

ON FREGEAN SENSE AND MENTAL CONTENT¹

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Abstract

Fregeans follow Frege (1892) in accepting *informativeness* and *substitution failure* as reliable criteria for the existence of senses as objects of thought. In this paper I show that if we accept this, we must also accept the existence of an infinite hierarchy of senses as objects of thought. This is a bad result since it turns Fregeanism into a doctrine according to which object-related thoughts either have an infinite number of objects as contents or none at all. This shows, against the Fregean, that senses cannot themselves be constituents of thought.

KEY WORDS: Reference; Individuation; Determination.

Resumen

Los fregeanos aceptan, siguiendo a Frege (1892), que los criterios de *informatividad* y *falla de sustitución* son guías confiables de la existencia de sentidos como objetos del pensamiento. En este artículo muestro que si aceptamos esta tesis también debemos aceptar la existencia de una jerarquía infinita de sentidos como objetos del pensamiento. Esta es una mala consecuencia pues convierte al fregeanismo en una doctrina según la cual los pensamientos dirigidos a objetos o bien tienen un número infinito de objetos como contenido o ninguno. Esto muestra, contra los fregeanos, que los sentidos no pueden ellos mismos ser objeto del pensamiento.

PALABRAS CLAVE: Referencia; Individuación; Determinación.

1. Setup

We sometimes utter sentences to express thoughts about the world of our surroundings. Consider a rather simple picture of how this works: our thoughts are about the world and our utterances refer to it. The world itself is the content of both our utterances and thoughts. Thus, we might have thoughts (e.g., that mountain is 4,000 meters high) about objects that we perceive (e.g., Mont Blanc), and we might express them by

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uttering sentences (e.g., “that mountain is 4,000 meters high”) that directly refer to those objects of our experience. On this simplified view, the semantic properties of the terms involved in the uttered sentence play an important role: “that mountain” refers, in the context of use, to Mont Blanc, while the predicate “is 4,000 meters high” refers to some property (or relation) that the referred object is taken to bear.

Suppose now that propositions are both the semantic content of uttered sentences and the content of mental states. Furthermore, suppose that propositions are structured sets constituted by the objects to which the relevant terms are used to refer.² On this view, my belief that Mont Blanc is 4,000 meters high has something like the following object as its content:

<Mont Blanc, being 4,000 meters high>

Frege (1892) famously argues against the simple picture. The thoughts we have about the objects of our experience are not merely constituted by those objects and their properties. For objects are not given to thought immediately. Rather, they are given by means of some or other *mode of presentation*, which itself is part of the thought. Frege dubbed this a *Sinn*. Since then, philosophers have followed by talking about senses. According to Frege’s foundational text:

The regular connection between a sign, its sense and its *nominatum* is such that there corresponds a definite sense to the sign and to this sense there corresponds again a definite *nominatum* (. . .). A proper name (word, sign, sign-compound, expression) expresses its sense, and designates or signifies its *nominatum*. We let a sign express its sense and designate its *nominatum*. (Frege 1892, pp. 200, 202).

If this is true, then we no longer have the simple view of the relation between language, thought, and the objects of our perceptual experience. Two theses appear on the complex view: (i) objects are given through modes of presentation; and (ii) the modes of presentation of an object are constituent parts of the thought concerned with the object. Language and thought are, thus, mediated and concerned with both reference and sense.

² The assumption that there are propositions is central to the debate between Fregeans and anti-Fregeans. But some Fregeans (see Chalmers 2004) do not assume that propositions are structured. My use of structured propositions is merely illustrative.

To illustrate, consider the example above. According to the Fregean view, my belief that Mont Blanc is 4,000 meters high has something like the following proposition as its content:

<MB_{sense}, Mont Blanc, being 4,000 meters high>

where MB_{sense} is the sense associated to “Mont Blanc”. On this view, my belief about Mont Blanc has a sense as its content; and it is about Mont Blanc only indirectly, in virtue of the fact that MB_{sense} is a mode of presentation of Mont Blanc.

As before, semantic properties play a central role for the complex view: the content of a referential expression includes both a referent and a sense.

All else equal, we should prefer the simple view. But not everything is equal. Frege (1892) offers two criteria that are purported to prove both theses above: i.e., what we now know as the puzzles of *informativeness* and *substitution failure*. The fact that Frege’s criteria gave place to a long-standing descriptivist tradition on the semantics of referential terms shows how well they have been accepted. Even anti-Fregeans, such as Recanati (2010), agree that Frege’s criteria prove the existence of a semantic value over and above that of reference.

The remainder of this paper is devoted to show that *informativeness* and *substitution failure* cannot constitute reliable reasons to defend both: (i) that object-related thoughts are mediated; and (ii) that the mediating devices are themselves contents of thought. I will argue, in particular, against the claim that Frege’s criteria support the second thesis. If we are to believe that senses are contents it better be for other reasons.

2. Proving the existence of sense

Let me start by presenting Frege’s criteria. Here’s a condensed version of the *informativeness* criterion.

Premise 1: If referential expressions contribute only their referents then utterances of sentences that vary only in using different correferential terms express the same contents.

Premise 2: If utterances of different sentences that vary only in using different correferential terms express the same contents then competent speakers cannot accept one without accepting the other.

Premise 3: Competent speakers can accept utterances of (1) without

accepting utterances of (2) in the same context even though (1) and (2) vary only in the use of different correferential terms.

(1) Mont Blanc is 4,000 meters high.

(2) That mountain is 4,000 meters high.

Premise 4: From Premises 1, 2, and 3, referential expressions do not only contribute their referents.

Premise 5: If referential expressions do not only contribute their referents, they also contribute a sense.

Premise 6: If referential expressions contribute a sense, then the objects they refer to are always given to thought by means of a sense.

Conclusion: From Premises 4, 5, and 6, the objects to which referential expressions refer to (e.g., Mont Blanc) are always given to thought by means of a sense.

And here's a condensed version of the criterion of *substitution failure*.

Premise 1: If referential expressions contribute only their referents then utterances of sentences that vary only in using different correferential terms express the same contents.

Premise 2: If utterances of different sentences that vary only in using different correferential terms express the same contents then correferential terms must be substitutable *salva veritate* within belief reports.

Premise 3: "Mont Blanc" and "that mountain" may not be substitutable *salva veritate* within the belief reports (3) and (4) even though "Mont Blanc" and "that mountain" are correferential in the context of such reports.

(3) François believes that Mont Blanc is 4,000 meters high.

(4) François does not believe that that mountain is 4,000 meters high.

Premise 4: From Premises 1, 2, and 3, referential expressions do not only contribute their referents.

Premise 5: If referential expressions do not only contribute their referents, they also contribute a sense.

Premise 6: If referential expressions contribute a sense, then the objects they refer to are always given to thought by means of a sense.

Conclusion: From Premises 4, 5, and 6, the objects to which referential expressions refer to (e.g., Mont Blanc) are always given to thought by means of a sense.

Both arguments are valid. It is not my goal to argue in favor or against any particular premise. For now, let me just make two different points. First, if trustworthy, the arguments show that referents are given to thought by some or other means. They do not show, however, that these mediating elements (presumably senses) are themselves part of the content of the relevant thought. This latter is a further claim that does not, strictly speaking, follow from the arguments. The thesis, however, may be said to borrow support from the arguments. For if we accept the thesis (i.e., if we accept that senses are themselves contents) we can readily explain the rather strange behavior observed by Premise 3 in each argument. We can, that is to say, account for *informativeness* and *substitution failure*. Thus, we can say that to accept that senses are contents one has to draw an inference to the best explanation from the basis of Frege's criteria.

Second, and most importantly, I want to show that if we do draw that inference, that is, if we do accept that senses are contents on the basis of Frege's criteria, we are doomed. For notice how general each conclusion is. These arguments are meant to show not that a particular group of objects, say objects of ordinary perception such as Mont Blanc, are always given to thought by means of a sense. They show, rather, that the objects that we can refer to by means of a linguistic expression, whichever those objects may be, are always presented to thought by means of a sense. Thus, if the best explanation of this is the alleged fact that there are senses that constitute content, we should ask ourselves whether these mediators are given directly to thought or not. To answer this question we can use the arguments above and show that this very mediators (i.e., senses) are themselves presented to thought by means of further mediating elements (e.g., suprasenses). And we will then have to accept (following the same kind of inference) that these suprasenses are themselves part of the content of the relevant thought. It is not hard to see that we are up for an infinite regress. This is a problem.

Let me clarify. The problem is not that Frege's criteria may provide good reasons to think that object-related thoughts must be mediated. It is also not a problem to claim, on independent grounds, that senses (whatever they are) may themselves be objects of thought. The problem is, rather, that there is something paradoxical in taking one and the same criterion to do both things: (i) prove that there is only mediated access to the objects of thought, and (ii) deliver an object of thought.

3. Sense, suprasense, suprasuprasense

Suppose we agree with Frege and accept that referents are not directly given to thought. Should we also agree with Fregeans and accept that senses are given to thought? Should we also accept that senses themselves are part of the relevant object-related thought they mediate? If so, shouldn't we also ask, as Frege did with referents, whether senses are given to thought directly?

If Frege is correct, then senses are things we can talk about. Frege himself seems to agree with this. He claims that, "If we wish to speak of the sense of an expression 'A' we can do this simply through the locution 'the sense of the expression 'A'.'" (1892, p. 200). Suppose that the criteria show both that we cannot think of, say, Mont Blanc, except by means of a sense and that this sense is itself an object of thought. If so, then there are three things we must distinguish among: Mont Blanc (the mountain), "Mont Blanc" (the name), and the associated sense. For ease of reference, call the latter " MB_{sense} ". If this is so, it must be that MB_{sense} is something we can talk about by means of a referential term, such as " MB_{sense} ". After all, if we accept Frege's criteria, we have good reasons to believe in the existence of something like MB_{sense} .

But now we must distinguish among four things: the object of perception, its name, the sense associated with its name, and the name of the sense associated with its name. We must distinguish, for example, between Mont Blanc, "Mont Blanc", MB_{sense} , and " MB_{sense} ". It would be ok if this were all we had, but it isn't. For we must remember what the doctrine claims: to every sign there corresponds a sense and to every sense there corresponds a referent. If this is so, then it cannot be that " MB_{sense} " merely refers to MB_{sense} , there must be a sense associated to the former by means of which it refers to the latter. If so, then a fortiori, MB_{sense} cannot itself be given to thought except by means of a sense.

Thus, we get a fifth thing, namely, the sense of the sign " MB_{sense} " by means of which this name manages to denote the sense MB_{sense} , by means of which "Mont Blanc" manages to denote the mountain Mont Blanc. For just like Mont Blanc, MB_{sense} is not given to thought directly but, rather, by means of a sense. Since it is a sense of a sense, we might call it a "suprasense". For ease of reference let's call this sense " $MB_{\text{suprasense}}$ ". But wait, it seems that we now have six things instead of five: Mont Blanc, "Mont Blanc", MB_{sense} , " MB_{sense} ", $MB_{\text{suprasense}}$, and " $MB_{\text{suprasense}}$ ", for just as we can talk about and refer to senses by means of linguistic expressions, we can also talk about and refer to suprasenses by means of linguistic expressions.

This, of course, will never end. If we accept Frege's criteria to show both (i) that object-related thoughts are always mediated, and (ii) that the mediating elements are also part of the content of the relevant thought, then we are up for an infinite regress. We will have to accept the existence of an infinite hierarchy of senses that are themselves part of the content of the relevant object-related thought.

To see how well this fits Frege's criteria consider the following adapted version of it:

Premise 1: If referential expressions contribute only their referents then utterances of sentences that vary only in using different correferential terms express the same contents.

Premise 2: If utterances of different sentences that vary only in using different correferential terms express the same contents then correferential terms must be substitutable *salva veritate* within belief reports.

Premise 3: "MB_{sense}" and "that sense" may not be substitutable *salva veritate* within the belief reports (5) and (6) even though "MB_{sense}" and "that sense" are correferential in the context of such reports.

(5) François believes that MB_{sense} is associated with "Mont Blanc".

(6) François does not believe that that sense is associated with "Mont Blanc".

Premise 4: From Premises 1, 2, and 3, referential expressions do not only contribute their referents.

Premise 5: If referential expressions do not only contribute their referents, they also contribute a sense.

Premise 6: If referential expressions contribute a sense, then the objects they refer to (i.e., a sense) are always given to thought by means of some (further) sense.

Conclusion: From Premises 4, 5, and 6, the sense to which a referential expression refers to (e.g., the sense MB_{sense}, normally associated with "Mont Blanc") is always given to thought by means of a further sense.

4. Similar yet different objections

I want to show that all forms of Fregeanism are committed to the existence of an infinite hierarchy of content-relevant senses. For this I will have to describe (in the following section) the landscape constituted by the different varieties of Fregeanism. Before doing so I would like deviate a little and discuss a common objection to the Fregean picture,

based on the notion of indirect reference, that may appear to be the same as the one I am here presenting. My goal in this section is to show how unique the objection of infinite-hierarchy is by showing how it differs from the common objection based on indirect reference. An important consequence of this is that the Fregean cannot avoid the former objection by using the same arguments she uses to avoid the latter.³

4.1 The objection from indirect speech

In a recent paper Carlson (2004) presents an objection to Frege's account that is similar to the one I am presenting here. Frege's criteria seem to give place to some kind of an infinite *regress*. To account for the use of referential expressions in indirect speech⁴ Frege requires that the ordinary sense become the referent and, given that every referent has a sense, we get yet another sense, and so on. Carlson, however, seems to think that this only happens if, following Frege, we allow for ordinary senses to switch places with ordinary referents, such that the former become referents and the latter senses.

It should be clear that this objection is different and independent from the one I am presenting. On the one hand the infinite *regress* that Carlson presents depends exclusively on Frege's claim that in indirect speech what used to be the sense becomes the referent. On the other hand, the objection of infinite *hierarchies* that I am presenting depends on the claim that differences of informativeness and/or cases of substitution failure constitute trustworthy evidence of the existence of sense. That the two objections are independent becomes clear when we realize that even if the Fregean rejects the claim that ordinary sense becomes the referent of indirect speech, she may still hold on to the claim that cases of substitution failure are trustworthy evidence of the existence of sense. Thus, she will still be subject to the objection of infinite hierarchies that I have presented.

To make this distinction among objections even clearer, let me consider another familiar objection (perhaps the very same as Carlson's) that Dummett (1973) famously considered. Here's a well known passage of Dummett (1973):

³ I owe this suggestion to an anonymous referee.

⁴ Indirect speech occurs when a sentence is used to report someone else's utterance or one's own utterance at a later time. They typically appear under 'that...' clauses. Belief reports, such as (3) and (4), are paradigmatic examples of indirect speech.

What is the indirect sense of an expression? Frege has told us what its indirect referent is, namely its ordinary sense; but that is not enough to determine what its indirect sense is to be. It is clear that there is no way available to state what the *sense* of an expression is to be taken to be. (...) Consider expressions in double *oratio obliqua*, e.g., “Scott” in “Russell said that George IV wondered whether Scott wrote *Waverly*”. Since “Scott” occurs within the clause following “said that”, by Frege’s doctrine it must here stand for the sense it would have in that clause taken as a complete sentence, i.e., in the sentence “George IV wondered whether Scott wrote *Waverly*”. But in this sentence “Scott” has its indirect sense; so in the longer sentence it must stand for its indirect reference (and a doubly indirect sense); its double indirect referent will be its (simply) indirect sense, which in turn stands for its (simply) indirect referent, i.e., its ordinary sense. Since we cannot say what the simply indirect sense of an expression is, we cannot even say what its referent is when it occurs in double *oratio obliqua*; it would seem to follow that we cannot even know how to judge the truth-value of a sentence involving double *oratio obliqua*. This constitutes a *reductio ad absurdum* of the whole theory. (Dummett 1973, p. 267).

Briefly put, the objection claims that on Frege’s view it is impossible to determine the truth-value of a sentence involving indirect speech. To get to this conclusion the objection starts by assuming that it is only by means of the sense that one can determine the referent of an expression, which we need to determine the truth-value. However, in indirect speech we do not know what the sense of the expression is, for its ordinary sense has become the indirect referent and we cannot go from reference to sense given the assumption above. It follows that in cases of *double* indirect speech we cannot even determine the reference, and so, we cannot determine truth-values.

This objection is somewhat different from Carlson. The problem here is not that of an infinite regress but, rather, that of determining truth-values. As such, it also clearly differs from the objection of infinite hierarchies that I am presenting in this paper.

4.2. A non-solution

To show that Dummett’s objection is completely independent of mine, I will consider Dummett’s proposed solution and show how it fails to solve the problem of infinite hierarchies.

Dummett's response to the truth-value determination problem is simple: reject the assumption that the only way to determine the referent, and hence the truth-value, is by means of the sense. According to Dummett one is led to think that it is only by means of the sense that we can determine the reference because "we have been 'asking after its reference in isolation' from the contexts of the sentences in which it occurs, which Frege expressly forbids." (Dummett 1973, p. 268). The main idea here is that, since the sense is not always enough to determine reference it is possible that a sense of a word may "determine it to stand for one thing in one kind of context, and for a different thing in a different kind of context." (Dummett 1973, p. 268). We can then say that there is no such thing as an indirect sense of a word: "there is just its sense, which determines it to have in transparent contexts a reference distinct from this sense, and in opaque contexts a referent which coincides with its sense." (Dummett 1973, p. 268).

Briefly put Dummett's solution is this: indirect speech requires that the ordinary sense become the referent, but it does not require that sense and referent be distinct objects in indirect speech. It may very well be that one and the same sense determines itself to be the referent of a given referential expression in indirect speech. This, of course, avoids the problem of truth-values by giving us a reference for the double use of indirect speech, i.e., the very same sense that is selfdetermined as reference.

This also seems to avoid Carlson's infinite regress objection, for there is no longer a need to postulate a different object to be the sense of the ordinary sense that has come to be the referent of the indirect speech. It is the same object all the way through.

But this does not solve the infinite hierarchy problem that I am presenting in this paper. The latter problem has to do with the use of substitution failure and informativeness as trustworthy evidence of the existence of sense *as a distinct object* from that which is the referent. Thus, even if one and the same object can play both the role of referent and of sense in indirect speech, it most definitely cannot play both roles in *direct* speech cases, such as that of informativeness. For if it could, then the Fregean would have no reason to postulate the existence of sense as apart from referents (see section 2), and, thus, we would have no way to distinguish sense from reference.

It goes without saying that all that the infinite hierarchies objection that I hereby present needs to stand is for cases of informativeness to be considered as trustworthy evidence of the existence of senses as distinct objects. And this, for sure, is something that the Fregean (including Frege) cannot give up.

Hence, the objection I present in this paper is different from that of Carlson's and Dummett's. It has a much wider scope, as it remains a standing objection even after we have accommodated the theory to avoid those other objections.

5. The varieties of Fregeanism

I have described how Frege's criteria show that object-related thoughts are mediated by senses. Call this thesis "mediacy".

Mediacy: to every referential term there corresponds a sense as a medium by means of which the relevant thought is associated with the term's referent.

I said that it takes a further inferential step (perhaps an inference to the best explanation) to claim that these mediating elements are themselves contents. Call this thesis "constituency".

Constituency: senses are the objects of the contents of thoughts.

I have argued that in taking Frege's criteria as evidence for both Mediacy and Constituency, Fregeans are committed to the existence of an infinite hierarchy of content-relevant senses: senses, suprasenses, suprasuprasenses, and so on *ad infinitum*. Call this thesis "infinity":

Infinity: to every sense there corresponds an infinite hierarchy of senses: sense, suprasenses, suprasuprasenses, and so on *ad infinitum*.

Thus, all forms of Fregeanism accept both Mediacy and Constituency and, in virtue of that, they must accept Infinity. Together, these theses entail unacceptable consequences. As a result, all forms of Fregeanism turn out to be untenable. Or so I will argue in what follows.

Let me first prepare the landscape. There are two questions upon which Fregeans do or may differ. First, do senses and referents exist independently of each other? Second, do senses and referents both constitute content? Depending on their answers to these questions, we get four different forms of Fregeanism. See table 1.

Table 1: Varieties of Fregeanism

Varieties	Independent	Dependent	Single	Double
Old School	x			x
Alternative Old School			x	
<i>De re</i>		x		x
Alternative <i>De re</i>		x	x	

Old school Fregeanism (e.g., Frege 1892, Plantinga 1978, and perhaps also Dummett 1991, Devitt 1981, and Stanley 1997; see Fitch and Nelson 2007 for details) holds both that senses and referents exist independently of each other and that both, senses and referents, constitute the contents of the relevant thought. Thus, on this view, Frege’s criteria deliver an extra ingredient to the content of the relevant thought.

A central claim of this traditional form of Fregeanism is that of the independent existence of senses and referents. Thus, there is an alternative way to interpret traditional Fregeanism. Alternative Old School Fregeanism holds both that senses and referents exist independently of each other and that it is only senses that constitute the content of the relevant thought. Thus, on this view, Frege’s criteria provide reasons against taking referents to be contents. The only constituent of thought is the relevant mediating sense.

Another form of Fregeanism, better known as *De re* Fregeanism (see Evans 1982 and McDowell 1984) rejects the central claim of Old School Fregeanism. *De re* Fregeanism holds that the existence of senses depends on that of referents. On this view, the element that mediates between a thought and its object is a *de re* sense (more on this later).

De re Fregeanism allows us to avoid claiming that senses and referents are two different, separate, objects. One can claim, on this view, that senses simply are “ways in which the referent is presented to thought”. This simplifies things by taking object-related thoughts to have only one object as content —i.e., the object as it is presented in some or other way— while keeping Mediacy —i.e., the object is still not immediately presented to thought, but in some or other way.

The advantage of this alternative interpretation of *De re* Fregeanism becomes clear when we reflect that, as any other form of Fregeanism, *De re* Fregeanism is committed to Infinity. If those

infinitely many senses, all of them being *de re*, are not metaphysically distinct objects, this will allow us to keep a more simplified view of mental content.⁵ As I will show, even this view turns out to be untenable.

De re Fregeanism holds, then, both that the existence of senses depends on that of referents and that it is only the object, as it is presented by its sense, that constitutes the content of the relevant thought. Thus, on this view, Frege's criteria provide us with a single constituent of thought: i.e., the referent as it is presented by its sense.

6. Problems with Fregeanism

Given that they are committed to all of the following theses, I believe all forms of Fregeanism are untenable.

Mediacy: to every referential term there corresponds a sense as a medium by means of which the relevant thought is associated with the term's referent.

Constituency: senses are the objects of the contents of thoughts.

Infinity: to every sense there corresponds an infinite hierarchy of senses: sense, suprasenses, suprasuprasenses, and so on *ad infinitum*.

Let me address each view one at a time.

6.1. Old school Fregeanism

Suppose I am conveniently located so as to see Mont Blanc at a distance. Given enough information I come to believe that *Mont Blanc is 4,000 meters high*. According to the simple view, my belief directly involves Mont Blanc. Using the structured proposition metaphor as an illustration, my belief is directed toward α :

α : < Mont Blanc, BEING 4,000 METERS HIGH >

According to Old School Fregeans, my belief is indirectly about Mont Blanc. There is an extra mediating object: i.e., the sense

⁵ As Old School Fregeans, *De re* Fregeans may consistently take a "double" view of content (see table 1). On this view, there are (at least) two objects as contents for every object-related thought, namely, the referent and its dependent (yet different) *de re* sense.

associated with the name “Mont Blanc”, namely, MB_{sense} . To illustrate, my belief is said to be directed toward ϕ :

ϕ : $\langle MB_{\text{sense}}, \text{Mont Blanc, BEING 4,000 METERS HIGH} \rangle$

This prompts the question: why should we accept this extra ingredient? And the answer is simple: Frege’s criteria deliver such extra ingredient to the content of the relevant thought. But, as I have shown, Frege’s criteria prove Infinity to be true. Thus, if we take the criteria to show that there is an extra ingredient, beyond reference that constitutes content, we must accept there is an infinite number of extra ingredients that constitute content. Thus, on this view, the content of my belief is not something like ϕ but rather something like ∞ :

∞ : $\langle \text{Mont Blanc, } MB_{\text{sense}}, MB_{\text{suprasense}}, \dots, MB_{\infty\text{sense}}, \text{BEING 4,000 METERS HIGH} \rangle$

Old School Fregeanism claims that in order to think of Mont Blanc one must also think of the sense associated with the name “Mont Blanc”. Humans are, of course, limited beings. They cannot perform infinitely many cognitive tasks, nor can they store infinitely many items in memory. If in order to think of Mont Blanc one must also think of the sense MB_{sense} associated with “Mont Blanc”, and if in order to think of MB_{sense} one must also think of the sense $MB_{\text{suprasense}}$ associated with “ MB_{sense} ”, and so on *ad infinitum*, then one can never think of Mont Blanc (or any other object for that matter). Thus, Old School Fregeanism is untenable.

6.2. Alternative Old School Fregeanism

According to Alternative Old School Fregeans, my belief that Mont Blanc is 4,000 meters high is indirectly about Mont Blanc. There is a mediating object: i.e., the sense associated with the name “Mont Blanc”, namely, MB_{sense} . This object is the only constituent of thought. To illustrate, my belief is said to be directed toward ψ :

ψ : $\langle MB_{\text{sense}}, \text{BEING 4,000 METERS HIGH} \rangle$

This prompts the question: why should we accept that the referent is not a constituent part of content? And the answer is simple: Frege’s criteria provide reasons against taking referents to be contents. The only constituent of thought is the relevant mediating sense. But, as we know,

Frege's criteria also prove Infinity to be true. Thus, for each sense that we may find to be a plausible content of the relevant thought, the criteria will always deliver another mediating sense that, according to Alternative Old School Fregeanism, should be considered to be the only constituent of the relevant thought. So one is left wondering which one is the *relevant* mediating sense for a given object related thought; the sense, that is to say, that does constitute an object of the content of the relevant thought.

The problem is that, on the Alternative Old School Fregean reading, Frege's criteria show that referents do not constitute content in virtue of the fact that a mediating sense can be found between the thought and the referent. But once Infinity gets into the picture, the criteria also show that for any sense that may constitute content one can find a higher order mediating sense between the thought and that proposed sense.

Thus, if this interpretation of the criteria is correct, there is nothing, strictly speaking, that can be the content of an object-related thought, for it will always be associated with some or other sense at some or other level of hierarchy. So, on this view, all object-related thoughts are, strictly speaking, devoid of constituent content. If nothing constitutes them, there probably are no object-related thoughts on this view. Or perhaps they all turn out to be empty. Thus, Alternative Old School Fregeanism is untenable.

One might try to defend this view by claiming that the proper reading of Frege's criteria takes them to show not that referents are not constituents of thought in virtue of there being mediating senses, but rather that sense and referents are both constituents in virtue of there being such mediation. Notice, however, that this gets us back to Old School Fregeanism, a view that I have already shown to be untenable.

6.3. New Fregeanism

This bad result does not only concern Fregeans such as Frege (1892), and perhaps also Dummett (1991), Plantinga (1978), Stanley (1997), and Devitt (1981). Its negative features are inherited by Neo-Fregeans such as Carnap (1947) and those inspired by his work, including philosophers (see Chalmers 2002 and 2004) and linguists (see Heim and Kratzer 1998). The central difference between Fregeans and Neo-Fregeans consists in that the latter take senses to be intensions: i.e., functions from possible worlds to extensions (or to truth-values). They all admit Frege's criteria for the existence of sense, so they are committed to Infinity as well. Perhaps Neo-Fregeans would like to accommodate this thesis by claiming

that senses can also be higher order intensions or hyperintensions (as the jargon has it): i.e., functions from functions to functions.

Neo-Fregeans still have to accept that this infinite hierarchy of senses can be the contents of thought. Thus, they face the very same options as their Fregean peers: either Frege's criteria provide an extra ingredient, or they provide reasons against taking referents as contents. If the former is the case, then any object related thought will have an infinite hierarchy of functions as constituents. Humans cannot compute an infinite hierarchy of functions. If this is what an object-related thought is, then humans cannot have object-related thoughts. Furthermore, if intensions and referents constitute content, then there is an infinite number of contents to every object-related thought.

If the second option is the case, that is, if Frege's criteria show that referents are not contents because there are mediating intensions that do constitute content, then Frege's criteria also show that for any proposed intension there will be a higher order mediating intension that does constitute content. Thus, Frege's criteria show that there is no referent, intension, or hyperintension that can constitute content.

New Fregeanism seems to endorse both Mediacy and Constituency. If they do so on the basis of Frege's criteria, they are committed to Infinity.

Mediacy: to every referential term there corresponds a sense as a medium by means of which the relevant thought is associated with the term's referent.

Constituency: senses are the objects of the contents of thoughts.

Infinity: to every sense there corresponds an infinite hierarchy of senses: sense, suprasenses, suprasuprasenses, and so on *ad infinitum*.

Now, they can either take both, referents and intensions, to be contents, or just the latter. If, on the one hand, both are contents then there is an infinite number of objects as contents to every object-related thought. If, on the other hand, reference is not a constituent part of content then neither are intensions. Either way the view is untenable.

It seems, then, that traditional Fregeanism (either Old School, Alternative, or New) entails that any given object-related thought (e.g. my belief that *Mont Blanc is 4,000 meters high*) is either directed to an infinite number of contents or to none of them at all. There has to be something wrong with such view.

7. Problems with *De re* Fregeanism

7.1. The View

De re Fregeanism holds, then, both that the existence of senses depends on that of referents and that it is only the object, as it is presented by its sense, that constitutes the content of the relevant thought. Thus, on this view, Frege's criteria provide us with a single constituent of thought: i.e., the referent as it is presented by its sense (see Evans 1982 and McDowell 1984).⁶

To defend the first thesis one might want to claim that a *de re* sense is a mode of presentation "whose functioning depends essentially on (say) the perceived presence of the objects" (McDowell 1984, p. 287). In fact, one might want to go further and claim that there are no two objects, namely, sense and reference, but rather one object (the referent) presented in this or that way. To defend the second thesis one might want to claim that *de re* senses may "be parts or aspects of content, not vehicles for it" (McDowell 1984).

De re Fregeanism varies from more traditional forms of Fregeanism in two ways: (i) corresponding senses and referents are not two separate objects (sense are parts or aspects of referents); (ii) senses are not mediating elements. Thus, instead of Mediacy we get what I call "aspectuality".

Aspectuality: to every referential term there corresponds a sense as an aspect under which the term's referent is presented to thought.

The view is still committed to Constituency and, in virtue of this, it is also committed to Infinity.

Constituency: senses (aspects) are the objects of the contents of thought.

Infinity: to every sense (aspect) there corresponds an infinite hierarchy of senses: aspect of X, aspect of the aspect of X, and so on *ad infinitum*.

Consider now our original example. According to the simple view, my belief that *Mont Blanc is 4,000 meters high* involves Mont Blanc

⁶ McDowell (1984) offers a defense of Evans (1982). McDowell's own view, however, does not take senses as content, see McDowell (1977).

itself as an object of content, not Mont Blanc as it is presented under some or other aspect of it. To illustrate, my belief is said to be directed toward α :

α : < Mont Blanc, BEING 4,000 METERS HIGH >

De re Fregeanism offers a more complex account of content, yet one that is more simplified than the traditional Fregean account. On the *De re* Fregean view, in order to think of Mont Blanc one need not first think of MB_{sense} and then think of Mont Blanc. In order to think of Mont Blanc all one needs to do is think of it in the MB_{sense} way. Call this MB_{sense} way “aspect α_1 ”.

This suggests, then, that the content of my belief is something like β :

β : <Mont Blanc $_{\alpha_1}$, BEING 4,000 METERS HIGH >

with the understanding that α_1 is a mode of presentation of Mont Blanc that essentially depends on Mont Blanc: i.e., it is a part or aspect of it.

Strictly speaking, the content is more complex. For, given Infinity, *De re* Fregeans are forced to accept an infinite hierarchy of *de re* senses into the content. Thus, my belief that *Mont Blanc is 4,000 meters high* is directed toward Mont Blanc as it is presented under an aspect, say, α_1 , which is itself presented to thought under a second order aspect, say, α_2 , which is itself presented to thought under a third order aspect, say, α_3 , and so on *ad infinitum*. This suggests that the content of my belief is not exactly β but rather something like β_∞ .

β_∞ : <Mont Blanc $_{\alpha_1, \dots, \alpha_\infty}$, BEING 4,000 METERS HIGH >

I do not know if it is psychologically impossible to have thoughts directed towards objects presented under aspects of aspects of aspects of aspects, and so on *ad infinitum*. *De re* Fregeans can say in their favor that the relevant thought contains only one object. There is only one thing we must think of (e.g., Mont Blanc), even though it is presented under an infinite hierarchy of aspects ultimately related to it.

Even if it is psychologically possible to have such thoughts, this account prompts the question: why should we accept that aspects of referents (and an infinite hierarchy of such) are constituent parts of the relevant thought? We know the answer by now: Frege’s criteria provide

reasons to think that *de re* senses (i.e., aspects of objects) are constituents of thought. Now, given that these aspects are not themselves extra constituents, in other words, given that there is only one object as the content of the relevant thought, one is forced to ask: what is it (if not different constituent objects) that *de re* senses contribute to the content of the relevant thought?

To this question there is, I think, only one plausible answer: even though they do not contribute extra objects as contents, *de re* senses are truth-conditionally relevant. *De re* Fregeans will presumably defend this claim by going back to Frege's criteria. There are two readings of the criteria that render *de re* senses truth-conditionally relevant. On the one hand, *De re* Fregeans might claim that the criteria show that referents are, by themselves, not enough to determine the truth-conditions of the relevant thought. The criteria show that there is something else, a corresponding *de re* sense, that also determines truth conditions. On the other hand, *De re* Fregeans might claim that Frege's criteria show that referents are not truth-conditionally relevant. The criteria show, on this reading, that it is the relevant associated *de re* sense that, by itself, determines truth-conditions.

I think both explanations turn out to be untenable. Let me address them one at a time.

7.2. *De re* Fregeanism

It should be clear why both readings are untenable. The problem is not that *De re* Fregeanism entails that object-related thoughts have either infinitely many objects as constituents or none of them at all. The problem is, rather, that on this view for each object-related thought there are either infinitely many truth-conditionally relevant aspects to compute or none of them at all.

Suppose, on the one hand, that Frege's criteria are taken to show that referents are not enough to determine truth conditions. The criteria show, on this view, that there is something beyond the referent that is also truth-conditionally relevant, namely, a *de re* sense. But, as we have seen, if we accept Constituency, the criteria also prove Infinity to be true.

Constituency: senses (aspects) are the objects of the contents of thoughts (i.e., they determine truth-conditions).

Infinity: to every sense (aspect) there corresponds an infinite hierarchy of senses: aspect of X, aspect of the aspect of X, and so on *ad infinitum*.

Thus, under this truth-conditional interpretation, the criteria show that for each *de re* sense that determines truth-conditions there is an infinite hierarchy of equally truth-conditionally relevant *de re* senses.

If Frege's criteria show that, besides the referent, there is an extra element that is truth-conditionally relevant, namely, the relevant *de re* sense, then they also show that there is an infinite hierarchy of senses all of which are truth-conditionally relevant. Thus, on this view, the subject must process each one of the members of the infinite hierarchy of aspects associated with the referent (e.g., Mont Blanc) in order to determine the truth conditions of a given thought. Humans cannot compute an infinite hierarchy of truth conditions. It follows, then, that it is impossible to determine the truth conditions of an object-related thought. It may very well be that (somehow) humans manage to grasp a thought that is directed to something like β_∞

β_∞ : <Mont Blanc _{$\alpha_1, \dots, \alpha_\infty$} , BEING 4,000 METERS HIGH>

It will still be impossible, however, to determine its truth-conditions and, hence its truth value. It seems plausible to think that determining truth-value is a necessary part of the determination of content. It seems, then, that on the *De re* Fregean view it is impossible to determine the content of an object-related thought. If not untenable, this suggests that *De re* Fregeanism is a highly unsatisfactory theory of the content of mental representational states.

7.3. Alternative *De re* Fregeanism

On the other hand, *De re* Fregeans might claim that Frege's criteria show that referents are not truth-conditionally relevant. The criteria show, on this reading, that it is the relevant associated *de re* sense that, by itself, determines truth conditions. On this view, my belief that *Mont Blanc is 4,000 meters high* is said to be directed toward something like β

β : <Mont Blanc _{α_1} , BEING 4,000 METERS HIGH>

where α_1 is an aspect, or *de re* sense, of Mont Blanc.

This proposal prompts the following question: why should we accept that the referent is not truth-conditionally relevant? The answer is, of course, that Frege's criteria show that referents are not truth-conditionally relevant, in virtue of the fact that there is an associated *de*

re sense that is itself truth-conditionally relevant. But, as we know, Frege's criteria also show Infinity to be true. Thus, for each *de re* sense that we may find to be truth-conditionally relevant, the criteria will always deliver another, higher order, *de re* sense that, according to this Alternative *De re* reading, should be considered to be the one determining truth conditions. So one is left wondering which one is the relevant *de re* sense for a given object-related thought; the *de re* sense, that is to say, that does determine the truth conditions of the relevant thought.

The problem is that, on the Alternative *De re* Fregean reading, Frege's criteria show that referents are not truth-conditionally relevant in virtue of the fact that an associated *de re* sense can be said to be an aspect under which the referent is presented to the thought. But once Infinity gets into the picture, the criteria also show that for any sense that may be considered truth-conditionally relevant one can find a higher order associated *de re* sense that can be said to be an aspect under which the lower order aspect is presented to the thought.

Thus, on this reading, there is nothing, strictly speaking, that can be said to determine the truth-conditions of an object-related thought; for any candidate aspect that may be thought to do so will always be presented to thought under some higher order aspect that may itself be considered to determine truth-conditions. Hence, on this view, all object-related thoughts are, strictly speaking, devoid of any truth-conditionally relevant elements. If nothing determines their truth-conditions, then there probably are no truth conditions that may be said to correspond to an object related thought. If not untenable, this seems to make of the Alternative *De re* Fregean view a highly unsatisfactory account of the content of mental representational states.

Alternative *De re* Fregeans may reply by claiming that it is not in virtue of there being an associated *de re* sense that referents are not truth-conditionally relevant. If so, then such Fregeans are left with the task of providing some alternative account of why referents are not truth-conditionally relevant. (I confess I do not see what other reason may be given.)

De re Fregeans might also reply by claiming that the criteria do not show that referents are not truth-conditionally relevant, but, rather, that they show simply that *de re* senses play such a role. Hence, we are back into *De re* Fregeanism, a view that I have already shown to be highly unsatisfactory, if not untenable.

It seems, then, that *De re* Fregeanism (including the Alternative account) entails that any given object-related thought (e.g., my belief that

Mont Blanc is 4,000 meters high), either has an infinite hierarchy of truth-conditionally relevant aspects or none at all. There is something wrong with *De re* Fregeanism.

8. Final Remarks

Fregeans take Frege's criteria to give reasons on behalf of both Mediacy and Constituency.

Mediacy: to every referential term there corresponds a sense as a medium by means of which the relevant thought is associated with the term's referent.

Constituency: senses are the objects of the contents of thoughts.

De re Fregeans take them to give reasons on behalf of Aspectuality and Constituency.

Aspectuality: to every referential term there corresponds a sense as an aspect under which the term's referent is presented to thought.

Constituency: senses (aspects) are the objects of the contents of thought.

In virtue of this, Fregeans of both traditions are committed to Infinity.

Infinity: to every sense (medium or aspect) there corresponds an infinite hierarchy of senses.

I have shown how this renders all forms of Fregeanism to be either untenable or highly unsatisfactory accounts of mental content. What should we do, then, to avoid this result? What should we take Frege's criteria to show?

Fregeans may want to reply by claiming that senses do not determine truth conditions or constitute the objects of mental content. That seems fine, but they better take senses to play some or other semantic role, otherwise the view would simply fail to be Fregean. Suppose, for the moment, that senses play some yet to be determined, content-related, semantic role R. If so, it better be that Fregeans do not take Frege's criteria to justify the claim that senses play role R. If they do so, then the very same criteria can be used to show either that there is an infinite hierarchy of things playing role R, all of which are semantically relevant, or that nothing really plays such role.

It is not clear, in light of the present discussion, what it is that the criteria do show. I hope it is very clear, however, what it is that the criteria do not show: i.e., that the associated senses, whatever they may be, are themselves contents (or truth-conditionally relevant aspects) of the relevant thought. Rejecting this claim will allow us to avoid Infinity, for once we preclude senses from being themselves contents (or truth-conditionally relevant aspects) we preclude Frege's criteria from being applicable to senses.

This will also allow us to avoid the paradoxical result mentioned at the end of section 2. We would no longer be taking one and the same criterion (e.g., *informativeness* or *substitution failure*) to do both things: (i) prove that there is only mediated (or aspectual) access to the objects of thought; and (ii) deliver an object of the content of thought. It seems safer to take Frege's criteria to do only the first of these two jobs.

Alternatively, Fregeans may want to add a distinction thesis according to which there is a kind-distinction between, say, ordinary objects of perceptual experience and *senses*. The central difference would be, on this alternative account, that the latter but not the former can be directly thought of. If such were the case then there would be reasons to think that higher order senses are unnecessary and, hence, that what I have dubbed "infinity" is no longer a consequence.

This would appear to save Fregeanism from the problems here presented, but it would only do so at a high cost, for there would seem to be no good reasons –given that Frege's *criteria* clearly apply to senses– to think that we can not have thoughts that are directly about the objects of perceptual experience. Whatever reasons Fregeans may offer to defend that *senses* can be directly thought of will also appear as reasons to think defend that *chairs* (and any other object of perceptual experience) can be directly thought of just as well.

References

- Carlson, G. (2004), "Reference", in Horn, L. and Ward, G. (eds.) (2004), *The Handbook of Pragmatics*, Oxford, Blackwell.
- Carnap, R. (1947), *Meaning and Necessity*, Chicago, University of Chicago Press.
- Chalmers, D. (2002), "On sense and intension", in Tomberlin, J. (ed.) (2002), *Philosophical Perspectives*, 16, Language and Mind, pp. 135-182.
- (2004), "Epistemic Two-dimensional semantics", *Philosophical Studies*, 118 (1), pp. 153-226.

- Cummings, S. (2009), "Names", in Zalta, E. (ed.) *Stanford Encyclopedia of Philosophy*.
- Evans, G. (1982), *The Varieties of Reference*, Oxford, Oxford University Press.
- Devitt, M. (1981), *Designation*, New York, Columbia University Press.
- Dummett, M. (1973), *Frege: Philosophy of Language*, London, Harper & Row Publishers.
- (1991), *The Logical Basis of Metaphysics*, Cambridge, Harvard University Press.
- Fitch, G. and Nelson, M. (2007), "Singular propositions", in Zalta, E. (ed.) *Stanford Encyclopedia of Philosophy*.
- Frege, G. (1892), "On Sense and Nominatum", in Martinich, A.P. (ed.) (2002), *The Philosophy of Language*, Oxford, Oxford University Press.
- Heim, I. and Kratzer, A. (1998), *Semantics in Generative Grammar*, Oxford, Basil Blackwell.
- Jackson, F. (1998), *From Metaphysics to Ethics*, Oxford, Oxford University Press.
- McDowell, J. (1977), "On the sense and reference of a proper name", *Mind*, 86 (342), pp. 159-185.
- (1984), "De re senses", *The Philosophical Quarterly*, 34 (136), pp. 283-294.
- Plantinga, A. (1978), "The boethian compromise", in Plantinga, A. (2003), *Essays in the Metaphysics of Modality*, Oxford, Oxford University Press.
- Recanati, F. (1993), *Direct Reference*, Oxford, Blackwell.
- (2010), "Singular thought: in defense of acquaintance", in Jeshion, R. (ed.) (2010), *New Essays on Singular Thought*, Oxford, Oxford University Press.
- Salmon, N. (1986), *Frege's Puzzle*, Cambridge, The MIT Press.
- Stanley, J. (1997), "Names and rigid designation" in Hale, B. and Wright, C. (eds.) (1997), *A Companion to the Philosophy of Language*, Oxford, Blackwell Publishing.

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