

## Reviewing “On Sense and Reference”

### 1 Laying-out of the Sign-Sense-Reference frame

Frege is an enthusiastic formalist who had been pursuing an ideal language capable of expressing thoughts in an exact manner. His work “On Sense and Reference” is also based on this pursuit. Frege introduced the distinction between sense and reference as a solution to the puzzle of the inaccountability of the difference between “ $a=a$ ” and “ $a=b$ ”(given that “ $a=b$ ” is true). The equality itself is put forward as a puzzle: what is equality about? Is it about relation and if so, is the relation between objects or between signs? By trying to answer this question, Frege came to the discussion of the sense and reference of proper names and laid out his framework of how signs, sense and reference work together to shape a system of meaning at the logic level. This framework of connexion has been defined as: to the sign there corresponds a definite sense and to that sense in turn a definite reference which is cited as the famous semantic triangle in later literature. This is a great clarification of the opaque world of meaning. Actually many great linguists at that time did not realize this distinction and made confusing remarks in their discussion of “meaning”. For example, Bloomfield, being deeply influenced by Behaviorism, kept confusing reference and sense in his discussion of meaning in “Language”. In Bloomfield’s world, a meaning of a word is exactly its reference without the intermediate node of “sense”. Because his ignorance of the distinction between sense and reference, Bloomfield made many wrong comments in his work of “Language”.<sup>1</sup> Frege does not offer an academically formal definition to sense and reference for it is just hard to define them. We can only find an informal definition throughout the paper: It is natural to think of there being connected with a sign, besides that to which the sign refers, which may be called the reference of the sign, also what I should like to call the sense of the sign, wherein the mode of presentation is contained. As this review will point out later, this inclarification is responsible for the problems discussed in the reference of sentences.

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<sup>1</sup> The more detailed information and discussion is in my paper “ On the ‘Meanings’ in Bloomfield’s ‘Language’ ”, published in the Journal of Yancheng Teacher’s College,1999,10

Under the category of reference, Frege distinguishes indirect reference and customary reference. Under the category of sense, he distinguishes indirect sense and customary sense. Frege bridges reference and sense by advancing that indirect reference of a word is its customary sense. This distinction, while its correctness and necessity remain open to debate, is crucial in his discussion of reference of sentences. Frege made a claim at the very beginning of the paper “Equality is a relation between names of objects.” In the discussion of proper names, he argued against the relation being about objects by pointing out it does not hold true if the two names do not both have designated things. He also pointed out if equality is about relation between what the names designate, it would be that  $a=b$  could not differ from  $a=a$  (provided  $a=b$  is true) as we already mentioned in the outset.

One thing we should notice is that for reference of words, Frege mainly talked about nouns and did not extend to the discussion of verbs or adjectives. Shall we follow Frege’s question for the reference of sentence and ask what is the reference of verbs and adjectives? Or put it more specifically: do they have reference? It seems Frege skips this question which, in our view, is kind of strange given his strong concern for reference of nouns and sentences.<sup>2</sup>

## 2 About reference of sentence

### 2.1 How Frege moves to his concern about reference of sentence

When the paper moves from proper name (word, sign, sign combination and expression) to sentence, a thorny problem was raised and fully discussed: what is the reference of a sentence? A new term “thought” is introduced for sentence and becomes a dominant factor in deciding its reference. The thought is introduced in this way that truth value of a sentence comes from the judgement of a thought, hence having an independent thought is the prerequisite of having a truth value. Thought is preferred by Frege to be the sense of the sentence rather than reference of it. We sympathize with this claim and think Frege’s argument that “the relation of the thought to the True may not be compared with that of

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<sup>2</sup> Although Frege did not discuss the reference of verbs, adjectives and adverbs, he did mention them when he cut into the topic of sentence reference: “This might generate the supposition that the reference of a subordinate clause was not a truth value but rather of the same kind as *the reference of a noun or adjective or adverb*.”

subject to predicate” is beautiful. Frege asserts that by combining subject and predicate, one reaches only a thought, never passes from sense to reference, never from a thought to its truth value. We agree with this because we think the action of combining subject and predicate is just building up a sentence which by itself has not reached the stage of a sentence yet. Frege justified the seeking of something further than thought of a sentence by saying that “The fact that we concern ourselves at all about the reference of a part of the sentence indicates that we generally recognize and expect a reference for the sentence itself. The thought loses value for us as soon as we recognize that the reference of one of its parts is missing.” We think seeking something beyond thought for a sentence is on the right track. According to Frege, thought is the objective content of a sentence and since it is not just a single name but a relation, it is natural then for people to be concerned of its truth value. And once truth value is involved, it seems that there is no way to avoid addressing the reference. Frege thinks people seek the reference of a sentence because of their seeking of the reference of its components. We can see that Frege’s arguing for reference of sentence is arranged in a rigorous way.

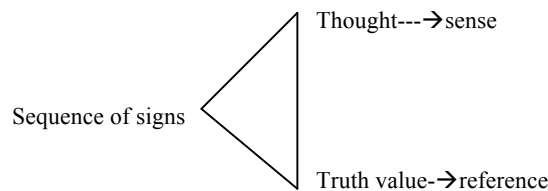
## 2.2 Our confusion, thinking and questioning of reference of sentence

While seeing rigorousness of Frege’s reasoning steps, we have a question: will involvement in the reference of parts of a sentence necessarily bring our seeking of reference of the sentence? Our thinking is that this may not necessarily be the case.

Following our suspicion about the rightness in correlating the reference of a part of the sentence with the reference of the whole sentence, we have a further question: is it legitimate to use the term “reference” in discussing what we actually mean by “the reference of a sentence”? Why do we have to assume the “reference” of a sentence and then decide it is the truth value of the sentence? Why don’t we skip the term of “reference of a sentence” and the idea of “sentence’s reference” from the very beginning? Actually we have the suspicion that when we use of the term “reference” for sentence, we already distort its original sense. Just consider that for the reference of proper names, we can have everything in the outside real world for it, but if truth value is the reference of sentence, we can only have two values for reference. Based on this uncertainty, we think the conditional in the following claim may not hold true: “If our supposition that the reference of a sentence is its truth value is correct, the latter must remain unchanged

when a part of the sentence is replaced by an expression having the same reference". We think the word "reference" cannot be used in this conditional that its sense in the second use can be reduplicated to the first use. It could be that Frege assumes the reference of sentence to provide a match for truth value, just as he has a match between thought of sentence and sense of sentence, please consider the following symmetric bi-matching:

*For sentence:*



We think assuming the existence of reference of sentence is ungrounded given the conditions of being a sentence within our understanding for the present stage. This thinking can be recognized by looking at one of Frege's assertions in the paper: Frege claims that a subordinate clause with "that" after "command", "ask" or "forbid" which would appear in direct speech as an imperative has no reference but only a sense. He said the reference of such a clause is not a truth value but a command, a request, and so forth. We notice that the words like "command" all indicate that the clause after it represents unrealized event. That is why the clause seems to have no reference. By saying so, Frege actually presupposes reference is about something realized or achieved. Again we are trapped in: what is reference? Here we can see clearly how inconsistent the reference of sentence could be in Frege's work. How could reference of a sentence be shifted among truth value, a thought (sense) or a command, a request or whatever other things? If it is legitimate to manipulate like this, then what is the point of having one if it could be changing and is so elusive?

### 2.3 The analysis of subordinate clause' reference

We think that this improper assumption of reference of a sentence is partly responsible for the inconsistency we get between the reference of a sentence and the reference of a subordinate sentence. Frege analysed situations in which subordinate clauses with simple senses have different references. We summarize these situations as follows:

*Situation 1: Noun clauses introduced by "that" in which words in the clause have indirect reference. Hence the reference of the clause is thought. In this*

*case, the truth value of the whole sentence is independent of the truth value of the subordinate clause*

*Situation 2: Subordinate clauses with “that” after “command”, “ask” with only sense but no reference. The reference of these clauses is a command, a request, etc.*

*Situation 3: Subordinate clauses in which words have the customary reference but are only part of a thought hence no independent sense or truth value. The sense of the subordinate clause cannot be reproduced in an independent sentence.*

*Situation 4: Subordinate clauses in which words have a complete thought as sense and the reference of the subordinate clause is truth value.*

Frege says that these categories are only for subordinate clauses with simple senses and haven't exhaust all of the possible categories. It can be seen that having a complete thought is the prerequisite for having truth value as the reference, but a complete thought does not guarantee a truth value as the reference: if the thought is in quotation, we do not have a truth value for the reference; If the thought is not realized yet (unlike the unrealized situation in conditional clause), we do not have a truth value for the reference. We see there is much room for discussion in his analysis. Firstly, in situation 2, Frege makes contradictory analysis: for clause with “that” after verbs like “command”, he first said : “Such a clause has no reference but only a sense.” Then he said again that “The reference of such a clause is therefore not a truth value but a command, a request, and so forth.” In addition, we do not agree with Frege's analysis that the words in the subordinate clauses after “command” have indirect reference which is their customary sense. We think the words here have customary reference in the general sense, these words should not be treated differently from the words in quotation. What is commanded is not the sense of the words but something further than the sense for which we are not sure which terminology we should use. Also, for situation 4, the example Frege advanced is:

*Napoleon, who recognized the danger to his right flank, himself led his guards against the enemy position.*

According to Frege, the subordinate clause in this sentence by itself has a complete thought as sense and its reference is hence its truth value. We can expect the clause to be replaced by a sentence with the same truth value without changing the truth value of the whole sentence. It is not made clear in Frege's analysis whether replacing the clause with a sentence of a same truth value while retaining the truth value of the whole sentence is a sufficient condition or necessary condition for its reference to be its truth value. We cannot figure out this either. But we have another different thinking here: we think the clause in this sentence is not subordinate clause in the real sense. We say this because unlike the subordinate clauses discussed earlier, the clause here can be extracted out without influencing the grammaticality of the whole sentence:

*Napoleon, (who recognized the danger to his right flank,) himself led his guards against the enemy position.*

Actually we do not think there is much sense talking about whether replacing the clause with another sentence of the same truth value can retain the truth value of the whole sentence. Replacing the clause with another sentence, even if it is of the same truth value, will distort the thought of the whole sentence. If we follow Frege's proposal that truth values comes from the judgement of the thought, we will see making effort on this topic is going a bit far away. On the other hand, we should also see that a subordinate sentence, although it is likewise a sentence from the logical standpoint, is not a sentence, hence it falls into our expectation if any inconsistency is detected there.

While questioning the rightness of discussing the topic we just mentioned above, we still give credits for Frege's analysis on closing up his paper: Frege tried to explain why a subordinate clause cannot be simply replaced by another one of same truth value. Although the motivation of the analysis may be miss-targeted, Frege's analysis is very insightful here. He goes out of the level of the sense and reaches the hidden level where he recognizes subsidiary thought. This actually allows in the role of conversational implicature which is the topic of our another review. Frege claims that there could be more thoughts than clauses and a certain clause may be connected to one thought and part of another thought. Hence extracting the clause may be altering a part of thought which is linked to the sense based on what the truth value of the sentence is decided. In this case, we should not expect to simply replace the subordinate clause without harming the truth

value of the whole sentence. But in another reason Frege suggests for the improperness of simple replacement, we do not sympathize with his demonstration of the example in which he claims the subordinate clause is taken twice over with different references:

*Bebel mistakenly supposes that the return of Alsace-Lorraine would appease France's desire for revenge.*

Frege thinks two thoughts are expressed here, in the first one the words in subordinate clause have their indirect reference and in the second thought the same words have their customary reference:

*(1) Bebel believes that the return of Alsace-Lorraine would appease France's desire for revenge.*

*(2) the return of Alsace-Lorraine would not appease France's desire for revenge.*

We do not think that in the first thought, the words in the subordinate clause have indirect reference, we think the verb believe does not introduce a quotation and the words after it also have their customary reference.

### 3 Summary

Reading Frege's paper on sense and reference, we can see most effort has been exerted on the discussion and clarification of reference, mainly on the reference of sentence. Our impression is that the sense of the term "reference" should be further clarified, especially if we have the ambition to extend "reference" to the level outside of nouns and noun phrases. Frege did great work by opening up an enchanted logical world of meaning. The interesting topics he came up with in the paper actually have been fathering later effort in semantics. We do feel that every issue he addressed in the paper is dangerous to be worked on, but this is exactly the challenge and charm of semantics.

### Selected Reference:

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A.P.Martinich, *The Philosophy of Language*, Oxford Univ. Press, 2001