

Frege's theory of sense

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We have now seen how a theory of reference – a theory that assigns to each expression of the language a reference, which is what it contributes to determining the truth or falsity of sentences in which it occurs - might look for a fragment of English. (The fragment of English includes proper names, n -place predicates, quantifiers, and compound sentences connected with 'and.')

We now turn to Frege's reasons for thinking that a theory of reference must be supplemented with a theory of sense.

1 Why there must be more to meaning than reference

1.1 The puzzle about identity sentences

Frege begins “On sense and reference” with the claim that identity (sameness) raises difficult questions. As we’ll see, identity sentences provide a central reason why

1.1.1 Frege’s treatment of identity sentences in *Begriffsschrift* §8

In the *Begriffsschrift*, Frege had this to say about identity sentences:

“Equality of content differs from conditionality and negation by relating to names, not to contents. Elsewhere, signs are mere proxies for their content, and thus any phrase they occur in just expresses a relation between their various contents; but names at once appear *in propria persona* so soon as they are joined by the symbol for equality of content; for this signifies the circumstance of two names’ having the same content. Thus, along with the introduction of a symbol for equality of content, all symbols are necessarily given a double meaning – the same symbols stand now for their own content, now for themselves.” (§8)

Given what we know about Frege’s theory of reference and the role played by proper names in that theory, this should strike you as a bizarre theory. Elsewhere, names contribute the object for which they stand to the truth-conditions of sentences in which they occur; why should they, in this one case, stand not for an object but for themselves?

Later in §8, Frege explains his reasoning:

“It is clear . . . that different names for the same content are not always just a trivial matter of formulation; if they go along with different ways of determining the content, they are relevant to the essential nature of the case. In these circumstances the judgement as to equality of content is, in Kant’s sense, synthetic.” (§8)

Frege seems to have in mind something like the following: if we take some trivial and analytic identity sentences, like

Bob is Bob.

and replace one of the names with another having the same reference, as in

The person used most often as an example on PHIL 415 is Bob.

then it seems that we arrive at a sentence which is synthetic. The intuitive analytic/synthetic distinction; a way to restate Frege’s point here without relying on an analytic/synthetic distinction. The idea of the cognitive significance of a sentence.

1.1.2 Frege's criticism of his early view

Frege later came to see that his original treatment of identity sentences as expressing equality of content was mistaken. According to that earlier view, a sentence like

Hesperus is Phosphorus.

means something like

'Hesperus' and 'Phosphorus' have the same content.

or

'Hesperus' and 'Phosphorus' stand for the same thing.

About this view, Frege had this to say in "On sense and reference":

"What one wishes to express with 'a=b' seems to be that the signs or names 'a' and 'b' name the same thing; and in that case we would be dealing with those signs: a relation between them would be asserted. But this relation could hold only inasmuch as they name or designate something. The relation, as it were, is mediated through the connection of each sign with the same nominatum. This connection, however, is arbitrary. . . . Hence, a sentence like 'a=b' would not longer refer to a matter of fact but rather to our manner of designation; no genuine knowledge would be expressed by it. But this is just what we do want to express in many cases. . . ." (199b)

What is Frege's criticism here? Two related versions of the criticism: one relating to the subject matter, the other to the truth conditions, of identity sentences.

The dilemma this poses: it seems that names in identity sentences neither stand for themselves nor (merely) stand for objects. Then how are names functioning here?

1.1.3 A more general form of the puzzle about identity sentences: cognitive significance

A more general form of this worry is that sometimes it seems that, in some intuitive sense, two sentences which do not differ with respect to the references of the expressions which compose them differ in what they *say*. Just as one might think that what is said by identity sentences like

The morning star is the morning star.

The morning star is the evening star.

differ, so one might think that what is said by non-identity sentences like

Last morning, I was looking at the morning star.

Last morning, I was looking at the evening star.

differ. An even more obvious case: any sentences with the same truth-value.

A general criterion for having different ‘cognitive significance’, in this sense:

Two sentences S and S' differ in cognitive significance iff it is possible for a rational agent who understands both to take some attitude toward S without taking that attitude toward S' (or vice versa).

Reasons for thinking that a theory of language should capture some of ‘cognitive significance’, in this sense.

1.2 *Sense, reference, and understanding*

So far we have been focusing on the explanation of the links between expressions and the world. But an adequate theory of language should also explain the links between linguistic expressions and their users.

1.2.1 *Understanding and knowledge of meaning*

One important such relation is that of *understanding* linguistic expressions, or knowing their meaning. (It seems plausible that one understands an expression iff one knows what it means.)

If this is right, then we have a new form in which we can raise our question about whether the theory of reference can serve as a full theory of the signification of language: we can ask whether to understand an expression, one must know its reference.

1.2.2 *Knowledge of meaning and knowledge of reference*

Frege thought not:

“The sense of a proper name is grasped by everyone who knows the language or the totality of designations of which the proper name is a part; this, however, illuminates the nominatum, if there is any, in a very one-sided fashion. A complete knowledge of the nominatum would require that we could tell immediately in the case of any given sense whether it belongs to the nominatum. This we shall never be able to do.” (“On sense and reference,” 29a)

Here Frege claims that we lack the kind of knowledge of reference that we have of the meaning of an expression. Just from understanding an expression, we are typically not in a position to know what its reference is. The case of sentences.

Another way to put the point is given by the following argument involving co-referential expressions:

1. To understand an expression is to know its meaning.
 2. If two expressions have the same meaning, then anyone who understands both will be in a position to know this.
 3. Often, we can understand two expressions without knowing whether they have the same reference.
-
- C. Reference is not meaning.

1.3 Opaque contexts

A theory of reference is supposed to explain the links between language and the world by assigning to expressions what those expressions contribute to the truth or falsity of sentences in which they occur. We've just argued that such a theory can't *also* explain the links between languages and their users.

But there are sentences which seem to show that a theory of reference cannot, by itself, even explain the connections between sentences and the world. Sentences about mental states and about necessity and possibility. This a further argument against taking a theory of reference to do all the work of a theory of meaning.

1.3.1 Propositional attitude ascriptions

Bob believes that the greatest student of Plato was a philosopher.

Bob believes that the greatest teacher of Alexander the Great was a philosopher.

Bob believes that $2+2=4$.

Bob believes that arithmetic is incomplete.

1.3.2 Modality

Necessarily, all cordates are cordates.

Necessarily, all cordates are renates.

Necessarily, the greatest mathematician is a mathematician.

Necessarily, the greatest cyclist is a mathematician.

2 What are senses?

Frege introduces a new theoretical notion, *sense*, which he thinks can resolve at least parts of each of the preceding three objections to the theory of language of the *Begriffsschrift*:

“It is natural, now, to think of there being connected with a sign, . . . besides that to which the sign refers, . . . what I should like to call the *sense* of the sign, wherein the mode of presentation is concerned.” (57)

What we now have to do is see what sorts of things the senses of linguistic expressions are, and how they are supposed to solve these problems.

2.1 *Why senses cannot be linguistic items*

2.2 *Why senses cannot be mental images*

Frege’s argument against the thesis that the meanings of linguistic expressions (i.e., ‘thoughts’) are mental:

“If every thought requires an owner and belongs to the contents of his consciousness, then the thought has this owner alone; and there is no science common to many on which many could work, but perhaps I have my science, a totality of thoughts whose owner I am, and another person has his. Each of us is concerned with the contents of his own consciousness. No contradiction between the two sciences would then be possible, and it would really be idle to dispute about truth; as idle, indeed almost as ludicrous, as for two people to dispute whether a hundred-mark note were genuine, where each meant the one he had in his pocket and understood the word ‘genuine’ in his own particular sense. If someone takes thoughts to be ideas, what he then accepts as true is, on his own view, the content of his consciousness, and does not properly concern other people at all. If he heard from me the opinion that a thought is not an idea he could not dispute it, for, indeed, it would not now concern him.” (‘Thoughts’, 336)

Four further arguments against the view that meanings are ideas, or mental images:

- Mental images are not available for enough kinds of linguistic expressions. (‘of’, ‘chiliagon’)
- Berkeley’s point: mental images are too precise to be meanings.
- Widespread variance in images associated with individuals. No one would ever mean the same thing by a word as anyone else.
- Wittgenstein’s point: mental images need interpretation as much as physical ones.

2.3 Senses as modes of presentation

Sense as a mode of presentation of reference; as something which gives a perspective on the reference. This makes sense of (i) the fact that different expressions can have the same sense but different reference, and (ii) the cases of difference in informativeness we have discussed.

A potential worry: doesn't this mean that Frege is back in the camp of those he criticized, who thought of meanings as mental? Frege's response:

“The reference of a proper name is the object itself which we designate by its means; the idea, which we have in that case, is wholly subjective; in between lies the sense, which is indeed no longer subjective like the idea, but is yet not the object itself. The following analogy will perhaps clarify these relationships. Somebody observes the Moon through a telescope. I compare the Moon itself to the reference; it is the object of the observation, mediated by the real image projected by the object glass in the interior of the telescope, and by the retinal image of the observer. The former I compare to the sense, the latter is like the idea or experience. The optical image in the telescope is indeed one-sided and dependent upon the standpoint of observation; but it is still objective, inasmuch as it can be used by several observers. At any rate it could be arranged for several to use it simultaneously. But each one would have his own retinal image.” (‘On sense and reference,’ 30)

Another important analogy: ‘the intersection of A and B ’ and ‘the intersection of C and D ’.

Senses and ‘the third realm.’

3 The theoretical role of senses

3.1 The relation between sense and reference

3.1.1 Sense determines reference

Sense determines reference: any two expressions with the same sense/meaning will also have the same reference.

Why would one think that sense determines reference? One reason: intuitively, if two sentences have the same sense, they say the same thing about the world; and if two sentences say the same thing about the world, they cannot differ in truth-value. But if the reference of a sentence is its truth-value, that means that the sense of a sentence determines its reference. (Can you see how you could use this as a premise to argue that the senses of sub-sentential expressions determine their reference?)

Reference does not determine sense: often, two expressions with the same reference will differ with respect to sense.

3.1.2 *Indirect reference*

“When words are used in the customary manner then what is talked about are their nominata. But it may happen that one wants to talk about the words themselves or about their senses. The first occurs when one quotes someone else’s words in direct (ordinary) discourse. . . . In writing we make use of quotes enclosing the word-icons. . . . In indirect discourse we speak of the sense, e.g., of the words of someone else. From this it becomes clear that also in indirect discourse words do not have their customary nominata; they here name what would ordinarily be their sense.” (‘On sense and reference’, 29b)

Cases in which the reference of an expression is its (usual) sense. A semantics for propositional attitude expressions.

3.2 *Sense and understanding*

3.3 *Sense and tone*

From “Thought,” p. 331:

“It makes no difference to the thought whether I use the word ‘horse’ or ‘steed’ or ‘nag’ or ‘prad.’ . . . What is called mood, atmosphere, illumination in a poem, what is portrayed by intonation and rhythm, does not belong to the thought.

Somebody using the sentence ‘Alfred has still not come’ actually says ‘Alfred has not come’, and at the same time hints - but only hints - that Alfred’s arrival is expected. Nobody can say: since Alfred’s arrival is not expected, the sense of the sentence is false.”

Frege’s criterion for picking out what parts of the sentence matter only to the ‘tone’ seems to be that it must, at least potentially, make a difference to the truth value of the sentence. Further examples of the same sort:

He was poor and honest.

He was poor but honest.

They have two children.

They have at least two children.

He drove home and got drunk.

He got drunk and drove home.

3.4 *Sense and force*

Frege's view that one can do more than one thing with a sense: one can assert it, grasp it, ask it, command it, We might say that the following sentences have the same sense, but different force:

You are doing the reading for this course.

Are you doing the reading for this course?

Do the reading for this course!

4 **Objections to Frege's theory of sense**

The obscurity of senses. Criteria for sameness and difference of senses without much more information about what senses are.

The metaphysics of sense, and the third realm. Frege's view of the metaphysics of senses:

“So the result seems to be: thoughts are neither things in the external world nor ideas.

A third realm must be recognized. Anything belonging to this realm has it in common with ideas that it cannot be perceived by the senses, but has it in common with things that it does not need an owner so as to belong to the contents of consciousness. Thus for example the thought we have expressed in the Pythagorean Theorem is timelessly true, true independently of whether anyone takes it to be true. It needs no owner. It is not true only from the time when it is discovered; just as a planet, even before anyone saw it, was in interaction with other planets.” (‘Thoughts’, 337)

How can we grasp things in the third realm? Connections between material objects and abstract objects.