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The Semantic Significance of Frege's Puzzle

Resumen: En “¿Puede Frege formular el puzzle de Frege?”, Stavroula Glezakos argumenta que el puzzle de Frege respecto del significado cognitivo de los enunciados de identidad no tiene el estatus de un genuino problema de la semántica. El puzzle surge solamente bajo la siguiente condición: que la solución específica fregeana del puzzle sea aceptada. A partir de esto, Glezakos concluye que Frege no puede realmente formular su puzzle. Ni los no-fregeanos ni los fregeanos deberían desconcertarse por este. El propósito de este artículo es mostrar que la evaluación deflacionaria, de Glezakos, del puzzle no puede sustentarse. Se argumenta que el puzzle de Frege no se refiere al análisis semántico del lenguaje natural, como lo asumen Glezakos y Howard Wettstein, sino a la construcción de una interpretación semántica para el lenguaje de la ciencia, el cual nos permite comunicar de una manera adecuada nuestros actos y actitudes cognitivos. Así entendido, el puzzle tiene el estatus de un genuino problema, cuya solución es un problema clave de la semántica.

Palabras claves: *Puzzle de Frege. Stavroula Glezakos. Howard Wettstein.*

Abstract: In “Can Frege Pose Frege's Puzzle?”, Stavroula Glezakos argues that Frege's puzzle about the cognitive significance of identity statements does not have the status of a genuine problem of semantics. The puzzle arises only on the condition that Frege's specific solution of the puzzle is accepted. From this she concludes that Frege cannot really pose his puzzle. Neither Non-Fregeans nor Fregeans should be puzzled by it. The aim of this paper is to show that Glezakos' deflationary assessment of the puzzle

cannot be sustained. It is argued that Frege's puzzle does not refer to the semantic analysis of natural language, as Glezakos and also Howard Wettstein assume, but to the construction of a semantic interpretation for the language of science that allows us to communicate our cognitive acts and attitudes in an adequate way. So understood, the puzzle has the status of a genuine problem whose solution is a key problem of semantics.

Key words: *Frege's puzzle. Stavroula Glezakos. Howard Wettstein.*

1. Introduction

The puzzle presented by Frege on the first pages of “On *Sinn* and *Bedeutung*” (1892, SB) has various readings. This is because Frege's presentation of the puzzle is both vague and ambiguous. He introduces the puzzle in the opening paragraph of SB as follows:

Equality gives rise to challenging questions which are not altogether easy to answer. Is it a relation? A relation between objects, or between names or signs of objects? In my *Begriffsschrift* I assumed the latter. The reasons which seem to favour this are the following: $a=a$ and $a=b$ are obviously statements of different cognitive value [Erkenntniswert]; $a=a$ holds *a priori* and, according to Kant, is to be labelled analytic, while statements of the form $a=b$ often contain very valuable extensions of our knowledge and cannot always be established *a priori*. ... Now if we were to regard equality

as a relation between that which the names 'a' and 'b' designate [*bedeuten*], it would seem that $a=b$ could not differ from $a=a$, *i.e.* provided that $a=b$ is true. A relation would thereby be expressed of a thing to itself, and indeed one in which each thing stands to itself and to no other thing (Frege, 1892, 151).

This description strongly suggests that Frege's puzzle refers to the nature of the identity relation. The challenge is to explain how an identity statement can be both true and informative. To say of two different objects that they are identical is wrong, and to say of one and the same object that it is identical with itself is trivial. To solve this problem, one might argue that identity is not a relation between objects, but between names of objects. This is the approach adopted by Frege in the early *Begriffsschrift*. It is rejected by him in the paragraphs that immediately follow the quotation above.

However, in SB, Frege does not answer the question what the *relata* of the identity relation are. He does not say, neither explicitly nor implicitly, that identity is a relation between objects. It is hence highly implausible to assume that the puzzle he has in mind really refers to the nature of the identity relation.

To understand the puzzle more closely, we must look at the closing paragraph of SB, where Frege returns to the starting-point of this essay:

Let us now return to starting-point. If we found ' $a=a$ ' and ' $a=b$ ' to have different cognitive values, the explanation is that for the purpose of acquiring knowledge, the sense of the sentence, *viz.*, the thought expressed by it, is no less relevant than its *Bedeutung*, *i.e.* its truth-value. If now $a=b$, then indeed the *Bedeutung* of ' b ' is the same as that of ' a ', and hence the truth-value of ' $a=b$ ' is the same as that of ' $a=a$ '. In spite of this, the sense of ' b ' may differ from the sense of ' a ', and thereby the thought expressed by ' $a=b$ ' will differ from that expressed by ' $a=a$ '. In that case the two sentences do not have the same cognitive value. If we understand by 'judgement' the advance from the thought to its truth-value, as in the present paper, we can also say that the judgements are different (Frege, 1892, 171).

Note that the puzzle is formulated here partly in semantic and partly in epistemological terms. The puzzle has, accordingly, both a semantic and an epistemological reading. On the semantic reading, which is the standard one, the puzzle refers to the linguistic phenomenon that " $a=a$ " and " $a=b$ " do not have the same informational value, and the challenge is to explain this difference. The role of the puzzle is to introduce a criterion of adequacy for theories of proper names, which reads: a theory of proper names must be able to explain the difference between " $a=a$ " and " $a=b$ " with regard to their informational value. It is this criterion that seems to motivate Frege's distinction between the *Sinn* and the *Bedeutung* of a proper name.

On the epistemic reading, the puzzle refers to the epistemic phenomenon that we may extend our knowledge by making a judgement of the form $a=b$. In this case, the role of the puzzle is a heuristic one. It helps us to understand both the logical structure of our judgements and the conditions on which the acquisition of knowledge depends: to judge and also to recognize that $a=b$, we must firstly grasp the *Sinn* of " $a=b$ ", and secondly advance to the *Bedeutung* of " $a=b$ ", its truth-value.

Glezakos' criticism of the puzzle is based on the semantic reading. She divides Frege's reasoning about the puzzle into two parts: the presentation of the puzzle and the resolution of it. The task of the former is to generate puzzlement and the task of the latter is to resolve it. To avoid a vicious circle, the first part must be carried out without presupposing the second, she argues (Glezakos, 2009, 202 f.). This means that Frege must show that there is a cognitive difference between identity statements of the form $a=a$ and identity statements of the form $a=b$ without employing his notion of *Sinn*. Glezakos holds that this is not possible. From this she concludes that Frege did not really pose a puzzle. The problem is that Frege does not get his puzzle started, that is, he does not succeed in generating any puzzlement. A resolution of the puzzle is hence not needed.

My aim in this paper is to defend Frege against this criticism. In section 1, I shall critically discuss Glezakos' argument. In the remaining

sections, I shall develop and defend what I take to be a more adequate assessment puzzle. Section 2 focuses on the semantic version and section 3 on the epistemological one. Finally, in section 4, the connection between these versions is explained.

2. Glezakos' Criticism of Frege's Puzzle

Glezakos assumes that Frege's puzzle refers to two types of identity statements that are roughly characterized by Frege as statements of the form $a=b$ and statements of the form $a=a$, respectively. The puzzle is that, on the one hand, statements of the form $a=b$ and $a=a$ "differ in their epistemic profiles", whereas, on the other hand, they are "made true by the same object's self-identity" (Glezakos, 2009, 202).

To explain the difference more closely, Frege must explain "what makes it the case that an identity statement is of the form $a=a$ as opposed to $a=b$ " (Glezakos, 2009, 203). Suppose that someone associates, on some occasions, the name 'Aristotle' with the sense of 'the teacher of Alexander the Great' and, on other occasions, with the sense of 'the Stagirite philosopher'. Suppose further that this person associates the first occurrence of 'Aristotle' in "Aristotle=Aristotle" with the first sense and the second occurrence with the second sense. In this case, the sentence "Aristotle=Aristotle" appears to be an instance of the form ' $a=b$ ', because it expresses the sense of "The teacher of Alexander the Great=the Stagirite philosopher", although, syntactically, it has the form ' $a=a$ ' (Glezakos, 2009, 205).

It would be natural to say that an identity statement has the form $a=b$ if and only if the *Sinn* of 'a' is different from the *Sinn* of 'b'. This approach, however, is not open to Frege, because it "appeals to something like the theoretical notion of *Sinn*" (Glezakos, 2009, 202 f.). The problem is that the approach is circular, because it presupposes Frege's specific solution of the puzzle.

To pose the puzzle in a neutral way, without making any theoretical commitments, Frege must say that an identity statement has the form $a=a$ when the same name flanks the identity sign,

and $a=b$ when distinct names flank the identity sign (Glezakos, 2009, 203 f.). This leads to the question what the conditions are for the identity of names. In Glezakos' view, Frege tackles on this question in the famous second footnote of SB, where he says, with regard to the name 'Aristotle', that we can tolerate variations in the assignment of *Sinn* among users of that name "so long as the *Bedeutung* remains the same" (Glezakos, 2009, 204). This explanation suggests the following criterion of identity for names: "we have the same name whenever we have the same sign/referent combination" (Glezakos, 2009, 204).

If I understand her correctly, Glezakos reads the footnote as an answer to the question what the conditions are for two inscriptions to be occurrences of the same name N. Frege holds, on this reading, that two occurrences of N (say, 'Aristotle') are occurrences of the same name if and only if the occurrences refer to the same object. If, for instance, in the language of one person, 'Aristotle' refers to Aristotle, while, in the language of another person, 'Aristotle' refers to Kant, then we have two names 'Aristotle', and not one. This, however, does not seem to be the question actually discussed by Frege. The footnote reads:

In the case of an actual proper name such as 'Aristotle' opinions as to the sense may differ. It might, for instance, be taken to be the following: the pupil of Plato and teacher of Alexander the Great. [...] So long as the *Bedeutung* remains the same, such variations of sense may be tolerated, although they are to be avoided in the theoretical structure of a demonstrative science and ought not to occur in a perfect language (Frege, 1892, 153).

Clearly, Frege does not discuss here the identity conditions of names, but the semantic constraints that a name N must fulfill when we want to use N in science. One possible constraint is that the speakers must assign the same reference to N, and another is that the speakers assign the same sense to N. His question is not whether two occurrences of 'Aristotle' with different senses but the same reference are occurrences of one and the same name, but the question whether in

a perfect language of science all occurrences of 'Aristotle' must have the same reference or also the same sense.¹

Now, the criterion of name identity that Glezakos attributes to Frege implies that, in order to recognize whether two occurrences of a name are occurrences of the same name, we must recognize whether the occurrences refer to the same object. Given this account of name identity, there is no difference in epistemic profile between $a=a$ and $a=b$, she holds (Glezakos, 2009, 205 f.). In both cases, we must decide whether two names refer to same object. From this she eventually concludes that Frege cannot pose his puzzle in a non-circular way.

In my own view, the problem of circularity does not actually arise, for Frege. As a matter of fact, in his presentation of the puzzle, he does not characterize the difference between $a=a$ and $a=b$ in semantic terms like '*Sinn*', but in epistemological terms such as 'cognitive value', 'a priori' and 'a posteriori'. The difference stressed by him to generate puzzlement is that, in most cases, $a=a$ and $a=b$ are not *cognitively* equivalent, that is, they cannot be verified in the same way. Alternatively, Frege could also characterize the difference in logical terms, saying that, in most cases, statements of the form $a=a$ and $a=b$ are not *logically* equivalent, that is, they do not have the same logical consequences. In neither case, his notion of *Sinn* is somehow presupposed.

Consequently, Frege is able to answer the question posed by Glezakos, "What makes it the case that an identity statement is of the form $a=a$ as opposed to $a=b$?", in a non-circular way. He can say, for instance, that an identity statement is of the form $a=a$ if and only if it can be verified by logical means alone. On this criterion, an occurrence of the sentence "Aristotle=Aristotle" is an instance of the form $a=b$ if and only if the speaker depends on empirical evidence to verify it, and an occurrence of this sentence is an instance of the form $a=a$ when the speaker does not depend on such evidence to verify it.

3. The semantic version of Frege's puzzle

Generally speaking, a puzzle (or *paradox*) is a conflict between two or more claims that are

all intuitively true. It is possible to reconstruct Frege's puzzle as a puzzle in this sense. On the semantic reading, the claims that contradict one another refer to the sense of identity-statements of the form $a=b$.

Intuitively, two atomic sentences express the same sense when they predicate the same property or the same relation of the same object(s). The senses of two atomic sentences are identical when their subject(s) and their predicate are identical. This implies:

- (I) Pairs of sentences of the form $a=b$ and $a=a$ express the same sense when they are both true.

When Frege formulates the puzzle in terms of the question what the *relata* of the identity relation are, the point he wants to make is that sentences of the form $a=b$ and $a=a$ seem to have the same sense when identity is considered as a relation between objects. For, in this case, both the predicate and the subject of $a=b$ and $a=a$ are identical, given that $a=b$ is true. In Frege's words:

[I]f we were to regard equality as a relation between that which the names '*a*' and '*b*' designate [*bedeuten*], it would seem that $a=b$ could not differ from $a=a$, *i.e.* provided that $a=b$ is true (1892, 151).

To avoid this consequence, identity may be construed as a relation between names or signs of objects. In this case, the predication (or functional application) in $a=b$ is different from the predication in $a=a$.

The second claim, which is also intuitively true, but incompatible with the first, is that two sentences have different senses when they have different cognitive values. This implies:

- (D) Pairs of sentences of the form $a=b$ and $a=a$ may express different senses even when they are both true.

Note that this formulation of the puzzle does not presuppose Frege's notion of *Sinn*. Even Russell or Quine, who reject Frege's notion of *Sinn*, may accept this formulation.

To resolve the puzzle, Frege distinguishes between two notions of sense that he calls *Sinn* and *Bedeutung*, respectively. Note that, in German, 'Bedeutung' also means 'sense'; the literal translation of 'Bedeutung' into English is not 'reference', but 'meaning'. The technical notion of *Sinn* satisfies (D), and the technical notion of *Bedeutung* satisfies (I).

The role of the puzzle is here to justify the distinction of two notions of sense that Frege did not clearly distinguish in his first logical system, the *Begriffsschrift*. The puzzle does not justify the further claim that proper names actually express a *Sinn*. We could accept the distinction and still argue that we do not need to assign a *Sinn* to proper names, because the cognitive significance of sentences simply does not matter to us.

In his discussion of the *Sinn* and the *Bedeutung* of whole sentences in SB, Frege takes it for granted that the cognitive significance of sentences does matter to use; he justifies only the assumption that their *Bedeutung*, i.e. their truth-value, matters, too (cf. 1892, 156 ff.). The obvious reason is that Frege is concerned in SB primarily with the *scientific use* of language. The speech acts that are typically performed in science are acts that express cognitive acts and attitudes ('judgments' and 'thoughts') like the communication of a scientific discovery. The point of such acts is exactly the exchange of information. It therefore goes without saying that, as far as science is concerned, the informational value of sentences does matter.

To show that the *Bedeutung* of sentences also matters, Frege contrasts their use in science with their use in poetry, arguing that while in poetry we are interested in the poetic value of sentences, but not in their truth-value, we are interested in science in their truth-value, but not in their poetic value. The upshot of this discussion is that, in science, we are mainly interested in two values of sentences: their cognitive (informational) value and their truth-value. This, finally, implies that in science, but not necessarily in natural language, we must assign both a *Sinn* and a *Bedeutung* to the proper names.

4. The epistemological version of Frege's puzzle

On the epistemological reading, the goal of Frege's theory of *Sinn* and *Bedeutung* is to

explain what the conditions are for the acquisition of knowledge. Some basic principles of this epistemological theory are:

- To recognize that p , it is necessary, but not sufficient, to grasp the thought that p .
- To recognize that p , it is also necessary to recognize the truth of the thought that p .
- We can grasp a thought without recognizing it as true.
- To judge is to advance from a thought to its truth-value.

Regarded from this point of view, Frege's puzzle refers, in the first place, to our cognitive acts and attitudes. The puzzle is that, on the one hand, the judgement that $a=a$ seems to be identical to the judgement that $a=b$, because in both cases the same relation is predicated of the same object (provided that $a=b$ is true), while, on the other hand, these judgements must be different because the judgement that $a=b$ extends our knowledge whereas the judgement that $a=a$ is trivial. The closing paragraph of SB suggests that it is this puzzle that Frege ultimately wishes to resolve:

If now $a=b$, then indeed the *Bedeutung* of 'b' is the same as that of 'a', and hence the truth-value of ' $a=b$ ' is the same as that of ' $a=a$ '. In spite of this, the sense of 'b' may differ from the sense of 'a', and thereby the thought expressed by ' $a=b$ ' will differ from that expressed by ' $a=a$ '. In that case the two sentences do not have the same cognitive value. If we understand by 'judgement' the advance from the thought to its truth-value, as in the present paper, we can also say that the judgements are different (1892, 171).

The role of the puzzle in this context is a heuristic one. It allows us to determine the conditions on which the acquisition of knowledge depends. The conclusion at which Frege finally wants to arrive is that neither the *Sinn* alone nor the *Bedeutung* alone is sufficient for the acquisition of knowledge, but only the *Sinn* together with the *Bedeutung*:

We can never be concerned only with the *Bedeutung* of a sentence; but again the mere

thought alone yields no knowledge, but only the thought together with its *Bedeutung*, i.e. its truth-value. Judgements can be regarded as advances from a thought to a truth-value (1892, 159).

It is clear that cognitive significance is a property of cognitive acts, in the first place, and not a property of sentences. A sentence is cognitively significant only in a derivative sense, namely, in the sense that the judgement expressed by it is cognitively significant. Consequently, to explain the semantic difference between sentences of the form $a=b$ and sentences of the form $a=a$, we must first explain the cognitive difference between judgements of the form $a=b$ and judgements of the form $a=a$. According to this order of explanation, the epistemological version of the puzzle is more fundamental than the semantic one.

5. The connection between the semantic and the epistemological version

One might object to the semantic version of the paradox that Frege confuses semantic constraints with epistemological ones. He seems to presuppose, without any justification, that it is the task of a semantic theory to explain the epistemological aspects of identity statements. We could object, as Howard Wettstein (1986) does, that Fregean semantics has rested on the mistake to accept the solution of Frege's puzzle as a criterion of adequacy for semantic theories. An adequate semantic theory does not need to explain the epistemological differences between $a=b$ and $a=a$; it suffices that such a theory explains the referential properties of language (cf. 1986, 200-204).

This objection overlooks, I think, the status of Frege's criterion of adequacy. We have already seen that Frege is concerned in SB, not with the semantic properties that the actual name 'Aristotle' actually has in natural language, but with the properties that this name should have if it is used in the language of science. Frege's theory of sense and reference is not to be understood

as a theory describing the semantic properties of natural language, but as a theory prescribing what the properties are that an expression must have when we want to use it in science. It is a normative theory, and not a descriptive one.

Now, the connection between the semantic and the epistemological puzzle is that, in science, we use sentences to communicate knowledge and, more generally, to exchange information. Suppose, for instance, that we wish to communicate the scientific discovery that the morning star is identical to the evening star. To this end, we need a language that is not only capable of predicating the identity relation of the referents of 'the morning star' and 'the evening star', but also of expressing the belief that the morning star is identical to the evening star. This means, in other words, that our semantic interpretation of the language of science must be sensitive to the cognitive difference between the judgment that $a=a$ and the judgement that $a=b$.

Wettstein asks: "Why did Frege take it for granted that semantics ought provide an explanation of cognitive significance?" (1986, 200). As we have seen, Frege does not take this for granted. He is not concerned with the semantics of natural language, but with the construction of an adequate semantic interpretation for the language of science. He takes it for granted that such an interpretation must enable us to express our cognitive acts and attitudes. His puzzle does not provide a criterion of adequacy for the semantic analyses of natural language, but for the construction of a perfect language for science. It reads: in science, we must interpret our sentences in such a way that they are capable of expressing our knowledge.

This criterion sounds very reasonable. It can be derived from the principle of consistence. To see this, suppose that we need a language whose sentences express Fregean thoughts in order to be able to express our overall theory of the world (our knowledge). The existence of Fregean thoughts is then a condition for the successful assertion of our theory. Our theory, however, denies the existence of such entities. In this case, our theory is inconsistent in the performative sense that the conditions of its truth are incompatible with the condition of its successful assertion: when the

theory is true, it cannot be successfully asserted, and *vice versa*. We cannot consistently deny the existence of Fregean thoughts in a theory whose successful assertion depends on the existence of such entities.² From this we may conclude that Frege's criterion for the construction of an adequate semantic interpretation for the language of science is already implied by the principles of logic, broadly construed. This might have been the reason why Frege took it for granted.

Notes

1. The same objection applies to Glezakos' discussion of Frege's 'Dr. Gustav Lauben' example (2009, 205-206). It is very hard to see that Frege is concerned with the question of the identity conditions of names, in this context. He supposes that the name 'Dr. Gustav Lauben' is associated with different senses in the languages of two different speakers. To remove the ambiguity, he supposes that the speakers use different names to refer to Dr. Gustav Lauben, namely, 'Dr. Lauben' and 'Gustav Lauben', respectively. But this does not imply that Frege individuates names in terms of sense, as Glezakos assumes.
2. For a systematic defence of this performative principle of consistency, see Greimann 2014.

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