, unusable, and downright silly sentences.) The justification of this regimentation lies in one fact: the rules of quantifier logic, a simple set of rules that captures an astonishingly wide range of valid inference (presumably it is wide enough

to capture all the valid inferences needed in mathematics), can be applied to sentences in the regimented language.[38]

We proceed, finally, to introduce what Quine likes to call 'the canonical notation of quantification'[39] by simple abbreviation (the procedure is obvious and entirely mechanical). The attorney-client sentence, for example, is abbreviated as

$\forall x$(if x is a person, then, if x acts as the attorney of x, $\exists y$(y is a client of x and y is a fool)).[40]

We have, or so I claim, introduced the canonical notation using only the resources of ordinary English. And to do this, I would suggest is to *explain* that notation.[41]

Having introduced quantifiers and variables, let us remind ourselves of some standard terminology. '$\forall$' and '$\exists$' are, respectively, the *universal* and the *existential quantifier*. An occurrence of a quantifier followed by an occurrence of a variable is an occurrence of a *quantifier-phrase*. The pair of brackets following an occurrence of a quantifier-phrase indicates the *scope* of the occurrence of the quantifier-phrase. If an occurrence of a variable is a part of a quantifier-phrase, or if it occurs within the scope of a quantifier phrase containing an occurrence of that variable, it will be said to be *bound in* the formula consisting of that quantifier phrase and its scope; it will also said to be bound in any formula of which that formula is a part. If an occurrence of a variable does not satisfy these conditions with respect to a formula, it will be said to be *free in* that formula. Consider, for example, the formula 'x is a dog and $\exists x$ (x is a cat)'. In this formula, there are three occurrences of the variable 'x'. The second is bound in '$\exists x$ (x is a cat)' because it is a part of a quantifier-phrase. The third is bound in '$\exists x$ (x is a cat)' because it occurs within the scope of a quantifier-phrase containing 'x'. Both are bound in the whole formula ('x is a dog and $\exists x$ (x is a cat)') because they are bound in '$\exists x$ (x is a cat)' which is a part of this

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[38] For a fuller statement of this important point, see 'Meta-ontology', p. 240.

[39] Instead of 'canonical notation' we might say 'canonical grammar'. (Cf. Quine, *Word and Object*, p. 231.) Note that our account of quantifiers and variables in the text was largely a matter of reducing the great variety of English syntactical devices used to express universality and existence to a few standard (that is, canonical) syntactical devices.

[40] Unabbreviated quantifier-phrases contain verbs, verbs that would seem to be in the present tense. But abbreviated quantifier-phrases like '$\forall x$' and '$\exists y$' contain no verbs and are therefore not tensed (or at least not overtly tensed). I will not consider the implications of this fact in the present essay.

[41] This account of quantification is modeled on, but does not reproduce, the account presented in Quine's *Mathematical Logic* (Cambridge: Harvard University Press, 1940), pp. 65–71. The subscript device is really the same device as the device illustrated in the two diagrams on p. 70 of *Mathematical Logic*: the leftmost occurrence of a given subscript and any other occurrence of that subscript represent the endpoints of one of Quine's 'bonds'.

formula. The first occurrence of '*x*' in '*x* is a dog and ∃*x* (*x* is a cat)' is free in this formula. The third occurrence of '*x*' in '*x* is a dog and ∃*x* (*x* is a cat)' is free in '*x* is a cat'—despite its being bound in '*x* is a dog and ∃*x* (*x* is a cat)' and '∃*x* (*x* is a cat)'. A variable will be said to *occur free in* a formula if some of its occurrences are free in that formula, and to *occur bound in* that formula if some of its occurrences are bound in that formula. Thus, the variable '*x*' occurs both free and bound in '*x* is a dog and ∃*x* (*x* is a cat)'. If some variable occurs free in a formula, that formula will be said to be an *open* formula (or an open sentence); if a formula contains no free occurrences of variables, it will be called a *closed* formula or sentence. (Sentences containing no variables—like 'Moriarty is a cat'—are thus 'automatically' closed sentences.)

It is evident that Thesis 4—'The single sense of being or existence is adequately captured by the existential quantifier of formal logic'—is true if our explanation of the meaning of the existential quantifier is correct. If what we have said about the meaning of '∃' is right, '∃*x* *x* is a dog' is an abbreviation of 'It is true of at least one thing that it is a dog.' And that phrase is no more than a long-winded way of saying 'There is at least one dog.' And, if Thesis 2 is correct, 'There is at least one dog' is equivalent to 'At least one dog exists,' and the existential quantifier expresses the sense of the ordinary 'exists' as well as the ordinary sense of 'there is'.

Before leaving the 'Quinean' account of quantifiers and variables, I will note two of its consequences that seem to me to be of special philosophical importance. (1) The notion of a 'domain of quantification' is not an essential part of an understanding of quantification. Quantification, unless it is explicitly restricted to suit the purposes of some particular enquiry, is quantification over everything. There are, I concede, philosophers who maintain that when one says 'Some sets are not members of themselves' or 'For every ordinal number there is a greater', what one says is meaningless unless in uttering these sentences one presupposes a domain of quantification—a particular set of sets, a particular set of ordinals. These philosophers are in the grip of a theory. They ought to reason by *Modus tollens*; they ought to reason that because it is true without qualification that there are sets that are not members of themselves and that for every ordinal there is a greater, that their theory about quantification is false.[42] As George Boolos has said, 'ZF (Zermelo-Fraenkel set theory) is couched in the notation of first-order logic, and the quantifiers in

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[42] Might these philosophers reply that a domain of quantification can be a proper class? Either there are proper classes or there are not. If there are no proper classes—if apparent reference to proper classes is just a manner of speaking that can be avoided by paraphrase—this position is vacuous. If there are proper classes, what will these philosophers say about statements about all of them ('No proper class is a member of anything,' for example)?

the sentences expressing the theorems of the theory are presumed to range over all sets, even though (if ZF is right) there is no set to which all sets belong.'[43] (2) There is *au fond* only one 'style' or 'sort' of variable. Different styles or sorts of variables are a mere notational convenience.[44] If we like, we can use, say, bold-face variables for, say, sets, and ordinary italic variables without restriction (for 'objects in general' or 'just any objects'), but this is only a labor-saving device. It allows us to replace the somewhat unwieldy formula

$$\exists x\, \exists y \sim \exists z\ (x \text{ is a set }\&\ y \text{ is a set }\&\sim\ z \text{ is a set.} \&\ y \in x\ \&\sim z \in x)$$

with the more compact formula

$$\exists \mathbf{x}\, \exists \mathbf{y}\ \sim \exists z\ (\mathbf{y} \in \mathbf{x}\ \&\sim z \in \mathbf{x}).$$

And 'unsorted' variables are what we must start with, for a variable is in essence a third-person-singular pronoun, and there is only one-third-person-singular pronoun, and it has only one meaning. We do not have one third-person-singular pronoun for talk about objects in one logical category and another for talk about objects in another.[45] We do not use 'it' with one sense when we are talking about artifacts and living things and asteroids and with another when we are talking about topological spaces and amounts of money and trade routes. If these things were not so, the following sentences would be nonsense:

Everything has this property: if it's not a proper class, it's a member of some set

No matter what logical category a thing may belong to, it can't have contradictory properties

If something belongs to the extension of a predicate, it can do so only as the result of a linguistic convention.

And these sentences are quite plainly *not* nonsense.

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[43] 'On Second-Order Logic', *The Journal of Philosophy* 72, no. 16 (1975), p. 515. For an important discussion of this issue, see Richard Cartwright, 'Speaking of Everything', *Noûs* 28 (1994), pp. 1–20. (This article contains some simply amazing quotations—so they strike me, at any rate—from Dummett and other important philosophers of logic.)

[44] Here I touch only on variables occupying nominal positions. For a discussion of expressions like '∃F ∀x Fx' and '∀p p v ∼p' see my essay 'Generalizations of Homophonic Truth-sentences', in Richard Schantz (ed.), *What is Truth?* (Berlin and New York: de Gruyter, 2002), pp. 205–22.

[45] Of course, 'he' and 'she' are restricted to, respectively, males and females, and both have at least a 'preference' for the category 'person'. Even 'it'—see note 35—has a 'preference' for the categories 'sexless thing' and 'non-person'. But, whatever logical categories may be, these are certainly not logical categories.

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The fifth and last of the theses of the Quinean meta-ontology cannot be stated briefly. It is in fact not really a single thesis at all, but rather a set of inter-related theses—all pertaining to what Quine has called 'ontological commit-ment'[46]—about the how one should settle philosophical disputes about what there is. There is, in Quine's view, no sharp boundary that separates philosoph-ical disputes about what there is—disputes about the existence of universals, for example, or about the existence of *possibilia* or about the existence of mere-ological sums—from disputes about whether there are caches of weapons of mass destruction in Iraq or genes that code for homosexuality or gravitons. Still, there are interminable philosophical disputes about the existence of things of various kinds, disputes that cannot be resolved by the relatively straightforward methods used by arms inspectors—or even by the less straightforward methods of theoretical biology and quantum-gravity physics. It is obviously the first busi-ness of the philosopher who is interested in such disputes to try to bring some sort of order and clarity to them. Our final topic is Quine's contributions to this task. I will approach this topic by providing some illustrations of Quine's theses on ontological commitment at work, illustrations that show how applying these theses brings order and clarity to one traditional philosophical problem, the problem of universals—or, more generally, the problem of abstract objects.

The simplest position about universals and other abstract objects is that there are none—a position traditionally called nominalism. Nominalism has one great advantage over its competitors. A 'realist', a philosopher who says that there are abstract objects, may reasonably be asked to say what they are like, to say what properties they have. (For any object at all, that object must have, for each property, either that property or its negation.) The nominalist alone, among all the theorists of universals, does not face this obligation. That is not to say that nominalism raises no questions. The nominalist must tell us, for example, how it can be that the predicate 'is white' applies to a multiplicity of objects if there is no such thing as whiteness, no object that is in some sense the common property of all white things (and is the property of nothing else). The fact remains, however, that the nominalist alone need say nothing about the nature of whiteness.

Nominalism is therefore an attractive position. But is it possible to be a nominalist—or, better, is it possible to be a *consistent* nominalist? Quine has

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[46] Quine himself very early came to prefer 'ontic commitment' to 'ontological commitment'. See Quine, *Word and Object*, p. 120 n. I have kept his original coinage because it seems to be the usage of most philosophers.

pointed out that it is harder to be a consistent nominalist than some have supposed.

Imagine, for example, that Norma the nominalist has said in print that there are no abstract objects (understandable, given that she's a nominalist), and has in fact said this by writing those very words—'There are no abstract objects.' But imagine further that in another place, about halfway down the same page, she has written, 'Although there are true sentences that appear to imply the existence of abstract objects, these sentences do not really have that implication.' That sentence logically implies (or certainly seems to) that there are sentences—for the same straightforward reason that 'There are biological weapons hidden somewhere in Iraq' 'certainly seems to' have 'There are weapons' among its logical consequences. And 'sentences' in this context must mean 'sentence-types', and sentence-types, if such there be, must be abstract objects. (Universals, in fact: a sentence-type is a universal whose instances are its tokens.) Norma, therefore, has to confront the following criticism of her stated position: It looks for all the world as if one can logically deduce (employing, to be sure, a couple of auxiliary premises) 'There are abstract objects and it is not the case that there are abstract objects' from what she has written on that one page.

I have made a point about the logical consistency of two of Norma's theses. But one of those theses was nominalism itself. I could, therefore, have put essentially the same point this way: One (at least) of the theses Norma has affirmed seems to have the falsity of nominalism as a logical consequence. The thesis that provided our example of this was a thesis that (so we imagined) she affirmed as a part of her defense of nominalism. While the choice of an example having this feature has its rhetorical uses, it is evident that many other theses that a nominalist (or anyone else) might advance have, or seem to have, the existence of sentence-types as an immediate logical consequence—for example, 'The same offensive sentence was scrawled on every blackboard in the building.'

In the preceding two paragraphs, I employed only the informal quantific-ational apparatus of ordinary English. But I might have made essentially the same points using the quantifier-variable idiom—the canonical notation of quantification. I could just as well have said this:

Norma has written a sentence whose obvious rendering into the quantifier-variable idiom is this: '$\exists x$ (x is a sentence & x is true & x appears to imply the existence of abstract objects) & $\forall y$ (y is a sentence & y is true & y appears to imply the existence of abstract objects. $\rightarrow$ y does not imply the existence of abstract objects).' The sentence '$\exists x$ x is a sentence' follows from this sentence by the rules of quantifier logic. And it is obvious from the context that the open sentence 'x is a sentence' is to be understood

in such a way that '∀x (x is a sentence → x is an abstract object)' is indisputably true. Therefore, Norma's sentence at least appears to imply the falsity of '∼ ∃x (x is an abstract object)'—that is, the falsity of nominalism.

Now why do I say 'appears to imply'? Why the qualification? Well, there are some moves open to Norma and her fellow nominalists in cases like this. The most interesting of them turns on the idea of 'paraphrase'. Here is a much-quoted passage from 'On What There Is.'

[W]hen we say that some zoölogical species are cross-fertile we are committing ourselves to recognizing as entities the several species themselves, abstract though they are. We remain so committed *at least until we devise some way of so paraphrasing the statement as to show that the seeming reference to species on the part of our bound variable was an avoidable manner of speaking.* [p. 13, italics added]

When Quine says 'some way of so paraphrasing the statement …', he means 'some way of rendering the statement into the canonical notation of quantification that employs only open sentences that can be satisfied by objects that (unlike species) are acceptable to nominalists'. And, as a matter of fact, 'nominalistically acceptable paraphrases' of 'Some zoological species are cross-fertile' are not hard to find. I will give an example of one. It will serve as an illustration of the 'move' that is open to the nominalist who is accused of having made an assertion whose obvious rendering into the quantifier-variable idiom has formal consequences inconsistent with nominalism. This paraphrase makes use of four open sentences (abbreviated as indicated):

Ax x is a (living) animal

Cxy x and y are conspecific (animals)

Dxy x and y are fertile (sexually mature and non-sterile) animals of different sexes[47]

Ixy x can impregnate y or y can impregnate x[48]

And here is the paraphrase:

$$\exists x \, \exists y \, [Ax \,\&\, Ay \,\&\, \sim Cxy. \,\&\, \forall z \, \forall w \, (Czx \,\&\, Cwy \,\&\, Dzw. \,\rightarrow\, Izw)].$$

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[47] If anyone protests that this predicate could be satisfied by a pair of organisms only if there were objects—presumably they would not be nominalistically acceptable objects—called 'sexes' such that the members of this pair were 'of' distinct objects of that sort, we may reply that we could have used the following predicate in its place: '(x is a fertile male animal and y is a fertile female animal) or (y is a fertile male animal and x is a fertile female animal)'.

[48] Quine, of course, does not like modal predicates, but we are trying to find a paraphrase of 'Some zoological species are cross-fertile' that is acceptable to the nominalist *simpliciter*—and not to the nominalist who also shares Quine's distaste for modality. It is certainly hard to see how the thesis that some zoological species are cross-fertile could be anything other than a modal thesis.

Informally:

There are two living animals x and y that are not conspecific and which satisfy the following condition: For any two fertile animals of different sexes one of which is conspecific with x and the other of which is conspecific with y, one of those two animals can impregnate the other.

We observe that the paraphrase has a feature that renderings of natural-language statements into the quantifier-variable idiom often have: it resolves an ambiguity of the original. It is not obvious whether, e.g., '*Equus caballus* and *Equus asinus* are cross-fertile' implies that *any* fertile horse can impregnate or be impregnated by *any* fertile donkey of the opposite sex (the reading assumed in the paraphrase)—or only that either some horse can impregnate some donkey or some donkey can impregnate some horse. But this is no more than a question about the intended meaning of 'cross-fertile'; it is of no ontological interest. What is of some ontological interest is this. Our nominalistic paraphrase treats 'x and y are conspecific' as a primitive predicate. But if one were willing to 'quantify over' zoological species, one could define this predicate in terms of 'x is a species' and '(the animal) x is a member of (the species) y'. Simplifying our ontology (adopting an ontology that includes animals but not species) has therefore led us to complicate our 'ideology'—that is, has led us to expand our stock of primitive predicates.[49] The other three predicates used in the paraphrase are, of course, also undefined predicates that do not occur in the 'obvious' rendering of 'Some zoological species are cross-fertile' (i.e., '$\exists x \exists y$ (x is a zoological species & y is a zoological species & $x \neq y$ & x and y are cross-fertile)'). But anyone with sufficient interest in biology to wish to assert that some zoological species are cross-fertile would probably find these predicates indispensable for making other biological assertions and would probably have to treat them as primitives.[50]

There are, however, cases of apparent 'quantification over' abstract objects that are not so easily dealt with by the method of paraphrase. Applied

[49] See pp. 202–3 of W. V. Quine, 'Ontological Reduction and the World of Numbers', in *The Ways of Paradox and Other Essays* (New York: Random House, 1966), pp. 199–207. See also Quine's 'Ontology and Ideology', *Philosophical Studies* 2 (1951), pp. 11–15. A part of the latter essay (including Quine's remarks on 'ideology') is incorporated in 'Notes on the Theory of Reference' (*From a Logical Point of View*, pp. 130–8). I have to say that I do not find the remarks on 'ideology' in 'Ontology and Ideology' and 'Notes on the Theory of Reference' very enlightening. I would say the same thing about the brief discussion of the word in the final paragraph of 'The Scope and Language of Science' (*The Ways of Paradox*, pp. 215–32).

[50] 'Ax' *might* be defined as 'x is a member of some zoological species', but only by someone who did not wish to be unable to raise questions like 'Are all animals—hybrids, for example—members of some zoological species?' I note that, strictly speaking, 'A' is not necessary for the paraphrase: 'Ax & Ay' could have been replaced by 'Dxy'.

mathematics is notoriously productive of sentences that resist nominalistically acceptable paraphrase. (And pure mathematics even more obviously so. But a nominalist might be willing to 'sacrifice' large parts of pure mathematics to make the world safe for nominalism. It would be a brave nominalist, however, who was willing to save nominalism at the price of dispensing with the application of mathematics to the physical world.)

Quine has made a very simple observation that has far-reaching consequences for the old dispute between the nominalists and the realists. The observation was this. If our best scientific theories are recast in the quantifier-variable idiom (in sufficient depth that all the inferences that users of these theories will want to make are logically valid—that is, valid in first-order logic, there being no such thing as 'higher-order logic'), then many of these theories, if not all of them, will have as a logical consequence the existential closure of an open sentence F such that F is satisfied only by mathematical objects—numbers, vectors, operations, functions—and the existence of mathematical objects is incompatible with nominalism. It would seem, therefore, that our best scientific theories 'carry ontological commitment' to objects whose existence is denied by nominalism. Consider, for example, this simple 'theory': 'There are homogeneous objects, and the mass of a homogeneous object in grams is the product of its density in grams per cubic centimeter and its volume in cubic centimeters.'[51] If we 'recast' this theory in the quantifier-variable idiom, we obtain the following or something very like it:

$$\exists x \, Hx. \, \& \, \forall x \, (Hx \rightarrow Mx = Dx \, \text{x} \, Vx).$$

('Hx': 'x is homogeneous'; 'Mx': 'the mass of x in grams'; 'Dx': 'the density of x in grams per cubic centimeter'; 'Vx': 'the volume of x in cubic centimeters'; '$x \, \text{x} \, y$': 'the product of x and y'.) One obvious logical consequence of this 'theory' is

$$\exists x \, \exists y \, \exists z \, (x = y \, \text{x} \, z).$$

That is: there exists at least one thing that is a product (at least one thing that, for some x and some y, is the product of x and y). And a 'product' must be a *number*, for the operation 'product of', in the relevant sense, applies only to numbers (and in the present case, the numbers in question must be real numbers, since the physical qualities that figure in the theory are measured

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[51] No doubt a proper physical theory, even such a simple one as this, should be independent of particular units of measure. Our little theory could be given this feature if we elaborated it by generalizing over units of measure—in this case, units of mass and distance. A more elaborate version of the theory that had this feature would, of course, present the nominalist with the same challenge.

by real numbers: the mass of a thing in grams, the density of a thing in grams per cubic centimeter, and so on, are real numbers). Our little theory, at least if it is 'recast' in the way shown above, is therefore, in a very obvious sense, 'committed' to the existence of numbers. It would seem, therefore, that a nominalist cannot consistently affirm that theory. (In this example, the role played by 'the open sentence F' in the abstract statement of Quine's 'observation' is played by '$x = y \times z$'.)

Quine, and following him, Hilary Putnam,[52] have contended that it is not possible to provide nominalistically acceptable paraphrases of most physical theories—certainly not of any physical theories that make any very extensive use of mathematics. It is not possible, they have contended, to render these theories into the quantifier-variable idiom in such a way that the rendering does not have '$\exists x \; x$ is a number' or '$\exists x \; x$ is an operation' or some other 'nominal-istically unacceptable' existential quantification as a logical consequence. They have further contended that the indisputable 'success' of physical science and the 'indispensability' to physical science of quantification over mathematical objects together provide a strong argument against, perhaps a refutation of, nominalism. I will not discuss the merits of this argument. To do that would raise epistemological questions about which I have nothing interesting to say. I will note only that if quantification over mathematical objects is indeed indispensable to the physical sciences, then nominalists who accept theses like the above thesis about homogeneity and density—to say nothing of theses like 'For no integer n greater than 2 and no integer m greater than 3 does a central-force law according to which force varies inversely with the nth power of distance yield stable orbits in m-dimensional space'—have some explaining to do. The ball is in their court. And it is Quine's theses on ontological commitment that show *why* the ball is in their court.

Although Quine has emphasized the indispensability of quantification over mathematical objects to the physical sciences, it is worth pointing out that when we are engaged in the ordinary business of life we very frequently say things that raise problems for the nominalist that are exactly parallel to the problems raised for the nominalist by the things said by physicists speaking in their professional capacity. We have seen one case of this: 'The same offensive sentence was scrawled on every blackboard in the building.' In 'A Theory of Properties', I investigated in some detail the problems raised for nominalism by the apparent quantification over properties (attributes, characteristics, qualities, features, …) in everyday speech. (In that paper, I defended the conclusion that anyone who denied the existence of properties would find it at least very

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[52] Before his apostasy; see note 28.

difficult to account for the validity of many obviously valid inferences—such as, 'Any two mature, well-formed female spiders of the same species have the same anatomical features; *Hence*, An insect that has some of the same anatomical features as some mature, well-formed female spider has some of the same anatomical features as any mature, well-formed female spider of the same species.')

To recapitulate. The fifth thesis (the family of theses that I loosely call 'the fifth thesis') of the Quinean meta-ontology is a proposal about the way in which 'philosophical disputes about what there is' should be conducted. (We might call them his 'rules for conducting an ontological dispute'.) To wit:

The parties to such a dispute should examine, or be willing in principle to examine, the ontological implications of *everything they want to affirm*.[53] And this examination should consist in various attempts to render the things they want to affirm into the quantifier-variable idiom (in sufficient depth that all the inferences they want to make from the things they want to affirm are logically valid). The 'ontological implications' of the things they affirm will be precisely the class of closed sentences starting with an existential-quantifier phrase (whose scope is the remainder of the sentence) that are logical consequences of the renderings into the quantifier-variable idiom of those things they want to affirm. Parties to the dispute who are unwilling to accept some ontological implication of a rendering of some thesis they have affirmed into the quantifier-variable idiom must find some other way of rendering that thesis into the quantifier-variable idiom (must find a paraphrase) that they are willing to accept and which does not have the unwanted implication.

If these 'rules' are not followed, then—so say those of us who are adherents of Quine's meta-ontology—it is almost certain that many untoward consequences of the disputed positions will be obscured by imprecision and wishful thinking.

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[53] Quine assigns a special, central role to the affirmations of physical science in his discussions of ontological commitment. I would say that this was a consequence of certain of his epistemological commitments and not of his meta-ontology.