

AN INTRODUCTION TO FREGEAN SEMANTICS

M. Uxía RIVAS MONROY

Abstract

In the semantics elaborated by G. Frege the most important notion, according to his logical concerns, is that of reference –“Bedeutung”. However, no less important are the notions of sense –“Sinn”– and thought –“Gedanke”–, which are among the most fruitful and controversial ones in the work of Frege. The aim of this paper is to briefly characterise these notions, establishing the close connection that exists between them and language, and also between thought and truth, and paying attention to the role that ontology plays in Frege’s semantics.

1. Introduction

In the presentation of the role which the notions of sense and thought play in Fregean semantics, it is also important to study the reasons why this logician-mathematician introduced them in the first place. Some of these clarifications will show that a realistic and also an idealistic approach are juxtaposed in his conception of sense and thought. Thus ontology is a very relevant element in Frege’s analysis of why language conveys knowledge about the world, and why certain knowledge about the world constitutes facts, i.e., true, immutable and eternal thoughts.

Frege distinguishes three realms within the ontology. The realm of reference is where the realistic approach of Frege’s thought is more clearly observed. What there are in the real world, the world we wish to know, are objects of different types, but all of them are objects which have extension and which are perceptible: they are complete and objective entities. This realm is mainly studied by science. Secondly, the realm of mental phenomena, where the entities are also complete, but not perceptible, is not of great interest for Frege, although its importance comes to the fore when he studies the personal pronoun “I”. The entities of this realm are subjective and they are studied by psychology. The third realm, so called by Frege, is that of the objective abstract entities. It is here where the idealistic-platonistic conception of Frege’s

thought takes place. This realm is the most difficult to study and to clarify, due to the abstract character of its entities: senses and thoughts, which are which cannot be perceived by our senses, rather by our language.

It is usual to establish the identification between sense and meaning, forgetting the place that sense and thought take in the writings of Frege as elements of this third realm. The aim of this paper is to attempt to emphasize the separability from sense and language as well as from thought and language in the way Frege states in his work. Paying attention to that fact, the total identification of sense and linguistic meaning is almost impossible, especially if one believes, as myself do, that linguistic meaning is a phenomenon really involved in language and its practice; this would not exist if language did not exist. This, however, is not the case with sense and thought for Frege. Both are apprehended through language, however, they are independent of it, they would exist even if language did not exist.

2. An approach to Frege's ontology

Frege's ontology is a very good example of Occam's economy principle "not multiply the entities without necessity". Frege works only with two kinds of entities: objects and functions. It is in "Function and object" [9] where he treats this subject.

This ontology can be articulated by paying attention to two kinds of criteria, among others: 1) the formal criterion and 2) the ontological criterion.

The formal criterion is the basic criterion used by Frege to establish his ontology and to divide it into objects and functions. It consists in distinguishing what is saturated from what is not, that is, to distinguish complete from incomplete, what needs complementation from what does not because it is autosufficient. This criterion is clearly related to mathematical notions, specially to a function. For that reason we could say that Frege's ontology is based on a formal, logical-mathematical criterion which allows us to treat the categories of the actual or real as logical categories. Following this criterion, functions are distinguished from objects because they are not-saturated <ungesättigt>, incomplete <unvollständig> and because they present gaps or empty places that need to be completed <ergänzungsbedürftig>. All which does not enter into the category of function is, then, an object. Then, to be an object is to be something complete.

The application of the formal criterion to the linguistic field originates the distinction between functional expressions and nominal

expressions, or what is the same, between incomplete expressions — the functional ones — and complete expressions — the nominal ones. Examples of the first are predicative expressions, while examples of the second are proper names, definite descriptions, sentences.

We may say that in the work of Frege a syntactical criterion gives rise to certain ontological categories which are designated by the corresponding semantical categories. That is, the logical, ontological and epistemic levels are reflected in the categories of sign, reference and sense respectively, which also correspond to the division in syntax, extensional and intensional semantics. The relation between sign, sense and reference must be, in general, as follows: a sense must correspond to each sign, and a reference to each sense. This is not the case of an object where the relation between reference, sense and sign is not that we have just mentioned, on the contrary there may be more than one sense to the reference, and more than a sign to each sense. This relation between sign, its sense and its reference reflects what the “regular behaviour” ([9], p. 42) of language is. But, as Frege says, there are exceptions to this behaviour. The best example is the natural language, where the normal behaviour of signs is that the same sign has more than one sense, and what is worse, that the different senses of the signs change through the context; speaking about natural languages Frege states: “we must be happy if only in the same context the same word has always the same sense” (*ibid.*). In a formal language and in any language with scientific purposes these changes of sign senses must not be allowed, and of course never happen in a perfect language.

The ontological criterion allows us to establish differences between both types of entities — functions and objects. It refers to the kind of general ontological properties which corresponds to each entity, and it gives place to a very typical Fregean distinction: that of the three realms. Frege states three worlds or realms: that of the objects or physical space-temporal world; that of the mental which includes what Frege calls representations, that is, the subjective world; and that between these two, that of sense and thoughts. We can say, then, that there are different types of entities in each of these realms, and their nature would be respectively: physical, mental and abstract.

If we apply the formal criterion to the abstract and objective entities: sense and thought, we obtain a new and important classification: that of objective complete entities and objective incomplete entities. That is to say, we have objective entities which are objects and objective entities which are functions. Examples of the first case are the senses of proper names and complete sentences; examples of the second case are the senses of predicative expressions.

Another classification we can do into the category of the object is the following: concrete objects which exist in space and time, which are physically and “sensorially” perceptible; mental objects which do not exist in space and which are not physical; and abstract objects which exist neither in space nor in time and which are neither physical nor mental, such as thoughts.

From all of this it is not difficult to understand how wide the category of objects is for Frege, where we can find persons, numbers, things, places, facts, truth values, planets, cities, senses, thoughts...

To summarise we can remember a text by M. Dummett: “Frege occasionally speaks (in his unpublished writings) of the ‘realm of sense’ and the ‘realm of reference’. The realm of reference just is reality, that reality of which we speak and in virtue of which the thoughts which we express are true or false: it is the entire universe, for there is nothing in the universe of which we may not speak and which may not therefore constitute the referent of some expression which we use. But the realm of sense is a very special region of reality: its denizens are, so to speak, things of a very special sort. The exact ontological status of senses Frege found it embarrassing to describe: there is nothing that can be done with a sense save to grasp it, express it and thereby convey it to another, and, in the case of a thought, assert that it is true, or ask whether it is true, or the like.” ([5], p. 153-154)

3. Sense: characterizations and functions

Sense is characterized, but not defined, mainly in the article “Über Sinn und Bedeutung” (1892) [9], while thought is mainly developed in “Der Gedanke” (1918) [10]. Sense is presented in the first place as linked to proper names, and afterwards it is extended to sentences, where it is called “thought”, and in every case it is examined in the light of its direct connection to language; thought is studied primarily with regard to its relation to truth and logic.

A) The first characterization of sense is that of an *epistemic* type and refers more concretely to *the sense of a sign*, to be more precise, to the sense of a proper name. Sense contains the way of giving <Art des Gegebenseins> or the mode of presentation of what is designated by the sign. Looking at sense in this light, what is emphasized is the *cognitive value* carried by the sign. It must be remembered that Frege introduced the notion of sense in order to explain the difference in cognitive value between expressions which denote the same referent in identity sentences and due to this they produce an increase in information, provided the identity was true. That is the case of synthetic identity statements.

Sense, which contains the mode of presentation, explains the fact that these identities are informative, for instance: “Venus is the morning star”, or “The morning star is the evening star”. We might say that the mode of presentation takes the weight of the explicative role of sense: since the former is contained in the latter, the sense is able to transmit information as well as knowledge about what is denoted by the sign. As M. Dummett says: “Frege is tacitly connecting the notion of sense with that of knowledge.” ([5], p. 95)

Sense and mode of presentation are not, strictly speaking, equivalent although they are usually considered as such. However, to identify sense with mode of presentation is not completely right because not all modes of presentation must necessarily be expressed through language. Senses are always modes of presentation. However, the inverse is not the case: not all modes of presentation are always senses.

Given all this, it is not difficult to understand that another characterization of sense focuses on language: “the sense of a proper name is grasped by everybody who is sufficiently familiar with the language or the totality of designations to which it belongs” ([9], p. 42). This is so since any competent speaker of a language, by the mere fact of his/her competence in it or mastery of it, knows the sense that is bound up in each of the expressions of the language. This could be taken as a proof that it is precisely because of the connection between sense and language that a way to accede to sense is by knowing the language, its signs and its expressions, through which sense — an abstract entity, sensorially imperceptible — is made present, made material, or takes on a form.

B) One of the most secure ways of interpreting sense and, more concretely, the sense of proper names, is to treat it as a path of access leading to the knowledge of objects. More precisely, the sense “illuminates” the reference of an expression, that which is denoted by it, even if only partially. This means that sense *determines* in some way — this indicated by the mode of presentation — the object or the reference of a sign. Seen in this way, the sense provides the thought with the ways of thinking about an object, thereby determining and singularising this object.

A fundamental point to remember is that the sense of a proper name *partially* sheds light on the object it denotes. Each sense determines only one object and this from a single perspective, which indicates the mode of presentation of the object and which therefore, must be partial. To have total and complete knowledge about the reference of an expression, it would be necessary, according to Frege, to be able to immediately indicate for each sense expressed whether it belongs or not to a certain reference, and as he says: “this we can never do” ([9],

p. 42). Understanding a sense does not necessarily imply knowing the existence of the referent, or putting it more simply, understanding the sense of an expression does not imply that the expression has a reference. In other words, the sense of an expression determines some way of knowing the object it denotes, but merely understanding the sense is not sufficient to know whether the expression does or does not have a reference. So, just as in order to understand the sense of an expression, knowing the language it belongs to is enough, the knowledge of this expression is not sufficient to know its reference: since this does not depend exclusively on our mastery of a language, but is often dependent on research carried out in fields removed from that of language, which then prescribe the reference of an expression. This is one of the reasons why it is not always possible to establish what the exact reference for the sense of a sign is, even though we may understand perfectly its sense, for instance, “the least convergent series”.

Since Ch. Morris stated the division of semiotics into syntax, semantics and pragmatics it is very usual to define semantics as this part of semiotics which studies the relation between signs and their *designata*. When the *designata* are actual objects, they are called *denotata*. T. Burge speaking about the second function which sense satisfies, i.e., the semantic function, says “[it] is that of determining the referent or denotation associated with the expression: for singular terms, senses serve as ‘routes’ to singling out the unique object, if any, denoted by the term” ([1], p. 356). Therefore this function of sense coincides with the traditional view of understanding semantics, since sense determines the referent or “Bedeutung” of the expressions. According to Frege, the semantic relation of referring, that is, the relation established between the sign and the object which is denoted by it, must always be mediated by the sense of the sign.

From this point of view semantics is divided into two parts: a) extensional semantics which studies the relation sign-reference (or sign-“Bedeutung”) — a wider relation than that of sign-object in Frege’s work, because a Bedeutung or reference could also be a function, which for Frege is not an object, according to his ontological division —; and b) intensional semantics, which studies meaning — a wider relation than that of sign-sense (or sign-“Sinn”). Although Frege was more interested in the development of the extensional semantics, that is, of logic, he could not avoid going through the intensional semantics, focusing some of his writings in this field too, although this topic was not one of his primary interest and his first object of study.

C) Another feature which serves to characterise sense is that it is the *reference* of a word when the word is introduced in indirect discourse.

This is a crucial point in Frege's theory because it implies that the reference of a sentence in this kind of discourse changes from being a truth value into a thought. Taking into account the composition principle for reference which Frege stated, if the reference of words in indirect discourse is its indirect reference — i.e., its usual sense — then the reference of the sentence is also what is ordinarily its sense — i.e., the thought. Thought is the sense of a sentence because it is derived from the sense of each expression that is logically relevant to the sentence, in terms of what the composition principle for sense states. This characterization of sense is directly related to the third function of sense in Frege's theory, according to T. Burge: "[it] is that of providing entities to be denoted in oblique contexts" ([1], p. 356).

From an ontological point of view and without stretching the assumptions made in Frege's theory too greatly, there is nothing to prevent us from regarding senses as references of words in indirect discourse since senses are objects, abstract entities, which cannot be located in time or space.

In the indirect discourse the *Bedeutung* or reference of the sentence is the thought it expresses. The sense of the sentence in the indirect context is called indirect because the proper names which occur in the sentence do not determine physical objects as the sense of the same expressions does in the ordinary discourse, but in the case of determining something, this would be a thought. The sense of the sentence in indirect discourse is only one part of the whole sense of the sentence. The sense of the complete sentence — main sentence and subordinate sentence — shows the kind of relation which holds between them, that is, shows if the thought or reference of the subordinate sentence is imagined, believed, wanted, etc., for instance, the sentence: "Mary believes that the Earth is not completely round", or "Mary imagines that the Earth is not completely round", or "Mary is convinced that the Earth is not completely round" and so on. The thought — in this case that the Earth is not completely round — is eternal and independent of us, in spite of the different attitudes we may assume with respect to it, and which do not modify it at all. The sense of the main sentence together with the sense of the subordinate one expresses in what terms the thought is given to a person. But the truth or falsity of the thought expressed by the subordinate sentence is not important in this case, as it would be if the sentence were not in the indirect discourse, as is shown by the following example: "Mary believes that there are inhabitants in the Moon", or "Mary imagines that there are inhabitants in the Moon". That explains the fact that in indirect discourse the *Bedeutung* or reference of the sentence is the thought and not the truth value, while in

ordinary discourse the *Bedeutung* or reference is the truth value and the sense of the sentence is the thought it expresses. In indirect discourse the sense of the subordinate is not complete, because it is part of the whole sense of the sentence. This is another reason to understand that for a sentence to have a truth value, it must express a complete thought.

4. Some reasons to explain why Fregean sense is not the same as meaning

In an informal manner of speaking, it is very common to present sense as being equivalent to linguistic meaning. This manner of understanding sense diverges greatly from the aims that Frege intended to cover with this notion. The reasons are, above all, that sense is not introduced by Frege to serve as an account of the linguistic understanding of words or sentences, rather, on the contrary, to give an account of our knowledge about the world; Frege always stressed the independence of sense from the linguistic activity. However some of Frege's papers could help to build this kind of identification between sense and meaning, for instance, when he writes in "On sense and reference" that every sign has sense, one can interpret this statement as being equivalent to every sign having meaning. It is sense that makes signs be what they are, and therefore sense is the explicative element for that which is the most fundamental aspect in signs, since if signs did not have sense, they would not be signs at all. Sense is the necessary and sufficient condition for a sign to be a sign, but sense is only a necessary condition and not a sufficient one for a sign to have a reference.

For Frege, the sense of a word is something that is added to the word. The word can have syntactical or semantic properties due to its connections with other words and its place in the sentence. These properties have nothing to do with the sense of the word, which is linked, primarily, to the way of presentation of the object that the word refers to. For Frege, sense is one thing and language is another, even though there is a very close connection between them: without language we cannot apprehend senses. Language is the body that covers and materialises senses. The strong distinction between language and sense is one that I, myself, do not accept, if sense has to be understood as Frege did, i.e., as something completely independent of us human beings, who do not create thoughts, rather only discover them. Linguistic meaning and language are, in many modern interpretations which have their origin in Wittgenstein's *Philosophical Investigations*, what we human beings intend that they should mean. It is our use of words that principally gives words a meaning; in this way, meaning is related to language in a more

essential and indivisible way than the one that is proposed by Frege. In order to understand meaning and the role it plays in language, it is not necessary to claim the existence of a third realm. However, due to the fact that in Frege's theory sense has a strong epistemic and ontological character, to understand it only as linguistic meaning is to severely limit and restrict it, so much so that sense could no longer serve for the tasks which Frege was thinking of, specifically, to safeguard the objectivity of science.

In Frege's view, while language, which is created by human beings, has to be subject to conventions, and therefore changes as we see in the different languages, sense neither depends on individuals nor changes with the languages which express it: it is independent, eternal and immutable. Frege's description of sense has been severely criticized and he has been called a Platonist. However M. Dummett claims that this reification "can be interpreted as a harmless manner of speaking, intended only to emphasize the communicability of sense as against the alleged ultimate incommunicability of tone" ([5], p. 157).

The knowledge of things and the knowledge of their modes of presentation is reached through the propositional knowledge, that is, through the recognition that the thought which says that things are given this or that way is true because words do not happen in isolation, but in the whole sentence. In the actual world Frege only recognizes the existence of objects. Facts are nothing else but true thoughts, belonging in the ontological level to the category of abstract entities — which are neither physical nor space-temporary. Therefore facts, that is, true thoughts, belong to the third world, and not to the world of the external objects. But at the same time sense and thought are also ontological categories, objective entities, although they belong to another ontological level different from that of the physical objects. In this respect, sense and thought have the same independence with respect to human beings as that which have the physical objects and this in two senses: 1) They are not created by a particular mind, and therefore, they are not subjective phenomena, which afterwards reach objectivity through the language; and 2) the knowledge or information they transmit to us is independent of us, because sense contains the ways objects are given, and those ways are also independent of us. We can discover this knowledge by inferential procedures or by observing or making experiments, but what appears as a fact, was a fact before human beings could express it through a true statement, for instance: "There were dinosaurs on the Earth".

Facts have the objectivity and independence which is proper of objects, although they are entities belonging to another realm: objects

belong to the external world, facts belong to the realm of thoughts, according to Frege. Both are independent of us, but we have a different perception of thoughts from that we have of objects. The latter can be perceived through our different senses, but the former can only be apprehended in an intellectual process.

The independence of thought connects with the realistic view of the independence of objects; this view says that objects are what they are like without our intervention. As we say the sense of proper names informs us about this because it contains the mode of presentation of the objects, which is also independent. But proper names are hardly used in isolation, on the contrary, they are almost always used in the context of the sentence. For that reason, when a proper name has a reference and the same happens with the other expressions of the sentence, and also the force of the sentence is assertive, then the complete sense of the sentence is a thought which gives us information about the object denoted by the proper name. This knowledge we acquire by the thought is not invented or created or produced by us, but it is discovered, according to Frege; we unveil what already existed, we know what the world is like and the objects of the world because we can apprehend the thought which is not our work. This conception of sense and thought makes it difficult to assimilate sense or thought to meaning.

M. Dummett and T. Burge maintain different positions with respect to this issue. Dummett claims that it is possible to establish the equivalence between sense and linguistic meaning, or at least to see sense, understood as a way of presentation of the referent, as an ingredient of the notion of linguistic meaning, the only case where this identification is not possible is in oblique contexts and in sentences with indexicals (see [6]). Burge considers that this identification harms the richness of functions that Fregean sense used to fulfil, and separates it from epistemological questions and even from ontological ones proper to this notion in Frege's thought (see [4]).

5. Thought and its relation to truth and logic

When Frege introduces the notion of thought the first distinction he makes is that of separating clearly his own conception of the thought as the sense of an assertive sentence from the usual and typically psychological meaning of the thought as the activity or the process of thinking. In the first case we have the objective content of thinking, while in the second the subjective production of the act of thinking. This way of understanding thought is, for Frege, a series of neurophysi-

ological and psychological phenomena, and it stands completely aside from his concerns which are basically logical ones.

Besides, in many of his works (for instance: [7], p. viii-ix; [8], p. xxii; [9], p. 66; [10], p. 31; [11], p. 182, 190-192, 213; [12], p. 139-161) there is a call to the necessity for totally separating logic from psychology. That is to say, the clarity and the progress in logic will be delayed, if the logical studies go on with psychological ideas. This fact happens in this way because most of all psychology, specially in the time of Frege, was concerned with mechanisms and processes of perception and production of ideas. Therefore, psychology was concerned with subjective activities. On the contrary, thought as the sense of an assertive sentence which serves to express a judgement is very important to logic, and Frege characterises it by its objectivity. A proof of the objectivity of thought is its capacity of being "a property belonging to many people" ([9], p. 44) and its capacity to be true or false ([10], p. 33).

Many of the features of thought are the same as those ones ascribed to the sense of proper names, such as the objectivity, the capacity of being property of many people, or of being an abstract object. This coincidence is not strange because the thought of a sentence depends on the senses of the expressions which form part of it, just as the principle of composition of sense demands.

The relation between thought and truth is similar to the relation established between sense and reference. We can say there are two different levels: one can remain in the sense level without interfering with the reference level, for instance, when we are in the sphere of poetry, roman, epic, theatre. The sense of the sentence would not be called thought when the truth value is not discussed at all, as in the case of theatre, poetry, etc. ([9], p. 49; [10], p. 36). Here there is no way from sense to reference. To use the term thought properly in the same way as Frege does, it is necessary to put it in relation to the reference of the sentence, that is, in relation to truth or falsity. The sense of the sentence would lose its interest and its value for logic and scientific knowledge if it were not put in relation to truth values.

Even following this relation it could be taken for granted that if the sense of a word determines its reference, in the same way, the thought of a sentence consists of its truth conditions, that is, consists of what determines its truth value. That means that all senses of the expressions which form the sentence must determine a reference, and that all the expressions with a sense in a sentence must have a reference. If this fact did not happen, then we would be again in the sense level and it would be impossible to go into the reference level. In such a case, the sense of the sentence would stop being important for scientific consid-

erations, for instance the sentence used by Frege in “On sense and reference” ([9], p. 47): “Ulysses was left in Ithaca deeply asleep”. Due to the fact that thought and truth are placed in different levels, Frege insists on the impossibility of regarding this relation as that between subject and predicate, where the thought would occupy the place of the subject and the truth would be expressed by the predicate, for instance Frege’s example ([9], p. 49): “Five is a prime number” and “The thought that five is a prime number is true”. For Frege both sentences are equivalent, they express exactly the same thought. The predicate “is true” does not add any new information to what is expressed by the sentence.

These considerations give rise to what is called the redundancy truth theory. If we consider truth as a predicate at the same level of thought, then, according to Frege, truth is redundant when the predicate “is true” appears in an assertive sentence. For Frege what indicates that a thought is true or that it is recognised as such, is the form of the sentence, i.e., the sentence under the form of an assertive sentence ([10], p. 35). Therefore, if a thought is expressed by a sentence with this assertive force, then this sentence implies the recognition of the truth of that thought. So, it is clearly redundant to say again that the thought expressed by the sentence is true as it is stated by the predicate “is true”. From a traditional logical point of view subject and predicate are parts of the thought, they both constitute the thought expressed by the sentence, said in other words, thoughts are formed by putting together subjects and predicates. Truth is also a logical object, but a different one, it is not built articulating subjects and predicates. The only logical analysis we could do related to truth is that of the reference of the relevant logical expressions which conform the sentence. But this possibility which was taken into account in “On sense and reference” ([9], p. 50) is a very obscure passage in this article, and Frege never again paid attention to this topic. Anyway, in the mentioned article Frege maintains that thought and truth belong to different levels: one is a sense, the other an object. Truth is not a property of the thought in the sense that it can never be part of it, as Frege says: “A truth value can not be part of a thought, as the sun can not be, because it is not a sense, but an object” ([9], p. 49). Truth can never form part of a thought, and vice versa.

6. Thought and language

Thought and language are different subjects for Frege, and one independent from the other. But there is a peculiar relation between them. Frege describes this relation in metaphorical terms, saying that the imperceptible thought gets dressed with the perceptible cloth of the sen-

tence, and so we can grasp it ([10], p. 33, 40). In this relation language seems to be the instrument, the material means to make the access to the thought possible because language has properties which the thought has not. Language is material, perceptible, thought is not material and not perceptible through our senses. Thought needs to cover itself, to embody, to materialise, to be present through the clothes provided by language. Language is the means of access to the thought, it is the means to grasp it. However it is necessary to make clear that it is impossible to accede to thoughts by using language indiscriminately, putting that another way, any type of expression or any type of linguistic construction does not serve to enable us to express thoughts. In this sense, only the sentence, and in particular, the assertive sentence <Behauptungssatz> can express a thought.

The most common way to express a thought is through an assertive sentence. The reason lies in that both of them are in close connection with truth. When Frege analyses this type of sentences he distinguishes two aspects in them ([10], p. 35) the content and the assertion, quite difficult to define because in these sentences they are strongly linked. The content of the sentence is the thought when it has been grasped or conceived. The assertion consists of the manifestation of the recognition of the truth of a thought; in other words, the assertion consists of the realization of a judgement — or, what is the same, to judge the thought true —, and the expression of that judgement in the language. The assertive sentence carries with it the recognition and manifestation of the truth of its content.

Following Frege ([10], p. 35) there is another type of sentences which can also express thoughts, but their way of doing so has nothing to do with truth. These are the interrogative sentences. Perhaps their content coincides with the content of an assertive sentence, i.e., they can express the same thought but the way of expressing it is different in each case. While in the interrogative sentence the thought is expressed by its form and with the force of a question, in which one asks implicitly for the truth of that thought, in the assertive one, what is stated is the thought recognised as true. However, the answer “yes” to an interrogative sentence is equivalent to the force of an assertive one because this answer shows the truth of the thought which was expressed in the interrogative sentence. Due to the fact that these types of sentences can express the same thought, it is possible to change the assertive sentence into interrogative ones when followed by an affirmative answer because in this case the same aim is achieved: to show that the thought is true. The inverse is also possible. For instance: “Is the Earth a planet of the solar system? Yes” and “The Earth is a planet of the solar system”.

Unlike exclamations, commanding or interrogative sentences with additional marks to indicate the way in which they express a thought — exclamation, question, intonation marks —, assertive sentences have no particular marks or signs to indicate the assertion. Their capacity to indicate that they are assertive sentences lies in the form of the sentence itself. In some languages it is the word-order of the sentence which serves to indicate that the sentence is an assertive one.

Frege does not consider language and thought as different aspects of the same phenomenon but as different entities: the same thought can be expressed by several sentences and the same sense can be expressed through different words. It is possible to conceive exactly the same thought, even if the sentences used to express it are very different, for example, sentences in the passive voice and active voice, or even more clearly, sentences belonging to different languages. According to Frege the thought expressed in these cases are always the same, what changes is the language which tries to colour and emphasize aspects of the thought ([9], p. 45; [10], p. 36-37). This remark leads us to make another distinction which stresses again the independence between thoughts and language for Frege: while thought is immutable and remains inalterable, the words and sentences that express it change depending on the language. Even in the same language, different sentences can express the same thought. For Frege it is obvious that “mankind has a common treasure of thoughts” ([9], p. 44), although there are a great variety of languages to grasp them.

According to Frege, the difference among sentences which express the same thought is not due to the senses of their words but to the lighting, colouring or interpretation of these senses. Therefore not only language but also other types of phenomena, such as the representations, the intonation, etc. are contributing to show the thought covered by some aspects which do not belong to it. The task of logic is to recognise the same thought through such clothes, and to discover new thoughts by inferences based on other thoughts, independently of the language used to express them ([12], p. 154, 160-161).

Although the sentences of a language usually convey more than the mere content of judgements, it is also common to find sentences which convey less ([10], p. 37). Some sentences need to be completed by space-temporary signs or by paying attention to the context because they are not enough by themselves to express a complete thought, or some sentences express an indefinite thought. In both cases the sentences can not have a truth value. Such is the case of the sentences which have indexicals such as “this”, “that”, “I”, “here”, “now”, etc. They need additional information to get a complete thought, and there-

fore to be useful for logic, where the main interest lies in the truth value of the sentences. The solution for these cases is to transform the sentence which expresses an incomplete thought into an eternal sentence — as Quine call it —, for instance, the sentence “I am here now” taken out of context, could be transformed into an eternal sentence like “M^a Uxía Rivas Monroy is in Santiago de Compostela on October 4th, 1999”.

7. Conclusion

As we have seen, sense and thought play some important functions in Frege’s semantics: a) an epistemic function, where the sense of an expression, usually a proper name, gives the cognitive content of it, and where the thought of a statement gives a propositional knowledge, which following the analytical tradition we can understand as the truth conditions of the sentence; b) a semantical function, where sense determines the referent of a proper name, that is, an object, and thought determines the referent of a sentence, that is, a truth value; c) an ontological function, where sense and thought are the referent of the expression in indirect speech (see [1]).

This complexity of sense and thought dissuades their identification with linguistic meaning, because they are not considered by Frege as linguistic phenomena. They are related with language in different ways, but they are not linguistic at all, because they are not depending on language. For Frege was very important the justification of objective knowledge, or what is the same, the justification of science. To accomplish this aim he needed to postulate the actuality of a realm which does not depend on human beings and which is eternal and immutable as the knowledge of science is supposed to be.

University of Santiago de Compostela, lfuxia@usc.es

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