Meaning: Sense and Reference
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Semantics is, in the general sense, the science that studies the meaning of words and expressions. The definition of the word “meaning” itself is a matter of long dispute among linguists and semanticists. “What constitutes meaning? Is meaning a property of language or a contribution of the mind? and “what is that element that triggers ambiguity of meaning” All these questions are the topic of many linguistic, psychological and philosophical theories. In this article, we are going to shed light on one of these theories; namely Gottlob Frege’s theory of sense and Reference.

Frege’ referential theory of meaning is to be discussed with respect to two different levels: meaning at the word level, and meaning at the sentence or clause level The latter level is by its turn discussed with regard to declarative sentences, and subordinate sentences. In the present article we will discuss the arguments for this theory on the three levels.

Deswart (1998: 7) points out that within a referential theory of meaning, words refer to all kinds of things in the world; “objects, properties of individuals, relations between individuals, events and situations”. However a theory of reference does not try to address issues such the psychological processes involved in knowing and understanding meanings and how this knowledge is stored in the brain. Saeed (1997) argues that humans have the ability to identify or denote meanings by referring to identities in the world all around. Lyons(1977) differentiates between the terms “referring” and “denotation” by pointing out that referring is what speakers do while denoting is a property of words. Denotation in this sense is a stable relationship not dependent on any one use of a word, while Reference is a moment by moment relationship depending on the context.

In analyzing how names get their properties of reference, Frege (1980) propose the description theory where a name is taken as a label or shorthand for knowledge about the referent. In this theory understanding a name and identifying its referent are both dependent on associating the name with the right description. On the other hand, Devitt and Sterelny (1987) propose the causal theory where names are socially inherited or borrowed. The users of a name according to this theory, form a type of a chain back to the original person given the name¹; thus people may use a name with very little knowledge about its referent and still perceive a “meaning” of it. If we adopt a reference-based theory of semantics, we can as well say that verbs denote actions, adjectives denote properties of individuals, and adverbs prosperities of actions.

¹Rf, Some times a name does not refer to a certain identity but rather to a whole mental image as in the case of a name that indicates a whole religion ; like “this conference will invite Mohammad, Paul and Cohen” where the meaning is Moslems, Christians, and Jews.
The concept of sense in Frege’s theory is a very important key issue; since without it a lot of shortcomings may be raised as criticism to the theory. Saeed (1997) discusses some of these shortcomings when pointing out that sometimes people use words that do not refer to certain existing identities (like Batman, or unicorn…etc). Another thing is that at the same time people use more than one way of referring to the same identity (like the president of Egypt and Anwar Sadat, or the morning star and the evening star…). The fact that people still understand the meanings of these words (that have either more than one reference device, or have none) imply that a theory of meaning has more than just reference. Frege (1980) distinguishes two aspects of semantic knowledge: sense and reference. Saeed (1997: 32) explains the term “sense” as the factor that makes us “understand the expression” and which “we can use .. to refer to a particular individual at any given time.” The meaning of an expression then arises from its sense and its reference.

Gamut (1991:8) distinguished between reference and sense in Frege’s theory of meaning by explaining that “the reference of a name is an entity. Its sense is… the mode of presentation of that entity. It is the way the reference is presented.” He gives the example of (P) in the following diagram:

\[ \begin{align*}
P & \quad A \\
& \quad C \\
& B
\end{align*} \]

where (P) is the intersection of A and B, of A and C, of B and C, and of A, B and C. A single entity (P) is thus the reference of four different names. These different descriptions have different senses, but the same reference. Gamut states that “sense is merely a criterion by means of which reference may be determined under various circumstances”.(1991:9). A very important point is that it is possible to have a sense of a word without having any reference in mind which is the case always with names and descriptive noun phrases such as the richest man in the US.

So in Frege’s theory three important concepts should be considered essential; sign, sense and reference. By sign he means a name, a combination of words or even a letter, by reference he means “the object that which the sign refers to, by sense he means the thought where a “mode of presentation is contained”. Proper nouns have a reference and a sense. The difference between sign and reference is that to a single sign there is a definite sense and a definite reference, while to a definite reference (an object) there does not belong only a single sign. Likewise one sense has different expressions in
different languages and even in one language; for example “John” has the reference of “a man”, and the sense “the thoughts associated with this person”, while ‘man’ as a reference does not signify ‘John’ only.

Frege claims that any “grammatically well-formed expression representing a proper name has a sense”, but this does not mean- as we have shown in Saeed’s discussion- that there is always a reference to that sense; as a person may not be able to grasp the reference and be certainly assured of it. Even in writing, writers tend to emphasize the use of certain keywords. Such words are often represented in italics, bold or between inverted commas. Frege points out that such a keyword “must not be taken as having its ordinary reference.”

An equally important concept in Frege’s theory is that of ‘idea’. Frege differentiates between the sense/ reference a word has and the idea associated with it. If the reference of a sign is an object perceivable by the five senses, one’s idea of it is an internal image. Frege declares “the idea is subjective: one man’s idea is not that of another. There results .. a variety of differences in the ideas associated with the same senses”. When discussing the idea associated with a certain sign, one needs to identify to whom it belongs and at what time. If two persons picture the same thing, each still has his own idea, and even one person changes his idea from time to time. In short, Frege emphasizes “the idea aroused in the hearer by a word shall not be confused with its sense or its reference”.

We can sum up the argument for word meaning by saying that a proper noun (a word, sign, sign combination or expressions) expresses its sense, stands for its reference which is different from the ideas associated with it.

So far this discussion has been focusing on Frege’s referential theory of word meanings, we turn now to his stand towards sentence meaning. Frege declares “a sentence has both a sense and a reference just as names do”. And like words, a sentence has also a tone (Farbung) or force(Kraft). By the tone of an expression, Frege means the ideas which a language user associates with an expression. These mental representations -as discussed above- are subjective, and can therefore play no part in communication. The objective part of the meaning would then be the sense. Every sentence expresses a thought or proposition. This thought should be something objective; i.e. one and the same proposition is conveyed to all language users who understand a sentence. The sense of a sentence is the proposition it expresses and its reference is its truth value. Like names, sentences may have a sense without having a reference; so in “the shybat killed the hytarus”, the shybat and the hytarus have no reference, but the sentence expresses a proposition. So it has a sense but no truth value (no reference). The sense of a

[^2]: “The shybat and the hytarus” are made-up words.
sentence is a criterion for determining its reference; a sentence is true only when the proposition it expresses holds.

Frege defines the truth value of a sentence as “the circumstances that it is true or false”. In this sense the quality of a declarative sentence is the same as a proper name in regard to their reference; being either true or false. Frege explains that the concept of “truth value” cannot be part of a thought just as the Sun cannot be a part of a thought; for it is not a sense but an object. The truth value of a sentence is its reference. The concept of ‘truth value’ is different from ‘sentence judgment’; as the latter is “something quite peculiar and incomparable …they are distinctions of parts within truth values.”

Gamut (1991) formulates Frege’s principles concerning sentence meaning as follows:

1) If two expressions have the same reference, then substitution of one for the other in a third expressions does not change its reference.

2) If two expressions have the same sense, then substitution of one for the other in a third expressions does not change its sense.

So in the sentence: “Peter’s barber is Mary’s husband” both Peter’s barber and Mary’s husband have the same reference and can substitute for each other. The case is not the same however in intensional constructions. Frege claims that expressions do not have their normal references in intensional constructions but refer instead to their senses. He says that in such cases, expressions have an indirect reference, which is then the same as what is normally their sense. Thus the sentence:

Peter’s barber is Mary’s husband.

does not have the same truth value (reference) as

Mary’s husband is May’s husband

as May’s husband in the second sentence can not be substituted with Peter’s barber in the first sentence3.

The third important aspect of Frege’s referential theory is the question of sense/reference of Subordinate sentences. The sentence:

If a number is less than 1 and greater than 0, its square is less than 1 and greater than 0.

is a compound sentence, the truth value of the whole does not always include neither the truth nor the untruth of the subordinate clause. That’s why we cannot replace one expression by another that has the same customary sense. The reference of subordinate sentences then is not a truth value but a thought

3 Gamut(1991) believes that Frege’s theory would have been more systematic if he claimed that his principles hold only on the extensional constructions level where substitution may take place freely. P.12
that expresses its function; command, a request, and so forth. The sense of subordinate sentences is not the thought but the sense of the words that constitute “the command, the opinion, the belief, ..etc”. The subordinate clause could then be regarded as a single noun; as a proper name of that thought or that command, etc.

The problem with subordinate clauses is that their sense is not a complete one, it has to be attached to the sense of the whole sentence. An indefinite noun, such as ‘whoever’ in

‘whoever discovered the elliptic form of the planetary orbits died in misery’

has no independent sense, therefore the sense of the subordinate clause is not a complete thought. The same case is in conditional sentences where the sense of these subordinate clauses cannot be reproduced in an independent sentence, as an essential component- the determination of place or time, would be missing and is only indicated by a relative pronoun or a conjunction. So in the sentence:

‘When the Sun is in the tropic of Cancer, the longest day in the northern hemisphere occurs’,

it is impossible to express the sense of the subordinate clause in a full sentence, because this sense is not a complete thought. If we say: ‘The Sun is in the tropic of Cancer’, this would refer to our present time and thereby change the sense. If however the conditional sentence is in the present tense, and the place is definite –as in ‘If the Sun has already resin, the sky is very cloudy’- here it can be said that a relation between the truth value of conditional and dependent clauses has been asserted.

Frege’s arguments for the reference and sense of subordinate clauses can be summarized as follows:

1- the subordinate clause usually has for its sense not a thought, but only a part of one, and consequently no truth value as reference.

2- The reason for this is either that the words in the subordinate clause have indirect reference, so that the reference, not the sense, of the subordinate clause is a thought;

3- or else that, on account of the presence of an indefinite indicator, the subordinate clause is incomplete and expresses a thought only when combined with the main clause.

4- It may happen, however, that the sense of the subsidiary clause is a complete thought, in which case it can be replaced by another of the same truth value without harm to the truth of the whole- provided there are no grammatical obstacles.

Key terms:
Reference
Sense
Sign
Idea / tone
Judgment
Direct / customary reference
Indirect reference

Bibliography

*Word count: 2200 words.