

ON FREGE'S PHILOSOPHY OF LANGUAGE - A LINGUISTIC APPROACH

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Frege's linguistic views are exemplified by an analysis of the following topics: proper and common names, the definite and the indefinite article, the singular and plural distinction, words and sentences, together with the role of the copula, and the relationship of syntactical and semantical categories. His endeavour to overcome the ambiguities of natural language inherently connected with his logical investigations failed. In fact, his conceptions are relying on accidental features of a particular natural language, namely German. Therefore, they are neither valid in general nor relevant from the logical point of view. They are influenced rather by his philosophical prejudices than by empirical results obtained in comparative philology and linguistics at all.

1. Introduction. When one speaks about Frege's philosophy of language,¹ what kind of language did he want to study? If it really was only the language of logic and mathematics, was it appropriate to adopt the German usage and to utilize its contingent features as arguments supporting his ontology? That his interests were broader, seems to be also confirmed by his reference to the science of language, concretely to A. H. Sayce's **Introduction** (London 1880), made in connection with the thesis that sentences are prior to words. According to Frege, the sentence-word (Satzwort) is the archetype of human speech.²

Frege's philosophical views are characterized by his endeavour to overcome the ambiguities of natural language, "to break the domination of the word over the human spirit" (BuG, p. VI). He proclaims "the fight with the logical shortcomings of language" (NSchWB I, p. 272). But contrary to it, he appeals to the "common German linguistic feeling" (BuG, p. 195) or finds in the German usage indicated by the singular - "zehn Mann", "vier Mark", "drei Fass" - a confirmation of his view that numbers are attributed to concepts (GLA, § 52).

When trying to reconstruct his views, as objectively as possible, one cannot overlook two formal obstacles. First of all, it is his attitude to opinions of past or contemporary thinkers holding similar conceptions. He criticizes, for instance, Mill's empirical justification of mathematics, but does not mention his semantics of connotation and denotation, neither his theory of names. B.

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Kerry and A. Korselt give exact references to Bolzano's *Wissenschaftlehre*, but Frege who otherwise carefully analyzes their papers³ does not react to these hints. Further, it is the oscillation between the common usage of terms and his modified version.

It can be doubted that Frege utilizes, in fact, the term "Begriff" in a "purely logical use" (BuG, p. 192). According to him, the word "planet" does not designate an object, but a concept (GLG III/1, p. 308), i.e. a class, whose elements are individual planets, e.g. "Earth" or "Mars". Frege explicitly says that a concept is the meaning of a grammatical predicate (BuG, p. 193), a possible predicate (GGA II, § 56). A concept is also a function "whose value is always a truth-value" (FG, p. 15). But he uses the term "Begriff" also in its usual significance as an objective counterpart of the subjective idea (Vorstellung) when speaking about the geometrical number (GLA, § 19), when comparing properties of objects with notes (Markmale) of concepts (NSchWB II, p. 150). He even admits that the concept "cat" was obtained by abstraction (GLA, § 34). He maintains that concepts have always a predicative nature, (BuG, pp. 193, 198), but he does not object against their position in the place of subjects in judgments (BuG, p. 198).

In the following analysis, I shall discuss three topics only which will be compared with the views of O. Jespersen⁴ a philosophically minded linguist whose monographies were published in the twenties of the XX. century, when Frege was still alive.

2. Proper and common names, both articles and the singular-plural distinction. In my analysis of his views concerning proper names (Eigennamen) and common names or "concept words" instead to say "Begriffsname" (GGA II, § 64) in order to stress the strict disjunction of proper names and concepts words (GLG III/1, p. 308) I shall concentrate my attention to grammatical aspects only.

The basic features of Frege's standpoint are in the main elaborated in his mathematical works and are, thus, an inherent component of his professional work. They can be summarized as follows.

(i) A proper name or a name of an object is a sign which should designate an object (GGA I, § 43). It is the purpose of a proper name to designate a single object (GLG III/1, p. 298). In this sense it differs from concept word which primarily refer to a concept.

(ii) It is characterized by the definite article: the definite article has to designate just one single object (GLA, § 23). The use of the definite article is appropriate only for a singular object designated by a proper name (GLA, §

120). With the definite article a certain singular object of scientific investigation is referred to (GLA, § 38).

(iii) The definite article changes a **nomen appellativum** in a **nomen proprium**, i.e. in an expression which has to designate a singular object (NSchWB I, p. 89f). It serves to form from a concept word a proper name (GGA I, § 11). This transformation is correct if and only if the proper name designates one single object. It is, therefore, incorrect to form from the concept (or concept word) "positive square root from 2" - by inserting the definite article - the object (proper name) "the positive square root from 2" (GGA I, § 11, GLA, § 97, NSchWB II, p. 96). It is, however, correct to transform such **nomen appellativum**, as e.g. "Besieger von Waterloo" or "Sieger von Austerlitz", which designates concepts, but not objects, into proper names (Einzelnamen) "der Besiegte von Waterloo" or "der Sieger von Austerlitz" (NSchWB II, p. 155). A concept word with a definite article has to be considered as a proper name (GLA, § 51). This holds also in the case of such expressions as "The negation of the thought that 3 is greater than 5". The definite article indicates that this expression designates a singular (Einzelnes), namely a thought; the whole expression is a singular name, a representative of a proper name (LU III, p. 156).

(iv) The meaning of a proper name is the object itself which we designate by it (SB, p. 30). A proper name can never be an expression for a predicate, it can only by a part of such an expression (BuG, p. 200). A proper name is unable to be in the plural, as e.g. "Friedrich the Great" or "the chemical element gold" (GLA, § 38). A plural is possible only for concept words (GLA, 38). If a word is used with an indefinite article or in the plural without article, it is a concept word (GLA, § 51, BUG, p. 195).

This strict differentiation of proper names and concept words with the underlying dichotomies "singular - plural" and "definite - indefinite articles" together with the corresponding ontological disjunction of object and concept is for Frege absolute. It has to secure, as it seems, his view that numerals, e.g. "die Zahl Eins" or "die Eins" are proper names (GGA II, § 100; GLA, § 57), resp. that numbers are individual objects (GLA, § 45) and in this sense also ultimate subjects for predication. At the same time it helps to avoid the possibility to conceive numbers as properties of things (GLA, § 50).

Against the above sketched conception based on purely formal aspects of German, namely on its syntactical categories, the following linguistically orientated objects can be raised.

It is a well-known fact that many languages lack forms for designating the antithesis of singular and plural. The article is not occurring in slavonic

languages, Latin or archaic Greek. These formal criteria are, therefore, not universally valid and are for logical or ontological purposes useless. Even in a language containing the above mentioned dichotomies, there are many exceptions. There are proper names in the plural, e.g. "The Pyrenees", "the United States", "in the days of the Stuarts", "there are two Rembrands in this gallery" (JES-PhG, p. 69f). There are concept words in the singular, e.g. meat, water. There are proper names with an indefinite article, which became concept words, e.g. "he is a Diogenes", "he is a Thomas" (JES-PhG, p. 67). Frege is aware of the possible transition from proper names to concept words and vice versa in natural languages, but considers it as an expression of their unexactness (NSchWB II, p. 151, 164). And further, there are concept words with a definite article which became a proper name, e.g. "the king is dead, long live the king" (JES-PhG, p. 109). Taking into account empirical facts, the distinction of proper and common names (Frege's concept words) is "of degree only" (JES-PhG, p. 67). "Linguistically it is utterly impossible to draw a sharp line of demarcation between proper names and common names" (JES-PhG, p. 69). In fact, a substantive can serve equally well to designate a class or a single element of a class (JES-PhG, p. 203f).

Frege refuses to admit "unbestimmte Gegenstände" and requires that every object be determined as existent and singular (GLG III/1, p. 308). He criticizes J. St. Mill for using the expression "die charakteristische Weise" (GLA, § 23), because there are many characteristic manners. Contrary to it, he speaks too often about "die Sprache" or "die Zahl" as if there would be just one language or one number.

The problem which Frege wants to overcome without analyzing the dichotomy "singular - universal" or "individuum - class" cannot be solved by linguistic means. It is unsolvable by reference to accidental features of a particular natural language. It depends on various factors, at least the following characteristics are relevant:

An individual has to be a single object, i.e. an object having certain space-time coordinates, if it is concrete, or an object conceived - by fiat, by postulating - to be single, if it is abstract. It has to be an object of interest and for this reason we adopt a proper name or name functioning as a proper name with the aim to designate such an individual. In deciding whether a name has to be considered as a proper name, one has to take into account the pragmatic dimension of the semiosis and rely on context value of the name rather than on its dictionary value (JES-PhG, p. 66). A grain of salt is something singular, but we shall hardly say that it is an individual which has to be named by a proper name. Cats as other animals are individuals, but a proper name will

be attached only to our cat, the animal we are interested in. What is an individual, a species or a genus in the biological hierarchy of organic nature is neither the business of logicians nor of linguists. Such a restriction holds in all other extralogical and extralinguistic instances as well.

3. Words, sentences and the role of the copula. Frege is convinced that the significance of an expression can be fully exhibited only in the context of a sentence: Only in the complete sentence have words, properly speaking, a meaning. It is sufficient if the sentence as a whole has a sense (GLA, § 60). It is not necessary that the singular words themselves have sense and meaning, if the whole sentence has a sense (NSchWB II, p. 183). Only in the context of a sentence the words mean something (GLA, § 62).

This standpoint is in any case controversial. The available historical material of comparative philology does not favour this or that solution of the priority problem (JES-L, p. 439). It is neither supported by our knowledge of the learning process in early childhood. "The child knows nothing of grammar; it does not connect words together, far less forms, sentences but each word stands by itself" (JES-L, p. 133). It is neither confirmed by communication acts among people speaking different languages who usually combine words with deictical gestures, but are not able to formulate and understand "complete sentences".

The priority of sentences is a consequence of Frege's philosophy. Only in the context of a sentence one can decide whether an expression is its subject, e.g. "the horse", or predicate, respectively part of the predicate, e.g. "is a horse". The distinction of these syntactical categories is the background of his ontology - for the differentiation of objects and functions, i.e. concepts or relations. The priority of sentences is closely connected with his analysis of the copula in subject-predicate sentences, because in the sentential context only one can study its various functions: subsumption, i.e. class-membership, subordination, i.e. class inclusion, equality or identity and existence (e.g. BuG, pp. 194, 197, 201f; GLA, §§ 51, 53, 57, 74).

When interpreting the verb "to be" as an expression of the identity (or equality) relation Frege becomes involved into a problematic discussion. Already in his *Grundlagen* (§ 57) he thinks that the sentence "Jupiter has four satellites" equals with the sentence "The number of the Jupiter satellites is four", "The number of the Jupiter satellites is the four" or "The number of the Jupiter satellites is the number four". In all these sentences the verb "is" is for Frege not the copula of traditional logic, but the expression of identity, namely "is equal", or "is the same as". These sentences differ, therefore, e.g. from the sentence "The sky is blue" where "is" is the copula only.

I really wonder what one cannot say - adopting Frege's argumentation - analogously "The colour of the sky is blue" or "The colour of the sky is the blue", and interpret the "is" as the expression of equality or identity as well.

Take another, rather very popular example: "Der Morgenstern ist die Venus" (BuG, p. 194) or "Der Abendstern ist die Venus" (NSchWB II, p. 150). These sentences have to be understood in the sense of "Der Morgenstern ist nichts anderes als die Venus" or "Der Abendstern ist zusammenfallend mit der Venus". I strongly doubt that any "unphilosophical man" would consider "ist nichts anderes als" to be the same as "ist". The English version "Phosphorus is Hesperus" or in its transformation "Phosphorus equals Hesperus" seems to be more intuitive. The transformed version does not contain the verb "is", hence no problem with the interpretation of the copula. In **enuntiationes secundo adiacentes** with a verbal predicate, e.g. "sol lucet", "The sun shines" the copula **is** does not occur, similarly as in many languages which are lacking a copula in our gramatical sense.

There are other unclear formulations, e.g. when comparing two kinds of expressions: "es sei Alexander der Grosse", "es sei die Zahl vier", "es sei der Planet Venus" against "es sei grün", "es sei ein Säugetier" (BuG, p. 193), implying only in the first case the identity or equality interpretation of the verb "to be". According to Frege the identity relation holds only for proper names designating singular objects. This restriction contradicts the equality relation used in definitions or in such sentences as "Children are children".

In the mathematical formulae " $a = a$ " or " $a = b$ " (BS, p. 25) this questionial view, at first glance, does not occur. We can say "a is the same as a" or "a and b are identical", or "a equals b". Today everybody will affirm that in this case we have to do with relational formulae, with two-place propositional functions. But Frege himself, to our surprise, analyzes them, at least in their concretization, e.g. "Der Morgenstern ist die Venus" as a one place propositional function containing a proper name as subject, namely "Der Morgenstern" and an object word "ist nicht anderes als die Venus" as predicate (BuG, p. 194). The first expression has to designate an object, the second one a concept. Frege's paradigm of sentences is the two-element model "subject - copula plus (nominal) predicate" (NSchWB I, p. 154), but not the three-element model "subject, copula, predicate".

The opposition of subject and predicate has to secure a corresponding contraposition of objects and concepts. It is not difficult to find various examples which contradicts this strict linguistic dichotomy with its ontological impacts, e.g. "Es gibt nur ein Wien" - "Wien ist eine Kaiserstadt" (BuG, p. 200); "John is small" - "Small is beautiful", "This rose is red" - "Red

is an exciting colour", "My brother was captain of the vessel" - "The captain of the vessel was my brother" (JES-PhG, p. 153). What is here a proper name and what a concept word? The subject and predicate of such sentences is determined by syntactical rules of the given language. What is an individual (a single object) and what a class (a concept) in the sentences "The sailor shot an albatros" and "An albatros is a big sea-bird" cannot be decided by grammatical means: the indefinite article is used in both cases, in the subject part and in the predicate part (JES-PhG, p. 152).

4. Language, ontology and the role of semantic categories. It seems to be evident, that Frege draws from the syntactical structure of german relevant ontological conclusions. Contrary to it, language is posterior to ontology. Its origin is combined with the evolution of *homo sapiens*, a very late product of nature. By linguistic means no ontological problem can be settled. To decide whether to accept the sentence "a cat is a mammal" or the sentence "a mammal is a cat" is outside the competence of English. It is an extralinguistic decision based on zoological knowledge.

Frege's ontology is a one-dimensional ontology. It is true that he often speaks about concrete objects, e.g. mammals or horses, but this seems rather to be a *façon de parler* intended to exemplify his doctrine to a broader audience. The basic objects of his investigations are numbers. The assumption of the outer world is for him irrelevant. He refused to admit any empirical justification of mathematics as suggested by J. St. Mill or H. v. Helmholtz. He simply postulates a realm of meanings (GLG II, p. 371), a world of thoughts and a world of language (LU II, p. 148).

Frege's semantics according to which "a proper name (word, sign, group of signs, expression) expresses its sense and refers to or designates its meaning" (SB, p. 31; GGA I, p. IX, § 2) has been developed in connection with his analysis of opaque contexts and indirect speech, with his investigations into the nature of identity and connected with the priority of sentences.

I hold for necessary to reveal other impulse as well. The terms "Sinn" (sense) and "Bedeutung" (meaning) - rather than "denotation", "reference" or "designation" - are rooted in the linguistic tradition: "sense" is attributed to sentences, whereas "meaning" to words (JES-PhG, p. 93). Sense and meaning are, of course, not independent: all meaning is mediated by sense; the sense of an expression determines its meaning. This holds for names and sentences as well. For the sense of a sentence there is relevant the sense of its components, i.e. of the proper name, and not its meaning (SB, p. 33). Similarly not the meaning, i.e. the truth-value, of a sentence, but its sense, i.e. a thought it expresses, is relevant for our knowledge (GGA II, § 138).

But what does Frege understand by a thought? The following formulations will hardly elucidate this problem. A thought is something similar as a judgment or proposition (GLG III/2, p. 377; LU I, p. 61, LU III, p. 38), but at the same time a thought is assumed to be different from a judgment (GGA I, § 5). It is not a mental image (NSchWB II, p. 102) neither an idea of our inner world nor of the outer world, the world of sensible things (LU I, p. 75). A thought is neither the sense of an interrogative sentence (LU II, p. 144) nor of an imperative or any other sentence with the exception of indicative sentences (LU I, p. 62).

From these negative characteristics it is difficult to explain what a thought really is. Does it reflect the structure of the corresponding sentence or its empirical counterpart? How is secured its objective existence? Is not the assumption of thoughts a concession to psychologism which Frege wanted to reject from logical theory? Hardly to say.

5. Conclusion. Frege intended a revolution in the foundations of mathematics, logic and semantics. His ambitious project which achieved many very positive results did not avoid even controversial and misleading views. I do not yield the opinion of J. Barnes "that a major portion of Frege's philosophical writings is nonsense"⁵. Contemporary history of science has convincingly exhibited that nonrational stimuli or irrational ideas have played under certain circumstances in the history of ideas a positive role. Great mathematicians make mistakes in simple counting, similar as logicians draw sometimes invalid conclusions. Man is not in reality an **animal rationale**: every one combines in thinking, feeling and acting rational and irrational elements. The tension in the work of Frege as a logician and a philosopher is in this respect a classical example.

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¹Frege's works will be quoted with the abbreviations common in present Fregean literature: BS, FB, BuG, GGA, GLA, GLG, LU, NschWB.

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³Cp. B. Kerry, *Über Anschauung und ihre psychische Verarbeitung*, Vierteljahresschft. f. wissen, Philos. 8 - 13 (1885 - 1889). especially (1887), pp. 240 - 307; A. Korselt, *Über die Grundlagen der Geometrie*, Jahrb. d. dt. Math.-Vereinigung 12 (1903) p. 405.

⁴Cp. O. Jespersen, *Language. Its Nature, Development and Origin* (JES-L), *The Philosophy of Grammar* (JES - PhG).

⁵J. Barnes, *Review of M. Schirn (ed.) (Studien zu Frege) Studies on Frege*, Stuttgart 1976, in: *Grazer philosophische Studien* 6 (1978) p. 141.