Existence and Quantification Reconsidered[1]

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1. Introduction

The currently standard philosophical conception of existence makes a connection between three things: certain ways of talking about existence and being in natural language; certain natural language idioms of quantification; and the formal representation of these in logical languages. Thus a claim like 'Prime numbers exist' is treated as equivalent to 'There is at least one prime number' and this is in turn equivalent to 'Some thing is a prime number'. The verb 'exist', the verb phrase 'there is' and the quantifier 'some' are treated as all playing similar roles, and these roles are made explicit in the standard common formalization of all three sentences by a single formula of first-order logic: '$(\exists x)[P(x) \ \& \ N(x)]$', where '$P(x)$' abbreviates '$x$ is prime' and '$N(x)$' abbreviates 'x is a number'. The logical quantifier '$\exists$' accordingly symbolizes in context the role played by the English words 'exists', 'some' and 'there is'.

This view about how to represent or regiment these kinds of sentences will be familiar to philosophers; so familiar, in fact, that for many it will be taken as an established result. I think it should not be taken in this way, and my aim in this paper is to disentangle a number of different claims contained in this standard view, and to dispute some of them.

Before doing this, I must first distinguish between two ways in which these kinds of formalization can be understood. On one understanding, they are taken as representing the underlying logical form (or maybe the semantic structure, if that is the same thing) of sentences like 'there are prime numbers' or 'prime numbers exist'. This treats formalization as part of a systematic account of the actual workings of natural language, and such attempts should be assessed by their adequacy in accounting for the structure of as much of the way we actually speak as possible. I will call this the 'descriptive' approach.

The second way of understanding formalizations like this is as a proposed revision of the way we talk, for certain scientific or philosophical purposes. The aim here is not to capture the actual underlying 'logical form' or 'semantic structure' of the way we speak, but rather to create a more rigorous representation of our theories of the world, by removing ambiguities, unclarities and misleading idioms. This is the approach championed by Quine (1969). Quine's aim was not to give a systematic semantics of natural language, but to create a language in which we can express, in as precise a way as possible, our best theory of the world. I will call this the 'revisionary' approach.

The two approaches to formalization are very different. The descriptive approach is concerned to get as much of our natural language right as possible, and it is evaluated against the considered linguistic judgements ('intuitions') of native speakers. The revisionary approach is prepared to disregard these judgements or explain them away, if they are not required to express what we independently believe to be our best theory of the world.

My concern here will be with the descriptive approach, and to that extent I will not take issue with Quine's revisionary project. I will dispute the connection

made between verbs of existence and natural language quantifiers, as claims about the meaning or semantic role of these words. My reason for doing this is that there are natural language sentences which seem to be straightforwardly true, but which are incompatible with the standard approach to existence, understood semantically. These are sentences which we use to talk about – and apparently 'quantify over' – things that do not exist. I will argue that if we are to give an adequate semantic account of these claims, then we cannot treat 'some things are *F*' and '*Fs* exist' as equivalent in meaning.

The claims which I will focus on are claims like, 'some things we think about do not exist' or 'some characters in the Bible did not exist' or 'some characters in *War and Peace* existed, and some did not'. My interest in these claims derives from the phenomenon of intentionality: the mind's direction upon its objects. A definitive feature of intentionality is that intentional mental states can concern or be about things that do not exist: we can think about characters in fictions and myths, and about things mistakenly supposed to exist, like gods or entities postulated by false scientific theories. Moreover, our language seems to behave in similar ways whether or not the things we are talking about exist. We can use names and other referring expressions to talk about these things, and it seems that we can generalize from these uses and quantify over these things too.

Unless we can make clear sense of these intentional phenomena, then we can have no adequate general account of intentionality. Part of making sense of these phenomena, I believe, is a matter of showing how claims like those just quoted are *true*. The standard semantic approach to existence and quantification does not allow them to be true; so the standard approach must be rejected. Fortunately there are

reasons, independent of any particular theory of intentionality, to reject the standard approach. Or so I will argue.

My underlying motivation would not move someone like Quine, of course, because he does not think that it is possible to make scientific sense of intentionality or the semantics of attributions of intentionality. In *Word and Object*, Quine famously talked of the 'baselessness of intentional idioms and the emptiness of a science of intention' (Quine 1960: 221). He agrees that we have more or less precise ways of talking about intentionality in ordinary speech, and for practical purposes (in the 'market place') we can talk as if there are thoughts, desires, intentions and so on. But when we are 'limning the true and ultimate structure of reality', we will not find intentionality there. So the regimentation of our ordinary talk which is required for formulating our best theory will not need to account for the phenomenon of thought about the non-existent. Our best theory of the world will not need to talk about thoughts, and *a fortiori* it will not need to talk about thoughts about the non-existent.

I reject Quine's attitude to the mental and to intentionality, and I am skeptical of his conception of what the best theory is. The arguments of this paper, however, are not addressed to these issues, but to the semantics of our actual talk of existence and quantification. Quineans who look for a revisionary approach will not be moved by the arguments presented below. This paper is addressed to those who want to make sense of our ordinary claims, and not to those whose concern is with the construction of a new language for expressing the best theory of the world. However, to the extent that someone (like e.g. van Inwagen 2003) thinks that Quine's view gets something right about natural language quantification, this paper is addressed to them.

2. The problem

When thinking or talking about, say, characters in the Bible, we might reason as follows. Abraham, Moses, Solomon and Jesus are all characters in the Bible. We have good reason to think that Solomon and Jesus existed; but less reason to think that Abraham and Moses did. From this we might generalize to the claim I call (S):

(S) Some characters in the Bible existed and some did not.

This seems like a straightforward use of quantification ('some …') as a device of generalization. Compare this case with the following. We might be thinking about the history of England, and contemplating the ways in which various kings of England met their deaths. Edward II and Richard III died violently; Henry VII and Charles II did not. So we can generalize to the claim I call (K):

(K) Some kings of England died violently and some did not.

This claim looks somewhat similar in its syntax to (S). (K) combines a quantified noun phrase with a verb phrase, and the second quantifier 'some' is elliptical for 'some kings of England'. (S) likewise combines a quantified noun phrase with a verb, the only syntactic difference being that in (K) the verb is modified by an adverb and in (S) it isn't.

If we approached these sentences without any knowledge of philosophical and logical history of discussions of existence, then we might say the following. Intuitively, what both these sentences do is to pick out or identify a group of things (characters in the bible, kings of England) and say something about some of them (existing, dying violently) while denying it about the others. But while we might be

able to say this about (K), the standard approach will not let us say this about (S). This is because it holds that 'Some *Fs* are *Gs*' is equivalent to 'There exist *Fs* which are *Gs*'. So, with the ellipsis spelt out, (S) is equivalent to:

(S1) There exist characters in the Bible which exist and there exist characters in the Bible which do not exist.

And the second conjunct of (S1) is a contradiction, assuming that '… does not exist' is equivalent to 'it's not the case that … exists'. Given that contradictions are not true, then (S) cannot be true, because it is equivalent to a contradiction. Yet we previously found good reasons to think that (S) is true, since it seemed to be an generalization from some simple truths about characters in the Bible.

If the standard approach is right, then we cannot think of 'some *Fs*' as picking out a collection of things independently of whether they exist. And so we cannot then go on to predicate existence of some of them but not of others. This is because 'some' already introduces, implies or otherwise contains the idea of existence. A defender of the standard view might say that this is the reason that the symbol used to represent 'some' in the predicate calculus ('∃') is called the *existential* quantifier.

There is another reason why the orthodoxy cannot think of what (S) says in the intuitive way described above. The intuitive description was that a quantified sentence 'some *Fs* are *Gs*' first picks out the *Fs* and then predicates *G-ness* of some of them. On the standard account, this is a perfectly acceptable way of thinking of a sentence like (K), for example. One starts with a domain of quantification, where this is thought of as a domain of objects, real things. Either the domain contains everything, and (K) says that some things in the domain are both kings of England

and died violently. Or we restrict the domain to the Kings of England, and we identify some objects in the domain as those who died violently. But on both approaches, it is usually assumed that *the domain contains only real – and that means existing – things*. So (S) cannot be true because its domain of quantification cannot include those characters in the Bible that exist and those that do not exist: no domain can include things that do not exist.

This problem – about real or apparent 'quantification over non-existents' – is, of course, well-known and has received extensive discussion. I am not pretending that I have discovered a new problem. But many responses to the problem have either denied that these sentences are true, or tried to modify the normal logic of quantification. My aim here, by contrast, is to develop a way of understanding sentences like (S) which preserves their intuitive truth-value and keeps the basic ideas of the logic of quantification intact. In what follows I will not, I believe, take issue with any major claim of contemporary logic. Instead, I will argue that we can keep logic pretty much as it is (with a few minor modifications), and yet make sense of the idea that some things do not exist. The truth or falsehood of this claim is not a matter of logic. Rather what I will challenge is the philosophical interpretation of some logical ideas, and how this interpretation has shaped a conception of the meaning of claims like (S) which makes intentionality hard to understand.

3. Two irrelevant ideas

In order to make progress in understanding (S) and related claims, we need to put to one side two ideas which are often introduced in this context.

It is sometimes said that the essence of the standard view of existence is that the verb 'exists' is not a 'logical' predicate, or not a 'first-level' predicate.[2] It is also said that the essence of the standard view is that there is no conceptual or ontological distinction between *being* and *existence*, implying that anyone who rejects the standard view has to accept such a distinction between being and existence.

It turns out that neither of these ideas is central to the standard view as I conceive of it – i.e. to the view that makes sentences like (S) contradictory. What is central to this view is the connection between existence and certain kinds of quantification (the quantification we express in the vernacular with 'some'). But one can accept this connection while also accepting that 'exists' functions as a first-level predicate. So it cannot be essential to the standard view that 'exists' is not a first-level predicate.

Likewise, as I shall explain below, one can accept the standard view and still hold some kind of distinction between being and existence. Or one can deny the standard view and hold that there is no interesting such distinction. I will take these two ideas – 'exists' as a predicate, and the distinction between being and existence – in turn.

A vast amount has been written about this thesis that 'exists' does not function logically as a first-level predicate (and about its historical origins) – too much than can be reasonably surveyed here. What I will do is explain briefly why this thesis is independent of the standard view. First-level predicates are defined by Dummett as 'incomplete expressions which result from a sentence by the removal of one or more occurrences of a single "proper name" [i.e. referring expression]' (Dummett 1973: 37-8). If this is all it takes for a predicate to be first-level, then 'exists' is a first-level

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[2] Of course, when I say general things about the meaning of the English word 'exists' I mean this to apply to its cognates in other languages.

predicate. We can construct the predicate '*x* exists' from the sentence 'Vladimir exists' by removing the name 'Vladimir' and replacing it with the free variable '*x*' to mark its incompleteness. Furthermore, this way of representing the form of this sentence makes it clear how we can also represent, in simple way, the form of sentences like 'everything exists' and 'something exists' (see Mackie 1976).

Those who think that 'exists' is not really a first-level predicate treat this fact as superficial and as misleading as to the real logical structure of the sentence 'Vladimir exists'. I need not rehearse their reasons here, which are well-known.[3] The point I want to make here is only that it is not essential to what I am calling the standard view that it accept this view about the logical role of 'exists'.

The essence of the standard view is that a use of a quantified sentence of the form 'some *F*s are *G*' expresses a belief in the existence of *F*s. If you think 'exists' is not a first-level predicate you will probably take 'some *F*s exist' to be of the form '$(\exists x)(Fx)$'. But the fact that your use of 'some' commits you to the existence of the things you are quantifying over does not *prevent* you from treating 'exists' as one-place predicate, if you have *other* reasons to treat it in this way. If you did this, you would treat 'some *Fs* exist' as having the form '$(\exists x)(Fx \ \& \ Ex)$' where '*Ex*' is your first-level existence predicate.

This is in effect the view taken by Gareth Evans, who argues that there are linguistic reasons for treating 'exists' as a first-level predicate (Evans 1982: 346-7; he appeals also to Mackie (1976) in defence of this view). But in arguing for this, Evans does not depart from the standard view, since he thinks that the sense of the first-level existence predicate *E* 'is precisely fixed by saying that it is true of everything' (1982: 348). He adds that the sense of '*E*' is 'shown' by the formula: '$(\forall x)(x$ satisfies '*E*')'.

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[3] But see Wiggins (1995) for a spirited defence of this position.

Since this formula is equivalent to '¬(∃x)¬(x satisfies 'E')' it is clear that the standard connection between existence and quantification is maintained on Evans's view. If 'E' is true of everything, then it cannot be that some things do not exist.

I think Evans, Mackie and others are right that we should treat 'exists' as a first-level predicate, and that there are no overwhelming logical or semantic objections to such a thesis. But my aim here is not to argue for this thesis, but to emphasize that the thesis does not suffice to refute the standard view, since it is perfectly compatible with the standard view. The standard view is about the relationship between existence and quantification, not about the logical form of 'exists'.

The second irrelevant idea I need to discuss is that there is no significant (non-verbal) distinction between being and existence, and that this is the essence of the standard view. The idea is this: those who say 'there are things that do not exist' are distinguishing between *what there is* and *what exists*. So they are distinguishing between *being* and *existence*. But once we recognize that the distinction between being and existence is merely verbal, then we will see why, properly understood, a sentence like (S) is genuinely contradictory: for either it implies that there *are* things which there *are not*, or that there *exist* things which *do not exist*.

This line of thought is derived from Quine (1948), and the idea that there is no non-verbal difference between being and existence is described by Peter van Inwagen as 'the essence of Quine's philosophy of being and existence' (2008: 37). But it seems to me that the distinction between being and existence is largely irrelevant to the question posed by (S). Someone who rejects the standard view of quantification and existence can agree with the Quinean that there is no interesting distinction between

being and existence. To see why this is so, we need to look a little more closely at what the distinction is supposed to be.

The Quinean critic no doubt has in mind the view expressed in this famous passage from Russell's *The Principles of Mathematics*:

> There is only one kind of being, namely being *simpliciter*, and only one kind of existence, namely, existence *simpliciter*. Being is that which belongs to every conceivable term, to every possible object of thought… Numbers, the Homeric gods, relations, chimeras, and four-dimensional spaces all have being, for if they were not entities of a kind, we could make no propositions about them… For what does not exist must be something, or it would be meaningless to deny its existence; and hence we need the concept of being, as that which belongs even to the non-existent. (1903: §427)

Russell here distinguishes between being and existence and says that things that do not exist nonetheless have being. To apply Russell's idea to our problem: since every object of thought has being, so all biblical characters have being, even if not all of them exist. Since being and existence are so different, there is no contradiction in saying that there are some biblical characters which do not exist: the things that there are (those that have being) are one thing, and the things that exist quite another.

Elsewhere Russell (1959: 64) attributed this view to Meinong. But in fact, Meinong's view was quite different from Russell's 1903 view. Meinong (1904) did draw a distinction between being and existence, and held that only spatiotemporal things exist. Non-spatiotemporal things – like numbers, propositions ('objectives' in Meinong's terminology) – do not exist. Rather, they have a different mode of being, which Meinong called *subsistence*. But in addition to these entities, there are also things that have no being at all, neither existence nor subsistence. These are the objects of thought which are 'beyond being' (Meinong 1904; see also Priest 2005). So Meinong's view is not Russell's 1903 view.

Meinong's view that not everything we think about (not every object of thought) has being is surely more plausible than Russell's.[4] Of the many things that can be said about the concept of being, one obvious connection is with the idea of reality: what has being is what is real, it is an inhabitant or part of reality. Not everything we think about is part of reality, despite what Russell says: the Homeric gods are not. Neither are non-existent biblical characters. Not only do they not exist, but they also have no reality, they are not beings. Whatever we want to say about the vexed questions of being, this at least seems obvious. So we should reject Russell's 1903 view. If we can think about things that have no being at all, then the problem posed by (S) remains.

Distinguishing between being and existence does not help in solving the problem posed by (S). On this the Quineans are right. But rejecting the distinction in the way just indicated does not make the problem disappear either. For the problem arose because (S) seemed to be a straightforward generalization from 'Abraham did not exist, Jesus did' *etc*. And yet (S) expresses a contradiction. Insisting that there is no distinction between being and existence does not show us how to avoid this contradiction.

The distinction (S) makes between things that exist and things that do not should not be expressed in terms of the distinction between being and existence. But this does not mean that there is *no* interesting distinction that can be made between being and existence – it's just that this distinction is not relevant to our problem. However, since it the distinction is often appealed to in discussions of non-existence, it is worth getting clear what might be at issue here.

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[4] As Russell later acknowledged, apparently without recognizing that he was agreeing with Meinong here: see Russell 1919: 169-70.

Meinong's distinction is intended to express the idea that there are different kinds of *ways* or *modes of being*. Although contemporary philosophers occasionally ridicule the idea that there are different modes of being – associating it with rejected ideas like 'degrees of reality' – the phrase has a perfectly unexceptional reading, and the idea it expresses should be accepted by everybody. Some of those who believe in events, for example, consider them to be entities which are temporally extended over time, and which have temporal parts. This is the *mode of being* of events, as opposed to the *mode of being* of material objects, which have no temporal parts. Those who reject this kind of distinction – e.g. four-dimensionalists about objects – can say that events and objects have the same *mode of being*. But they can still say that four-dimensional entities have a different mode of being from abstract entities (if they believe in such things).

At least with regard to the distinction between being and existence, then, Meinong's view is only terminologically different from the Quinean view. For the Quinean can distinguish between concrete and abstract objects, just as the Meinongian can distinguish between existing and subsisting objects. Each of them will agree that there are such objects, but the Quinean will say that the abstract objects exist as much as the concrete ones do. The Quinean and the Meinongian can agree about what has being, they just disagree about how to use the word 'exist'.

There should, therefore, be no dispute between the Quinean and the Meinongian about whether there are different modes or kinds of being. The only dispute is whether different modes of being are described in terms of (say) the contrast between existence and subsistence, or in some other way. And this might indeed be a verbal dispute. The real point of disagreement between the Quinean and Meinong is over whether there are some objects with no being whatsoever, or whether

it is true that some objects have no being whatsoever. In order to say what this means, and what this disagreement amounts to, we need to understand what quantifiers like 'some' mean. I will turn to this in the next section. But before leaving the topic of being and existence, I need to make two final points.

First, a possible reason for thinking that 'there are things that do not exist' introduces a distinction between being and existence is that the expression 'there is' contains the third-person present tense form of the English verb 'to be'. But we should not move too quickly here. The mere presence of this verb is not in itself a sign that we are talking about being. (Consider: 'there are things that have no being' is not an obvious formal contradiction.) As is well-known, the verb 'to be' has many uses which have no simple connection to being. The English verb is used to express the copula too, and there is no inference from this use to predications of being or existence. The fact that the word 'is' occurs in 'Pegasus is a mythological horse' implies nothing, of course, about whether Pegasus has being.

Second, it is sometimes said (e.g. by van Inwagen 2003) that 'there are things which do not exist' involves two *quantifiers*: a committing one (associated with existence) and a non-committing one (associated with being). I will not discuss this view in detail, for two reasons. The first is that it is implausible to regard claims about what *has being* to be 'non-committing'. If you really want a non-committing quantifier – and I shall argue below that our quantifiers are non-committing – then it should commit us neither to the existence *nor* to the being of something. The second reason is that 'there is' is not, on the face of it, a natural language quantifier phrase. So we need good reasons for seeing it as 'really' a quantifier.

So this just raises the question, to which I now turn: what is a quantifier?

4. Quantification in natural language

The general answer is that a quantifier is a term which specifies the quantity of things being talked about. Philosophers are most familiar with the quantifiers 'some' and 'all' and their treatment in predicate logic. These quantifiers are normally called the *existential* and the *universal* quantifiers, and symbolized by '∃' and '∀' respectively. But natural languages contain many other ways of quantifying: that is, of specifying the quantity of things being talked about. As well as 'some' and 'all', we have 'few', 'most', 'many', 'at least one' and so on. Syntactically, these expressions are determiners: expressions that combine with a noun to create a noun phrase. Noun phrases created by quantifiers and nouns (possibly modified by adjectives) are known as quantified noun phrases. Thus 'some' combines with 'pigs' to make the quantified noun phrase 'some pigs'. Quantified noun phrases combine with verb phrases to make sentences; so 'some pigs' combines with 'swim' to create the sentence 'some pigs swim'.[5]

In Frege's logic, quantifiers are treated as second-level function-expressions ('concept-words'). They take first-level function-expressions (such as those we these days might represent as 'Pig(x)') as arguments and yield truth or falsehood as values. Frege treated the quantifiers as *unary*: that is, they can create a sentence by taking *one* first-level function-expression as argument. For example, the formula '∀x(Pig(x))' says that everything is a pig. On the Fregean understanding, this formula says that the concept 'Pig(x)' yields the value true for all objects in the domain. Thus quantifiers are unary function-expressions which combine with one open sentence to make a closed sentence.

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[5] For authoritative accounts of natural language quantification and their relations to logic, see Westerståhl 2007, Peters and Westerståhl 2006.

On Frege's logical analysis, 'some pigs' is not a syntactic constituent of the logical form of the sentence 'some pigs swim'. Rather, 'some' is a variable binding operator and the logical role of 'pigs' is as an unary first-level function-expression (or open sentence). This contrasts with the apparent syntax of 'some pigs' in English (and other languages: see Ben-Yami 2005). The English sentence 'Some pigs swim' seems to combine the determiner 'some' with *two* expressions ('pigs' and 'swim') to create a sentence. But the determiner 'some' cannot combine with 'pigs' to make a sentence, unlike the way the quantifier '$\exists x$' and 'pig(x)' can make the sentence '$\exists x(\text{pig}(x)$'. So as far as apparent natural language syntax is concerned, quantifiers are *binary*: they combine with *two* expressions (either verb phrases, noun phrases or adjectives) to make a sentence.

Frege's (1879) view was that apparently binary quantifiers could be defined in terms of unary quantifiers plus sentential connectives. Thus 'some pigs swim' has the form '$\exists x(\text{pig}(x)$ & swims$(x))$'. The sentence says that some things in the domain of quantification are pigs that swim. (More precisely, the first-level concept-word 'pig(x)' yields the value true for some objects in the domain and the first-level concept-word 'swims(x)' also yields the value true for those objects.)

This was for many decades the standard approach to the syntax and semantics of quantifiers, and this is still the way that students of logic are taught the syntax and semantics of the two quantifiers of elementary first-order logic. But it has been widely recognized for some time that not all natural language quantifiers can be represented by unary quantifiers and connectives.[6] 'Most pigs swim', for example, cannot be represented by saying that most things in the domain are such that they are pigs and they swim; nor by saying that most things in the domain are such that if they are pigs

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[6] For an authoritative account, see Barwise and Cooper (1981); the idea of generalized quantifiers appealed to there derives from the work of Mostowski and Lindström.

they swim. The former is obviously not what is meant by 'most pigs swim', and the latter is rendered true by the fact that since most things in the world are not pigs, then most things are such that if they are pigs they swim. But if the original claim is true, then surely it is not true because of this! 'Most' does not have a formalisation in classical first-order logic.[7]

The objection here is not to Frege's view of quantifiers as second-level function-expressions as such. We can preserve this view yet say that the quantifiers are binary: the semantic value of a quantifier is a function from a *pair* of first-level function-expressions to truth-values (Evans 1982: 58). But treating quantifiers as binary does bring them closer to surface syntax than Frege's analysis does. For example, we can represent 'some pigs swim' as '[some x: pigs x](swim x)' where the material in the square brackets corresponds to the quantified noun phrase 'some pigs', and 'swim(x)' corresponds to the verb phrase. The quantifiers are still treated as binding variables, and we can still treat the semantic value of the quantifier as a second-level function-expression which takes first-level function expressions ('pig(x)' and 'swim(x)') as arguments.[8] But the formalisation preserves the syntactic unity of 'some pigs' and other quantified noun phrases, and therefore facilitates a unified semantic and syntactic account of all natural language quantifiers.

What is appealing about this approach is that it gives a lucid representation of the idea that whether or not 'some pigs swim' depends on how things are with the *pigs* in the domain. For this reason, many treat natural language quantifiers as *restricted* quantifiers: the role of quantified noun phrase is to pick out some things

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[7] This point is usually credited to Rescher (1962). For more details, see Wiggins (1980) and Neale (1990).
[8] This is not say that we have to construe the semantics in Frege's way; the more usual approach is to treat the semantic values of the quantifiers as sets of subsets: see Westerståhl (2007). For an exceptionally lucid introduction to the issues here, see Neale (1990).

from the domain of pigs, and the role of the second open sentence is to predicate something of them.

Assuming the intelligibility of an existence predicate, 'some biblical characters exist' can represented as: '[some x: biblical character x](exist x)'. And on the face of it, its semantics can be understood in the same way as that of 'some pigs swim'. The quantified noun phrase identifies some things in the domain of biblical characters and the second open sentence predicates existence of them. We can also identify some biblical characters in the domain and predicate non-existence of them. It is natural, and orthodox, to think of quantifiers as describing a relationship between two sets. So in this case, the set of existing things will intersect with the set of biblical characters: the set of existing biblical characters is a subset of the set of biblical characters.

What is wrong with taking this simple face-value view? The immediate objection is that existence is implied as soon as we start talking about domains of quantification. When evaluating a quantified sentence for truth or falsehood, we assume a domain of quantification, where this is normally understood as a *set* of entities (but see Stanley and Szabó 2000: 252). The members of the domain must be entities. For if they were not entities, we cannot make sense of the semantics of quantification. So we cannot say that there are non-existent objects in the domain of quantification.

I do not think that non-existent biblical characters are entities of any sort, for the reasons given above (see §3). So in order to justify my face-value interpretation of (S) I have to say something else about domains of quantification. This will be my central point of disagreement with the standard view.

5. Domains of quantification and universes of discourse

To understand what is going on here, we have to return to the phenomena we started with: our ordinary talk about the world. I am assuming as an undeniable fact that our ordinary talk about the world contains terms which refer, and terms which do not. Some names do not refer ('Pegasus') and some predicates neither refer nor are true of anything ('*x* is phlogiston'). If we are to obtain a satisfactory account of our language as it actually is, we have to accommodate these facts.

We can talk about all these things and we can think about them. So just as we can use the term 'object of thought' to refer to anything we can think about (whether or not it exists) we can also use the term 'object of discourse' to refer to anything we can talk about (whether or not it exists). 'Object' here does not mean *entity*, any more than 'object of thought' means 'entity of thought' (see Crane 2001).

Just as we can use referring terms or predicates in similar ways whether or not they refer to anything, so we can generalize about objects of discourse whether or not they exist. Quantifying is generalizing: it is talking about a quantity of things and predicating things of them. A domain of quantification contains all the things which are relevant to evaluating the quantified claim. Sometimes we quantify unrestrictedly, as when we want to talk about absolutely everything. But, as noted above, it is more usual in ordinary discourse to assume some restriction on the domain of quantification (see Stanley and Szabó 2000).

In a traditional terminology, the domain of quantification was called the *universe of discourse*. This term gives a hint as to how we should understand quantification if we are going to make literal sense of sentences like (S). The universe of discourse contains all the items we assume or stipulate to be relevant to our *discourse*. An item here is simply something which can be thought or spoken about:

an object of thought or discourse, in the sense I introduced above. The domain of quantification consists of just those *objects of thought* relevant to the truth or falsehood of the quantified claim.

Objects of thought are not, as such, entities. An object of thought is just anything which is thought about, in the most general sense of that term. Some objects of thought exist, and some do not. But to say this is not to assume that there is an ontological or quasi-ontological category of 'objects of thought' to which all these things belong. When an object of thought exists – for example, when I think about the planet Neptune – then the object of thought simply is the thing itself (Neptune itself). When the object of thought does not exist, it is nothing at all (*cf* Husserl 1900-01: 99).

I am assuming that quantifying over things is a way of *talking about* them, in an intuitive sense. It is true, as Frege famously pointed out (1884: 60), that one can quantify over some entities without being able to think or talk about them individually. Thus one can say that all men are mortal without being able to judge of each man individually that he is mortal – since no-one is capable of forming a judgement about each man individually. There are men about whom we know nothing. But this does not stop my thought being *about* – in a perfectly ordinary sense – all men. So we can quantify over all the things we are talking about, and this is a way of talking about them too. All the things we are talking about are all the things we are thinking about: we can quantify over objects of thought.

It might be objected, however, that thinking of the members of a domain of quantification as objects of thought gives rise to paradox. An object of thought is just something thought about. But surely we can quantify over things that have never been thought about: for example, we can say 'some things have never been thought about'.

This surely must be true. But if so, how can the domain of quantification consist of objects of thought?[9]

This apparent paradox is avoidable, so long as we state our thesis clearly enough. I am using the idea of what is 'talked about' and 'thought about' in a very general way, to apply to any thing that is what we might call the subject-matter of thought or discourse. So, in particular, I do not understand such 'aboutness' in the sense of *reference*. Reference – the relation in which singular terms stand to objects, or plural terms stand to pluralities of objects – is one way in which words can be about things, but it is only one way. Predication, too, is a way in which words can be about things. When I say that some pigs swim what I am saying is about swimming just as much as it is about pigs. 'All men are mortal' is about mortality as much as it is about all men. But it is perfectly natural to think of the sentence as being about all men too, in this very general sense of 'about'.

So I can use a quantified noun phrase to 'talk about' things, even if those things cannot be talked about in other ways. It might seem paradoxical to say 'some things have never been talked about', but if we agree that quantified noun phrases are ways of talking about things, then we should understand this as conveying the following: *some things have never been talked about except by being talked about in this way*. This is comparable to what one should say to Berkeley when he says that one cannot conceive of an unconceived tree. Of course, by conceiving of a tree as unconceived, what one means is that it is not conceived in any way *other than in this act*. If there is a paradox here, it is not one which is specific to the view of quantification defended here.

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[9] I am indebted here to discussions with Makoto Suzuki and Stephan Leuenberger.

A related clarification is needed about the idea of aboutness. When I say that 'all men are mortal' is a way of talking *about* all men, I do not mean that there is some peculiar thing 'all men' which is the 'logical subject' of this sentence, any more than 'no men' is the peculiar logical subject of 'no men are immortal'. 'All men', I claim, is a quantified noun phrase and in a perfectly ordinary sense is the syntactic subject of the sentence. This is expressed clearly in the binary quantifier notation '[all x: men(x)](mortal(x))'. It is consistent with this to define the truth-conditions of this sentence in (e.g.) Russell's way, where one does not employ anything like 'all men' as a 'logical subject'. I am not questioning the conventional wisdom about logical subjects. All I want to insist on is that 'all men are mortal' is about all men. What a sentence is about is not the same as the logical subject of the sentence.

What does it mean, then, to quantify over non-existent objects? It is to have non-existent objects of thought in the universe of discourse, where a universe of discourse is a specific generalization of the idea of an object of thought: *viz.* all the things relevant to what we are talking about. So to have an object of thought in the universe of discourse is to have it among the things relevant to what we are talking about. These things can be 'values' of the variables bound by the quantifiers, just in the sense that things can be true or false of these objects of thought. So, when evaluating 'some biblical characters did not exist' we look for something in the domain (biblical characters) of which we can predicate non-existence. And lo! We find one: Abraham. Abraham is, then, a value of the variable.[10]

I suspect that to many philosophers, this way of thinking of a domain of quantification will seem either obscure or unexplanatory. But when we look at the ways in which philosophers typically *use* the idioms of quantification, when they are

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[10]I am therefore committed to the idea that there can be true simple predications of non-existent objects. I plan to say more about this in future work.

not explicitly talking about ontology, we find that they are very relaxed about

quantifying over entities in whose existence they do not believe, and that their actual

way of talking conforms very nicely to what I have just said.

One case is when philosophers talk of possible worlds to illuminate other

important concepts, like the concept of representation. Here is an especially lucid

example from Frank Jackson:

> A sentence represents by making a partition in the space of possible worlds, a partition in logical space. For such a sentence, S, there is a function from S to a set of possible worlds. *Each world* in that set is a complete way things might be consistent with how the sentence represents things to be. *Each world* in this set is a complete way things might be in the sense that every 'i' is dotted, every 't' is crossed. In understanding S, we are able, in principle, to know which worlds are in this set and which are not. To know that *some given world w* is in the set, we don't, however, have to be able to discriminate w from any other world in thought (which is anyway impossible, for there are infinitely many possible worlds, whereas we are finite beings). Typically we know that w is in the set in the sense that we know that *any world that is thus and so* is in the set, where *indefinitely many worlds* fall under 'thus and so', and we know that w is thus and so. (Jackson 2010: 45; my emphasis)

The italicized phrases are the quantified noun phrases which make reference to

possible worlds. So Jackson is perfectly happy to quantify over possible worlds. Yet

Jackson does not believe that possible worlds exist, and so he cannot believe that the

domain of quantification really is a set of existing possible worlds.

It will be replied that Jackson will adopt some reductionist analysis of possible

worlds, of the kind David Lewis called 'ersatzist'. One such analysis is to treat worlds

as 'recombinations' of actual properties and objects (Armstrong 1989). Another is to

treat 'worlds' as maximally consistent sets of sentences or propositions (Stalnaker

1984). But each of these approaches must appeal to representation in explaining what

talk of worlds really is. This is especially obvious in the case of propositions, which

are representations, if anything is. It is slightly less obvious in the case of

'combinatorial' theories: but one only needs to reflect on the fact that on these theories, nothing is *actually* recombined, and everything is actual. So what is really going on is that combinations of actual things are represented (maybe by being an abstract object). Quantifying over possible worlds, on these ersatzist views, either assumes a domain of propositions or a domain of representations of re-combined actual entities.

The approach defended in the present paper assumes the idea of representation too, by assuming the idea of an object of thought. An object of thought is anything which can be thought about, in the broadest sense of 'object' and 'thought about'. Thinking about is a form of representation. So I am assuming the idea of representation in explaining the idea of a domain of quantification. This is one way to describe my departure from the standard view: for many who hold the standard view want to explain representation in terms of an antecedent conception of domains of quantification, and relations defined on these domains. However, if what I have argued above is right, many ersatzists about modality are also thinking in my way: they explain quantification over possibilities ultimately in terms of representation. This does not invalidate their talk of sets of possible worlds or quantification over worlds; on the contrary, for any actualist, it makes good sense of it. The use by actualists of quantification over possible worlds as an example of how natural it is to use quantifiers to talk about things even if one is not assuming a domain of existing objects. Whether it is acceptable to take the notion of representation as fundamental or basic in this way, is a question for another occasion.

6. Existential sentences: 'there'

Having said how I think we should understand, in the most general terms, natural language quantification, I now need to say something about the relationship between the relevant natural language quantifiers and the English verb phrases 'there is'/'there are'. What I have to say here is somewhat provisional, but I believe it is on the right lines.

Philosophers are used to explaining the symbol '∃' variously as 'some' and 'there is'. This is entirely natural, for (*pace* Ben-Yami 2004) 'some *F* is *G*' is equivalent to 'there is an *F* which is *G*'. But 'there is' can also be used to express belief in the existence of something ('there is a God!' is, after all, a way of saying 'God exists!'). If this is so, then how can I separate 'some *F* is *G*' from 'an *F* which is *G* exists' in the way I have tried to?

Syntactically speaking, 'there is' is not a quantifier. 'There' functions as what linguists call an *expletive* – a word that fills a syntactic gap but has no semantic function – and 'is' is the third-person singular present tense form of the verb *to be*. Linguists call sentences beginning 'there is…' *existential sentences* (see McNally forthcoming; Moro 2007; Sawyer 1973). This title, and the occurrence of the verb *to be* in these sentences might suggest that the function of these sentences is to purely to say that something exists (or *is*, or has *being*). If this were so, then my attempts to say that 'Some biblical characters did not exist' is not contradictory are doomed from the outset! For 'Some biblical characters did not exist' entails 'there are biblical characters who did not exist' and this is an 'existential sentence'. And if the function of existential sentences is to say that something exists, then my sentence is close to an explicit contradiction.

In fact, matters are not quite that simple. Existential sentences in some other languages use verbs other than the equivalent of the verb *to be*: German existentials

begin *Es gibt…* and French *Il y a…* Since these languages do not reach for the cognate of *to be* when expressing what in English we express with 'there is' constructions, we should not rush to assume any deep semantic or metaphysical connection with the idea of being. And in any case, as noted above (§3), the presence of the verb *to be* in English is not always an indicator of 'being' in an ontological sense.

As for the fact that these sentences are called 'existential', this is of little significance. Although some analyses of the semantic structure of existentials introduce an 'exists' predicate into the underlying structure (Barwise and Cooper 1981), other theorists are more circumspect. In a recent survey, Louise McNally expresses doubts as to 'whether a uniform semantics and discourse function can be given for everything that looks formally like an existential sentence, or whether in reality there are several subtypes of existential sentence, perhaps with distinct semantics and pragmatics' (McNally forthcoming §1.2). Indeed, when looking for a general mark of existential sentences, the one thing which seems to emerge is not directly connected to the idea of existence:

> Although it is unlikely that one single semantics and discourse function can be assigned to existential sentences cross-linguistically, certain semantic and discourse functional properties are consistently associated with these sentences across languages. Perhaps the most important of these is the intuition that existential sentences *serve primarily to introduce a novel referent into the discourse* – one fitting the description provided by the pivot nominal. (McNally forthcoming section 1.2; my emphasis)

'Introducing a novel referent (or referents) into the discourse' is a good description of what happens when you say 'There were some Kings of England who died violent deaths' or 'There are some characters in the Bible who did not exist'. And a related idea which has had some currency in the literature on existential sentences is that

'there' in many of these sentences serves to introduce new information as the 'theme' of a discourse (see Allan 1971: 6-7). [11]

One terminological clarification: I would rather say 'object of thought/object of discourse/object of discussion' than 'referent', since in my terminology a referent must exist (this is a stipulation, but one which follows the usual philosophers' practice of calling names like 'Pegasus' *non-referring*). Some linguists would use the term 'discourse referent' – a term that derives from Discourse Representation Theory: see Geurts and Beaver (2007). A discourse referent in their sense is just an object of discourse in my sense. [12] But apart from this terminological difference, McNally's description of one central role of the existential 'there is…' is perfectly consistent with the account of quantification given here.

The subject requires a detailed treatment, of course; there are many kinds of existential sentences and certainly some of them ('There is a God!') should be understood as attributing existence. For present purposes my aim is only to show that the non-contradictoriness of 'Some biblical characters did not exist' is not undermined by the fact that it entails 'There are biblical characters which did not exist'.

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[11] In a textbook account of English grammar, David Crystal writes 'What the "there" construction does is highlight a clause as a whole, presenting it to the listener or reader as if everything in it is a new piece of information. It gives the entire clause a fresh status. In this respect, existential sentences are very different from the other ways of varying information structure, which focus on individual elements inside a clause.' (Crystal 2004: 354)

[12] According to Geurts and Beaver (2007: §3.1), 'A discourse representation structure (DRS) is a mental representation built up by the hearer as the discourse unfolds. A DRS consists of two parts: a universe of so-called "discourse referents", which *represent the objects under discussion*, and a set of DRS-conditions which encode the information that has accumulated on these discourse referents.' The emphasis is mine: but I do not think it is accidental that the universe of discourse referents *represent* the objects discussed; this is the same idea as my claim that a universe of discourse is a representation of all those things relevant to what is talked about.

7. Conclusion: logic and ontology

In this paper I have been talking about how to understand quantifiers in natural language, and the thoughts expressed by using these words. In particular, I have been talking about the meaning of 'some' and how its semantics should be understood, and how the semantics of quantification relate to predications of existence.

The standard view was stated in §1; the problem that intentionality poses for this view was given in §2. In §3 I distinguished this problem from problems about whether 'existence is a predicate' and about whether there is a distinction between being and existence. In §4 I described what seems to me the current state of play about quantification, and in §5 I argued that representation of the nonexistent should not give us reason to change the standard way of understanding the semantics of quantifiers. What we need to change is the conception of what a domain is: a domain should be thought of as a universe of discourse, a collection of objects of thought. However, I argued that my way of understanding domains is not as unfamiliar to philosophers as it might at first seem, given their unreflective appeal to quantification over such non-entities as possible worlds. Finally in §6 I sketched how this interpretation should fit with an understanding of so-called 'existential' sentences.

So the question remains: how *should* we represent 'some' and 'exists' in a formal language? If we want to account for our initial data (e.g. sentences like (S)), we have a choice. We could translate 'some' as '∃' in the usual way. But in this case, we should not understand '∃' as 'there exists'; we should express existence in another way. Or we could translate 'there exists' using '∃', in accordance with Quine's claim that 'existence is what the existential quantifier expresses' (1969: 166). But in this case, we should not understand '∃' as 'some'; we need another quantifier symbol for 'some'.

Which should we choose? Unlike words in a natural language, the meanings of symbols like '∃' are not something for us to discover, but something for us to decide. As long as we make it explicit the semantic distinction between 'exists'/'there exists' and 'some', and have enough symbols for the distinct notions, it is not a substantial matter what meaning we give to the symbol '∃'.

Of course, these considerations will not move those who adopt the revisionary approach described in §1. On the Quinean revisionary view, no distinction is made between quantification and existence, because the machinery of quantification is the best way of representing the ontological commitment of a theory. The ontological commitments of a theory, according to Quine, are the objects that are the values of the theory's bound variables if the theory is to be true: 'to be is to be the value of a variable' (Quine 1939: 708).

What I have said in this paper does not directly challenge the revisionary view. But it does challenge it indirectly. What I have argued here is that if we aim to give a systematic account of our actual thought and language, then we have to make room for quantification over the non-existent. So if this is our aim, then we cannot accept that to be is to be the value of a variable. How we should think about ontological commitment, then, remains an open question.

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