

CDD: 149.9

## INTRODUCING SENSE

MAITE EZCURDIA

*Instituto de Investigaciones Filosóficas*  
*Universidad Nacional Autónoma de México*  
*Ciudad de la Investigación en Humanidades*  
*Coyoacán 04510*  
MÉXICO

*maite@filosoficas.unam.mx*

**Abstract:** In this paper I present what I take to be the *best* argument for the introduction of the semantic category of sense. This argument, or a version of it, can be extracted from Frege's renowned 'On Sense and Reference', but has not been properly understood or appreciated. I begin by discussing the Russellian objections to other versions of the argument attributed to Frege, in order to expound the argument which fends off such objections.

**Key-words:** Frege. Millikan. Sense. Reference. Content. Cognitive value.

In his renowned "On Sense and Reference" ('OSR' from now on) Frege famously introduced what he intended to be a *semantic* level or *content* level different from that of reference, viz. that of sense. The argument put forth by Frege has been called (amongst other things) 'the paradox of identity' by Burge (1977) or 'Frege's puzzle' by Salmon (1986) and has been widely discussed (Burge, 1977; Evans, 1982; Millikan, 1991; Sainsbury, 1983; Salmon, 1986, amongst others). The category of sense itself has also been widely discussed (Evans, 1981 and 1982; Perry, 1977; Salmon, 1986

amongst many others). But what sense is is determined at least in part by what job the argument for its introduction sets it out to do, so a discussion of what sense is must take place in the light of the argument for its introduction. In the present paper I intend to present what I think is *the best* argument for the introduction of sense in an attempt at rescuing the semantic notion of sense. I say the *best* argument because I think it is the only argument for the introduction of sense which will be valid and preempt the criticisms of Russellians and neo-Russellians like Millikan and Salmon.

The argument I think is itself given by Frege, yet I shall not be concerned here with either showing that it is the argument offered by Frege, nor with giving exhaustive reasons for why it is the only argument that will preempt such objections. The first task I have done elsewhere<sup>1</sup> and so I shall speak of the argument for the introduction of sense as Frege's argument. Nevertheless, I will not shy away from some interpretive work where needed. The second task I shall leave unfinished, and will only argue how it is that the argument that I present here avoids the Russellian and in particular Millikan's objections.

I begin by presenting two versions of the argument (one offered by Burge and the other by Millikan), and say why such versions will not do to introduce sense. In the second section I present what I take to be *the best* argument and examine how it avoids those objections. And in the third section I examine the state of affairs between the Russellian and the Fregean.

## 1

Burge (1977) calls Frege's argument for the introduction of sense, 'the "paradox" of identity'. He describes it in the following way:

---

<sup>1</sup> See Ezcurdia, 1994.

The 'paradox' of identity says that, whereas a statement of the form  $\lceil \alpha = \alpha \rceil$  is uninformative, a statement of the form  $\lceil \alpha = \beta \rceil$  may be of considerable empirical significance; but ' $\alpha$ ' and ' $\beta$ ' are singular terms that refer to the same object; so the difference in the statements must go beyond what is referred to in them. The difference is in the mode with which the denoted object is presented to a thinker by the singular terms ' $\alpha$ ' and ' $\beta$ '. And Frege counted this difference as a difference in sense. (1977, p. 354.)

This interpretation of Frege's argument has a simple form. It has two parts. The first concludes that the difference between  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  cannot be explained purely in terms of the reference of the signs. It is the following:

1.  $\lceil \alpha = \alpha \rceil$  differs in cognitive or informative value from  $\lceil \alpha = \beta \rceil$ .
2. ' $\alpha$ ' and ' $\beta$ ' are co-referring singular terms.
- ∴ 3. The difference in cognitive value between  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  must be explained in terms of something other than the referents of ' $\alpha$ ' and ' $\beta$ '

The second part seeks to conclude that the difference between sentences of those two forms is (according to Burge) accounted for by Frege in terms of *the modes of presentation* associated with those singular terms, and that this difference amounts to a difference in sense.

Many philosophers have supposed that a difference in mode of presentation is equivalent to a difference in sense, and many have equated modes of presentation with senses.<sup>2</sup> It is clear in Frege's texts that he intends his notion of sense to be essentially *semantic*. By 'semantic' I will mean here truth-value, truth-conditions, reference or objects of refer-

---

<sup>2</sup> Perry (1977), Evans (1981) and Salmon (1986) are examples. For a discussion of the relation between modes of presentation and senses see Ezcurdia, 1995, 1997, and 2001.

ence.<sup>3</sup> By ‘content’ I will mean here any of the latter except truth-value. However, modes of presentation, the ways in which a subject is *presented* with an object, are not clearly semantic. They are primarily *psychological*. They include senses but also things like sensations, signs (i.e. syntactical objects), prototypes, causal chains, and thus many things which Frege would not have wanted to include as senses. At best the category of mode of presentation is too broad and includes things which are not senses, and at worst it is the wrong category in being primarily a psychological category. So if in the argument for the introduction of sense, Frege – as Burge thinks – is taking the difference in cognitive value between  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  to be one solely of modes of presentation, it is not clear that he has succeeded in introducing the *semantic* level of sense. Until we are given a reason to believe that the particular modes of presentation involved are also semantically relevant we have no introduction of sense as a semantic category.

---

<sup>3</sup> This way of being semantic may be seen as too narrow for it seems to exclude semantic rules, viz. those things which are necessary for understanding and which determine truth-conditions and objects of reference. So one might wish to expand the category of what is semantic to those things that *determine* truth-conditions and objects of reference. Yet this brings the problem of how to exclude things which are involved in the fixing of reference in Kripke’s sense (Kripke, 1980). Those things may be *presemantically* important but not semantically relevant. On the other hand, one may want semantic rules to be captured truth-conditionally (viz. through the axioms of an interpretive truth-theory), and so find no need in including as semantic something that determines truth-conditions and objects of reference. But sometimes, and at least for some interpretive truth-theories, that will not be possible, especially where context-dependent expressions are concerned. Nonetheless, notice that reference was included amongst those things which are semantic. Taking reference as the relation of reference, and taking semantic rules to be rules of reference or relations of reference, we can see how they are incorporated into the category of the semantic.

Millikan (1991) has challenged a Fregean introduction of sense on these grounds. She holds that in introducing sense Frege presents us with either an invalid or a question-begging argument. Either Frege produces an argument which succeeds only in introducing *psychological modes of presentation* and not semantic senses, or in order to produce a valid argument he supplements it with a question-begging premise, viz. a premise that says that the only way in which the difference between  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  is to be accounted for is in terms of sense. But this, she argues, is not so. She claims that the syntactical or notational difference between the sentences of those forms suffice to establish why we take it that  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  differ in cognitive value.

Before we begin to look at her version of Frege's argument, we need to look at what sort of expressions the argument concerns. If ' $\alpha$ ' and ' $\beta$ ' are *complex* referential expressions<sup>4</sup> which are co-referential, then it is not clear that the Fregean would have succeeded in introducing sense. Take two definite descriptions like 'The Evening Star' and 'The Morning Star'.<sup>5</sup> These expressions are co-referential and so have in one sense the

---

<sup>4</sup> Some might object to speaking of *complex* referential expressions, claiming that the only genuine referential expressions are simple ones, and the rest are quantified expressions. Although I do believe that there are complex referential expressions, for the purposes of the present argument one could think of what I call 'complex referential expressions' just as complex noun phrases. The present argument seems to be present in Russell and more recently in Millikan, 1991.

<sup>5</sup> There is an unstable position here concerning the way in which 'The Evening Star' and 'the Morning Star' are being taken. Given that they are in capital letters it would appear that they figure as names, not as descriptions. As such, even if the reference of 'the Evening Star' failed to satisfy the description 'the evening star' due to it being perceived in the afternoon but not in the evenings, or as is the case, due to it not being a star, that name would still refer to that star, just as 'Dartmouth' refers to the town even if it is no longer at the mouth of the river Dart. But for the argument to go through these expressions do not func-

same *semantic content*, but not in another sense. They share the same semantic content insofar as they refer to the same object, but differ in semantic content insofar as they arrive at that content (as Millikan puts it) via different routes and from different starting points. Given that ‘evening’ and ‘morning’ refer to different parts or times of day, and hence have different references, we may say that the complex expressions ‘The Evening Star’ and ‘The Morning Star’ have in some respect different contents or references. Yet because they refer to the same object, namely, Venus, they have the same reference. So these expressions differ in content in some way, but not in another. They both refer to Venus but they get there via different routes and from different starting points: via the different times or parts of the day to which ‘evening’ and ‘morning’ refer.

This account does not, however, cover all referential expressions, but only complex ones. Simple referential expressions, that is, expressions with no identifiable semantic complexity or semantic proper parts, like ‘Hesperus’ and ‘Phosphorus’ or like ‘Tully’ and ‘Cicero’, are not covered by such an account. The difference in content between these co-referring expressions cannot be explained in terms of the difference in the references of the parts as we did with complex referential expressions. ‘Hesperus’ and ‘Phosphorus’ have the same reference, but because they are *prima facie* genuinely simple referential expressions, they do not have semantically relevant proper parts whose reference we could pick on to explain how they differ in the way of arriving at their reference. Russellians, and in particular Millikan, hold that only if the Fregean denies such genuine semantic simplicity, could she hold a view of simple referential expressions as elliptical for complex referential expressions, and only then could she follow

---

tion solely as names, but also as descriptions. The descriptive elements in them are taken to have a semantic role to play in determining or arriving at the reference of the names.

the strategy above in distinguishing different contents. According to the Russellian then referring expressions like ‘Hesperus’ and ‘Phosphorus’ could only have the same content in one way and differ in another if we assume a certain hidden complexity in them; for example, that they are (elliptical for) definite descriptions (Russell) or complex phrases composed of a demonstrative and a predicate (Burge).<sup>6</sup>

But accepting that there is a difference in the semantics of two referential expressions due to the ‘routes’ via which they arrive at their reference is not yet to admit a level of content other than the *referential* level.<sup>7</sup> For the Russellian the difference in *routes* is still a difference in reference: in the parts or properties being referred to in order to arrive at the object.

---

<sup>6</sup> Frege need not assume a hidden complexity in proper names. It is true that in ‘The Thought’ he suggests that the senses of proper names are descriptive, and were that to be his view then he would have no problem about simple co-referential expressions. However, there is an alternative interpretation of Frege’s views on proper names which pays more attention to his OSR in McDowell, 1980.

<sup>7</sup> Taschek (1991) has argued that Frege’s argument for the introduction of sense depends on the reference of sentences being their truth-values, the argument being the introduction of a difference in the senses of the sentences, viz. in the thoughts expressed by sentences with the same truth-value. But then there would be no dispute between the Fregean and the Russellian for it will not be clear that a different semantic or content level will have been introduced. In fact, a Russellian can accept that there are two types of references for a sentence, one being its semantic value and the other its semantic content, the semantic value for a sentence just being its truth-value and the semantic content being captured by truth-conditions made up of the references of the meaningful parts of a sentence arranged in a certain way. Such truth-conditions are what I have elsewhere called ‘purely referential truth-conditions’. (See Ezcurdia, 1994 and 1995.) Thus, for there to be a genuine dispute between the Fregean and the Russellian, I shall assume that the reference of sentences are just what the Russellians would take their semantic content to be (or their purely referential truth-conditions).

So even if one were to get rid of genuinely simple referential expressions, this would not entail that one had introduced a different semantic level by an appeal to routes. Hence, although Frege does not make the distinction between complex and genuinely simple referential expressions, if the Fregean is to introduce a semantic level different from that of reference, the distinction between sense and reference must apply to genuinely simple referential expressions. Thus, Frege's argument must be put in terms of those expressions.

Bearing this in mind, we can now look more closely at Millikan's particular interpretation of such argument. Frege's argument concerns the informativeness or cognitive value<sup>8</sup> of sentences with a certain logical form. It was Frege's realization that sentences of the form  $\lceil \alpha = \beta \rceil$  (where 'α' and 'β' are to stand for simple co-referential expressions) differed in *cognitive value* from sentences of the form  $\lceil \alpha = \alpha \rceil$  that led him to believe that these two syntactically differing sentences differed also at the semantic level or level of content. Assuming for the moment that a difference in cognitive value between two sentences with the same referential content entails that a subject who is competent in the language in question and who is rational can take opposing attitudes to the content of those two sentences, we can put forth the argument which Millikan thinks is Frege's argument for the introduction of sense in the following fashion:

1. 'α' and 'β' are simple co-referring expressions.
  2. It is possible for someone, who is rational and understands the language in question, to take opposing attitudes towards the content(s) of sentences of the form  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$ .
- ∴ 3.  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  differ in cognitive value.

---

<sup>8</sup> I have argued elsewhere that a difference in *information content* may not amount to a difference in cognitive value. See Ezcurdia, 1994.



- ∴ 4.  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  differ in some respect other than their reference.
- ∴ 5. Because 'α' and 'β' are simple co-referring expressions, and the sign of identity is common to both sentence-forms, the difference between sentences of the form  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  must be a difference in the *modes of presentation* of the reference of 'α' and 'β', in their senses.

So if  $\lceil \alpha = \alpha \rceil$  did not differ from  $\lceil \alpha = \beta \rceil$  then coming to know that Cicero is Tully would not consist in new knowledge and we would be able to infer directly 'Cicero is Tully' from 'Cicero is Cicero'. The fact that we can take opposing attitudes towards the contents of the sentences 'Cicero is Cicero' and 'Cicero is Tully' is evidence that these sentences differ in cognitive value. Since the simple referential expressions in those sentences have the same reference they must differ at another semantic or content level, viz. at the level of *sense* or of modes of presentation. Such a level, Frege will claim, is a semantic level.

But if this argument purports to be an argument for sense as something semantic, then as it stands it is invalid. Since it overlooks the fact that the notational or syntactical difference between 'α' and 'β' in  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  may give us the desired difference. For why could it not be the case that the difference in cognitive or information value of  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  be owed solely to a difference in notation? Why couldn't the difference in *notation* or *syntax* suffice to 'move the mind differently'? Why could it not be that our ability to take opposing attitudes to sentences of these two different forms lie in our failure to know that 'α' refers to the same thing as 'β'? A *notational account* of the difference between true sentences of the form  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  would say that they differ in their cognitive value because they differ in their notation.  $\lceil \alpha = \alpha \rceil$  contains two tokens of the *same* sign whereas  $\lceil \alpha = \beta \rceil$  contains two tokens of *different*

signs. There are two such notational accounts. The first, which I shall call '*the Begriffsschrift notational account*', is suggested by Frege himself in his *Begriffsschrift*; and the second, which I shall call '*the psychological notational account*', is suggested more recently by Millikan, 1991.

Under the first account, the content of sentences of the form  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  is not given merely by the references of ' $\alpha$ ', ' $\beta$ ' and '='. Rather under its content we have it that  $\lceil \alpha = \alpha \rceil$  simply states that ' $\alpha$ ' has the same reference as ' $\alpha$ ' and  $\lceil \alpha = \beta \rceil$  states that ' $\alpha$ ' has the same reference as ' $\beta$ ' (or that the referent of ' $\alpha$ ' is the referent of ' $\beta$ '). Thus, in order to account for the difference in cognitive value between  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  taking account of the reference of ' $\alpha$ ' and ' $\beta$ ' and syntactical notations would seem to suffice to argue that ' $\alpha$ ' and ' $\beta$ ' have different contents at one level but not at another. ' $\alpha$ ' and ' $\beta$ ' have the same reference but the sentences which contain such simple referring expressions and which involve the identity-sign do not.<sup>9</sup> There ' $\alpha$ ' and ' $\beta$ ' refer to themselves as well, so to speak. So when a subject takes opposing attitudes to the contents of 'Cicero is Cicero' and 'Cicero is Tully', she does so because those sentences differ in their content in virtue of their difference in syntax.

---

<sup>9</sup> Frege takes the notational account he proposes in his *Begriffsschrift* to account only for sentences containing the identity-sign. Yet, as Salmon (1986) has been quick to remark, the argument for the introduction of sense has little to do with sentences containing the identity-sign, and more with simple referring expressions. For example, 'Hesperus is a big star' and 'Phosphorus is a big star' are sentences which do not concern identity, which have the same reference, but which still differ in cognitive value. So we could take the *Begriffsschrift* notational account to cover all sentences in which simple referring expressions occur and not just identity-sentences. Wherever a sentence occurs with a simple referring expression the semantic contribution of that simple referring expression will not be its referent only, but also itself. Thus, 'Hesperus is a big star' will state that the reference of 'Hesperus' is a big star.

Millikan would find even this *Begriffsschrift* notational account suspicious. For why should one assume that, because a subject may take opposing attitudes to the contents of two sentences which differ syntactically, those sentences actually differ in content? According to her, there is no reason to suppose that sentences of the form  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  differ in content just because a subject who is rational and competent in the language in question can take opposing attitudes towards their contents. Rather one may suppose that sentences of those two kinds have the same content, the same semantics, and that what explains why a subject takes opposing attitudes towards them is the way in which that content is presented, viz. the syntactic difference between the sentences that have the same content. The mind is then supposed to be sensitive to those syntactic differences in taking opposing attitudes to the content of sentences. Those *syntactic modes of presentation* could suffice for an account of why a subject may assent to the content of 'Hesperus is Hesperus' or 'Cicero is Cicero' and yet deny or dissent to the content of 'Hesperus is Phosphorus' or 'Cicero is Tully'. So when a subject takes opposing attitudes to the contents of 'Cicero is Cicero' and 'Cicero is Tully', she does so not in virtue of those sentences differing in content, but rather in virtue of their differing syntactically. Under the *psychological* notational account one has no reason to claim that 'Cicero is Cicero' and 'Cicero is Tully' differ semantically in order to account for why it is that a subject may take opposing attitudes towards them without being irrational. If Frege's argument is to be valid, the Fregean needs to rule out both notational accounts of the difference in cognitive value between two sentences of the form  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$ .

In order to rule out Millikan's psychological notational account, Millikan claims that at the very least the Fregean needs the following additional premise:

6. A rational subject, who understands the language in question, can only take opposing attitudes to the content(s) of sentences of the form  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  if they differ in semantic content.

But 6 is only justified, according to Millikan, if the Fregean does some mingling between vehicles of representation and the semantics or contents of representations. The move Millikan envisages is one where the Fregean *projects* certain properties of the vehicle or sign onto the content: she assumes (according to Millikan) that if two vehicles of representation are different then their contents or semantics are different. Millikan calls this move ‘*the externalization of differents*’. However, to externalize differents is just to beg the question at issue: that the difference between  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  involves not merely a syntactical difference, a difference in vehicles, but also a difference in content or semantics. That we can take one attitude to ‘Cicero is Cicero’ and an opposing one to ‘Cicero is Tully’ is evidence that there is a difference in content between these two sentences *only if* we already assume that we can only take opposing attitudes to sentences which differ in content, and not to sentences which differ merely in notation. Millikan sums up this point thus:

*Cicero is Tully* is an informative thought whereas *Cicero is Cicero* is not, so these thoughts must have different contents. But, quite transparently, that begs exactly the question at issue. Of course the thoughts *Cicero* and *Tully* are different (or at least for some people they might be) or they couldn’t move the mind differently [...] The question is whether their *contents* must be different in order for this to be so. Might they not differ as it were merely in notation? [...] for this Fregean argument to go through [...] [o]ne has to already believe that content and only content can *move* the mind directly. Alternatively, one simply *means* by ‘content’, mechanical vehicle or, more abstractly, production or occurrence of a disposition for the mind to move in a certain way. But then one needs an argument that this sort of ‘content’ is *content* – that it catches something with a semantic dimension, something the sameness of which will imply,

say, same way of helping to determine truth value. That this is the case is not given. (1991, p. 455.)

In order to produce a valid argument, the Fregean would need to show why the difference between ‘Cicero is Cicero’ and ‘Cicero is Tully’ is not merely a difference in notation. So far there seems to be no reason why this difference in notation could not by itself produce different reactions to them, different mental attitudes towards them. So a further premise needed to support 6 is the following:

7. A rational subject, who understands the language, cannot take opposing attitudes to the content of sentences of the forms  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  if they differ merely in notation.

This, however, cannot be had by the Fregean for in the face of (at least) the psychological notational account it begs the question at issue. Therefore, according to Millikan either Frege’s argument for the introduction of sense as a semantic category begs the question or, as it stands, it is invalid.<sup>10</sup> However, even if the Fregean were able to rule out Millikan’s psychological notational account, she would still require an argument against the *Begriffsschrift* notational account, where the signs themselves are part of the content of identity-sentences.

Were Frege’s argument to be the one that either Burge or Millikan envisage, Frege would not have succeeded in introducing sense. However, I think that both Millikan’s and Burge’s versions of Frege’s argument are not the only ones. There is a version of the argument which avoids the problems here presented.

---

<sup>10</sup> For Millikan something counts as content if it is semantic, and something is semantic if it is either *purely referential* truth-conditions, referents or extensions.

## 2

Burge is right in concluding that there are two parts to Frege's argument. However, he is wrong in believing that the conclusion to the first part is just that the difference between  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  cannot be a difference in reference alone. Rather the conclusion is that such a difference cannot be just a difference in the reference of the terms nor, *crucially*, a difference in signs between  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$ . The first part of Frege's argument (which I shall call '*The Negative Phase*' from now on) has three stages. Its overall aim is to establish that differences in the cognitive value of sentences with the forms  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  cannot be accounted for either in terms of their syntactic differences or in terms of the references of ' $\alpha$ ' and ' $\beta$ '. The First Stage of this phase establishes that  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  differ in cognitive value. The Second Stage concerns the *Begriffsschrift* notational account of the relation of identity, in terms of which a notational account of the difference in cognitive value between  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  is given. And The Third Stage consists of an argument against such a notational account of the difference in cognitive value. Finally, the second part of his argument, which I shall call '*The Positive Phase*', argues that the difference in cognitive value between sentences of those two forms will be owed to a *semantic* difference, in particular to a difference in senses, or more specifically, *ways of determining reference* or *ways of referring*. Let us then look at the argument.

### The Negative Phase

#### The First Stage

In the last section we said that a difference in cognitive value has (at least) some psychological consequences. *Prima facie*, a difference in cognitive value and the psychological abilities of a rational subject connect rather nicely in the following way:

- (I) If  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  differ in cognitive value, then it is possible for there to be a subject who is competent in the language in question and rational and who takes opposing attitudes towards the content(s) of  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$ .
- (II) If there is (as a matter of fact) a subject who is rational and competent in the language in question, who understands  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$ , and who takes opposing attitudes towards the contents of  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$ , then  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  differ in cognitive value.

Given (I) and (II), even if all the English-speaking community were to know that Hesperus is Phosphorus it will still be possible for there to be a subject for whom sentences of the form ‘Hesperus is Phosphorus’ will be cognitively valuable (even if that subject is only a possible subject, not an actual one). So ‘Hesperus is Hesperus’ will always differ in cognitive value from ‘Hesperus is Phosphorus’.

However, a difference in cognitive value is not exhausted by (I) and (II). There is more to it than this.  $\lceil \alpha = \alpha \rceil$  is knowable *a priori* whilst  $\lceil \alpha = \beta \rceil$  is not necessarily knowable *a priori*,<sup>11</sup> where the latter form of identity-sentences, but not the former, contain valuable extensions to our knowledge. This is what makes a sentence cognitively valuable, viz. that it

---

<sup>11</sup> Frege says further that  $\lceil \alpha = \alpha \rceil$  is analytic, and whilst he does not explicitly extend the difference by claiming in OSR that  $\lceil \alpha = \beta \rceil$  is synthetic, in his *Begriffsschrift* he had already recognized its synthetic nature, and since in “Function and Concept” he had made it clear that the truth of  $\alpha = \beta$  is not immediately recognizable, we can say that it is not knowable *a priori*. I take it that such analytic-synthetic difference is a good indication of a difference in cognitive value, but I do not take it to be essential to such a difference. For this reason I have left it out of the main characterization of the difference between sentences of the form  $\lceil \alpha = \alpha \rceil$  and those of the form  $\lceil \alpha = \beta \rceil$ .

may extend our body of knowledge. In the light of this, the question we must ask ourselves when considering Frege's argument is whether a mere difference in notation between  $\lceil\alpha=\alpha\rceil$  and  $\lceil\alpha=\beta\rceil$  would suffice for the following:

- (a) to account for the difference in cognitive value between  $\lceil\alpha=\alpha\rceil$  and  $\lceil\alpha=\beta\rceil$  by doing justice to the claim that sentences of the form  $\lceil\alpha=\beta\rceil$  may extend our knowledge; and
- (b) to allow for the possibility of a rational and understanding subject to take opposing propositional attitudes to  $\alpha=\alpha$  and  $\alpha=\beta$ .

Millikan's psychological notational account suffices to account for (b), but what remains to be seen is whether her account or the *Begriffsschrift* notational account suffice for (a) too. This is the first stage of The Negative Phase of Frege's argument.

#### The Second Stage

In his *Begriffsschrift* Frege took it that the difference between  $\lceil\alpha=\alpha\rceil$  and  $\lceil\alpha=\beta\rceil$  is a mere difference in notation. This account of identity was intended to provide the logical form of sentences with the identity-sign. Frege noticed in the *Begriffsschrift* that if there were two co-referring signs which did not differ trivially and were joined by an identity-sign, then their logical form would be  $\lceil\alpha=\beta\rceil$ , and not  $\lceil\alpha=\alpha\rceil$ .<sup>12</sup> So sentences of the form  $\lceil\alpha=\alpha\rceil$  contain signs which either differ solely as a matter of formulation or are two tokens of the same type. In this way all sentences with

---

<sup>12</sup> There are other cases where one might think that two signs differ trivially, viz. when one is an abbreviation of another as in the case of 'NY' for 'New York'.



this logical form assert identity or equivalence in the reference of two tokens of the same sign, whereas sentences of the form  $\lceil\alpha=\beta\rceil$  do not. Sentences of the latter form say rather that two different referential expressions have the same reference, that ‘ $\alpha$ ’ and ‘ $\beta$ ’ are equivalent in what they refer to, viz. that ‘ $\alpha$ ’ has the *same* reference as ‘ $\beta$ ’.

As a logical form proposal this notational account is not intended as an explanation of the *psychological* phenomenon which involves the ability of a rational and competent subject of a language to take opposing attitudes to the content of sentences of the form  $\lceil\alpha=\alpha\rceil$  and  $\lceil\alpha=\beta\rceil$ , and hence of the difference in cognitive value between those of the form  $\lceil\alpha=\alpha\rceil$  and those of the form  $\lceil\alpha=\beta\rceil$ . Millikan’s psychological notational account, in contrast, does intend to explain such phenomenon: a subject can take opposing attitudes to the proposition(s) expressed by sentences like ‘Hesperus is Hesperus’ and ‘Hesperus is Phosphorus’ because such sentences have different syntactical forms and the mind is sensitive to such differences. In OSR Frege does not think that his *Begriffsschrift* notational account is able to account for differences in cognitive value. His reasons will also pose a challenge to Millikan’s own psychological notational account.

#### The Third Stage

Under the *Begriffsschrift* notational account what is said by  $\lceil\alpha=\beta\rceil$  is something about the expressions contained in  $\lceil\alpha=\beta\rceil$ , viz. the relation of sameness of reference of ‘ $\alpha$ ’ and ‘ $\beta$ ’. Frege notes that this relation between the expressions would hold only insofar as they referred to the same thing. The telling paragraph of what he thinks regarding such a notational account is the following (which I have split into three parts):

**A** But this is arbitrary. Nobody can be forbidden to use an arbitrarily producible event or object as a sign for something. In

that case the sentence  $a=b$  would no longer refer to the subject matter, but only to its mode of designation; we would express no proper knowledge by its means. But in many cases this is just what we want to do.

- B** If the sign ' $a$ ' is distinguished from the sign ' $b$ ' only as an object (here, by means of its shape) not as a sign (i.e. not by the manner in which it designates something), the cognitive value of  $a=a$  becomes essentially equal to that of  $a=b$ , provided  $a=b$  is true.
- C** A difference can arise only if the difference between the signs corresponds to a difference in the mode of presentation of the thing designated. (OSR, p. 57)

The Third Stage of Frege's argument is contained in this paragraph. **C** clearly belongs to the positive part of the argument, so for the present we shall ignore it. **A** is where the argument against the *Begriffsschrift* notational account will be found. **B** contains a mixture of the negative and the positive phases of the argument as we shall presently see.

The interpretation I shall be giving of this paragraph does present Frege as having reasons for why notational accounts will not do to explain the difference in cognitive value between sentences of the form  $\lceil \alpha=\alpha \rceil$  and  $\lceil \alpha=\beta \rceil$ , and will leave the way open for why senses are to underpin such differences in cognitive value.

**A** concludes, roughly, that if the *Begriffsschrift* notational account of identity-sentences is true we would express no *proper knowledge* when using  $\lceil \alpha=\beta \rceil$ . But why would it not express 'proper knowledge'?

Suppose, for the sake of argument, that identity-sentences claim merely an identity in the reference of two signs as the *Begriffsschrift* notational account says. Then the knowledge we get of  $\lceil \alpha=\beta \rceil$  is purely knowledge of a language; it is purely *metalinguistic* knowledge (viz. expressed

metalinguistically). Coming to know that  $\alpha=\beta$  is just coming to know that the reference of ' $\alpha$ ' is the same as the reference of ' $\beta$ '.<sup>13</sup> If this is so then scientific discoveries would just be discoveries about language. For example, coming to know that molecules are different from atoms would just amount to coming to know that the reference of 'molecules' differs from the reference of 'atoms'. Coming to know that Hesperus is Phosphorus would just be coming to know that 'Hesperus' and 'Phosphorus' have the same referent. But our intuitions tell us that this is not always what we take *proper* knowledge to be. Although there are cases in which knowledge is linguistic (viz. about a language), there are other cases in which it is not (in certain genuine scientific discoveries). In other cases, knowledge is geological, economical, chemical, biological, physical (as pertaining to physics), or astronomical (amongst others). Thus, when we take sentences like 'Hesperus is Phosphorus' we must explain that they are cognitively valuable insofar as they yield knowledge in astronomy, and not knowledge which is metalinguistic, viz. about our language.

But the more crucial (and related) argument against the *Begriffsschrift* notational account is that it cannot properly account for the difference in cognitive value between  $\lceil \alpha=\alpha \rceil$  and  $\lceil \alpha=\beta \rceil$ . It cannot distinguish properly between the cognitive value of sentences like 'Hesperus is Phosphorus'

---

<sup>13</sup> I am interpreting Frege's expression 'its mode of designation' in

In that case the sentence  $a=b$  would no longer refer to the subject matter but only to its mode of designation...

to mean its sign, the way in which the reference is referred to by the sign. 'Mode of designation' as used here differs from Frege's 'the manner in which it designates something' in **B** where 'it' refers to the sign. The latter, as we shall see, refers to ways of determining references or to senses. This is not so with the former since in '*its* mode of designation' '*its*' indicates that it concerns the reference's mode of designation, the sign, and not the way in which the sign refers to something.

and that of sentences like ‘Hesperus is  $\diamond$ ’, where ‘ $\diamond$ ’ is a sign introduced arbitrarily as having the same reference as ‘Hesperus’. In not being able to distinguish between the cognitive value of these, the *Begriffsschrift* notational view cannot account properly for the cognitive value of sentences of the form  $\lceil \alpha = \beta \rceil$ , and so cannot properly account for the way the cognitive value of such sentences differs from that of sentences of the form  $\lceil \alpha = \alpha \rceil$ . This in a nutshell is what the argument in **A** is. Let us spell it out.

Anyone can introduce any arbitrary sign to refer to an object, but coming to know that the new sign referred to the same object that an old sign did would not constitute proper knowledge.

Compare

(i) Hesperus is Phosphorus

with

(ii) Hesperus is  $\diamond$ .

(i) and (ii) are both true. *Prima facie* these two sentences differ in their cognitive value. The former, but not the latter, gives us proper knowledge; it reports a new and genuine scientific discovery. This does not occur with (ii). (ii) at most purports to tell us how someone intends us to use ‘ $\diamond$ ’. But (i) purports to do something different from (ii). What it purports to do must be described by the account of identity-sentences. However, if the *Begriffsschrift* notational account cannot bring out the difference between (i) and (ii), then it will not be able to account properly for the cognitive value of (i).

For the *Begriffsschrift* notational account, (i) is equivalent to

(i’) ‘Hesperus’ refers to the same thing as ‘Phosphorus’,

and (ii) is equivalent to

(ii') 'Hesperus' refers to the same thing as '❖'.

Thus, such an account does not have the tools to distinguish properly (i) from (ii). It does not say why (i) constitutes an extension in our proper knowledge but (ii) does not, nor why we think that, although (ii) is really expressing some metalinguistic knowledge, (i) is not. For the *Begriffsschrift* notational account knowing that (i) and knowing that (ii) are just two forms of the same kind of metalinguistic knowledge and nothing else. So our intuitions about the cognitive value of (i) being different from that of (ii) are not vindicated.

Furthermore, if an account cannot distinguish the cognitive value of sentences like (i) from that of sentences like (ii), then it cannot give a proper account of the cognitive value of (ii) and hence of the difference in cognitive value between (i) and

(iii) Hesperus is Hesperus

In a notational account (iii) is equivalent to

(iii') 'Hesperus' refers to the same thing as 'Hesperus'.

Although (iii') and (i') may be said to be non-equivalent in cognitive value, their non-equivalence will be accounted for in a way that does not vindicate our intuitions, for it will not vindicate our intuitions concerning the difference in cognitive value between sentences like (i) and those like (ii). Furthermore, it will not vindicate our intuitions that when the Babylonians discovered that Hesperus was Phosphorus their discovery was not one purely about language. Their discovery was a genuine one about a scientific fact in astronomy, and not one about their language. If by something's being equivalent in cognitive value to something else Frege means that they are equivalent in *extending proper knowledge*, then we may

say that Frege is right in asserting in **B** that sentences of the form  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  are equivalent in cognitive value for the *Begriffsschrift* notational account. Both extend our metalinguistic knowledge in the same way. That they are not thus equivalent is an argument against such an account.

We are now in a position to spell out fully the argument of The Negative Phase of Frege's argument for the introduction of sense:

1. 'α' and 'β' are simple co-referential expressions.

The First Stage

2.  $\lceil \alpha = \alpha \rceil$  may differ in cognitive value from  $\lceil \alpha = \beta \rceil$  insofar as the latter but not the former provides valuable extensions to our knowledge.

The Second Stage

3.  $\lceil \alpha = \alpha \rceil$  may differ from  $\lceil \alpha = \beta \rceil$  insofar as  $\lceil \alpha = \alpha \rceil$  is semantically equivalent to  $\lceil$ the sign 'α' has the same reference as the sign 'α' $\rceil$  and  $\lceil \alpha = \beta \rceil$  is semantically equivalent to  $\lceil$ the sign 'α' has the same reference as the sign 'β' $\rceil$ . (The *Begriffsschrift* Notational Account)

The question is then whether a notational account can properly distinguish the cognitive value of 'Hesperus is Phosphorus' from that of 'Hesperus is ❖', where '❖' is an arbitrary sign introduced as having the same reference as 'Hesperus'. This is The Third Stage:

- ∴ 4. 'Hesperus is Phosphorus' is semantically equivalent to "Hesperus" has the same reference as "Phosphorus", and 'Hesperus is ❖' is semantically equivalent to "Hesperus" has the same reference as "❖". (Given 3)

- ∴ 5. Coming to know that ‘Hesperus’ has the same reference as ‘Phosphorus’ is *as cognitively valuable as* coming to know that ‘Hesperus’ has the same reference as ‘ $\diamond$ ’.
- 6. Coming to know that Hesperus is Phosphorus constitutes a valuable extension to our knowledge, whereas coming to know that Hesperus is  $\diamond$  does not constitute such a valuable extension to our knowledge.
- ∴ 7. The *Begriffsschrift* notational account cannot account properly for the cognitive value of ‘Hesperus is Phosphorus’.

It is for this reason that Frege both rejects the *Begriffsschrift* notational account, and holds that the difference in cognitive value between ‘Hesperus is Hesperus’ and ‘Hesperus is Phosphorus’ has to be explained in terms other than their signs or the reference of ‘Hesperus’ and ‘Phosphorus’.

We can generalize the point to all referring expressions because for any referring expression  $e$  we can introduce an arbitrary sign  $e'$  and stipulate that  $e'$  has the same reference as  $e$ . In all cases the notational account will be unable to account for the difference in cognitive value between those sentences which are of the form  $\lceil \alpha = \beta \rceil$  but which have in the ‘ $\beta$ ’-place of that form an arbitrary sign from those that don’t. For this reason, we can say further that the difference in cognitive value between  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  will have to be explained in terms other than their signs or the reference of ‘ $\alpha$ ’ and ‘ $\beta$ ’. This concludes The Negative Phase of Frege’s argument against the *Begriffsschrift* notational account. But notice that it can be extended to the psychological notational account.

How could the psychological notational account be capable of distinguishing between the cognitive value of ‘Hesperus is Phosphorus’ and that of ‘Hesperus is  $\diamond$ ’? Millikan claims that a notational difference between  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  is just a difference in modes of presentation

which have no semantic relevance, and that such a difference will suffice for a subject to take opposing attitudes towards sentences of these forms. She believes that these differences in vehicles or in purely syntactical modes of presentation will suffice to account for differences in cognitive value, because they will suffice to 'move the mind differently'. It is not clear, however, that such an account (or even supplementing the *Begriffsschrift* notational account with the claim about the different syntactical modes of presentation) will suffice to bring out the difference in cognitive value between 'Hesperus is Phosphorus' and 'Hesperus is  $\diamond$ '. It will certainly be possible to account for why a subject took opposing attitudes to these sentences or their contents since her mind would have been sensitive to their differences in modes of presentation, in vehicles. But it will not be possible for the psychological notational account (nor the supplemented *Begriffsschrift* account) to explain or predict the difference in *cognitive value* between 'Hesperus is Phosphorus' and 'Hesperus is  $\diamond$ '. The difference in vehicles or modes of presentation does not suffice to explain why the former, but not the latter, brings new and *proper* knowledge in the way explained above. In fact, the psychological notational account (as well as the supplemented one) will predict that 'Hesperus is  $\diamond$ ' is cognitively valuable because the difference in signs involve a difference in purely psychological modes of presentation and so a subject may take a different attitude to it from the one it takes to 'Hesperus is Phosphorus' or 'Hesperus is Hesperus'. But 'Hesperus is  $\diamond$ ' is not cognitively valuable. So a supplemented notational account, as it stands, would make the wrong predictions about such a sentence. Something more is needed. This is the challenge which Frege's account will pose to any notational account (or for that matter, to *any* account), viz. to bring out the difference in cognitive value between 'Hesperus is  $\diamond$ ' and 'Hesperus is Phosphorus'.



### The Positive Phase

Frege thinks that *sense* can do the job of distinguishing between the case in which an identity-sentence involves a sign introduced arbitrarily from the case in which it does not. His notion of sense is already present in his *Begriffsschrift*. There he distinguished between signs which differ merely as a trivial matter of formulation and those which do not, which are associated with or have different ways of determining reference:

[...] different names for the same [reference] are not always just a trivial matter of formulation; if they go along with *different ways of determining the [reference]*, they are relevant to the essential nature of the case. (p. 12; my emphasis)

In OSR Frege notices that cases where there is a syntactic difference merely as a trivial matter of formulation are not the only cases in which there is no one-one correspondence between signs and ways of determining reference. The sort of case he has in mind is the one we considered in The Negative Phase: when a sign is introduced arbitrarily. Since it is possible to introduce a sign arbitrarily, then it is possible for a difference in signs not to entail a difference in the ways of determining references or ways of referring. A sign may be introduced arbitrarily either via ostension or via another sign, viz. as having the same reference as another sign. So the new sign which is introduced thus will not give us a *new* way of referring different from the one of the sign used to introduce it or from the way it was introduced. Suppose that someone introduces ‘❖’ as having the same reference as ‘Hesperus’ (as I have done here). The way in which ‘❖’ is introduced will ensure that the way of determining the reference of ‘❖’ is just that of ‘Hesperus’. ‘❖’ will not have a new way of determining its reference, and so ‘Hesperus is ❖’ will not provide new *proper* or *scientific* (in this case, astronomical) knowledge to the person who has

already been introduced to the sign. Furthermore, were someone to understand and to take opposing attitudes to the contents of 'Hesperus is Phosphorus' and 'Hesperus is  $\diamond$ ', she would be irrational. Unlike 'Hesperus is  $\diamond$ ', 'Hesperus is Phosphorus' does provide new proper knowledge to the person who has already been introduced both to 'Hesperus' and to 'Phosphorus'. These simple referring expressions have associated ways of determining their references which are independent of each other, so the subject who has already been introduced to those signs can learn something new with 'Hesperus is Phosphorus'.

Frege thinks that only if ways of determining reference are distinguished from the signs, can we distinguish the cases in which identity-sentences do contain a furtherance in knowledge from those that do not. These ways of determining reference are what correspond to the semantic level of sense. It is true that in **C** Frege speaks of modes of presentation and not of ways of determining reference. But it is also true that in his *Begriffsschrift* Frege speaks of ways of determining reference as that which is associated with signs. So although Frege doesn't distinguish between ways of determining reference and modes of presentation, the distinction is crucial for, as we said at the outset, modes of presentation are essentially psychological whereas senses are essentially semantic. Having made the distinction between ways of determining references and modes of presentation, we must then ask ourselves whether ways of determining references are essentially semantic or not.<sup>14</sup>

---

<sup>14</sup> Frege wants differences in senses to account for the difference in cognitive value between the propositions  $\alpha=\beta$  and  $\alpha=\alpha$ , and so to allow for the possibility of a subject taking opposing propositional attitudes to sentences of those two forms. If a difference in senses is to allow for such a possibility there must be some way in which senses are *psychologically* relevant. So there must be a connection between psychological modes of presentation and semantic senses or ways

When speaking of ways of determination in his *Begriffsschrift* Frege gives an example which would lead us to believe that ways of determining references are essentially *epistemic*. Of two ways of determining the same point in the circumference of a circle, where the point is referred to with 'A' when determined in the first way and as 'B' when determined in the second way, Frege writes:

The same point is determined in a double way:

- (1) It is directly given in experience.
- (2) It is given as point B corresponding to the straight line being perpendicular to the diameter. (*Begriffsschrift*, p. 11)

(1) and (2) state two *epistemically* different ways of determining the reference, each corresponding respectively to 'A' and 'B'. Yet one need not be committed to the idea that all ways of determining reference are always *epistemic* ways of determining the reference as in this example. The important point about ways of determination is that they determine the reference of a name, sentence or predicate, that is, of a meaningful expression in the language, *in a certain way*. Such ways of determining reference may well be essentially semantic. Given what we said was *essentially* semantic, ways of determining reference will have to be shown to be either truth-values, truth-conditions, reference or objects of reference. There are at least two manners (which do not exclude each other) in which ways of determining reference may be said to be semantic categories. One of them is to say that ways of determining reference are just ways of referring and that *the relation of reference* is what is included under 'reference' in what is semantic, so that ways of determining reference are just different ways in which the relation of reference may be implemented. In this case, we come close to identifying senses as ways of referring with semantic

---

of determination. For more on the distinction and connection between ways of determining reference and modes of presentation see Ezcurdia, 1995.

rules. Such assimilation may well be threatened by context-sensitive expressions where a way of referring may not be identifiable with the semantic rule of the expression-type but is rather what is expressed by one of the tokens of such expression-type. In these cases, such ways of referring would just be instantiations of the semantic rule in a given context. Another way of viewing ways of referring as essentially semantic (compatible with the latter) is one offered by McDowell (1977 and 1980) and Evans (1981 and 1982). Such a view takes ways determining reference of sentences to be capturable as *interpretive* truth-conditions and of semantically meaningful expressions as interpretive truth-axioms, that is, truth-conditions or axioms of an interpretive truth-theory à la Tarski. I do not have space to go into this in the present paper, so I shall leave it aside for another time.<sup>15</sup> For our purposes it suffices to point out these two ways in which ways of referring may be essentially semantic.

Under this account of Frege's argument, it is easy to see why Frege says in **B** above, that if the signs are not distinguished by 'the manner in which they designate something', that is, by their ways of determining something, but only as syntactical objects, then the difference in cognitive value between  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$  cannot be properly accounted for. We already have reasons from The Negative Phase for believing that neither reference nor mere syntactical differences will suffice to allow for an account of the difference in cognitive value between  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$ . And we have already sketched how differences in ways of determination will suffice for such a task. *Only* a difference in ways of determination will account properly for differences in cognitive value as he envisages in **C** because, once reference and signs have been ruled out, that is all that is left.

We can then spell out the argument for The Positive Phase thus:

---

<sup>15</sup> For a discussion of this see Ezcurdia, 1997.

1. 'Hesperus is Phosphorus' differs in cognitive value from 'Hesperus is  $\heartsuit$ '.
2. Syntactic differences cannot account properly for these differences. (From 'The Negative Phase')
3. 'Hesperus' and 'Phosphorus' correspond to or have two different associated ways of determining the same reference.
4. ' $\heartsuit$ ' is a sign introduced as having the same reference as 'Hesperus', so it will not express a *new* way of determining reference different from that associated with 'Hesperus'.
- ∴ 5. 'Hesperus is  $\heartsuit$ ' does not express *new* proper knowledge.
- ∴ 6. Differences in ways of determination can give us the desired differences in cognitive value between 'Hesperus is Phosphorus' and 'Hesperus is  $\heartsuit$ '.

Until we have a reason then for supposing that something different from ways of determining reference or senses can allow for the difference in cognitive value between 'Hesperus is Hesperus' and 'Hesperus is  $\heartsuit$ ', we may assert with Frege that only differences in ways of determination will be able to account for such differences in cognitive value.<sup>16</sup>

---

<sup>16</sup> Salmon (1986) takes 'Hesperus is Hesperus' and 'Hesperus is Phosphorus' to be asserting the same proposition or to be encoding the same semantic information, viz. the self-identity of Venus. Nevertheless, he takes those sentences to differ in their *pragmatically* encoded information. Such a difference is meant to account for why it is that a subject can, without being irrational, assent to 'Hesperus is Hesperus' but not to 'Hesperus is Phosphorus'. But nothing of what Salmon says helps us distinguish 'Hesperus is Phosphorus' from 'Hesperus is  $\heartsuit$ '. All it does is say how it is that a subject is able to take opposing attitudes to one and the same content.

## 3

What is then the state of play between the Fregean and the Russellian?

Nothing of what I have said so far entails that the situation which Millikan envisages, or which any other Russellian might envisage, is false and it is not available as an alternative account. Yet it is important to note that such an account would be a *revisionary* account not only of our language but more importantly of what we take knowledge and genuine scientific discoveries to be.<sup>17</sup> What I have said so far only entails that the argument for Fregean sense is both non-question begging and valid. If someone, however, intends to pursue a notational account then she must face what I shall call '*the Fregean Challenge*'. The Fregean Challenge just consists in either offering an account which allows for an explanation of the differences in the knowledge we derive from 'Hesperus is Phos-

---

<sup>17</sup> Some might try (see Blackburn, 1979, pp. 27-8) to revive the notational account of the difference between 'Hesperus is Hesperus' and 'Hesperus is Phosphorus', in the following manner:

- (i) the way of determination associated with 'Hesperus' determines the same reference as the way of determination associated with 'Hesperus'

differs in cognitive value from

- (ii) the way of determination associated with 'Hesperus' determines the same reference as the way of determination associated with 'Phosphorus'.

The problem with this is that the cognitive value of 'Hesperus is Phosphorus' and of (ii) may not be the same. A subject may know that Hesperus is Phosphorus, but not that the way of determination associated with 'Hesperus' determines the same reference as the way of determination associated with 'Phosphorus'. In knowing that Hesperus is Phosphorus the subject has knowledge which is *sensitive* to differences in ways of determination or senses, but this is different from having knowledge of those ways of determining reference.

phorus' and 'Hesperus is  $\diamond$ ', or saying why coming to know that Hesperus is Phosphorus does not differ in cognitive value from our coming to know that Hesperus is  $\diamond$  (contrary to our intuitions).

Against the *Begriffsschrift* notational account of sentences there is at least one *prima facie* undesirable consequence which needs to be pointed out. If identity-sentences containing simple referring expressions assert just equivalence in reference between two signs then identity will turn out to be contingent, when we in fact think it as necessary. "Hesperus" has the same reference as "Phosphorus" would be only contingent because those signs or expressions could have had different references from that of Venus. Furthermore, the metalinguistic fact that 'Hesperus' has the same reference as 'Phosphorus' cannot alone explain properly why knowing that Hesperus is Phosphorus is having some knowledge in *astronomy*. The *Begriffsschrift* notational account will have to say more than just assert the metalinguistic fact in order to explain why the knowledge we get is astronomical. But it will have to do more. For the Fregean our *understanding* of simple referring expressions will involve knowledge of their associated ways of determination. But the Russellian will have to explain how it is that our *understanding* of simple referring expressions can be framed in a notational form.

Yet a Russellian may not want to go the notational way in accounting for the difference in cognitive value between sentences of the form  $\lceil \alpha = \alpha \rceil$  and  $\lceil \alpha = \beta \rceil$ . She might just want to claim that there is no difference in cognitive value between sentences of these two forms – as Salmon (in some way) and Millikan have done –, thus denying that Frege's argument is sound by claiming that premise 2 of 'The Negative Phase' is false. Or she might just claim that 'Hesperus is Phosphorus' is just as cognitively valuable as 'Hesperus is  $\diamond$ '. To take either of these two routes are viable options, yet they are *revisionist* options. And to take a revisionist option one needs to be furnished with a good argument against pursuing an account

that intends to vindicate our intuitions and accord with the commonsense and day to day evidence as a Fregean account would intend to do.

## REFERENCES

- BLACK and GEACH (eds.). *Translations from the Philosophical Writings of Gottlob Frege*. Oxford: Blackwell, 1980.
- BLACKBURN, S. "Thoughts and Things". *Aristotelian Society*, Supplementary Volume, LIII, pp. 23-41, 1979.
- BROOK, A. and R. DEVIDI (eds.). *Self-reference and Self-awareness*. Amsterdam: John Benjamins Publisher, 2001.
- BURGE, T. "Belief *De Re*". *Journal of Philosophy*, LXXIV, pp. 338-62, 1977.
- EVANS, G. "Understanding Demonstratives". In: H. Parret and J. Bouveresse (eds.). *Meaning and Understanding*. Berlin: De Gruyter, 1981. Reprinted in P. Yourgrau (ed.). *Demonstratives*. Oxford University Press, pp. 71-96, 1990.
- . *Varieties of Reference*. In: McDowell (ed.). Oxford University Press, 1982.
- EZCURDIA, M. *Sense, Indexicals and Action*. University of London, 1994 (PhD Thesis).
- . "Modos de Presentación y Modos de Determinación". *Crítica*, XXVII, pp. 57-96, 1995.
- . "Dynamic and Coherent Thoughts". *European Review of Philosophy*. Vol. 2 *Cognitive Dynamics*, San Francisco: CSLI, pp. 105-39, 1997.



- . “Thinking About Myself”. In: A. Brook and R. DeVidi (eds.) *Self-reference and Self-awareness*. Amsterdam: John Benjamins Publisher, pp. 197-203, 2001.
- FREGE, G. *Begriffsschrift*. In: Black *et al.*, 1980.
- . “Function and Concept”. In: Black *et al.*, 1980.
- . “On Sense and Reference”. In: Black *et al.*, 1980.
- . “The Thought”, 1918. In: Salmon *et al.*, 1988.
- KRIPKE, S. *Naming and Necessity*. Cambridge, MA: Harvard University Press, 1980.
- MILLIKAN, R. “Perceptual Content and the Fregean Myth”. *Mind*, C, pp. 439-59, 1991.
- MCDOWELL, J. “De Re Senses”. *Philosophical Quarterly*, 34, pp. 283-94, 1977. Reprinted in C. Wright (ed.). *Frege: Tradition and Influence*. Oxford: Blackwell, pp. 98-109, 1984.
- . “On the Sense and Reference of a Proper Name”. In: M. Platts (ed.). *Reference, Truth and Reality*. Routledge & Kegan Paul, pp. 141-66, 1980.
- PERRY, J. “Frege on Demonstratives”, 1977. In: P. Yourgrau (ed.). *Demonstratives*. Oxford: Oxford University Press, pp. 50-70, 1990.
- PLATTS, M. (ed.). *Reference, Truth and Reality*. London: Routledge & Kegan Paul, 1980.
- SAINSBURY, M. “On a Fregean Argument for the Distinctness of Sense and Reference”. *Analysis*, XLIII, pp. 12-14, 1983.
- SALMON, N. *Frege’s Puzzle*. Cambridge, MA: MIT Press, 1986.

SALMON, N. and S. SOAMES. (eds.). *Propositions and Attitudes*. Oxford: Oxford University Press, 1988.

TASCHEK, W. "Frege's Puzzle, Sense and Information Content". *Mind*, CI, pp. 767-91, 1991.

WRIGHT, C. (ed.). *Frege: Tradition and Influence*. Oxford: Blackwell, 1984.

YOURGRAU, P. (ed.). *Demonstratives*. Oxford: Oxford University Press, 1990.