

The Language Revolution
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Class #6
Frege on Sense and Reference

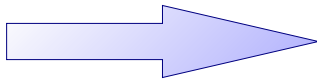
The Big Picture

How does language hook on to the world?

Obvious answer: names

- ▶ Mill: the semantic value of a name is the object it picks out.
- ▶ 'Fido'-Fido theory
- ▶ Direct reference theory

Fido



Frege's Three Puzzles

Problems for the 'Fido'-Fido Theory

FP1. The problem of cognitive content

FP2. Failure of presupposition/Empty reference

FP3. Opaque contexts



Dead Puppy
(Not really)

FP1: Cognitive Content

1. Hesperus is Hesperus

2. Hesperus is Phosphorus.

- ▶ 1 seems uninformative, knowable *a priori*, an analytic truth of language or logic, and necessarily true.
- ▶ 2 seems informative and knowable only *a posteriori*, a synthetic, contingent, empirical truth.

Given that 'Hesperus' and 'Phosphorus' refer to the same thing, how can there be such a difference?



Frege's Early Solution to FP1

Begriffsschrift (1879)

The identity symbol shifts the reference of the name to its symbol.

- ▶ 'a=a' is obvious since they are the same signs
- ▶ 'a=b' is not obvious since the signs are different

Gets us substitutivity of identicals

Problems

- ▶ Too narrow; there are other puzzles
- ▶ We refer under a mode of presentation.

Frege's Mature Solution to FP1

“On Sense and Reference” (1892)

Names, in fact all singular terms, have both sense and reference.

“It is natural, now, to think of there being connected with a sign (name, combination of words, letter), 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” (37).

‘Hesperus’ and ‘Phosphorus’ have the same reference.

They have different senses.

Senses

“A proper name (word, sign, sign combination, expression) *expresses* its sense, *stands for* or *designates* its reference. By means of a sign we express its sense and designate its reference” (40).

Senses are the intensions for which Frege argued in “The Thought”.

They are the *meanings* of terms.

Each of us grasps a term or sentence under what Frege calls a mode of presentation.

Different people associate different senses with a given linguistic object.

There are senses/meanings for all linguistic objects:

- ▶ Names (and other definite descriptions);
- ▶ Properties
- ▶ Sentences

References

References of names (and other singular terms) are the objects that those terms designate.

References of predicates

- ▶ properties (if one is an intensionalist)
- ▶ sets of objects that fall under the concept expressed (if one is an extensionalist).
 - See Frege, “On Concept and Object.”

References of sentences

- ▶ “If it were a question only of the sense of the sentence, the thought, it would be unnecessary to bother with the reference of a part of the sentence; only the sense, not the reference, of the part is relevant to the sense of the whole sentence. The thought remains the same whether ‘Odysseus’ has reference or not. 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 “(42).
- ▶ “It is the striving for truth that drives us always to advance from the sense to the reference. We have seen that the reference of a sentence may always be sought, whenever the reference of its components is involved; and that this is the case when and only when we are inquiring after the truth value. We are therefore driving into accepting the *truth value* of a sentence as constituting its reference. By the truth value of a sentence I understand the circumstances that it is true or false. There are no further truth values. For brevity I call the one the True, the other the False” (42).

Sense, Reference, and Meaning

When we ask for the meaning of a term, our question may be ambiguous between sense and reference.

The senses of terms are their meanings.

- ▶ For singular terms, they are modes of presentation of objects.
- ▶ For predicates, they are concepts (how we think of properties)
- ▶ For sentences, they are meanings (propositions).

The references of terms are what they designate.

- ▶ For singular terms, they are objects.
- ▶ For predicates, they are extensions (things of which the property holds) or concepts.
- ▶ For sentences, they are truth values.

See Letter to Husserl 24 May 1891.

The Relation Between Sense and Reference

“The sense of a proper name is grasped by everybody who is sufficiently familiar with the language or totality of designations to which it belongs; but this serves to illuminate only a single aspect of the reference, supposing it to have one. Comprehensive knowledge of the reference would require us to be able to say immediately whether any given sense belongs to it. To such knowledge we never attain” (37).

The sense of a term determines its reference.

I grasp, in my thoughts, the sense of a term.

▶ That’s what Locke over-emphasized.

FP2: Failure of Presupposition

the problem of empty reference

'Sherlock Holmes lives at 221B Baker Street'.

The meaning of the whole proposition is composed of the meanings of its parts.

'Sherlock Holmes' lacks reference.

If meaning is just reference ('Fido'-Fido), then the sentence lacks meaning.



Frege's Solution to FP2

Separate sense and reference

'Sherlock Holmes' has sense, even though it lacks reference.

Allows the compositionality of meaning even when some terms lack reference



FP3: Opaque Contexts

Lois Lane believes that Superman can fly.

Superman is Clark Kent.

So, Lois Lane believes that Clark Kent can fly.

- ▶ Substitutivity fails.
- ▶ But truth value depends on reference.
- ▶ And we're substituting co-referential terms.
- ▶ Uh-oh.



Frege's Solution to FP3

Within opaque contexts, references of sentences and singular terms are not their ordinary references, but their senses.

Discourse may be indirect.

- ▶ “In order to speak of the sense of an expression ‘A’ one may simply use the phrase ‘the sense of the expression “A”’. In reported speech one talks about the sense, e.g., of another person’s remarks. It is quite clear that in this way of speaking words do not have their customary reference but designate what is usually their sense. In order to have a short expression, we will say: In reported speech, words are used *indirectly* or have their *indirect reference*”(38).
- ▶ “The situation is similar in the case of expressions such as ‘to be pleased,’ ‘to regret,’ ‘to approve,’ ‘to blame,’ ‘to hope,’ ‘to fear.’ If, toward the end of the battle of Waterloo, Wellington was glad that the Prussians were coming, the basis for his joy was a conviction. Had he been deceived, he would have been no less pleased so long as his illusion lasted; and before he became so convinced he could not have been pleased that the Prussians were coming - even though in fact they might have been already approaching” (45-6).

When we say that Lois Lane believes that p, the object of her belief is a that-clause, which is the name of a proposition, the sense of a sentence.

Indirect Discourse

Lois Lane believes that Superman can fly.

Given compositionality, the reference of the that-clause should be the True.

But, if 'Superman can fly' referred to the True, then we should be able to substitute any truth and retain the truth value of the whole.

- ▶ 'Hamilton College is in Clinton NY'
- ▶ 'Lois Lane believes that Hamilton College is in Clinton NY.'

The reference of a that-clause in indirect discourse is its ordinary sense.

Properties of Propositions

Propositions (senses of sentences) are abstract, objective, mind- and language-independent entities that exist in a third ontological realm, neither private, nor physical.

Compositionality: propositions are structured entities built out of their parts.

- ▶ The sense of a whole expression is determined by the senses of its (often sub-sentential) parts.



Components of Propositions

E.g. that Marina is a kitten

It could contain the sense of 'Marina', the reference of 'Marina' (i.e. Marina herself), or something else.

It could contain the sense of 'is a kitten', the reference of 'is a kitten' (i.e. the set of kittens), or something else.

If propositions contained the referents of their component terms, then the proposition that the morning star is the evening star would be the same proposition as that the morning star is the morning star.

- ▶ So propositions are composed of the sense of the subject, or the subject under a mode of presentation, and the sense of the predicate, or the property under a mode of presentation.

Marina instantiates the sense (or individual concept) of the subject part of the proposition

The property of being a kitten is an instance of the sense of the predicate, of the concept of kittenhood.

If both concepts (of Marina and of kittenhood) are instantiated, then the proposition that Marina is a kitten will be true or false depending on whether or not Marina is a kitten.

Otherwise, the proposition has no truth value.

Objects of Language

Inscriptions or utterances of sentences

Objects (e.g. Marina, kittens)

Properties (e.g. being a kitten)

Individual concepts (e.g. of Marina).

Frege argues that such posits are not excessive.

- ▶ Senses are available to us; we can think about them (or apprehend them).
- ▶ The property of being a kitten (or the set of kittens) is the referent of 'x is a kitten'.
- ▶ We think about that property, or that set, only under a mode of presentation to us, i.e. its sense.
- ▶ The multiplication of entities is exactly how we solved the identity and empty reference problems.

Two Concerns

Concern #1: Analyticity

The sense of 'Aristotle' for one person:

- ▶ teacher of Alexander the Great, student of Plato, born in Stagira, author of *Posterior Analytics*

Another person could associate a different sense with 'Aristotle:

- ▶ Author of *Metaphysics*, guy who believed in four causes

Is 'Aristotle was a student of Plato' an analytic truth?



Concern #2: Opaque Contexts



Stephen Schiffer

- ▶ 'Marina's owner believed that Marina is a kitten.'
- ▶ I am making a presumably true statement.
- ▶ I have no access to the mode of presentation by which her owner knows that Marina is a kitten.



Bob Hale

- ▶ 'My copy of the *Grundlagen* was on my desk but I thought that it was in my bag.'
- ▶ Since the 'it' occurs in an opaque context, it should refer to its sense, not to its ordinary reference.
- ▶ But it refers to the same thing that the term at the beginning of the sentence refers to.
- ▶ 'It' is just 'my copy of the *Grundlagen*', not that object under a mode of presentation.

Ways Not To Be Frege

Some philosophers worry about access to abstract objects like senses.

Others just resist the multiplication of entities inherent in Frege's reification of meanings.

Frege's sense/reference distinction solves three puzzles.

- ▶ The problem of cognitive content is solved by distinguishing the meaningfulness of names from the identities of their bearers.
- ▶ The problem of empty reference is solved by showing that a sentence containing an empty name can be meaningful when the name has a sense.
- ▶ The problem of opaque contexts is solved by showing that reference within opaque contexts can be to the ordinary senses of names and subordinate clauses.

Russell attempts to solve the problems by using analysis and a description theory.

Extensionalists take the meanings of subjects to be just their referents, and the meanings of predicates to be the sets of objects of which those predicates hold.

- ▶ Quine solves Frege's problem with opaque contexts by refusing to substitute into opaque contexts.
- ▶ The problems of cognitive content and empty reference are more difficult for extensionalists.