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FREGE'S ANALYSIS OF SENTENCES OF THE FORM $A=B$

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Do sentences of the form $a=b$ always have the same epistemological character? Are they always informative or always trivial? At first sight, it may seem that such sentences have a fixed epistemic character. But is it true?

What is a , b , and $=$? Frege introduced special symbols to denote names, descriptions and their relation [1. P. 26–43]. These symbols look like algebra's symbols but they are not connected with it, they have other meanings. The symbols a and b stand for names or definite descriptions. The symbol $=$ stands for identity of the objects referred to by a and b (if a and b refer to different objects, $a=b$ is false) or identity of the object referred to by both a and b (if they corefer) with itself.

We should define some terms to analyze sentences of the $a=b$ form. A name is a phrase referring an object; a definite description is an expression which gives a notion about an object (it reflects a specific feature or characteristic of the object) – further: just a description; reference is something a name or description designates; the sense of a name is a characteristic of its referent we have in mind when using the name or the description.

One more key definition is a referential identity or coreference. Coreference (or referential identity) is a phenomenon characterized by the same reference of the two different expressions.

For example, we can take two names – name 1 and name 2 – and two senses with the same reference – sense 1 and sense 2 respectively. So, we can call one object in two ways: using the name 1 or name 2. What is more, these names have distinct senses though they refer to the same object. So, we have only one object but two descriptions and senses.

Consider a sentence of the form $a=a$. It contains only one name or description and so such sentences are always a priori and trivial (this equality accords from the law of identity). For example, it may be the sentence an apple is an apple. This sentence cannot give any new information, it is evidently.

As for sentences of the $a=b$ form, they may be either trivial (a priori) or informative (a posteriori). We can see some examples of trivial sentences:

– uncle=parent's brother – this sentence is trivial because the sense of the parent's brother is expressed by the name uncle, the senses of the name and the description are synonymous;

– Shakespeare's mother=mère de Shakespeare – these are two phrases in different languages which express absolutely the same sense.

Here are also some examples of informative sentences of the form $a=b$:

– Pushkin = the sun of Russian poetry – the description shows Pushkin's influence on Russian poetry but the name «Pushkin» as it is does not mean this;

– $30=20+16$ – this algebraic identity designates the possibility of decomposing the number 30 into numbers 20 and 16; the number 30 does not mean the sum of 20 and 16 and there is not senses of 20 and 16 in the reference of 30.

The first type sentences of the form $a=b$ are trivial but the second type sentences are informative. It is not enough to have two different names in the second type sen-

tences to be informative. What does the epistemic character depend on? It depends on the quantity of names or descriptions with different senses in the sentence [2. PP.1–18]. The presence of two senses of names or descriptions produces the potential informativeness in the second type sentences. As a result, senses combine with each other and may potentially give us new knowledge about the object. On the other hand, there is only one sense of synonymous names or description in the first type sentences. Obviously, such sentence cannot be informative like sentences of the form $a=a$ containing only one name and its sense.

Introduction of terms like sense and reference allows G. Frege to analyze sentences and their specifications. The terms help to explain the distinction in epistemic character between sentences of the form $a=a$ and sentences of the form $a=b$.

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