

**POSITIVE UNIVERSALLY HELD PROPERTIES ARE  
NECESSARILY UNIVERSALLY HELD**

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*“Language may be a distorting mirror, but it is the only mirror we have” (Dummett 1993, p. 6)*

**Abstract**

The well-known Principle of Plenitude has it that everything that exists in some possible world exists in the actual world. I argue for an amended version of this principle: If there’s a possible world in which something lacks some positive property, then there’s an object in the actual world that lacks that property. That is, all positive universally held properties in the actual world are *necessarily* universally held. This rules out that for some positive property, everything in the actual world merely *happens* to have it. After having presented and defended the argument, I show that it has a wide range of corollaries, such as that there are mereologically simple and composite things, physical and non-physical things, caused and uncaused things, and contingent and necessarily existing things. The argument has three premises. The first premise is the Frege-Russell-Quine view of existence, according to which there are no things that do not exist. The second premise is a Fregean theory of linguistic meaning. According to the third premise, two meanings coincide if and only if their *reference sets* coincide. The notion of a reference set is defined in the paper.

**Keywords:** semantics, meaning, reference, ontology, positive properties, possible worlds

## 1. Introduction

In this paper I propose a deductive argument for the conclusion that positive universally held properties are *necessarily* universally held. This rules out that for some positive property, everything in the actual world merely *happens* to have it. Modality is understood in the metaphysical and not epistemic sense. The well-known Principle of Plenitude has it that everything that exists in some possible world exists in the actual world. My conclusion can be understood as a revised version of this principle: If there's a possible world in which an object lacks some positive property, then there's an object in the actual world that lacks that property. I will not attempt to spell out exactly what a property is. Following Miller (2002, p. 63) and Van Inwagen (2008, p. 291) I adopt an inclusive stance on properties. That is to say, I take properties to be whatever can be attributed to something by a predicate. With one qualification though, namely that properties are attributable by a predicate that uses no or one leading noun and zero or more adjectives, such as 'being Aristotle', 'being red', 'being a table', 'being a red table' and 'being a large red table'. In what follows I shall use the term 'predicate' to refer to predicates thus understood. On this understanding of properties, to say that P is a property is not ontologically committal. For it is to say nothing more than that a predicate is correctly ascribed to something.<sup>1</sup> Hence, properties are thought of as being merely semantic shadows of predicates

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<sup>1</sup> It is often said that being is not a property (although e.g. Miller (2002) and Van Inwagen (2008) argue that it is) but that the predicate '(is a) being' can still correctly be attributed to things. On my inclusive stance on properties, the fact that '(is a) being' can be correctly said of things, is sufficient to hold that being is a property in the ontologically non-committal sense.

(Armstrong 1989, p. 78). A property is universally held if and only if everything that exists has it, where ‘everything that exists’ is shorthand for everything that exists in the *actual world* taken *de re*, that is to say, *our* world.

Positive properties are properties attributed by predicates such as ‘being triangular’, ‘being red’, ‘being a red table’ and ‘being Aristotle’. As a first approximation positive properties are those that can be defined without using negation. Properties expressed by predicates such as ‘being not red’, ‘being not a table’, ‘being a non-red table’, ‘being not Aristotle’ are typically not positive. Nevertheless, this is not to say that the notion of positivity is merely linguistic, let alone just a matter of whether ‘not’ or ‘non-’ is contained in the predicate. In what follows I shall not try to define precisely what a positive property is, but what I say about positive properties is compatible with various available accounts of positive properties in the literature (e.g., Pruss 2009, 2012; Koons 2014). A positive predicate is a predicate that attributes a positive property to something.

The argument has three premises. In the next section I introduce the first premise of the argument, namely the Frege-Russell-Quine view of existence. In section 3 I outline a Fregean theory of linguistic meaning, which forms the second premise. Although Fregean in spirit, it is not intended as a fully accurate representation of Frege’s original theory. My aim here is systematic and not historical. In section 4 I propose an identity criterion for meanings expressed by positive predicable generic expressions.<sup>2</sup> A *positive predicable* expression is an expression that can be used as a predicate and if so, yields a positive predicate. Examples include ‘red’, ‘red table’ and ‘Aristotle’. A *generic* expression is an expression that does not include singular terms, e.g. ‘red’ and ‘red table’. The criterion is the third premise of the argument. It is based on the

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<sup>2</sup> Throughout this paper, ‘expression’ is shorthand for ‘meaningful expression’.

concept of a ‘reference set’, which I will define in that section. According to the criterion, any two meanings expressed by positive predicable generic expressions are identical if and only if their reference sets coincide. In section 5 and 6 I defend the criterion.

In sections 7 and 8 I deduce the argument’s conclusion from the premises and I show how a number of corollaries follow from it, such as that there are mereologically simple and composite things, physical and non-physical things, caused and uncaused things, and contingent and necessarily existing things. In sections 9, 10 and 11 I respond to various objections and argue that the argument also goes through if we assume a Millian-Russellian or possible worlds theory of meaning instead of a Fregean semantics. Section 12 concludes the paper.

## **2. The First Premise: There Are No Things That Do Not Exist**

The first premise of the argument is the Frege-Russell-Quine view of existence (Frege 1950, Russell 1905, Quine 1953). On this view there are no things that do not exist. In other words, what exists is precisely what there is and vice versa. To say ‘everything’ is to say ‘everything that exists’ and the other way around. The Frege-Russell-Quine view of existence has it that the concept of existence is properly captured by the existential quantifier of first-order predicate logic.<sup>3</sup> Since there are no non-existent things, its scope is everything that exists.

I will not attempt an elaborate defense of the first premise here, but merely note its seemingly obviousness by echoing Peter van Inwagen’s words: ‘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

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<sup>3</sup> The view that there are no things that do not exist does not entail that ‘exists’ cannot be predicated of a thing correctly. For the view can be rendered as follows:  $\neg\exists x(\neg Ex)$ , where E is the existence predicate (Parsons 1980; Zalta 1983, 1988; Jacquette 1996).

Homer. [...] There *is* no nonexistent poison in the paranoid's drink. There *are* no unconceived people. [...] 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' (Van Inwagen 2009, 480-481).<sup>4</sup> Further, I take it to be necessarily true that there are no things that do not exist.<sup>5</sup>

### 3. The Second Premise: A Fregean Semantics

The second premise consists of a theory of meaning, i.e. a theory that tells us in general terms what the expressions occurring in the sentences of a natural language mean. More specifically, the premise is a statement of a Fregean theory of meaning. Although I will argue in section 11 that the argument also succeeds if we substitute the second premise for a Millian-Russellian or a possible worlds semantics.

The core of any Fregean theory of meaning consists of the following four theses.<sup>6</sup> *First*, an expression occurring in a sentence has a reference. The reference of a singular expression (a proper name or a definite description) is the object for which that term stands. Thus 'Barack Obama' and 'the president of the United States' both refer to Barack Obama. The reference of a general expression is a set of objects. For example 'red' refers to the set of all red things. The

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<sup>4</sup> See Jacquette 1996, Parsons 1980 and Miller 2002 for several arguments for and against the view.

<sup>5</sup> Note that this further assumption does not entail that 'existence' and 'being' have the same meaning, although it renders it very likely.

<sup>6</sup> See Speaks (2014) for a detailed overview of the common core of Fregean, Millian-Russellian, and possible worlds semantics, and for some of the examples in this section.

reference of a relational expression is a set of ordered pairs of objects. For example ‘is a part of’ refers to the set of pairs of objects such that the first is a part of the second.

*Second*, next to having a reference, an expression also has a meaning. The meaning of an expression is the mode of presentation or the way of thinking of the reference. These modes of presentation or ways of thinking are called *senses*. As Frege famously pointed out, the meaning of an expression (its sense) is not the same as its reference. I briefly revisit why, for that will be important in what follows. Consider the sentences ‘Mark knows that Phosphorus is Phosphorus’ and ‘Mark knows that Phosphorus is Hesperus’. Although the singular terms ‘Phosphorus’ and ‘Hesperus’ have the same reference (i.e., the planet Venus), they do not have the same meaning. For Mark clearly might know that Phosphorus is Phosphorus while being in doubt about whether Phosphorus is Hesperus. To illustrate the point for general expressions consider the sentences ‘Eva knows that all cordates are cordates’ and ‘Eva knows that all cordates are renates’, and apply the same reasoning as before. In a similar way it can be shown that meaning and reference differ for relational expressions.

*Third*, the meaning of an expression determines its reference. So, the meaning of the proper name ‘Barack Obama’ determines Barack Obama as its reference, and the meaning of the general term ‘cordate’ determines the set of all cordates as its reference. Since the meaning of an expression determines its reference, I shall sometimes speak loosely of the reference of a meaning, as shorthand for the reference of any expression that has the meaning in question. To illustrate, the reference of the meaning of the expression ‘red’ is the reference of the expression ‘red’ and thus the set of all red things.

*Fourth*, meanings can have *meaning elements*.<sup>7</sup> An *elementary* meaning lacks meaning elements. A *complex* meaning is a meaning that is not elementary. The meaning expressed by a subexpression is a meaning element of the meaning of the expression.<sup>8</sup> Yet, meanings of expressions consisting of subexpressions may have elements that are not expressed by a subexpression.<sup>9</sup> If a subexpression is substituted for another subexpression expressing a different meaning, the meaning of the expression changes.

Elementary meanings are expressed only by expressions that do not contain meaningful subexpressions, such as ‘Plato’, ‘red’, ‘being’ or ‘one’. Complex meanings can be expressed by expressions that contain meaningful subexpressions, such as ‘jazz band’ or ‘the king of France’. But they can also be expressed by expressions that lack meaningful subexpressions. Take for example the meaning expressed by ‘unicorn’. Although this expression doesn’t consist of meaningful subexpressions, the meaning expressed by it does have meaning elements, e.g., the meanings expressed by ‘horn’, ‘forehead’, and ‘horse’. Or take the meaning expressed by ‘vixen’. Its meaning elements are the meanings expressed by ‘fox’ and ‘female’.

Before I continue I need to draw attention to a point that is important for the derivation of the argument’s conclusion, as will become clear in section 7. Since everything is a ‘being’ (or

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<sup>7</sup> I stay neutral with respect to the question of what the nature of the relationship between a meaning and its meaning elements is.

<sup>8</sup> The meaning elements of the meaning of a pleonastic expression (e.g., ‘married husband’) just are the meaning elements of the meaning of the corresponding non-redundant expression (i.e. ‘husband’).

<sup>9</sup> Take the meaning expressed by ‘sand beach’. It has the meanings expressed by ‘sand’ and ‘beach’ as meaning elements. The meaning expressed by ‘landform’ is one of its elements as well. Now consider the meaning of ‘beach sand’. It also has the meanings expressed by ‘sand’ and ‘beach’ as meaning elements. But as a further meaning element, it has the meaning expressed by ‘material’ instead of ‘landform’.

‘thing’), the meaning expressed by ‘being’ (or ‘thing’) does not add anything to the way a reference is presented or thought about. But then the meaning expressed by ‘being’ (or ‘thing’) is not an additional meaning element of a meaning. Since on the Frege-Russell-Quine view of existence there are no things that do not exist, it also follows that the meaning expressed by ‘exists’ is not an additional meaning element.

It might not always be immediately clear which meaning a certain expression has, such as in the case of expressions that have multiple meanings (e.g., ‘arm’ or ‘bat’). In what follows though, I shall assume that such ambiguity or unclarity can always be resolved.

The second premise, then, is the conjunction of the above four theses, understood in the way I explicated.

#### **4. The Third Premise: An Identity Criterion**

The identity criterion I shall introduce in this section is an identity criterion for meanings expressed by positive predicable generic expressions, i.e. expressions that can be used as a predicate, and that, when they are so used, yield a positive predicate that does not include singular terms. Examples of such expressions include ‘red’, ‘being’, ‘red table’ and ‘round red table’.

I limit myself to these expressions because they are all I need to derive the conclusion of my argument, as will become clear in section 7.

Above, we noted the familiar point that sameness of reference does not entail sameness of meaning. However, meaning does fix reference. We refer to things through meaningful expressions. Meanings are about the things out there. Meaning and reference are thus closely related. But then it is not unreasonable to purport to identify for each meaning a set of references



(other than simply the reference of the meaning itself) such that sameness of such sets does in fact entail sameness of meaning.

Following this consideration I define the notion of a *reference set* for a meaning as follows. First, *the reference set of an elementary meaning is defined as the reference of that meaning*. So, the reference set of the meaning expressed by ‘red’ is the set of all red things. Similarly, the reference set of the meaning expressed by ‘being’ is everything that exists. The meanings expressed by ‘self-identical’ and ‘one’ also have everything that exists as their reference set. For according to the law of reflexivity of identity everything is identical to itself. And everything is clearly a thing and thus one thing.

Second, *the reference set of a complex meaning  $M$  is defined as the union of the reference sets of the meaning elements of  $M$* . This can be rendered formally as:  $\text{RefSet}(M) = \cup\{\text{RefSet}(M_i) \mid M_i \text{ is a meaning element of } M\}$ . Note that a meaning element can itself be a complex meaning and thus have meaning elements. The definition of reference set is therefore recursive. To illustrate, consider some meaning  $A$  that has  $B$  and  $C$  as its meaning elements. Let  $B$  be an elementary meaning and assume that  $C$  has elementary meaning elements  $D$  and  $E$ . In that case the reference set of  $A$  is determined as follows:  $\text{RefSet}(A) = \text{RefSet}(B) \cup \text{RefSet}(C) = \text{RefSet}(B) \cup (\text{RefSet}(D) \cup \text{RefSet}(E)) = \text{Reference}(B) \cup (\text{Reference}(D) \cup \text{Reference}(E)) = \text{Reference}(B) \cup \text{Reference}(D) \cup \text{Reference}(E)$ .

Consider the following example. The reference set of the meaning expressed by ‘unicorn’ is the union of the reference sets of its meaning elements. Suppose that the meaning elements of the meaning expressed by ‘unicorn’ are the meanings expressed by ‘horn’, ‘forehead’ and ‘horse’. In that case the reference set of ‘unicorn’ is the set comprised of all horns, all foreheads,

and all horses.<sup>10</sup> As another example consider the meaning of ‘even number’. It has the meaning of ‘even’ and the meaning of ‘number’ as meaning elements, so that its reference set contains all states of affairs consisting of an even number of things (e.g., Mark’s four books in his bag, Brigitte’s two plates on her table, etc.) and all numbers (if numbers exist).

I can now state the identity criterion. Let  $M_1$  and  $M_2$  be two meanings expressed by positive predicable generic expressions, then  $M_1 = M_2$  if and only if  $\text{RefSet}(M_1) = \text{RefSet}(M_2)$ . Here  $\text{RefSet}(M_1)$  and  $\text{RefSet}(M_2)$  are evaluated in the actual world *de re*, i.e., *our* world.<sup>11</sup> If  $M_1$  and  $M_2$  are elementary, the criterion trivially reduces to  $M_1 = M_2$  if and only if  $\text{Reference}(M_1) = \text{Reference}(M_2)$ .

Note that taking the intersection instead of the union in my definition of reference set would be a non-starter. Consider the meanings of ‘round square’ and ‘married bachelor’. If reference set had been defined in terms of intersections, then the reference set of the meaning of ‘round square’ would have been the intersection of all round objects and all square objects. That is the empty set. Similarly, that of ‘married bachelor’ would have been the intersection of all married persons and all bachelors. Again the empty set. Both reference sets would have been the same while the meanings differ. So the criterion would fail. Defining reference sets in terms of

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<sup>10</sup> Unless, of course, these elements are themselves complex. In that case, the reference set of the meaning of ‘unicorn’ is the union of the reference sets of the meaning elements of our original meaning elements. And so on. In the remainder, I will leave this recursive potential of reference sets implicit.

<sup>11</sup> This qualification is essential since it seems plausible that there are possible worlds in which sameness of reference sets doesn’t entail sameness of meaning. Take a possible world consisting of one charged simple. In that world the reference sets of the meanings of ‘charged’ and ‘simple’ coincide, while both meanings don’t.

unions confirms the identity criterion. For the union of all round objects and all square objects clearly differs from the union of all married people and all bachelors.

Let's consider another example to see how the criterion precisely works. Suppose  $M_1$  is the meaning expressed by 'cordate' and  $M_2$  that expressed by 'renate'. These meanings differ, while their references are the same (since every creature with a heart has a kidney and vice versa). But what about their reference sets? Let's say that the meanings expressed by 'pump' and 'chamber' belong to the meaning elements of  $M_1$ . They do not belong to the meaning elements of  $M_2$ . The reference set of  $M_1$  therefore includes all chambers and pumps, while these things are not part of the reference set of  $M_2$ . So the reference sets of  $M_1$  and  $M_2$  differ, which is in accordance with the criterion, since 'cordate' and 'renate' express different meanings. That is,  $M_1$  and  $M_2$  differ.

Note that the identity criterion does not entail that meanings *are* reference sets. It is thus not to be understood as an ontological reduction of meanings to reference sets. It doesn't say that meanings are ontologically nothing above and beyond their reference sets.

Neither does it say that we can explain meaning phenomena wholly in terms of reference sets and their set-theoretical features. The criterion merely provides a necessary and sufficient condition for when two meanings are the same. It leaves the ontological question of what kind of entities meanings are open.

## 5. In Defense of the Identity Criterion

Why should we accept the criterion? The 'only if' part follows straightforwardly. Suppose that both meanings  $M_1$  and  $M_2$  are elementary. In that case  $\text{RefSet}(M_1) = \text{Reference}(M_1)$  and  $\text{RefSet}(M_2) = \text{Reference}(M_2)$ . On Fregean semantics meaning determines reference. But then  $M_1$

$= M_2$  entails  $\text{Reference}(M_1) = \text{Reference}(M_2)$  and thus  $\text{RefSet}(M_1) = \text{RefSet}(M_2)$ . Suppose on the other hand that  $M_1$  and  $M_2$  are complex. If  $M_1 = M_2$  it follows that both meanings have the same meaning elements. But then the reference sets  $\text{RefSet}(M_1)$  and  $\text{RefSet}(M_2)$  coincide recursively as well.<sup>12</sup> I shall now offer two reasons to accept the ‘if’ part of the criterion.

First, the considerations from the previous section already indicate its intuitive plausibility. If the reference sets of two meanings coincide, then these meanings are entirely indistinguishable in what their meaning elements refer to, all the way down to their most elementary parts. Both meanings are thus entirely similar in how they map onto the world. But then, given the close connection between meaning and reference, it is plausible that these meanings are themselves identical.<sup>13</sup>

The second reason is constituted by an induction over the collection of meanings of positive predicable generic expressions. As I will show, there is a wide variety of representative examples that demonstrate that two different meanings indeed have different reference sets. As long as we aren’t given an example that conflicts with the ‘if’ part of the criterion (i.e., two positive predicable generic expressions with identical reference sets and different meanings), an inductive generalization to the whole collection is warranted.

It is very easy – bordering on the trivial, in fact – to come up with different meanings that have different reference sets. Just pick any two expressions whose meanings are so different from each other that it is obvious that their reference sets do not coincide: {‘motorcycle’, ‘bicycle’}, {‘unicorn’, ‘elephant’}, and {‘red’, ‘blue’}. Or, even more unrelated: {‘laptop’,

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<sup>12</sup> Note that this reasoning shows that the ‘only if’ part of the criterion works for meanings in general.

<sup>13</sup> Note again that this consideration generalizes straightforwardly.

‘lion’}, {‘house’, ‘rock’}, and {‘triangular’, ‘made-of-marble’}. In these examples not only the reference sets, but also the references of both meanings differ from each other.

It becomes more interesting once we consider pairs of different meanings with the same reference. Take the meanings expressed by ‘three-sided’ and ‘three-angled’. Clearly, they differ. This provides us with another confirmation of the ‘if’ part of the criterion, since the reference set of the meaning of ‘three-sided’ is not identical to the reference set of the meaning of ‘three-angled’. The former, but not the latter, includes all sides.

The earlier example of ‘cordate’ and ‘renate’ provides another example. Their meanings differ and so do their reference sets.

Consider also the meanings expressed by ‘water’ and ‘H<sub>2</sub>O’. On Fregean semantics the mode of presentation of both expressions differ, even if we follow Kripke and take it that it is metaphysically necessary that water is H<sub>2</sub>O. The meaning of ‘water’ is thus not the same as the meaning of ‘H<sub>2</sub>O’. But what about their reference sets? The meaning expressed by ‘water’ has as meaning elements the meanings expressed by ‘liquid’, ‘transparent’, ‘potable’, etc., whereas the meaning expressed by ‘H<sub>2</sub>O’ has as meaning elements at least the meanings of ‘hydrogen’ and ‘oxygen’. But then the reference set of the meaning expressed by ‘water’ (being the set of all liquids, all transparencies, all potables, etc.) is not the same as the reference set of the meaning expressed by ‘H<sub>2</sub>O’ (being the set of all hydrogen, oxygen, etc.). We thus obtain further confirmation of the ‘if’ part of the identity criterion.

Another class of examples are cases where both meanings have an empty reference, such as those expressed by ‘round square’ and ‘married bachelor’. Clearly these meanings differ. The reference set of the meaning expressed by ‘round square’ includes all round things and all square

things. The reference set of the meaning of ‘married bachelor’ contains all married people and all bachelors. So both reference sets differ as well, confirming the ‘if’ part of the criterion.

Yet more inductive support comes from cases where the reference sets of two meanings coincide and both meanings are indeed identical.

Consider for example the meanings expressed by ‘being’ and ‘self-identical’.<sup>14</sup> Both meanings are elementary. So their reference sets are their references, i.e. respectively everything that exists and everything that is identical to itself. Now, clearly, everything that exists is identical to itself (since a thing that is not self-identical would violate the law of reflexivity of identity) and everything that is identical to itself exists (since something must exist in order to be identical to itself). But then the reference sets of the meaning of ‘being’ and ‘self-identical’ coincide. Further, ‘being’ and ‘self-identical’ do in fact have the same meaning. Given that the entailment from ‘being’ to ‘self-identical’ is logically immediate, and vice versa, the meaning of ‘being’ amounts to nothing more or less than the meaning of ‘self-identical’. To say ‘being a thing’ is just to say ‘being something that is self-identical’.<sup>15</sup> Hence, the reference sets and the meanings are identical, which provides us with another confirmation of the identity criterion.<sup>16</sup>

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<sup>14</sup> Self-identical is understood in the strict sense of a thing being numerically identical to itself.

<sup>15</sup> One might insist that even though ‘being a thing’ and ‘being self-identical’ logically entail each other, both meanings differ. Still, conceding this does not lead to a problem for the criterion. For we can just as well understand it as an identity criterion that holds modulo logical entailment. That is to say, two reference sets coincide iff both meanings are the same *or logically entail each other*.

<sup>16</sup> A similar consideration holds in case of the meaning expressed by ‘(being) one’. For it follows immediately that everything is one (thing), and that something that is one (thing) exists. To say ‘being a thing’ is just to say ‘being one thing’ and vice versa.

In the absence of counterexamples, the above examples – and many more like them, which I trust readers will now be able to come up with themselves – provide strong inductive support for the ‘if’ part of the criterion. I conclude that the identity criterion for meanings of positive predicable generic expressions looks promising.

## 6. Strengthening the Defense of the Criterion

For my argument to work it is sufficient that the criterion holds for meanings of positive predicable *generic* expressions. Still, one may worry that it is ad hoc to propose an identity criterion with such a limited scope. What about the meanings expressed by positive predicable *singular* expressions, that is to say, proper names such as ‘Aristotle’ and definite descriptions such as ‘the king of France’?<sup>17</sup> And what about positive relational expressions, such as ‘is the father of’?

Added generality would certainly count in favor of the criterion, for the ad hoc objection would then lose much of its force. I will therefore argue that the criterion in fact holds just as well for meanings expressed by proper names, definite descriptions and positive relational expressions.

The ‘only if’ part is straightforward. It follows in the same way as in section 5. If two meanings coincide, then, their references and meaning elements (if any) also coincide, and therefore (recursively) also their reference sets.

As for the ‘if’ part: I already noted above that the connection between meaning and reference suggests its plausibility. In addition, we can again marshal impressive inductive support. Let’s consider proper names first. Pick any two proper names whose meanings are so

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<sup>17</sup> Note that on a Fregean semantics proper names have a meaning (sense).

different that it is obvious that the reference sets of these meanings do not coincide, such as {‘John’, ‘Brigitte’}, {‘Mark’, ‘Rome’}, and {‘Venus’, ‘Spain’}. In these examples the meanings are elementary, so that their reference sets are their references – which do indeed differ.

Proper names with the same reference are more interesting. Take Frege’s famous example of ‘Hesperus’ and ‘Phosphorus’. Both proper names have the same reference. The meanings of both names differ. For it is not a conceptual truth that Hesperus is Phosphorus. What about their reference sets? The meaning expressed by ‘Hesperus’ presumably has the meaning of ‘evening’ as meaning element. Thus the reference set of the meaning of ‘Hesperus’ includes all evenings. Since the reference set of the meaning of ‘Phosphorus’ contains all mornings, both reference sets differ and we get confirmation for the ‘if’ part of the criterion. Examples can be multiplied easily to obtain strong inductive support.

Another way to confirm the ‘if’ part of the criterion for proper names, is to consider examples where the reference sets coincide, and to show that the meanings coincide there as well. Here is one such example. Consider Jo. Jo decides to assign the proper names ‘abc’ and ‘xyz’ to her smartphone. Suppose the meanings of ‘abc’ and ‘xyz’ are both elementary. The reference set of the meaning of ‘abc’ is therefore the reference of ‘abc’, i.e., Jo’s smartphone. Similarly, that of ‘xyz’ is also Jo’s smartphone. Hence, the reference sets of the meanings of ‘abc’ and ‘xyz’ coincide. Do these meanings coincide as well? They do. The mode of presentation or the way of thinking about the smart phone is the same in both cases. There is nothing more to both meanings than that it was Jo who assigned the proper names expressing them to her smartphone. To put it differently, the linguistic knowledge of ‘abc’ amounts to nothing more than knowing that ‘abc’ refers to Jo’s smartphone. And the same holds for ‘xyz’.



The recipe for generating more confirming examples with proper names will by now be obvious. So, in the absence of counterexamples, there is strong inductive support for the ‘if’ part of the criterion for proper names.

Going through all the same moves for definite descriptions would become tedious, so I will limit myself to one confirming example of the ‘if’ part of the criterion.

Take ‘king of the Netherlands’ and ‘husband of Maxima’. Both definite descriptions have the same reference (i.e., Willem-Alexander), but their meanings clearly differ. What about the reference sets? The meaning of ‘king of the Netherlands’ has the meaning of ‘king’ and the meaning of ‘the Netherlands’ as its meaning elements, so that the reference set of this meaning consists of all kings and the Netherlands. The reference set of the meaning of ‘husband of Maxima’ is clearly different, seeing that it consists of all husbands and Maxima.

Finally, consider positive *relational* expressions. Take ‘is parent of’ and ‘is child of’. The meanings expressed by both expressions are not identical. And indeed their reference sets are not identical either, since the meaning of ‘parent’ and the meaning of ‘child’ have different meaning elements. So this example confirms the ‘if’ part of the criterion as well. And again many more examples can easily be generated, such as (‘is larger than’, ‘is smaller than’), (‘loves’, ‘hates’) and (‘is friend of’, ‘is brother of’).

I conclude that the identity criterion does not only apply to the meanings of positive predicable generic expressions, but also to meanings expressed by positive predicable singular expressions and positive relational expressions. The charge that the third premise of my argument is ad hoc therefore does not stick.

## **7. The Argument Stated**

We have reached the point where I can give my argument for the claim that all positive universally held properties are necessarily universally held.

Suppose for reductio that there is a positive universally held property that is not necessarily universally held. Let  $P$  be such a property. Since a property is whatever can be attributed to something by a predicate, it follows that  $P$  can be attributed by the predicate 'being  $P$ '. Since property  $P$  is positive, the predicate 'being  $P$ ' is positive. That is to say, ' $P$ ' is a positive predicable expression. Furthermore, since  $P$  is universally held, ' $P$ ' is in fact a positive predicable *generic* expression.

Let  $M$  be the meaning expressed by ' $P$ '. Since ' $P$ ', when used as a predicate, attributes a universally held property, the reference of  $M$  is everything that exists.

$M$  is either elementary or complex. Suppose  $M$  is complex. If we recursively unfold  $M$ 's meaning elements, we find at some stage at least one elementary positive meaning element  $M^*$ . But then the reference of  $M^*$  is also everything that exists.<sup>18</sup> And since  $M^*$  is elementary, the reference set of  $M^*$  is the reference of  $M^*$  and thus everything that exists.

Hence,  $\text{RefSet}(M^*)$  is everything that exists. Now, the reference set of the meaning expressed by the positive predicable generic expression 'exists' is everything that exists as well. So, it follows that  $\text{RefSet}(M^*) = \text{RefSet}(\text{meaning of 'exists'})$ . According to the identity criterion for meanings of positive predicable generic expressions, it follows that  $M^* = \text{meaning of 'exists'}$ . This contradicts the fact that  $M^*$  is a meaning element. For, as we saw at the end of

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<sup>18</sup> As an example, assume that  $M$  is the meaning of 'physical atom'. So everything that exists is a physical atom.  $M$  has the meaning of 'physical' as meaning element. Suppose further that the meaning of 'spatial' is an elementary meaning element of the meaning of 'physical'. Let  $M^*$  be this meaning element. It then follows indeed that the reference of  $M^*$  is also everything that exists.

section 3, the meaning of ‘exists’ cannot be a meaning element. There are no meanings that have the meaning of ‘exists’ as one of their elements.

The only remaining option is that M is elementary. Recall that the reference of M is everything that exists. Since M is elementary, the reference set of M is the reference of M and thus also everything that exists.<sup>19</sup> It follows that  $\text{RefSet}(M) = \text{RefSet}(\text{meaning of ‘exists’})$ . So, according to the identity criterion,  $M = \text{meaning of ‘exists’}$ . Now, M is the meaning of a predicable expression that, when used as a predicate, attributes a property that is *not necessarily* universally held. But then the meaning of ‘exists’ is the meaning of a predicable expression that, when used as a predicate, attributes a property that is *not necessarily* universally held. From this it follows that it is *possible* that there are things that do not exist. But this contradicts the first premise of the argument – the Frege-Russell-Quine view of existence – according to which it is impossible that there are things that do not exist. We thus have to reject our reductio assumption. Hence the conclusion follows: All positive universally held properties are indeed necessarily universally held.

## 8. Corollaries

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<sup>19</sup> The argument goes through even if it turns out to be false that the only remaining option is for M to be elementary. For if M is complex, we can recursively unfold its meaning elements to find an elementary meaning element  $M^*$  whose reference (and thus reference set) is everything that exists. But then, just as when M is elementary, the reference set of M (being the union of the reference sets of  $M^*$  and all other meaning elements) is everything that exists.

One might be tempted to think that the argument's conclusion is uninteresting, since the only examples of positive universally held properties we know of are formal trivially necessarily universally held properties such as 'being', 'one', and 'self-identical'. However, the argument actually offers an informative explanation of why we only encounter trivial formal examples. It is precisely because it is an extremely demanding condition that universally held properties be necessarily universally held, that we encounter only trivial examples.

Building on this line of reasoning, I'll now point at a number of interesting ontological corollaries of the argument's conclusion. Consider the positive property of being material. This property is positive and plausibly not *necessarily* universally held. For the existence of a thing that is not material seems at least possible. But then the property of being material is not universally held either. After all, according to the conclusion of the argument, if everything would be material, everything would be *necessarily* material. It thus follows that there are immaterial things, which is to say that *materialism* – the thesis according to which everything that exists, is material – fails. Analogously *physicalism* and *naturalism* fail as well. There are non-physical and non-natural things.

We can go on: The property of being *contingent* is positive and plausibly not necessarily universally held either. For a necessarily existing thing seems at least possible. But then it follows that this property is not universally held. So there is at least one non-contingent and thus necessarily existing thing.

It can furthermore be shown that there is at least one contingent thing, which refutes *necessitism* – understood as the thesis that everything exists necessarily. Moreover, since plausibly it is not necessarily true that everything is deterministic, it follows, contra *determinism*, that there are non-deterministic things.

Or take the positive property of being *caused*. It certainly seems possible that not everything is caused. So this property is not necessarily universally held. But then it follows that it is not universally held. That is, not everything is caused. There is at least one uncaused thing.

Also, since being composite is a positive property, and also plausibly not necessarily universally held, it follows that not everything is composite. Hence, contra the mereological thesis of *infinite divisibility*, there is at least one mereological atom.

Further, since being mereologically simple is both positive and plausibly not necessarily universally held, it follows that not everything is simple. There is, contra *mereological nihilism*, at least one mereological composite.

By now, the recipe for deriving further consequences will be clear enough. The argument thus has a wide variety of corollaries that are of considerable interest to several long-standing debates in metaphysics.

Proponents of the various views mentioned above (materialism, idealism, etc.) might accept my argument and maintain that it does entail that their view is in fact necessarily true. Yet, this would go against our modal intuitions, especially if we consider all views together.

## **9. A General Objection**

Let us now consider various objections that might be leveled against the argument. We'll get to specific objections in the following section, but in this section I want to look at a general methodological objection. Someone might object that ontological consequences simply cannot be deduced from claims, however plausible, about semantics. To this objection I propose a two-fold response. First, although two of the three premises are indeed about semantics, the first premise is a claim about the nature of being, namely the Frege-Russell-Quine view that there are

no things that do not exist. This premise is ontological in nature. So, the conclusion is in fact not solely derived from semantic considerations and the objection fails.

Second, even if the conclusion would have been derived entirely from claims about semantics, this isn't necessarily problematic. It seems reasonable to hold that the structure of language reflects, at least to some extent, the structure of the world. If this is so, conceptual analysis of linguistic structures provides us with defeasible insight into the world's structure. For example, proper names and definite descriptions reflect the ontological category of objects, general terms reflect the category of properties and relational expressions that of relations. Language's structure also reveals the ontological pattern of objects having properties. But then, given that semantics is a part of the conceptual analysis of language, semantic theses can indeed have ontological consequences. I therefore conclude that the general objection is unconvincing.

Two caveats: First, by maintaining that language reflects reality, one is not committed to the radical position that we *must* determine the structure of reality solely by analyzing the structure of language. I do not claim that we know that there are objects (properties, relations) only because we know that there are proper names (general terms, relational expressions).

Second, by holding that language gives us clues on the type of entities and patterns that the world contains, one is not committed either to the radical position that the structure of reality is ontologically dependent on the structure of language.

## **10. Specific Objections**

Let us now look at a number of specific objections. Since the argument is logically valid, I shall consider (i) objections that attack one or more of its premises directly, or (ii) purport to show that

the conclusion of the argument has absurd or otherwise unacceptable consequences, so that the argument must be rejected even if we cannot pinpoint exactly what's wrong with the premises.

I start with objections of type (i). As I explained above in section 2, I will not provide an in-depth defense of the first premise. Were a successful attack to be mounted against this premise, I concede that my argument would be vulnerable to it. What about the other two premises?

One could attack the second premise, that is, the Fregean theory of meaning. However, I will argue in the next section that the argument goes through as well if we rely on a Millian-Russellian or possible worlds semantics instead. Therefore, if one wants to attack the argument by refuting the second premise, one would have to refute these two theories of meaning as well.

In the remainder of this section I therefore focus on alleged counterexamples to the third premise of the argument (i.e., the identity criterion).

Consider the following case. The meanings of 'person' and 'human' differ. Yet, if the meanings of 'person' and 'human' are elementary, then their reference sets (i.e., their references, given that we're assuming their meanings to be elementary) coincide. However, this objection fails. It cannot be ruled out that there are non-human persons. Besides, one might argue that there are humans that are not persons, such as humans in a permanent vegetative comatose state or humans with an extremely severe mental disorder, which eradicates their personhood. If that is right, both references do *not* coincide.

For similar reasons counter examples based on pairs such as {'human', 'rational being'} and {'person', 'having knowledge'} fail as well.

Take as another example 'all-good' and 'all-powerful' and suppose their meanings are elementary. Their meanings differ. But on classical theism the reference sets of these elementary

meanings (i.e., the reference of ‘all-good’ and ‘all-powerful’) are the same: God. This contradicts the criterion. So it would follow that classical theism is false, which would be a surprisingly strong consequence for an identity criterion for meanings. How to respond? One may bite the bullet and agree that we indeed have an argument against classical theism here. But this is not required, for, the reference sets of the meanings of ‘all-good’ and ‘all-powerful’ in fact differ. Let me explain. The expression ‘all-good’ is not elementary. It has ‘good’ as a meaningful subexpression. But then the meaning expressed by ‘all-good’ has the meaning of ‘good’ as one of its meaning elements. The reference set of the meaning of ‘all-good’ thus includes all good things. Similarly, the reference set of the meaning expressed by ‘all-powerful’ includes all powerful things. But then both reference sets do not coincide, so that the example confirms rather than refutes the identity criterion.<sup>20</sup>

Let’s consider the second category of objections next, that is, objections that aim to derive an absurdity from the argument’s conclusion. For instance, one might think that the conclusion of the argument seems to entail that there are unicorns or that France necessarily does not have a king. For the properties of not being a unicorn and not being the king of France are clearly not necessarily universally held. After all, both unicorns and a France monarchy seem at least possible. But then it follows from the argument’s conclusion that these properties are not universally held, so that there is at least one unicorn and a king of France. Something similar can be argued for flying Spaghetti monsters, flying teapots, and so on – which is absurd. Therefore the argument is unsound.

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<sup>20</sup> Note that the subexpression ‘all’ in this example does not refer to everything that exists, but to those things that are in some sense maximal.



However, neither the predicate ‘not being a unicorn’ nor ‘not being the king of France’ are positive. But then the properties of not being a unicorn and not being the king of France are not positive. And since the argument’s conclusion is about positive properties, the conclusion that unicorns exist does not follow and neither does the conclusion that France necessarily lacks a king. The same holds for Spaghetti monsters, flying teapots, and other examples. So this objection fails as well.

### **11. Millian-Russellian and Possible Worlds Semantics**

In this section I argue that the argument goes through just as well if we substitute the Fregean theory of meaning for a Millian-Russellian or a possible worlds semantics in the second premise. Since the first premise of the argument – the Frege-Russell-Quine view of existence – is fully compatible with all three semantics, the burden of the argument in this section is to show that the third premise, i.e., the identity criterion of meanings, also holds on these two alternatives. I will show this for positive predicable expressions and positive relational expressions. Thus the strengthened defense of the identity criterion of section 6 is preserved as well if we adopt a Millian-Russellian or possible worlds semantics.

Let me start with Millian-Russellian semantics.<sup>21</sup> Its common core includes – with one exception – all four theses outlined in section 3. The exception is that it is no part of Millian-Russellian semantics that the meanings of linguistic expressions are Fregean senses. Instead, the meaning of a singular term is the object it stands for, the meaning of a general term is a property,

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<sup>21</sup> My characterization of Millian-Russellian semantics and its relation to Fregean semantics again relies on Speaks (2014), as does my description of possible worlds semantics and its relation to Millian-Russellian semantics later in this section.

and the meaning of a relational expression is a relation. Fregean senses then are modes of presenting or ways of thinking about these objects, properties, and relations. Therefore Fregean meanings (senses) correspond many-one to Millian-Russellian meanings. That is to say, many different Fregean meanings can be modes of presenting or ways of thinking about a single Millian-Russellian meaning.<sup>22</sup> But then, if two expressions have the same Fregean meanings, they also have the same Millian-Russellian meanings.

By relying on my articulation and defense of the identity criterion in sections 5 and 6, we can derive the identity criterion for Millian-Russellian semantics. Let  $MRM_1$  and  $MRM_2$  be two Millian-Russellian meanings. If  $MRM_1 = MRM_2$ , then it follows in the same way as in section 5 that  $RefSet(MRM_1) = RefSet(MRM_2)$ . So the ‘only if’ part of the criterion holds. To derive the ‘if’ part of the criterion, consider two Millian-Russellian meanings  $MRM_1$  and  $MRM_2$  whose reference sets coincide, i.e.  $RefSet(MRM_1) = RefSet(MRM_2)$ . Since these reference sets coincide, the identity criterion for Fregean semantics entails that the Fregean meanings  $FM_1$  and  $FM_2$  of two expressions having  $MRM_1$  and  $MRM_2$  as their Millian-Russellian meanings coincide as well. Thus  $FM_1 = FM_2$ . Since Fregean meanings correspond many-one to Millian-Russellian meanings, it follows that  $MRM_1 = MRM_2$ . So the ‘if’ part of the criterion also holds.

I now show that the identity criterion holds for possible worlds semantics as well. The common core of any possible worlds semantics includes – again with one exception – all four theses as outlined in section 3. The exception is that on possible worlds semantics, the meanings of expressions are not Fregean senses nor Millian-Russellian meanings, but *intensions*. That is to say, the meanings of singular terms (proper names and definite descriptions), general terms, and

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<sup>22</sup> Let me illustrate this for proper names. Take again ‘Hesperus’ and ‘Phosphorus’. Their Fregean senses differ, but they relate to the same Millian-Russellian meaning, namely the planet Venus.

relational expressions are *functions from possible worlds to references* – respectively to objects, sets of objects and sets of pairs of objects. For example, the meaning of ‘the president of the United States in 2014’ is a function that maps the actual world to Barack Obama, and possible worlds in which Hillary Clinton is the president of the United States in 2014 to Hillary Clinton. Since different Millian-Russellian meanings can fix the same reference in every possible world, Millian-Russellian meanings correspond many-one to possible worlds meanings. As mentioned, Fregean meanings correspond many-one to Millian-Russellian meanings. But then – since ‘many-one’ relations are transitive – it follows that Fregean meanings correspond many-one to possible worlds meanings as well. Hence, in the same way as before for Millian-Russellian semantics, it can now be shown straightforwardly that the identity criterion also holds for possible worlds semantics.

## **12. Closing Remarks**

I have argued for the claim that positive universally held properties are necessarily universally held. As I showed, this claim has a number of interesting consequences for various debates within metaphysics, such as that there are non-physical things, uncaused things and necessarily existing things. Now, until and unless other objections are proposed and shown convincing, I conclude that the argument is sound.

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