

On the naturalization of Fregean senses¹

Sobre a naturalização dos sentidos fregeanos

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Abstract

In several works that start from the seminal text *Language, Thought, and Other Biological Categories*, Ruth Millikan has presented her well know teleosemantic approach to philosophy of mind and philosophy of language. Millikan presents her theory of linguistic signs as a theory which, unlike other semantic theories, is able to more adequately solve problems such as that which is called “Frege’s puzzle”. Millikan considers that the Fregean modes of presentation are inconsistent with a representational theory of mind. In this paper, the relevance of Millikan’s objections to Frege is evaluated and the scope of these objections is discussed in the context of her own conception. We conclude that Millikan’s analysis of Fregean semantics relies on false assumptions and, in consequence, her doctrine is weakened.

Keywords: teleosemantic theory, Fregean semantics, senses, identity.

Resumo

Em várias obras que começam com o texto seminal *Language, Thought, and Other Biological Categories*, Ruth Millikan apresentou sua conhecida abordagem teleosemântica da filosofia da mente e filosofia da linguagem. Millikan apresenta sua teoria dos signos linguísticos como uma perspectiva capaz de abordar de forma mais adequada certos problemas para os quais, em sua opinião, não foi oferecido uma solução satisfatória, em especial, o chamado “Frege’s puzzle”. No geral, Millikan considera que os modos fregeanos de apresentação são incompatíveis com uma teoria representacional da mente. Neste trabalho, a pertinência das acusações que Millikan formula a Frege é examinada e o alcance dessas acusações é avaliado no contexto da sua própria concepção. Conclui-se que a análise que Millikan realiza da semântica de Frege é baseada em premissas falsas e, conseqüentemente, a sua própria posição é enfraquecida.

Palavras-chave: teoria teleosemântica, semântica fregeana, sentidos, identidade.

¹ I would like to thank Sofia Albornoz Stein, who gave me the opportunity to participate through this paper in the panel “Senses, Thoughts, Representation” at the III Latin American Analytic Philosophy Conference and the III Conference of the Brazilian Society for Analytic Philosophy. I would also like to thank Rodolfo Gaeta and Valeria Motta for their useful comments on the first draft of this paper.

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Introduction

In a series of works that start from the seminal text *Language, Thought, and Other Biological Categories* (hereafter LTOBC), Ruth Millikan has presented her well known teleosemantic approach to philosophy of mind and philosophy of language. Millikan's project is part of a naturalist program to show that language and mental representations must be conceived as a part of a natural order and, as such, they can be understood using the concepts that evolutionary biology provides. So, thoughts, concepts and linguistic signs – just as with the localization devices that bats possess or the language bees use – can be explained in terms of certain biological mechanisms such as function and purpose, derived function, semantic mapping functions and other related categories that are part of the conceptual framework developed by Millikan.

Millikan presents her theory of linguistic signs as a theory which, unlike other semantic theories, is able to more adequately solve problems such as that which is called "Frege's puzzle". Millikan considers that the Fregean modes of presentation are inconsistent with a representational theory of mind.

In this work, the relevance of Millikan's objections to Frege is evaluated and the scope of these objections is discussed in the context of her own conception. We conclude that Millikan's analysis of Fregean semantics relies on false assumptions and, in consequence, her doctrine is weakened.

Frege's puzzle

In *Über Sinn und Bedeutung* ("Sense and Reference"), Frege distinguishes two types of meaningful expressions: proper names on the one hand and functions on the other. Proper names include both ordinary proper names and definite descriptions, and these are complete expressions that function as subjects in declarative sentences. Functions are incomplete expressions which act as predicates in the sentences and include concepts and relations.

As for the names, Alonzo Church, who has defended and developed the theory of Frege in several of his works, holds that "the most conspicuous aspect of its meaning is that a proper name always is, or at least is put forward as, a name of something" (Church, 1996, p. 4). Thus, a proper name is characterized by its use even though in some cases it may lack denotation and therefore not be the name of anything. The denotation is the object which is named by the term. But the denotation is only one aspect of the meaning. The sense, another fundamental aspect, is something that we perceive when we understand the expressions of a language regardless of whether we have a direct relationship with what is being denoted. According to Frege, the sense of a name corresponds to the "mode of presentation" of the object. Thus, for example, " $7 + 5$ " is a mode of presentation of the number 12, as " $4 + 2 + 6$ " is another mode of presentation of the same number. Both expressions display modes of presentation of the same abstract object. Similarly, "morning star" and "evening star" express different senses, modes of presentation of the light object which appears in the sky at dawn and dusk, namely the planet Venus. It is clear, therefore, that two names can denote the same object but may differ in sense.

Frege explicitly points out that the sense of a sign must be distinguished from the subjective images associated with that sign. A painter, a horseman, and a zoologist will probably connect different conceptions with the name "Bucephalus" (Frege, 1948 [1892], p. 212). Thus, the image present in an individual mind which is subjective is also clearly distinguishable from the sense shared by all those who

understand and use a common language. In a technically more accurate manner, Frege says that “A proper name (word, sign, sign combination, expression) expresses its sense, refers to or designates its referent. By means of a sign we express its sense and designate its referent” (Frege, 1948 [1892], p. 214). But, since we do not know all the aspects of an object, the name, “to the extent that it expresses a sense – when it actually denotes – not only designates an object but also picks some aspect of the object” (Gaeta, 1997, p. 22).

In addition to considering proper names, in “Sense and Reference” Frege also considers the sense and denotation of declarative sentences³. Every declarative sentence is a name whose sense is the thought that it expresses and the denotation is its truth-value, so (the) true or (the) false are two peculiar objects, while sentences are their names: True, then, is the object denoted by all true sentences, and False the object denoted by all false sentences.

The very notions that characterize the theory of meaning developed by Frege –which are only partially outlined here – were introduced by the author in connection with the so-called “paradox of identity”. At the beginning of “Sense and Reference”, Frege wonders whether identity is a relationship between objects or between object names. If identity were a relationship between objects that are denoted by names, such a relationship would remain unchanged whatever names are used to denote those objects; so “ $a = b$ ” does not differ from “ $a = a$ ” (supposing that “ $a = b$ ” were in fact true). If “ $a = b$ ” does not differ from “ $a = a$ ”, it would be possible to substitute one expression for another without changing the truth value of the sentences which contain them. Thus, from the statement:

(i) Hesperus is Phosphorus,

by applying the principle of interchangeability of the identical, we obtain the statement:

(ii) Phosphorus is Phosphorus.

But sentences (i) and (ii) are sentences with different cognitive value: (i) expresses a synthetic and a posteriori knowledge, while the knowledge that (ii) provides is analytic and a priori. So, according to Frege, the difference between the cognitive content of “ $a = a$ ” and “ $a = b$ ” is explained if we look not only at whether or not the signs denote the same thing but also in what way they do it. That is, if the senses or modes of presentation are taken into consideration:

A difference can arise only if the difference between the signs corresponds to a difference in the mode of presentation of that which is designated. Let a , b , c be the lines connecting the vertices of a triangle with the midpoints of the opposite sides. The point of intersection of a and b is then the same as the point of intersection of b and c . So we have different designations for the same point, and these names (“Point of intersection of a and b ”, “Point of intersection of b and c ”) likewise indicate the mode of presentation; and hence the statement contains true knowledge (Frege, 1948 [1892], p. 210).

In summary, the names “ a ” and “ b ” in the identity statement “ $a = b$ ” have the same object denoted but differ in sense. This is the resource that Frege offers to solve the paradox of identity or paradox of analysis. There are other consequences which result from indirect contexts – and which are not related to the cognitive value but to the truth value of sentences instead. But for the purposes of this paper it is sufficient to have noted the above mentioned.

³ In “Sense and Reference” Frege does not refer to the sense and reference of the terms of function; the topic is introduced in “On Concept and Object”, a work written on the same year as the first, and later in “Considerations on Sense and Reference”, originally unpublished and published only in 1969.

The discreet charm of the modes of presentation

In LTOBC Millikan presents her teleosemantic theory in opposition to the Fregean doctrine of meaning. But it is particularly in chapter 11 of *On Clear and Confused Ideas* (hereinafter OCCI) that Millikan develops the key points of her critique of the modes of presentation.

Millikan interprets Frege's semantics in terms of a purely internalist model: while recognizing that the *Sinn*, strictly speaking, is not dependent on the mind, grasping of what the *Sinn* is does depend on the mind⁴. The senses – in her opinion – are 'intermediaries' between the mind and the world, and since they are apprehended directly, they are transparent to the mind.

If senses are externalized as Frege does, and then senses or ways of visaging are taken to be transparent to mind, the immediate result is internalism concerning thought content. Thus Frege's senses determine their own referents, each distinguishing its referent from all other things, and nothing external to what is grasped within the mind is relevant to this determination. This view contrasts sharply with the thesis of this book (Millikan, 2000, p. 130).

Millikan believes that the meaning of a public term can be specified directly by its reference without the need to postulate a kingdom of senses. In her view, Frege "made a mistake in positing something common beyond *Bedeutung* that is grasped by the mind of every competent speaker using the same 'unambiguous linguistic form'" (Millikan, 2005, p. 66). According to the teleosemantic approach mentioned, "the public meaning of a referential term typically includes only its stabilizing function and its reference, and since the stabilizing function depends almost entirely on sentential context, the public meaning is essentially *just* reference" (Millikan, 2005, p. 66).

This idea is clearly illustrated in the fable of the tribes of Hubtots and Rumans that Millikan presented in LTOBC. This fable is analogous to Putnam's Twin Earth, whose implications, however, are oriented towards an explanation in the framework of the teleosemantic theory. Millikan imagines that Hubots and Rumans inhabit the same space, share their environment but are biologically programmed slightly differently: Hubots use for their subsistence a mineral supplement that is found only in gold, while Rumans require a mineral supplement that is found only in copper. Both gold and copper are abundant in the territory, but neither Hubots nor Rumans can distinguish them; they both use the same term "Golper" to talk about the pieces of substance that are around.

Given that neither Hubots nor Rumans can distinguish gold from copper, an internalist will believe that the extension for "H-Golper" is the same as the extension for "R-Golper", which includes both the copper pieces and the pieces of gold. For the teleosemanticist, on the contrary, given the fact that there are differences in the dietary needs, it can be assumed that Hubots use "Golper" to communicate about pieces of gold, while Rumans use "Golper" to talk about pieces of copper, so that the extension of the terms in the two languages is different. From the perspective of Millikan, what makes the two terms proliferate and remain in the respective languages of the two communities is their stabilizing role: what stabilizes the use of "Golper" for Hubots is that it makes possible the communication about a sufficient

⁴ Millikan recognizes that the *Fregean sense* differs from the subjective image present in the individual mind, but believes that the mind captures the sense in a transparent, direct way and therefore concludes that the meaning is totally dependent on the mind.

number of pieces of gold; while the stabilizing role for Rumans consists in the fact that the use of the term includes a sufficient number of pieces of copper. The tokens of "H-Golper" and "R-Golper" belong to different reproductively established families, since the sources of their respective proliferations and stabilizations are different.

In short, according to the teleosemantic theory, the determination of extensions of a term is determined by its stabilizing role and not by thoughts, images, intensions or anything like this in the "head" of a user.

Moreover, as a practical matter, their own agreement in judgment with others is often the only thing actually discerned by language learners and users as a check on their usage, hence the only factor (of this kind) controlling proliferation of an extensional term's tokens. So it cannot be part of such a term's stabilizing function to implant intentional attitudes towards its extension or members of its extension [...] *as recognized in any particular way, or as thought of under any particular description*. Our basic extensional terms do not have handed-down conventional intensions (Millikan, 2010, p. 57).

The rejection of the Fregean senses by Millikan obviously has implications for Frege's puzzle. Let us remember that the meaning or mode of presentation is precisely the resource that Frege introduces in order to distinguish the cognitive value of the statements of identity that express *a posteriori* knowledge from the other statements in which value is known *a priori*. In other words, Frege explained how the sentences " $a = a$ " and " $a = b$ " can have different cognitive value in spite of having the same reference. Similarly, Millikan aims to provide a way to solve the puzzle, but a way that does not use the notion of meaning. In accordance with the teleosemantic theory, the difference between " a " and " b " is a genetic difference: the token " a " and the token " b " in a statement of identity belong to different least types⁵; they are distinguishable in virtue of belonging to least types whose use histories are different.

In LTOBC Millikan believes that the stabilizing role of the statements of identity such as " A is B " can be summarized in the following two purposes:

(i) "To cause the hearer to merge the concept he associates with ' A ' with the concept he associates with ' B ' so as to produce one univocal concept" (Millikan, 1984, p. 195).

(ii) "[...] roughly, to cause the hearer to treat members of two particular least types in the same way – least types that ' A ' and ' B ' are members of". This involves changing the hearer's "[...] habits with respect to the reproductively established families of ' A ' and ' B ' [...]" (Millikan, 1984, p. 196).

Thus, for example, in the case of "Hesperus is Phosphorus" the hearer is expected to merge the two sets of intensions, those related to Hesperus and those linked with Phosphorus. Thus, the hearer combines the description associated with Hesperus (in this case, the brightest point that lights up the night sky) with the description associated with Phosphorus (the most luminous point in the sky in the morning) and generates a combined concept (the most luminous point in the night sky and early morning) that produces a token of thought (internal term) that assigns the same function of mapping both to "Hesperus" and "Phosphorus".

⁵ According to the conceptual map that Millikan develops, words can form reproductively established families (given that people use words in specific contexts for specific purposes which other people copy using the same words in similar contexts for similar purposes). These chains of copy can be conceived of as lineages that make up word families, genetic types. Each genetic type corresponds to the main dictionary entries that can be divided into subtypes and these, in turn, into sub-sub-types. Millikan calls the latter types "least types".

The result is not immediate. There is a need to generate or hear new phrases that contain the word "Hesperus" or the word "Phosphorus" in order to start using the new internal term for the same referent. Millikan describes this process as the formation of a new habit through a process that requires the passing of time.

The mergence of two concepts in the referent which were until now considered distinct (intensions of the term in statements that are not statements of identity) prepares the way for the synthesis of the knowledge of the referent. The new token combines thoughts that were previously separated shaping, respectively, the referent of the least type of "A" and the referent of the least type of "B". Well, it's just the intervention of the least types which justifies the impropriety of replacing "Hesperus is Phosphorus" with "Hesperus is Hesperus".

According to Millikan, then, statements of identity are not, strictly speaking, acts of judgment, but rather acts of co-identification:

There are lots of ways to do things right rather than wrong without making claims or holding theories. You don't make claims when you stand up to walk just because it's possible you could trip and fall. Similarly, you don't make claims when you develop substance concepts or when you mark identities in thought. Erroneous identification is not failure on the level of know-that but failure on the level of know-how. It is failure in an activity (Millikan, 2000, p. 172).

Rather than substance concepts being implicit judgments or theories, it is better to say that, as distinguished from an identity sentence or assertion, there is no such thing as an identity *judgment*. It is not the job of an identity sentence to induce a belief. Its job is to induce an act of coidentifying (Millikan, 2000, p. 172).

Let us close this section with a final passage where Millikan synthesizes the discreet charm of the modes of presentation:

Reidentifying is *not* analogous to uttering a mental identity sentence containing two descriptions or terms referring to the same. Indeed, careful examination of this act undermines the notion that there even exist modes of presentation in thought (Millikan, 2000, p. xii).

Frege *versus* Millikan: A false contrast

We have seen that Millikan believes that the senses, the modes of presentation, commit Frege with an internalist semantics and then the world plays no role in the determination of the reference. Let us remember Millikan's assertions that for Frege the senses are transparent to the mind: "[the senses] determine their own referents [...] and nothing external to what is grasped within the mind is relevant to this determination" (Millikan, 2000, p. 130). The state of the external natural world cannot, according to this view of Frege, alter *that which determines the referents* of one's thoughts.

One may ask whether the image that Millikan offers represents an appropriate characterization of Frege's semantics. Our answer to this question is decidedly negative. It should be noted that for Frege, when the names actually refer to something and the corresponding identity statements are true, the senses collect properties of the world, they express a knowledge that cannot be considered analytic. This is why the determination of the truth value of the identity statement " $a = b$ ", when " a " and " b " are material objects, requires an empirical investigation. That the morning

star and evening star are the same thing is a fact discovered empirically. Similarly, even though this is not an empirical knowledge, $7 + 5$, just as $9 + 3$ or any other of the infinite modes of presentation of the number 12, are not things that are in the head.

Moreover, as noted by Sainsbury, the kind of knowledge that interests Frege and provides a way to introduce the distinction between sense and reference is not knowledge about language or thought but knowledge of non-linguistic objects. So if by "externalist semantics" we understand that "the meanings are not in the head", then clearly an internalist perspective cannot be attributed to Frege (Sainsbury, 2002, p. 128-129).

On the other hand, Millikan seems to interpret Frege in a way that recalls the criticisms of the traditional theory of meaning that Putnam makes in "The Meaning of 'Meaning'" (1975). According to Putnam, the traditional theory is based on two false assumptions. First, that knowing the meaning of a term is only a matter of being in a certain psychological state, and second, that the meaning of a term (in the sense of its "intension") determines its extension. It should be noted that regardless of Putnam's proposal against traditional semantics in his theory of reference, what he calls "intension" seems to correspond, at least by its function, with the Fregean senses. And in the same way that Putnam relates the intensions with certain psychological states, Millikan seems to attribute a feature which is similar to the modes of presentation. The conclusion that Millikan extracted from the example of the tribes of Hubots and Rumans, on the other hand, is coincident with the maxim extracted by Putnam from the example of the Twin Earth: "the meaning does not determine reference".

This internalist reading that Millikan makes of Frege is the main reason for Millikan's rejection of the modes of presentation. But if Frege is not an internalist, if the meaning is not in the head and if the display modes are anchored in the characteristics that the objects in the world actually possess, why then ignore that the senses are nothing but the reflection of those characteristics in the name? After all, the reference always seems to be associated with some description. But the content of such description does not depend neither on the psychological state of the speaker nor on the subjective image that he has in mind but, rather, on the language conventions accepted by a community of speakers. These are non-arbitrary conventions that indicate how the terms are used in successful communication, both in everyday communication and in scientific contexts. And this situation is not more than the idea contained in the modes of presentation.

Moreover, Millikan argues that the Fregean modes of presentation are incompatible with a representational theory of mind. But it should be noted that Frege's theory and Millikan's doctrine are at two levels of analysis which can be well differentiated. Millikan's theory of language emerges from a genetic analysis and subordinates its contents to this point of view. In the case of Frege, on the other hand, his theory is a philosophical elucidation that has nothing to do with the functioning of the mind.

The analysis which arises from a genetic epistemology and which explains, for example, how the concept of number is formed is totally alien to the theoretical issue that Russell develops under the logicist program. A genetic theory of the formation of the concept of number has to be weighed against another rival theory which is at the same level, not with a theory whose purpose is different. Similarly, a theory about the functioning of the *mind* cannot be contrasted with a philosophical-elucidative theory of language. The philosophical examination of the concept of identity has nothing to do with the question of how the mind reidentifies substances. Thus, to the extent that Frege's semantics and Millikan's teleosemantic theory are located

in different domains, they could ultimately coexist each in their own field. And the same applies to the results of empirical research on the formation of numerical notions in the child's mind which do not constitute a refutation of the definition of natural number developed by the logicians.

Millikan appears to emphasize the virtues of her own theory by exalting the alleged errors in Frege's conception. However, if the merits of Millikan's theory are in inverse relation with the merits of Frege's theory and if, in addition, this perspective leads to judging Frege's doctrine wrongly, then the resulting situation, rather than strengthening Millikan's doctrine, seems to do the opposite and weaken it.

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Submitted on February 10, 2015

Accepted on February 17, 2015