

Existence and free logic

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ABSTRACT – In this paper I aim to defend a first-order non-discriminating property view concerning existence. The version of this view that I prefer is based on negative (or a specific neutral) free logic that treats the existence predicate as first-order logical predicate. I will provide reasons why such a view is more plausible than a second-order discriminating property view concerning existence and I will also discuss four challenges for the proposed view and provide solutions to them.

A (universally) *free* logic with a partial interpretation function and a single domain of quantification seems to be a congenial partner of a view that treats existence as a first-order non-discriminating property.¹ On the basis of such a logical framework we can conceive of the existence predicate 'E!' – like the identity predicate '=' – as a first-order logical predicate. A logical predicate in this sense is a predicate with a fixed interpretation that fills a specific inferential role. That is, we assign to an atomic sentences of the form 'E!a' the truth-value T if the partial interpretation function assigns an object to 'a' and the truth-value F if the partial interpretation function assigns no object to 'a'. This allows us to account for the intuitive truth-values of singular positive and negative existential sentences like the following:

(1) Vulcan does not exist.

(2) Barack Obama does not exist.

It is an important advantage of such a view that it can account for these intuitive truth-values on the basis of the *literal reading* of such sentences. But such an account is only then materially adequate if it can plausibly be extended to others kinds of existential sentences; namely to sentences that contain other grammatical subjects than proper names, for example determiner phrases like 'the president of the USA' or bare plurals like 'unicorns'.

¹ This could be either a *negative* free logic or a specific version of a *neutral* free logic. C.f.: Burge (1974); Lehman (1994); Sainsbury (2005); Rami (2011).

In this paper I will focus on several problems that such an extension has to deal with and I will propose solutions to each of these problems. But before I will discuss four challenges for such an extension, let me explain why a first-order view concerning existence should be favoured over a second-order view.

In philosophy, there are three main rival conceptions concerning the semantic status of the verb 'exist'. Two of these conceptions assume that 'exist' expresses a first-order property. That is, a property of individuals and not properties. The third conception holds that 'exist' express a second-order property. That is, a property of properties and not individuals. According to the first conception, existence is not only a first-order, but also a non-discriminating property. Such a property has the feature that relative to every possible world there is no individual that is in the anti-extension of that property. Nevertheless, the extension of such a property may change from possible world to possible world and may also be empty relative to some possible worlds. A discriminating property is on the other hand a property that has at least relative to some possible worlds a non-empty anti-extension. Against this background, the first view may be called *the first-order non-discriminating property view of existence*; the second view: *the first-order discriminating property view of existence*. It is not so-clear and a matter of dispute what accounts for the *discriminating* feature of the property of existence on the basis of the latter view. Some defenders of this view think it is the property of being concrete that can be identified with the property of existence; others think that it is the property of actuality. The third view is also a discriminating property view, because it assumes that only (first-order) properties with a non-empty extension exemplify the second-order property of existence. Properties that have an empty extension do not exemplify this property. Let us call this view therefore *the second-order discriminating property view of existence*.

(1) Why the second-order discriminating property view is no serious rival

Here are the main reasons that speak against a second-order view on existence. There is ample linguistic data concerning our use of 'exist' in English that seems to favour an interpretation that conceives existence as a first-order non-discriminating property as the best and most simple explanation.² There are especially uses of 'exist' that seem to be

² C.f.: Evans (1982, 345).

especially challenging for a defender of the view that 'exist' stands for a second-order property. Examples of such uses are provided by meaningful sentences like the following:

(3) Something exists.

(4) Everything exists.

(5) Every man exists.

(6) Barack Obama exists.

If we conceive of 'exist' as a first-order predicate, an analysis of the logical form of our example-sentence seems to be a simple and uncontroversial task. But someone who conceives of 'exist' as a second-order predicate is really in trouble if he wants to specify the truth-conditions of sentences (3)-(6). In case of (3) and (4) he might postulate an ambiguity concerning 'something' and 'everything'. That is, we would distinguish a second-order use of these expressions from a third-order use. But such a move seems to be ad hoc and badly motivated and it also cannot be applied to example (5), because 'man' definitely is a first-order predicate. I see no plausible way to account for the meaningfulness of (5) by a defender of a second-order view concerning existence.

The prospects to account for the meaningfulness of (6) seem to be at least a bit better. A defender of a second-order view could claim that (6) is semantically equivalent with 'Barack Obama is identical with something'. The very same equivalence is also accepted by a defender of the *first-order non-discriminating property view*. But there is a significant difference between the interpretation of the sentence 'Barack Obama is identical with something' according to these two views. The second-order view claims that existence is expressed by the quantificational phrase 'something' and that 'Obama is identical with' expresses the first-order property of being identical with Obama. In this sense ' $\exists x(x=a)$ ' is the logical form of 'Barack Obama is identical with something'. But it is on the one hand implausible to claim that this formula also represents the logical form of (6). A defender of the mentioned free logic has a more plausible explanation of mentioned equivalence. According to him, ' $E!a$ ' is the logical form of (6) and ' $E!y$ ' is semantically equivalent with ' $\exists x(x=y)$ ', therefore (6) is also equivalent with 'Barack Obama is identical with something'. On the other hand it is implausible that 'Barack Obama is identical with something' provides a semantic analysis of (6), because these different sentences have different semantic constituents. If 'something' in 'Barack Obama is identical with something' corresponds with

'exist' in (6) and 'Barack Obama' in 'Barack Obama is identical with something' obviously with 'Barack Obama' in (6), what should on this basis be the semantic equivalent of the identity predicate that 'Barack Obama is identical with something' contains? A second-order analysis of (6) cannot answer this question in a plausible way. A defender of such an analysis may claim that 'is identical with' is a syntactically hidden component of 'Barack Obama'. But which seems to be an especially ad hoc reaction against the background that a defender of our mentioned free logical can explain the correspondences between the constituents of 'Barack Obama is identical with something' and (6) in plausible and straight forward way; because he claims that 'exist' corresponds with the complex predicate 'is identical with something'. So a first-order view provides a more plausible analysis of (6).

(2) The first challenge: Existential sentences with bare plurals

A first challenge for the view that existence is a first-order non-discriminating property comes from the defender of second-order discriminating property view and concerns the use of 'exist' in connection with bare plurals like 'horses' or 'dogs'. It has been claimed that a sentence like 'Horses exist' is semantically equivalent with 'There are horses' and that the latter claim has the logical form ' $\exists xHx$ '. This observation seems to substantiate an analysis of 'exist' as a second-order predicate.

There are two possible rejections to this claim: either one may reject the mentioned equivalence-claim on the basis of a general and well-motivated analysis of sentences that contain bare plurals as their grammatical subject *or* one may accept this equivalence-claim, but doubt that the acceptance of this equivalence-claim commits one to the proposed semantic analysis of sentences like 'Horses exist' and explain the equivalence on the basis of an alternative analysis.

The analysis of the truth-conditions of sentences that contain bare plurals is in general a difficult issue. We can distinguish at least three different readings of such sentences: a universal, a generic and an indefinite reading. Let us focus on the following examples to distinguish these three readings in detail:

(7) Horses are animals.

(8) Horses are nice pets.

(9) Horses live on Peter's farm.

The first of these example-sentences (7) is intuitively equivalent with 'Every horse is an animal' and has therefore a universal reading. (8) on the other hand has a so-called generic reading. On this basis it is equivalent with 'Every typical horse is a nice pet' or 'Typically, every horse is a nice pet'. The last example-sentence (9) has an indefinite reading and is equivalent with the sentence 'Some horses live on Peter's farm'. These equivalence-claims provide only a first guide concerning the semantics of sentences like (7)-(9), they don't determine the logical form of such claims.

In case of each of the three distinguished readings of sentences of the form 'Fs are G' it seems to depend on a specific semantic feature of the predicate 'G' which specific reading a sentence has. This claim is further confirmed by the observation that none of the mentioned sentences has more than one reading. But is this really a general feature of sentences of the form 'Fs are G'? Let us for example focus on the following sentence of this form:

(10) Names name (something).

There is a debate among philosophers whether (10) has a universal *or* a generic reading and this quarrel focuses on the question whether the property of naming something is an *essential* property of names or not. Does this link hold in general? I think so. A sentence of the form 'F's are G' only then has (unmistakably) a universal reading if 'G' expresses an essential property. On this basis there seem to be two tests to identify universal and generic readings. If the insertion of the adverb 'essentially' in a sentence of the form 'F's are G' does not alter the meaning of such a sentence significantly, then the sentence has a universal reading. If the insertion of the adverb 'typically' in a sentence of the form 'F's are G' does not alter the meaning of such a sentence significantly, then the sentence has a generic reading.

If we apply these two tests to a sentence like the following:

(11) Horses exist,

the result is clear: Both insertions alter the meaning of (11), so it seems that a sentence like (11) typically does neither have a universal nor a generic readings. Can we conclude on this basis that (11) has an indefinite reading and it is therefore at least semantically equivalent with the sentence 'There are horses that exist', which has the following logical form:

(12) $\exists x(Hx \wedge E!x)$?

This would be a desired result. On this basis we can explain why we have the *intuition* that the logical form of (11) could be represented by $\exists xHx$. (12) is necessarily equivalent with $\exists xHx$ so we can account for the sameness in truth-value between a sentence like 'There are horses', 'There are horses that exist', 'Horses exist' and 'There is something that is a horse' on this basis.

There is only one problem with this diagnose: There is a relatively common criterion in the linguistic literature on bare plurals that is not compatible with our desired result. This criterion aims to distinguish indefinite readings of a sentence of the form 'Fs are G' from non-indefinite readings. According to it, a sentence of such a form has an *indefinite reading* if 'G' expresses a property that an individual typically exemplifies only during a certain period of its existence, but not permanently throughout its existence.³ A prototypical example that satisfies this criterion is (9).

But this criterion is not only vague⁴, but also questionable. Existence is without exception a *permanent* property of every individual. But from this fact and the given criterion we should not conclude that (11) does not have an indefinite reading. We should rather conclude that the mentioned *linguistic criterion* is useless and it at least cannot be applied in a meaningful way to sentences like (11). It would be good to have a workable positive criterion at hand that helps us to identify sentences of the form 'Fs are G' that have an indefinite reading, but on the other hand it is also criterion of adequacy of such a criterion that it classifies sentences like (11) as sentences of the form 'Fs are G' with an indefinite reading. But we have the mentioned *negative* criterion to single out indefinite readings and this criterion seems to work properly and it also leads to the desired result that allows us to reject the claim that an adequate analysis of the truth-conditions of sentences like (11) favours a second-order discriminating property view on the property of existence.

(3) The second challenge: Intuitively true existential generalisations I

Let us now focus on two challenges for the proposed view on existence provided by two different versions of a first-order discriminating view on existence. A first version of this view

³ Following Carlson (1977, 448-451) nowadays linguistics use the term 'stage-level predicate' or 'episodic predicate' to name this class of predicates. C.f.: Moltmann (2010, section 6.1.)

⁴ Probably there are individuals that are permanently happy, others may only be temporally happy. Is the predicate 'is happy' therefore both a stage- and individual-level predicate?

holds that sentences in natural language that contain specific quantificational devices and are of the form 'There are F' or 'There are Fs that are G' do not essentially have an existential import.⁵ Defenders of this view draw our attention to examples like the following to substantiate this claim:

(13) There are things that do not exist; namely witches or unicorns.

(14) There are horses that do not exist; namely merely possible or fictional horses.

They claim that sentences like (13) or (14) have a *true reading* and this commits us to the view that existence is a first-order discrimination property. This thesis provides the second challenge for our proposed view on existence.

One can respond to this claim in the following way: If we accept that there are fictional horses, we also seem to accept that fictional horses exist. And if we accept that there are merely possible horses we also seem to accept that merely possible horses exist. There is only a verbal difference between sentences of the form 'There are F's' and those of the form 'F's exist' and corresponding claims of these forms are intuitively equivalent. A defender of the view under consideration tries to stipulate a semantic difference and a discriminating use of 'exist' that has no real foundation in our ordinary use of 'exist'. Against this background, he would have to reject the view that (13) is semantically equivalent with:⁶

(13*) There exist things that do not exist.

But in fact 'There are horses' and 'There exist horses' has the same meaning, because 'there' is no genuine subject; it is merely a syntactic placeholder for the logical subject 'horses' like 'there' in 'There are three men in the room' is a placeholder for the logical subject 'three men'. Therefore, the expression 'are' in 'There are horses' has to be interpreted as a genuine verb and not as a mere copula-verb.⁷ 'Horses are' is a stylistic variation of 'Horses exist'. We may conclude on this basis that the mentioned evidence is no good semantic evidence for treating 'exist' as a discriminating property. We assign to 'exist' a new meaning if we conceive it in such a way.

⁵ C.f.: Parsons (1980); Zalta (1983).

⁶ C.f.: Sainsbury (2010, 45).

⁷ On the basis of the proposed semantic equivalence between 'Horses exist' and 'There are horses' the latter has the same logical form than the former. Therefore, against the background of what we said about the logical form of 'Horses exist' in an earlier section we can conclude that ' $\exists xHx$ ' is not the logical form of these claims. An example for a sentence with this logical form is 'Something is a horse'.

(4) The third challenge: Intuitively true existential generalisations II

A second version of the first-order discriminating property view aims to make a very similar point, but on the basis of a different conception concerning the relation between quantificational devices and the existence predicate. According to this view we have two different devices of quantification in natural language: an outer quantifier that allows us to quantify over existent and non-existent things and an inner quantifier that allows us only to quantify over the existent things. Let us accept that this is a meaningful distinction and let us therefore for the sake of argument accept that 'non-existent thing' is not a self-contradictory expression. A defender of this view must provide examples of natural language expressions that have the desired features. So some have suggested that 'There is...' or 'There exists ...' has existential import while 'Some' or 'Something' does not have existential import.⁸ Against this background most of the following instances of (S1) and (S2) should come out as false:

(S1) Something is an F iff there is an F.

(S2) Some F's are G iff there are F's that are G.

In my opinion, this is unacceptable, because intuitively these instances have an ample number of true instances; nearly any meaningful instance seems to be a true instance. And it is very difficult to find instances of these schemata that are intuitively false.

A defender of the view under discussion – who might accept our diagnosis concerning (13*) and (13) – may propose the following counterexample against (S2):

(15) Some things do not exist; for example: unicorns or witches.

While (13) and (13*) seem to indeed contradictory, it seems to be plausible to claim that (11) has a true reading and this also demonstrates that (S2) has false instances.

Compared with (13) and (13*) (15) in fact provides more challenging data for our proposed view on existence. Intuitively, we seem to accept that the following inference is valid:

Unicorns do not exist.

⁸ C.f.: Priest (2005, 13-14).

Witches do not exist.

Some things do not exist.

On the other hand, we do not accept that (11) implies (7) or (7*). And therefore (S2) seems to have at least one false instance. How should we react to this data?

There are two possible ways: One could hold the view that (9) is an example of an objectual quantification that ranges over existent and non-existent *or* that (9) is an example of a specific substitutional quantification that has bare plural sentences of the form 'Fs are G' as instances.⁹ According to this view, a generalisation of the form 'Some things are G' is true iff there is at least one true instance of the form 'Fs are G'.¹⁰ This reaction commits one to the view that 'some' is in a certain sense ambiguous, between an objectual and a substitutional reading.

The first reaction to our problem would hold that 'some' has only one meaning, but should in general be conceived as objectual quantifier that quantifies over existent and non-existent things.

Postulating an ambiguity to solve a philosophical problem does not have a good press in general. But in our case things are a bit different. The distinction between objectual and substitutional seems to be of general importance and its relevance concerns a number of different uses of quantificational devices in natural language. We require substitutional quantification anyway to account for certain expressive powers we have in natural languages. Substitutional quantification for example allows us to quantify into contexts that might not be appropriate for objectual quantification. Why shouldn't we then apply such a useful tool also to our problem? Especially, if our proposed solution has certain advantages over its alternative. The alternative conception must hold that 'Some Fs' has *constantly* a wider domain than for example 'There is an F' or 'There exists Fs'. This commitment leads to implausible consequences like in the following case:

(16) Some mountains are made of gold.

⁹ Such a view is anticipated, but not defended in Sainsbury (2010, 50).

¹⁰ In more formal terms this could be expressed in the following way: $\{ \exists F \} \exists x (Fx \wedge \neg E!x)$ is true relative to I iff there is a true instance of the form $\exists x (Fx \wedge \neg E!x)$ that is true relative to I.

This sentence is intuitively false, the Meinongian who accepts that ‘Some mountains’ does not only quantify over mountains in the actual world, but also over mountains in other possible worlds has to accept the consequence that (16) is literally true. The Meinongian may try to explain away this data by appealing to a pragmatic quantifier domain restriction. But such a move doesn’t seem to be very plausible, because on this basis one has still to swallow the claim that (16) has a literally true reading. One could get rid of this unwelcome consequence by claiming that possible things, like possible mountains do not literally have any properties apart from existence. Such a reaction is in fact possible, but it is not clear at all whether such *bare possibilia* are respectable entities at all. On the other hand, we would also have to swallow that the following sentences have true readings:

(17) Something is a red thing, but there aren’t any red things.

(18) Some girls are blonde, although there aren’t any blonde girls.

But intuitively these sentences only have a contradictory and therefore false reading.

A defender of the second proposed approach to the truth-conditions of (15) is not concerned with any such problems. This solution is tailor-made for the use of the rather peculiar noun ‘thing’ used in its plural form together with a determiner like ‘some’. So we can meet the second challenge in a plausible way. The rival conception requires an implausible manipulation the meaning of certain quantifier phrases in relation to the predicate ‘exist’.

(5) The fourth challenge: universal generalisations with the existence predicate

A final challenge for the first-order non-discriminating view that I want to discuss stems from the Fregean logical framework we use, but not from any rival conception. It concerns the logical status of universal generalisations that contain ‘exist’ like the following:

(19) Every unicorn exists.

(20) Every horse exists.

On the basis of the already mentioned claim that ‘ $\forall y$ ’ and ‘ $\exists x(x=y)$ ’ are semantically equivalent the sentences (19) and (20) are semantically equivalent with sentences that have the following logical form:

(21) $\forall x(Hx \rightarrow \exists y(y=x))$

And a sentence of the form (21) is true relative to every interpretation and therefore in Tarskian terms a logical truth. Therefore, (19) and (20) also come out as true, but intuitively these sentences are contingent and have different truth-values: (19) seems to be false, while (20) seems to be true.

It has to be noticed that the mentioned equivalence is not the root of the problem, we can formulate the problem also by directly making use of the logical form of (19) and (20):

(22) $\forall x(Hx \rightarrow E!x)$

And we get the same result on the basis of our mentioned view that 'E!' is a logical predicate with the mentioned contribution to truth-conditions.

How should we react to this problem? Intuitively, it seems to be the case that something is wrong with (19) and it is not so clear whether we should hold that this sentence is false or whether it is neither true nor false, because a specific presupposition of (19) is not true. So there seem to be two possible ways to react to this problem. Firstly, one could either claim that the given Fregean truth-conditions of sentences like (19) and (20) are incorrect and that such sentences rather have those truth-conditions that Aristotle ascribed to them. On this basis such sentences would be equivalent with sentences of the logical form ' $(\exists xHx \wedge \forall x(Hx \rightarrow \exists y(y=x)))$ ' and would therefore have the desired truth-values. This seems to be a relatively substantial change to solve a relatively small problem. Secondly, one could alternatively claim that the Fregean truth-conditions provide the correct analysis of the semantic content of sentences like (19) and (20), but sentences of the grammatical form 'Every F is a G' can be used to convey contents that have equivalent truth-conditions with a sentence of the logical form ' $(\exists xHx \wedge \forall x(Hx \rightarrow \exists y(y=x)))$ '. An expression of the form 'Every F' triggers an existential presupposition and in case of (19) this presupposition is not satisfied. This reaction seems to be the more reasonable and moderate. However, both reactions show, I think, that the root of the problem is not the proposed notion of existence itself, but a more general problem concerning the logical analysis of sentences of the form 'Every F is a G'. This observation concludes our defence of existence as a first-order non-discriminating property.

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