

FREGE AND RUSSELL LECTURE 2

1. Frege goes on to apply the distinction between sense and reference to expressions other than names – in particular, he applies it to sentences. What is the reference of a sentence? What is its sense? Frege seems to accept the following two compositionality principles about sense and reference:

[B1] If two expressions have the same **reference** then substituting one for the other in a sentence doesn't change the **reference** of the sentence.

[B2] If two expressions have the same **sense** then substituting one for the other in a sentence doesn't change the **sense** of the sentence.

Keeping this in mind, we can (he says) identify the reference of a sentence with whatever remains fixed through arbitrary changes of the reference of its terms. And we can identify the sense of a sentence with whatever remains fixed through arbitrary changes of the *sense* of its terms.

2. Focusing first on reference: Frege held consistently to the following, additional substitution principle:

[D] If two expressions have the same **reference** then substituting one for the other in a sentence doesn't change the **truth value** of the sentence.

[D] applied to names says roughly 'A rose by any other name would smell as sweet'.

3. But it also means that we can identify the reference of a sentence with its *truth value*. All true sentences have the same reference ('The True') and all false sentences have the same reference ('The False'). Here it probably helps to think of 'reference' as a term of art rather than as a word for naming, though Frege *did* think of it in the second way.

4. As for sense: Frege identified the sense of a sentence with the *thought* that it expresses: 'Hesperus is uninhabitable' and 'The brightest non-lunar celestial body visible in the evening is uninhabitable' therefore have the same sense, because they express the same thought. But neither of them has the same sense as 'Phosphorus is uninhabitable', though by [B1] all three sentences have the same reference. (Notice the implication of this argument that definite descriptions also have a reference.) If we identify the thought expressed by a sentence with the information that it conveys, then [B2] becomes equivalent to [C] in Lecture 1.

5. The sense/reference distinction, for names as well as for sentences, can solve various puzzles. First and as we already saw, there is the puzzle of informative identity statements. 'H = P' and 'H = H' seem both to be saying the same thing about the same thing (both are saying, of a particular planet, that it is identical to H); and yet one of them is informative in circumstances in which the other is not. How can this be? The answer is that these sentences have different *senses* but the same *reference*.

FREGE AND RUSSELL LECTURE 2

6. Another puzzle occurs when we consider *empty* names. Take a sentence from a fictional context like 'Spiderman saved New York city from a crimewave'. Frege said that the sentence doesn't have a truth value: for it is true iff Spiderman did save New York city and false if and only if he didn't. But there *is* no Spiderman, and so the sentence fails to have a reference.

7. But it does express a sense because there is a thought that it expresses. And this thought may be different from the thought expressed by 'Batman saved New York City from a crimewave', because 'Spiderman' and 'Batman' have different senses even if they have 'the same reference' i.e. no reference.

8. The third puzzle arises from apparent violations of [D]. The sentence 'Mavis thinks that George Orwell was a novelist' is true, but 'Mavis thinks that Eric Blair was a novelist' is false, even though Eric Blair *is* George Orwell (but Mavis doesn't know that). Notice that we can get the first sentence from the second by interchanging 'George Orwell' and 'Eric Blair', that is, by interchanging names with (apparently) the same reference, and yet the resultant sentence doesn't have the same truth-value. So it looks as though [D] is false.

9. Frege's response is to point out, first, that in some contexts names (or other expressions) do not have their usual or customary reference. The simplest example in English is the device of quotation or *direct speech*. By means of quotation marks we create a context in which the enclosed words refer to themselves. 'London' refers to a city but "'London'" refers to a six-letter word.

10. Now that Frege has got us used to this idea let us return to the example, which is a case of indirect speech (Frege's *oratio obliqua*). What Frege says is that verbs like 'think', 'know', 'believe', 'hope', 'fear' etc. all create contexts in which a word refers, not to its customary reference, but to its customary *sense*. Now 'Eric Blair' and 'George Orwell' have the same customary reference but they don't have the same customary *sense* – one of them presents its reference (to Mavis) as her grandfather's best friend, the other as the author of *Animal Farm*, *Nineteen Eighty-four* etc. So the fact that 'Mavis thinks that George Orwell...' is true, whilst 'Mavis thinks that Eric Blair...' is false – this is in fact not a counter-example to [D].

11. Frege applies [D] to sentences too. For sentences do sometimes occur inside *other* sentences, most familiarly sentences containing logical connectives like 'and', 'or' etc. In those cases the sentence-version of [D] is straightforwardly true: if P and Q have the same reference (truth-value) then interchanging them in such contexts does not change the truth-value of the whole sentence: 'Salzburg is in Austria and Prague is in the Czech Republic' has the same truth-value as 'Salzburg is in Austria and Jupiter is a planet'. But in indirect speech the same problem arises as for names, as the 'Mavis' example already attests; here Frege thinks that the reference of a sentence is *its* customary sense i.e. the thought that it expresses.