

HANDOUT 1

SENSE AND REFERENCE: FREGE

THE PUZZLE ABOUT IDENTITY. What is the meaning of the statement:

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$$2 \times 3 = 8 - 2? \quad (1-1)$$

Obviously we mean to state identity between certain items, but what are these items? Perhaps we could paraphrase it in English. The most natural way is:

The number obtained by multiplying two by three is the same as the number obtained by subtracting two from eight. (1-2)

So the identity is between numbers—namely, the same number six. But then the statement:

$$6 = 6 \quad (1-3)$$

is exactly the same statement as (1-1). After all, both state the identity between the number six and itself. Now this seems false. The statement (1-3) is trivial requiring no knowledge of arithmetic, while (1-1) is arithmetically informative (at least slightly!).

Perhaps, then, the identity in (1-1) is not between numbers. Thus another proposal, favoured by Frege himself early on, is to think of (1-1) as a statement about the identity of signs themselves. Then indeed, the identity of signs, or symbolic expressions, flanking the identity sign in (1-1) is not trivial, while (1-3) is.

Now what *exactly* the identity between the expressions (names, signs) '2 × 3' and '8 - 2' could possibly even mean? If they are identified by their respective physical shapes, then they are not even similar, let alone identical.

If it is not merely shapes that we compare, then we compare names understood as having some designation property. So we say that the name '2 × 3' is identical to the name '8 - 2' because of what it designates. Yet, says Frege, this designation relation is arbitrary (or 'haphazard', *willkürlich*). There is no one right way for choosing to represent objects symbolically. Therefore, we cannot attain 'knowledge' of the identity between names. As I understand Frege here, this means: the equation (1-1) would at most reflect a contingent fact, not an arithmetical necessity that we normally wish to establish.

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Remark 1 (The role of identity). Frege frames the puzzle as a problem about identity. Already in the arithmetical case it does not have to do anything specifically with identity. Just consider this pair of statements where one is more informative than the other:

$$\begin{aligned} 2 \times 3 &> 8 - 3 \\ 6 &> 5. \end{aligned} \quad (1-4)$$

Even more obvious is the use in the natural language (if we extend the discussion to natural language):

Lenin is human.
The second son of Ilya Ulyanov is human. (1-5)

THE DISTINCTION. Frege introduces a new solution (opposed to his earlier own view). The expressions '2 × 3' and '8 - 2' designate the same object. Yet the object has different 'modes of presentation' in the two expressions.

Question 2. Explain the medians concurrency example in page 57.

Thus the sign is endowed with a *reference*, i.e. the object to which it refers, and with *sense*, i.e. the mode of presentation of that object.

CLARIFICATIONS. (a) The terminology of the 'mode of presentation' is obscure and elliptic. Frege clarifies it by linking it to our *knowledge* of the object. An object have different characteristics, and it is those characteristics that are aligned with sense. To say that an object presents to us in a certain way is to say that we know certain characteristics of the object. (b) Why does the expression '2 × 3' refer to the number six, but '2 × 2' does not? We want to say, 'Because it has a certain meaning in the language.' The 'meaning' here is nothing but Frege's sense. So sense *determines* the reference of the expression. (c) With some expressions, the sense is *transparent*. As soon as we have formulated the expression, we have specified its sense. Another way of putting this (or at least a closely related) idea: the sense of the expression is 'shown', but cannot be explicated in words. (d) The theory is not restricted to one domain of discourse, such as mathematics, but applies across the board. However, we encounter special problems in the treatment of natural language.

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Example 3. The expression ' 2×3 ' refers to the number six. Its sense is transparent: in uttering (formulating) the expression we use a particular characteristic of the number six—namely, that it is the product of two and three. Things are, or in any case seem, different with '6'. Here I don't use any characteristic of the number six. You might object that it is a characteristic of the number six that it is referred to with the aid of the sign '6'. This does not sound like a good objection, given Frege's earlier insistence on the arbitrariness of signs.

EXTENSION TO NATURAL LANGUAGE. Frege makes clear that the distinction does not apply merely to a limited area of discourse, such as mathematics. In natural languages we encounter special problems. For example: we demand that the sense of the expression should be known by every competent speaker of the language. Yet in the case of ordinary proper names there is no agreement what sense should be ascribed to them. Such names should be banished from the 'perfect language'.

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Example 4. Every person here is a competent user of the name 'Socrates', yet there is no consensus what sense should be ascribed to it.

Another problem is homonyms. The name 'George Bush' is used to refer to (at least) two distinct individuals. Consequently, there is no definitive sense that this name could express.

SENSES, IDEAS, TONE. Frege is emphatic in rejecting the association between senses and ideas. By 'ideas' he typically means products of subjective experience, such as memories and mental images. The main argument is that senses can be communicated between people. Ideas cannot. I cannot convey my idea to you. For that to happen I should put my head on your shoulders. We thus have to speak of the senses of the expressions, but of the ideas of the speakers or thinkers—ideas, that is, that exist in their minds.

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We are thus allowed to posit 'the sense' grasped by different individuals. Here Frege's argument is specious, though. He quotes a Latin proverb to argue that the ideas pictured by two different individuals must be different (since they are pictured in two different ways). But the same proverb may be used to argue that senses too are unstable: two persons grasp the sense, but why should it be the same sense.

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In any event, Frege then says that senses are somewhere in between of ideas and objects. This foreshadows his later explicit account of the 'third realm' of senses. There are, he says further, three levels of difference between expressions—corresponding to the differences in ideas, sense, and reference. Any person can associate whatever feeling or image with a word. This difference is between persons. Moreover, an adequate translation should preserve the sense (though lose ideas). This is its proper goal.

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At this point Frege distinguishes between sense and 'colouring', or what later was called 'tone'. To the tone belong various arbitrary elements of meaning that have nothing to do with reference.

Example 5 (Tone). Compare the expressions '*Vorstellung*' and 'idea'. By Frege's lights, they have the same sense, since one (we assume) is a correct translation of the other (German to English). Still, they may have different tones. In the German word we have 'vor-stellung' reminding us perhaps of something 'put before' or 'set before'. The word 'idea' has no such reminder. Or consider 'Bosch'/'German' and 'kike'/'Jew'. Both mean the same: they are synonyms for Germans or Jews. Yet one is offensive, the other not. The difference, Frege insists, is just in tone.

Remark 6. Note the example of the Moon and the analogy with retinal image.

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