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## 2.1

# REFERENCE

*Teresa Robertson*

### 1 Introduction: Reference, Semantic Content, and the View that Content is Reference

Reference may be the most basic of all semantic relations. It is the relation that an expression (in a particular context) bears to the thing (or things) for which it stands. (From here on, reference to contexts is suppressed unless suppression is apt to cause confusion.) The clearest examples of this relation in natural language are those involving the bare *demonstratives* 'this' and 'that'. When one says, gesturing to the coffee in one's cup, "This is good and strong," the expression 'this' refers to the coffee in the cup. Similarly, when I say, indicating Seattle, "That's my hometown," the expression 'that' refers to Seattle. Here are some other natural (which is not to say uncontroversial) examples of the reference relation: The *proper name* 'Socrates' *refers to* (or in other terminology *designates* or *denotes*) the philosopher Socrates; the *definite description* 'the philosopher executed for corrupting the youth of Athens' refers to him too; and the pronoun 'I' (in a suitable context) refers to me. The expressions in the five examples just given are all naturally thought of as *singular terms*, terms whose fundamental semantic role is to refer to a single individual. Paradigmatic singular terms are the individual constants and variables of formal logic. Because the notion of reference finds its natural home in the relation between expressions for single individuals and the individuals themselves, the bulk of the philosophical work on reference has been concerned with singular terms or expressions that are at least arguably singular terms.

Interest in reference has been intimately bound up with interest in meaning, specifically with interest in *semantic content*. The philosopher's notion of semantic content is a thoroughly intuitive one. (Again, something may be intuitive or natural or naive but nonetheless controversial.) Consider the English sentence 'Snow is white' and the French sentence 'La neige est blanche'. Intuitively, these sentences say the same thing. The single thing that both sentences say (or *mean* or *express*) is the *proposition* that snow is white. It is this proposition that is said to be the semantic content (or simply the *content*) of each of these declarative sentences. It is natural to say that what those sentences express is true. Taking appearances at face-value, propositions are taken to be bearers of truth-value (that is, things that are true or false). For similar reasons, they are taken to be bearers of modal properties (like necessity and contingency) and epistemic properties (like being knowable a priori or being knowable only empirically). They are also taken to be objects of other attitudes (that is, in addition to being taken to be objects of knowledge, they are taken to be objects of assertion, belief, doubt, and the like).

Propositions are commonly thought of as structured entities with component parts. Consider the propositions expressed by the following sentences: 'Socrates is wise', 'Socrates is Greek', and 'Plato is Greek'. Intuitively the proposition expressed by the second sentence shares a component with the proposition expressed by the first sentence—a component that is associated with the word 'Socrates'—in virtue of which each proposition is concerned with the individual Socrates. Similarly, the proposition expressed by the second sentence intuitively shares a component with the proposition expressed by the third sentence—a component that is associated with the phrase 'is Greek'—in virtue of which each proposition is concerned with the property of being Greek. Consideration of the propositions expressed by slightly more complex sentences like 'Socrates taught Plato' and 'Plato taught Socrates' reveals that propositions must be structured entities: if they were not, then the two propositions, which are clearly different since one is true and the other false, would not be distinguishable since both would simply consist of the same components. It is natural to think of the structure of the proposition as at least roughly isomorphic to the structure of the sentence that expresses it.

The idea that the content of a compound expression is a function of the contents of its parts together with the way those parts are structured is nearly irresistible—at least as a general rule. There are numerous exceptions to this rule. For example, whatever the content of 'Socrates' is—that is, whatever 'Socrates' typically contributes to the content of sentences in which it occurs—that thing is evidently no part of the following sentence:

'Socrates' contains eight letters.

Nonetheless it is safe to assume, as most work in semantics does, that this rule holds by and large. I will take it for granted in this chapter. In fact, for simplicity, I will typically assume something stronger, namely that by and large the content of a compound expression is a structured entity composed of the contents of the expression's contentful parts. I will say that an expression is *compositional* when its content is a function of the contents of its parts, together with the way those parts are put together (or, more strongly, when its content is a structured entity composed of the contents of the parts).

The most straightforward theory about content says simply that content is reference. On this theory, the proposition that is the content (and referent) of the sentence 'Socrates is wise' has as its components the individual Socrates (which is the referent of 'Socrates') and the property of being wise (which can, at least for present purposes, be taken to be the referent of 'is wise'). This theory unites the semantic relations of referring and expressing.

## 2 Trouble over Definite Descriptions

Two of the naive ideas encountered in §1, namely that definite descriptions are singular terms and that content is reference, come into conflict with one another. Consider again the definite description 'the philosopher executed for corrupting the youth of Athens'. Intuitively, it has contentful parts—parts which themselves have semantic content. And intuitively descriptions are compositional. (Again, exceptions may arise. Consider the description 'the number of letters in "Socrates"'. Whatever the content of 'Socrates' is, it is no part of the content of 'the number of letters in "Socrates"'. But here it is the quotation marks and not some feature common to all definite descriptions

## REFERENCE

that is responsible for the exception.) Accepting these intuitions at face-value reveals that we cannot accept both the straightforward semantic theory that content is reference and the natural thought that ‘the philosopher executed for corrupting the youth of Athens’ is a singular term that refers to Socrates: According to modern anatomy at least, Socrates is not himself a complex entity composed of the semantic contents of the contentful parts of ‘the philosopher executed for corrupting the youth of Athens’. There are two obvious ways to deal with this problem, and historically both have had advocates: Bertrand Russell (Russell 1905) rejected the claim that definite descriptions are singular terms and John Stuart Mill (Mill 1893) rejected the claim that content is reference. I will sketch both of these kinds of responses, though I will not aim to discuss the particular views of Russell and Mill themselves. I will use ‘Russell<sub>1</sub>\*’ and ‘Mill\*’ as labels for the views I discuss.

### 3 Definite Descriptions: Russell<sub>1</sub>\* and Mill\*

Russell<sub>1</sub>\* resolves the trouble over definite descriptions by retaining the thought that content is reference but giving up the thought that definite descriptions are singular terms. Russell<sub>1</sub>\* assimilates definite descriptions to other determiner phrases (phrases of the form ‘every F’, ‘some Fs’, ‘most Fs’, etc.), which are viewed as *restricted quantifier phrases*. So far, Russell agrees with Russell<sub>1</sub>\*. Russell himself thought that such phrases did not have content “in isolation”; however on a slightly more natural view, a restricted quantifier’s content is a higher-order property—perhaps a property of properties or a property of classes. For example, the sentence ‘Every philosopher is Greek’ may be thought of as attributing to the property of being Greek the property of being (a property that is) instantiated by everything that instantiates the property of being a philosopher, so that the attributed property (of properties) may be thought of as the content of ‘every philosopher’. (Roughly this idea is due to Richard Montague (Montague 1974).) Similarly, a sentence like ‘The philosopher executed for corrupting the youth of Athens was Greek’ may be thought of as attributing to the property of being Greek the property of being instantiated by something that uniquely instantiates the property of being a philosopher executed for corrupting the youth of Athens.

In contrast, Mill\* resolves the trouble over definite descriptions by retaining the thought that definite descriptions are singular terms but giving up the thought that content is reference. The idea is that there are (at least) two kinds of semantic value—content and reference—and that the content of a definite description is not its referent but instead some complex entity composed of the semantic contents of the description’s contentful parts. On this view, the description ‘the philosopher executed for corrupting the youth of Athens’ has as content some complex involving such things as the property of being a philosopher, the property of being executed, and so on, but the view retains the natural thought that the description’s referent is Socrates. Deviating as little as necessary from the naive theory that content is reference, Mill\* allows that some expressions, and in particular proper names, have as their contents their referents. (It is worth stressing that one can recognize a thoroughgoing distinction between content and referent, as Mill\* does, while allowing that for some expressions the very same entity is both. Compare: there is a thoroughgoing distinction between sister and wife, although for Zeus the same entity is both.)

#### 4 Challenges for Russell<sub>1</sub>\* and Mill\*

Though the theories of Russell<sub>1</sub>\* and Mill\* are very different in their theoretical outlooks, with the former but not the latter accepting that content is reference, they share a commitment to the claim that the semantic content of a proper name is its referent. This claim faces challenges in the form of various puzzles that can be grouped into two kinds: puzzles involving substitution of coreferential names and puzzles involving empty names (that is, names that lack referents).

Let's first look at the substitution puzzles. My father's given name is 'Charles', but for reasons that are lost to time, people in my family usually call him 'Pete'. Now consider the following two sentences.

- (1) Charles is Charles.
- (2) Pete is Charles.

Assuming that these sentences are compositional, the theories of Russell<sub>1</sub>\* and Mill\* ascribe the same content to both sentences, because they ascribe the same content to 'Charles' and 'Pete'. Or, more fully, because the components of the proposition expressed by each sentence are the same (my father, the relation of identity, and my father again) and they are put together in the same way. But, the sentences do not seem to express the same proposition, since the proposition expressed by (1) is not informative whereas the proposition expressed by (2) is. This is the *puzzle of informativeness* presented by Gottlob Frege (Frege 1892). He presented the puzzle using identity sentences, as I have done, but that is not crucial to the puzzle, as the following sentences reveal.

- (3) Charles is a person, if Charles is a person.
- (4) Pete is a person, if Charles is a person.

Again the theories of Russell<sub>1</sub>\* and Mill\* ascribe the same content to both sentences, yet intuition tells us that (3) and (4) express different propositions—one that is not informative and one that is.

There are a number of similar puzzles that vary from Frege's only in what particular property of propositions they highlight. So, for example, one can generate a puzzle concerning epistemic status (rather than informativeness) by noting that intuitively the proposition expressed by (3) is knowable a priori, whereas the proposition expressed by (4) is not. Similarly one can generate a puzzle concerning belief by noting that although Clark Kent is Superman, Lois believes the proposition expressed by (5) but not the one expressed by (6).

- (5) Clark Kent is a reporter.
- (6) Superman is a reporter.

(Here I am treating the comic book fiction as fact.) (A family of closely related substitution puzzles involves sentences of the form 'It is informative that S<sub>1</sub>', 'It is knowable a priori that S<sub>1</sub>', 'So and so believes that S<sub>1</sub>', and so on, where the numbered sentences above are examples of substituends for 'S'. Because these sentences involve the operator 'that', the full statement of these puzzles would have to address issues that are beyond the scope of this chapter. In brief, 'that' appears to operate somewhat as quotation marks

## REFERENCE

do, so that it takes significantly more than compositionality to underwrite the claims that according to Russell<sub>1</sub>\* and Mill\*, 'Lois believes that Clark Kent is a reporter' and 'Lois believes that Superman is a reporter' express the same proposition. Nor does compositionality provide enough to underwrite the claim that according to Russell<sub>1</sub>\* and Mill\* those two sentences have the same truth-value. Those claims can be adequately supported, but it takes additional theory to do so.)

It is important to understand that the substitution puzzles that arise for Russell<sub>1</sub>\* and Mill\* do not arise when definite descriptions are involved. These theories are committed to saying that coreferential names have the same semantic content, but they are not committed to saying that coreferential descriptions have the same semantic content or to saying that a name and a coreferential description do. (Here I use "referential" in a loose way, a way according to which even Russell<sub>1</sub>\*—who strictly speaking thinks that the referent of a definite description is a higher-order property rather than the individual that is intuitively its referent—can say that 'the philosopher executed for corrupting the youth of Athens' and 'Socrates' are coreferential.) And this allows these theories to resist the claims that sentences like (7), (8), and (9) below have the same content, even though Benjamin Franklin was the first postmaster general and also the inventor of bifocals.

- (7) Benjamin Franklin was interested in science.
- (8) The first postmaster general was interested in science.
- (9) The inventor of bifocals was interested in science.

This means that no analogs of the substitution puzzles involving names arise in the case of definite descriptions.

Now, let's look at the most general of the puzzles involving empty names. Intuitively, the name 'Santa' has no referent. Nonetheless, sentences involving it appear to be contentful. Consider the following sentence.

- (10) Santa is jolly.

What is the content of this sentence according to Russell<sub>1</sub>\* and Mill\*? An entity composed of the referent of 'Santa' and the property of being jolly. But 'Santa' does not have a referent. So how can (10) be contentful? One natural response to this question is that the proposition expressed by (10) must be some kind of "gappy" structured entity, with a gap where there should be something to which 'Santa' refers. But this solution founders when we consider the following sentence.

- (11) Tinkerbell is jolly.

Assuming that 'Tinkerbell' has no referent, (11) must also express a gappy proposition; in fact the same one expressed by (10). But intuitively (10) and (11) do not express the same proposition. (There are other puzzles involving empty names that are less general than this one. The most famous of these is the *puzzle of true negative existential statements*, which involve sentences like 'Santa does not exist'. A full discussion of this and the other more specific puzzles involving empty names is beyond the scope of this chapter.)

Again, it is important to understand that for Russell<sub>1</sub>\* and Mill\* there is no analog to the general puzzle involving empty names that involves instead empty descriptions.

For both Russell<sub>1</sub>\* and Mill\* a description like ‘the largest prime’ has content: for Russell<sub>1</sub>\*, its content is something like the property of being instantiated by something that uniquely instantiates the property of being a prime greater than all others; for Mill\*, its content is some complex involving the semantic contents of the semantically contentful constituents of the description.

### 5 Addressing the Challenges for Russell<sub>1</sub>\* and Mill\*: Russell<sub>2</sub>\* and Frege\*

Since the puzzles that arise for Russell<sub>1</sub>\* and Mill\* do not arise when descriptions are involved, the puzzles can be solved by assimilating names to descriptions. This is accomplished in a way that retains much of the theoretical outlook of Russell<sub>1</sub>\* (in particular adherence to the simple theory that content is reference) by Russell<sub>2</sub>\*, who maintains that names are really just definite descriptions in disguise (Russell 1910–1911). (Again, my use of a “starred name” indicates that my aim is not to capture the view of a particular historical figure so much as to tell a purely philosophical story in which figures a view that bears important similarities to the view of the referent of the “unstarred name.”) On this view, a name like ‘Santa’ is semantically equivalent to a description like ‘the fat jolly old elf who delivers presents to good children on Christmas’, which in turn is thought of as a restricted quantifier phrase. The assimilation of names to descriptions is accomplished in a way that retains much of the theoretical outlook of Mill\* by Frege\*, who takes Mill\*’s recognition of a distinction between content and referent to its extreme, holding that for every expression, that which serves as content includes a mode of presentation of that which serves as referent (Frege 1892). The content is thus distinct from the referent, at least typically. On this view, names, like descriptions, have contents that are conceptual in nature. The name ‘Santa’ has as its semantic content some complex involving such things as being fat, being jolly, and so on, so that ‘Santa’ is semantically equivalent to some definite description like ‘the fat jolly old elf who delivers presents to good children on Christmas’.

### 6 Trouble for Russell<sub>2</sub>\* and Frege\*

Though the theories of Russell<sub>2</sub>\* and Frege\* provide solutions to the puzzles encountered in §4, there are three powerful arguments against these theories: the *modal argument*, the *epistemic argument*, and the *semantic argument*. (The first two arguments are due to Saul Kripke (Kripke 1972/1980). The last is due to Keith Donnellan (Donnellan 1972) and independently to Kripke.) Somewhat surprisingly, two of these arguments (the modal and epistemic) depend on considerations that are remarkably similar to those involved in the puzzles of §4.

Let’s suppose with Russell<sub>2</sub>\* and Frege\* that the content of ‘Gödel’ is the same as the content of some description, say ‘the discoverer of the incompleteness of arithmetic’. Now consider the following two sentences.

- (12) Gödel (if he exists) discovered the incompleteness of arithmetic.
- (13) The discoverer of the incompleteness of arithmetic (if there is exactly one) discovered the incompleteness of arithmetic.

The modal argument points out that if ‘Gödel’ and ‘the discoverer of the incompleteness

of arithmetic' have the same content, then (12) and (13) express the same proposition. (The argument assumes that these sentences are compositional.) But, the argument continues, the proposition expressed by (12) is not necessary, whereas the proposition expressed by (13) is. Hence (12) and (13) do not express the same proposition. Hence 'Gödel' and 'the discoverer of the incompleteness of arithmetic' do not have the same content.

The epistemic argument is very similar to the modal argument. Both arguments have the same general form and reach the same conclusion. In place of the modal argument's appeal to the fact that the proposition expressed by (12) is not necessary whereas the proposition expressed by (13) is, the epistemic argument appeals to the fact that the proposition expressed by (12) is not knowable a priori, whereas the proposition expressed by (13) is.

The semantic argument, which is sometimes confused with the modal argument, is a very different sort of argument from the modal and epistemic arguments. Suppose that in fact the person who we think discovered the incompleteness of arithmetic (the man we call 'Gödel') did not in fact discover the incompleteness of arithmetic but rather stole the result from his neighbor (a man whom we call 'Schmidt'). Who would the name 'Gödel' refer to—the thief or the neighbor? Clearly, it would refer to the thief. (Or, not to put too fine a point on it, 'Gödel' would still refer to *Gödel* and not to Schmidt.) Who would 'the discoverer of the incompleteness of arithmetic' refer to—the thief or the neighbor? Clearly, it would refer to the neighbor (that is, Schmidt) even though we would in the circumstances mistakenly think that it referred to Gödel. Thus, assuming that content determines referent, the content of the name 'Gödel' is not the same as the content of 'the discoverer of the incompleteness of arithmetic'.

Given these problems for Russell<sub>2</sub>\*-Frege\* and the problems for Russell<sub>1</sub>\*-Mill\* that were discussed earlier, it is natural to search for some third general view concerning the semantic content of proper names. But it is evident that there is precious little room between the view that the semantic content of a proper name is its referent and the view that the semantic content of a proper name is the kind of thing that could be expressed by some definite description. Nonetheless philosophers have attempted to skirt the problems facing the dominant views by claiming that a proper name has as its content a "nondescriptive sense". (An early advocate of this approach was Felicia Ackerman (Ackerman 1979).) Such a sense would have to be some sort of conceptual entity that is associated with the name and that is such that the thing that falls under the relevant concept would be the referent of the name, but such a sense would at the same time have to be something that could not be captured by any definite description. (A conceptual content that is not but that could be captured by a definite description would not be a nondescriptive sense.) The exact nature of this line of thought remains murky and consequently attractive to some. Philosophers have also tried more straightforward approaches. There are current theories in the spirit of Russell<sub>1</sub>\*-Mill\* that address the problems of §4. (Prominent defenders of this line include Nathan Salmon and Scott Soames. Soames (2002) modifies Salmon's (1986) solution to the problems of substitution, and endorses Salmon's (1998) solution to the problems of empty names.) And also there are numerous theories in the spirit of Russell<sub>2</sub>\*-Frege\* that attempt to solve the problems of §6. (Michael Dummett (Dummett 1973) and Gareth Evans (Evans 1982) gave early and influential responses to the arguments of Kripke and Donnellan.) No consensus has emerged.

## 7 Mechanisms of Reference

It has been thought that one advantage of the Russell<sub>2</sub>\*-Frege\* view over the Russell<sub>1</sub>\*-Mill\* view is that the former has something to say about the mechanism by which reference is secured while the latter stands in need of supplementation. To fill this need, Kripke (1972, 1980) proposed the so-called causal-historical picture of reference. On this picture, a name may be introduced in a variety of ways. (Here are just a few examples. Parents of a newborn may introduce a name for their child by deciding on a name and acting on that decision. Similarly, the adoptive parents of an alien baby with extraordinary superhuman powers may introduce a name for their child by saying, "Let's call him 'Clark'." A scientist may introduce a name for a particular individual by saying, "I'll use 'Eve' to name the most recent female ancestor common to all living humans." The ritual aspects of these dubbings are presumably brought to a bare minimum when, for example, someone who lives alone names her pet, but even workers at a law office may without ceremony simply begin using the name 'Romeo' to refer to whoever sent flowers to the managing partner.) Those who introduce the name use it to refer to the relevant object. In communication, the name gets passed on to other users, so that the name refers to that same object even in the idiolects of the newer users. Spelling out the exact details of the nature of the causal chains that link later uses to initial uses is a difficult empirical task. (For example, why is it that although there are presumably causal chains linking my use of 'St. Nicholas' as well as my use of 'Santa Claus' to early uses of a name of Nicholas of Myra, 'St. Nicholas' refers to that saint while 'Santa Claus' does not?) What is of philosophical interest is that on this picture, in sharp contrast to the Russell<sub>2</sub>\*-Frege\* view, reference is determined contextually rather than conceptually.

While the causal-historical picture is just a picture and not a full-fledged theory (since many empirical questions about the nature of the relevant causal chains remain unanswered), the picture does provide enough of a supplement to the Russell<sub>1</sub>\*-Mill\* view that it would be unfair to say that it remains a complete mystery on this view how a name comes to be hooked up to its referent. And in spite of what is often said about the Russell<sub>2</sub>\*-Frege\* view, there is in fact some mystery on this view about this issue. While it is easy enough for the view to explain how a name's associated description gets connected to the name's referent (since the referent is simply whatever satisfies the description), the view stands in need of supplementation to explain how the name gets connected to its associated description.

## 8 Reference and General Terms

Although the reference relation is most at home in connection with singular terms, it is not much of a stretch to see the relation as holding between general terms and kinds. For example, it is natural to think of the general terms 'water' and 'tiger' as referring to a particular liquid substance and a particular species of animal respectively. (It is more of a stretch to see what the analog of the notion of reference is for other expressions such as predicates and sentences. An ingenious argument, the so-called slingshot, due to Alonzo Church (Church 1943) and Kurt Gödel (Gödel 1944), gives strong reason to think that the closest analog to singular term reference for a predicate is the class of ( $n$ -tuples of) individuals to which it applies and that the closest analog for a sentence is its truth value.) And in fact many of the issues that arose in the discussion of singular



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terms arise in much the same way for general terms. In particular, the modal, epistemic, and semantic arguments against the view that a proper name has the same content as a singular definite description apply equally against the view that a simple general term, like 'water' or 'tiger', has the same content as a general definite description, like 'the colorless, odorless, thirst-quenching liquid that fills the lakes and streams' or 'the species that serves as mascot for Princeton University'. (I leave the details as an exercise for the reader.)

Though much of the literature on general terms focuses on one-word general terms for natural kinds, it is far from clear that such terms differ in semantically significant ways from one-word general terms for nonnatural kinds. In particular, the modal, epistemic, and semantic arguments can be run using, for example, 'crayon' and 'the favorite writing instrument of Yoko'. (Hillary Putnam (Putnam 1975) using his Twin-Earth thought experiment gave a version of the semantic argument in connection with natural-kind terms. He also argued that artifact terms, like 'pencil', are not semantically equivalent to any definite description.) This is not to deny that a one-word general term may be synonymous with a compound common noun phrase: surely 'bachelor' is synonymous with 'unmarried man'. This highlights a significant point of disanalogy between terms for kinds and terms for individuals: It is commonplace to refer to kinds not only with simple terms and definite descriptions but also with compound common noun phrases like 'unmarried man' and 'guy who won't take no for an answer'. This fact raises many questions. Given that 'bachelor' and 'unmarried man' are synonyms, should the considerations that favor a Russell<sub>1</sub>\*-Mill\* view for simple-kind terms like 'bachelor' lead us to favor a Russell<sub>1</sub>\*-Mill\* view for compound-kind terms like 'unmarried man'? Or rather does the apparent fact that 'unmarried man' has descriptive content give us a consideration in favor a Russell<sub>2</sub>\*-Frege\* view for 'bachelor'? What impact should answers to these questions have on views about singular terms? Are there singular term analogs to kind-phrases? Suffice it to say that a more thorough understanding of workings of both singular and general terms is needed to get to the bottom of the notion of reference.

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