

Dear Students in Philosophy 247/447,

I originally intended to include the following descriptions of Frege's and Russell's theories in my article "Names and Natural Kind Terms." Unfortunately, the article became too long to include details about Frege and Russell. You should read the section on Millianism in that article before reading this selection.

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2. Frege's Theory of Sense and Reference

Although Frege accepted something like the Naive Theory in his early work, he later rejected it for reasons like those given above. He formulated a radical alternative, his famous theory of *Sinn* and *Bedeutung*. We here translate Frege's terms into English as 'sense' and 'reference', respectively. The distinction between sense and reference is most easily illustrated using sentences containing definite descriptions. Consider (11).

11. The inventor of the bifocals is the first Postmaster General of the United States. The definite descriptions in (11) refer to the same object, Benjamin Franklin. Yet they seem to present and determine that object in different ways: for instance, one presents him *as* an inventor, whereas the other presents him *as* a Postmaster General. Frege held that these definite descriptions differ in *sense*. A sense, according to Frege, is a *mode of presentation* of an object and a *way of thinking* of an object. A sense *presents* or *determines* an object. Each of the above definite descriptions *expresses* a sense, and each refers to whatever object its sense presents.

Frege claimed that proper names also express senses. The sense of a proper name, like the sense of a definite description, presents an object, which is the referent of the name. In that respect, the sense of a proper name is like that of a definite description. Frege often used definite descriptions to express the senses of proper names. For instance, he claimed that the sense of 'Aristotle' (for some speakers) can be expressed by the definite description 'the Stagirite teacher of Alexander the Great'. Thus, some philosophers claim that Frege thought that the sense of any name can be expressed by a definite description. Whether or not this is so, we shall *initially* be concerned with this descriptive version of Frege's theory. (Non-descriptive Fregean theories will be discussed later.)

Frege extended the theory of sense and reference to all expressions. A predicate expresses a sense that presents a set of objects (or, more accurately, the characteristic function of a set of objects). This set is the referent of the predicate. The truth value of a sentence is determined by the references of its parts: for instance, 'Mark Twain is human' is determined to be true because the referent of the name is a member of the referent of the predicate 'is human', that is, the set of humans. Thus, Frege held that the reference of a sentence is its truth value. (So the *Bedeutung* of an expression is comparable to its *extension*, or reference, in modern terminology.) The sense of a full indicative sentence is a *Gedanke*, or Thought. The Thought that a sentence expresses presents the truth value of the sentence. Thoughts are also the things that people assert and believe; in this respect, they are like the propositions of the Naive Theory.

Frege's theory was largely motivated by the Objection from Cognitive Significance, and deals handily with the examples used in that objection. 'Mark Twain' and 'Samuel Clemens' differ in sense, for most speakers. The sense of the first, for some speakers, can be expressed by 'the author of *Huckleberry Finn*' while the sense of the second, for some speakers, can be

expressed by ‘the person who published U.S. Grant’s autobiography’. Thus, sentences (1) and (2) express different senses, or Thoughts. So, the sentences can differ in informativeness, *a priority*, and analyticity, and a rational person can think that (1) and (2) differ in truth value. Similarly for (3) and (4), and (5) and (6).

According to Frege’s theory of attitude ascriptions, the ‘that’-clauses that appear in belief ascriptions (9) and (10) refer to the Thoughts that (1) and (2) express.

9. Mary believes that Mark Twain is Mark Twain.
10. Mary believes that Mark Twain is Samuel Clemens.
1. Mark Twain is Mark Twain.
2. Mark Twain is Samuel Clemens.

Thus (9) attributes to Mary belief in one Thought, whereas (10) attributes to her belief in a different Thought. It’s possible for Mary to believe one of these Thoughts without believing the other, so it’s possible for (9) and (10) to differ in truth value.

Frege’s theory allows proper names to express senses that fail to present an object.¹ For instance, the name ‘Pegasus’ expresses a sense that might also be expressed by the description ‘the winged horse’. This sense does not present an object, and so the name fails to refer. Nevertheless, sentence (7) expresses a Thought, and is (in that sense) meaningful. It’s not entirely clear how Frege’s theory would deal with apparently true negative existentials. At first glance, Frege’s theory seems to entail that ‘Pegasus exists’ has no truth value, since the name ‘Pegasus’ fails to refer. But it’s open to Frege to hold that, when a name appears in an existential sentence, it refers to its usual sense. Thus, ‘Pegasus exists’ might mean roughly the same thing as ‘The sense expressed by ‘Pegasus’ presents an object’. This is false, so (8) is true.

3. Russell’s Theory

Bertrand Russell also rejected the Naive Theory, for reasons much like Frege’s. But his proposed replacement was a relatively modest modification of the Naive Theory, compared with Frege’s radical alternative.

Russell, unlike Frege, accepted the existence of singular propositions. But he thought that agents entertain relatively few singular propositions, and rarely express singular propositions with their utterances. According to Russell, an agent A can entertain a proposition P only if A is *directly acquainted* with all of P’s constituents. Russell held that there are strong constraints on the things with which an agent can be directly acquainted. If O is an object, then A is directly acquainted with O at time T only if A’s experiences at T necessitate the existence of O at T. Furthermore, if A is directly acquainted with objects O and O* at T, and O is identical with O*, then A believes at T the singular proposition that they are identical, <O, O*, Identity>. If O and O* are distinct, then A does not believe this proposition, but rather its negation. Similar constraints on direct acquaintance hold for the properties and relations that appear in

¹ Gareth Evans (19xx) and John McDowell have argued that (i) Frege denied that non-referring proper names have senses and (ii) the claim that non-referring proper names have senses is inconsistent with (the spirit of) Frege’s theory of sense and reference, in particular with his claim that a sense is a way of thinking of an object. Evans’s and McDowell’s interpretations of Frege are strained. In any case, a Fregean theory that allows non-referring proper names to express senses is more interesting than one that does not, and certainly is better able to deal with Frege’s Puzzles. Therefore, this is the sort of Fregean theory we shall consider here.

propositions. Thus, an agent is directly acquainted with very little, perhaps only herself, her current experiences, and the properties and relations exemplified by her current experiences. The propositions she can entertain can have only items of these sorts as constituents. Furthermore, a sentence in A's language expresses proposition P only if A can entertain P. These doctrines have direct implications for puzzles of cognitive significance. Suppose N and N* are two names in A's language, and suppose that '=' expresses the relation of identity. Then the sentence "N=N*" expresses the singular proposition <O, O*, Identity> in A's language only if A is directly acquainted with O and O*. Thus if "N=N*" expresses the singular proposition <O, O*, Identity> in A's language, and this proposition is true, then A believes it. If the proposition is false, then A believes its negation. So, if N and N* are Millian names (or *logically proper names*, as Russell puts it) in A's language for the same object O, then A cannot think that "N=N" and "N=N*" differ in truth value. It also seems that these sentences cannot differ in cognitive significance for A in any other respect.

Russell held, however, that sentences containing *ordinary* proper names, like (1) and (2), *can* differ in cognitive significance. Thus, Russell held that ordinary proper names, like 'Mark Twain' and 'Samuel Clemens', are not logically proper names. They are, instead, abbreviations for definite descriptions. For a given agent, sentences (1) and (2) might be abbreviations for sentences (1d) and (2d).

- 1d. The author of *Huckleberry Finn* is the author of *Huckleberry Finn*.
- 2d. The author of *Huckleberry Finn* is the person who published U.S. Grant's autobiography.

These sentences do not express propositions that have Twain as a constituent. They instead express propositions whose constituents are the relation of authoring, the property of being a person, the relation of publishing, and so on.² Thus, a rational agent can think that (1) is true and (2) is false. The sentences can also differ in *a priority* and analyticity.³

Russell furthermore held that, strictly speaking, no ordinary proper name refers to an individual. His reason is that ordinary proper names abbreviate definite descriptions, and definite descriptions (on Russell's view) are semantically like quantifier phrases, such as 'all dogs' and 'some cats', which do not refer to individuals. For instance, a sentence containing a definite description, such as (12), expresses a complex proposition that is more perspicuously articulated by sentences (12a) and (12b).

²Strictly speaking, Russell held that predicates like 'author' and 'think' contribute *propositional functions*, rather than properties and relations, to the propositions expressed by sentences. A propositional function is a function from individuals to singular propositions. We ignore this detail here.

³Sentence (2d) contains the proper name 'U.S. Grant', but no agent, other than Grant, entertains a proposition that has Grant as a constituent. Thus, for most agents, the name 'U.S. Grant' is itself an abbreviation for a definite description. If an agent other than Grant wished to articulate, in *unabbreviated* form, the proposition that she entertains when she understands (2d), she would need to replace the name 'U.S. Grant' with a definite description whose constituent singular terms (if any) refer only to items with which she is directly acquainted. She would similarly need to replace the names '*Huckleberry Finn*' and the predicates 'author', 'person', 'publish', and 'autobiography'.

12. The author of *Huckleberry Finn* thinks.
 12a. There is a thing such that it authors *Huckleberry Finn*, and everything that authors *Huckleberry Finn* is identical with it, and it thinks.
 12b. $\exists x(\text{Authors}(x, \text{HF}) \ \& \ \forall y(\text{Authors}(y, \text{HF}) \rightarrow y=x) \ \& \ \text{Thinks}(x))$.

The proposition that (12) expresses has a constituent structure that is very different from the syntactic structure of sentence (12); the proposition's structure is, instead, very much like the syntactic structure of (12b). This proposition has as constituents the relation of authoring, being identical, the second-order property of being an instantiated property, and so on. It does not have a constituent that corresponds to the definite description 'the author of *Huckleberry Finn*'; the contribution of the definite description to the proposition that (12) expresses is "scattered" among various constituents of the proposition. Furthermore, there is no expression in (12a) or (12b) that, strictly speaking, refers to Twain; similarly, there is no constituent of the proposition that (12) expresses that determines or presents Twain. Thus, ordinary proper names do not, strictly speaking, refer, on Russell's view. However, Russell sometimes says that a definite description [the F] *denotes* object O if O is the unique object that is F.

Russell's solutions to Frege's Puzzles are similar to Frege's. (1) and (2) can differ in informativeness, *a priori*, and analyticity because they express different descriptive propositions. Similarly for (3) and (4), and (5) and (6). 'That'-clauses in belief ascriptions refer to the propositions expressed by the embedded sentences. Therefore, (9) and (10) attribute to Mary belief in different propositions, and so can differ in truth value. The name 'Pegasus' contributes a scattered complex of properties and relations to the proposition expressed by sentence (7). Therefore, sentence (7) is meaningful, even though 'Pegasus' fails to refer (and denote). Russell may have a more satisfactory answer to the problem of true negative existentials than Frege. On Russell's view, sentence (8), on one understanding of it, expresses a proposition that might be more perspicuously expressed by (8a).⁴

8. Pegasus does not exist.
 8a. $\sim \exists x(\text{Winged}(x) \ \& \ \text{Horse}(x) \ \& \ \forall y(\text{Winged}(y) \ \text{and} \ \text{Horse}(y) \rightarrow y=x) \ \& \ \exists zz=x)$.

The proposition expressed by (8a) is straightforwardly true, because it is not the case that there is a winged horse. Therefore, (8) is false, on this understanding of it.

⁴On Russell's theory, (8) is ambiguous, because the negation can take either wide or narrow scope. Thus there is a second way of understanding (8), represented by (8b).

8b. $\exists x(\text{Winged}(x) \ \& \ \text{Horse}(x) \ \& \ \forall y(\text{Winged}(y) \ \text{and} \ \text{Horse}(y) \rightarrow y=x) \ \& \ \sim \exists zz=x)$.
 (8b) is false, in fact, contradictory.