

# Mind, Matter and Language

Philosophy of Language

**Russel's Theory of Descriptions**



THE UNIVERSITY  
*of* EDINBURGH

## Outline

Denoting Phrases  
 Denoting Phrases

Problems and Puzzles

Russell's Solutions

Objections



## Denoting Phrases

- In the very first paragraph of 'On Denoting', Russell writes:

*By a "denoting phrase" I mean a phrase such as any one of the following: 'a man', 'some man', 'any man', 'every man', 'all men', 'the present King of England', 'the present King of France', 'the centre of mass of the Solar System at the first instant of the twentieth century', 'the revolution of the earth round the sun', 'the revolution of the sun round the earth'. Thus a phrase is denoting solely in virtue of its form.*

*(Russell 1905: 479)*



## Denoting Phrases (cont.)

- In other words, according to Russell, expressions such as those below belong to a distinguished group.
  - Some F
  - Every F
  - No F
  - Five Fs
  
- These expressions are today generally referred to as 'determiner phrases', 'quantifier phrases', or simply 'quantifiers'. I use these interchangeably in these lectures.



## Acquaintance and Description

- Russell draws an intuitive distinction between *knowledge by acquaintance* and *knowledge by description*.
- **Knowledge by acquaintance** requires acquaintance with the object(s) to which the knowledge pertains, for example perceptual acquaintance.
- **Knowledge by description** requires only knowing a way to describe the relevant object.
  - (a) For example, you (now) know by *acquaintance* that I have a beard.
  - (b) But you (probably) only know by *description* that some Russian spy lives in the US.
- Russell's aim: Provide a theory that explains the intuitive link between denoting phrases and knowledge by description.



## Descriptions and Reference

- Consider the sentence below.
  - (1) A dog barked today.
- It is tempting to think that the denoting phrase 'a dog' functions like a name, i.e. that it refers to specific dog. If so, (1) above would be true iff that specific dog is in the set of individuals that barked today.
- But there are reasons to think that this cannot be the right analysis.
  - Intuitively, what is required for (1) to be true is simply that *some dog or other* barked today. Not that any *specific* dog barked.
  - Notice, a sentence such as 'Fido barked and Fido did bark' is intuitively a contradiction. Yet there is nothing contradictory about 'a dog barked and a dog did not bark'.



## The Meaning Denoting Phrases

- Russell proposes the following analysis (in the formulas below 'C' is an arbitrary predicate, e.g. 'barks' or 'is a dog'):
  - C(everything) means "C(x) is always true"
  - C(nothing) means "'C(x) is false' is always true"
  - C(something) means "It is false that 'C(x) is false' is always true"
- In other words:
  - 'Everything is C' means  $\forall xC(x)$
  - 'Nothing is C' means  $\forall x\neg C(x)$
  - 'Something is C' means  $\neg\forall x\neg C(x)$
- Notice that ' $\neg\forall x\neg$ ' is equivalent to  $\exists x$ .



## The Meaning Denoting Phrases (cont.)

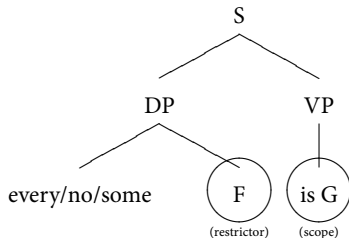
- In less technical terms:
  - 'Everything is C' is true iff for everything there is, it is C.
  - 'Nothing is C' is true iff for everything there is, it is not C.
  - 'Something is C' is true iff it is false that for everything there is, it is not C.
- Or equivalently:
  - 'Something is C' is true iff there is at least one thing is C.





## The Meaning of Denoting Phrases (cont.)

- In these examples, the sentences appear to still have essentially a subject–predicate structure.
- That is, it looks as if the sentence ‘Everything is C’ consists of a predicate (‘C’), and an argument (‘everything’), but things are slightly more complicated.
- Syntactically, words such as ‘every’, ‘no’, and ‘some’ combine with *two* arguments: a **restrictor** and a **scope**.



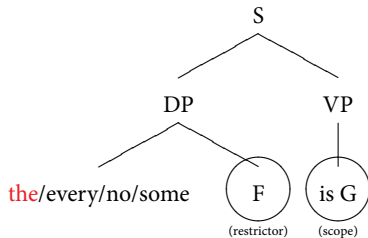
## The Meaning of Denoting Phrases (cont.)

- So, the analysis of ‘every’, ‘no’, and ‘some’ is slightly more complicated:
  - ‘Every F is G’ is true iff  $\forall x(F(x) \rightarrow G(x))$
  - ‘No F is G’ is true iff  $\forall x(F(x) \rightarrow \neg G(x))$
  - ‘Some F is G’ is true iff  $\exists x(F(x) \wedge G(x))$
- Or equivalently:
  - ‘Every dog barks’ is true iff for everything, if it’s a dog, it barks.
  - ‘No dog barks’ is true iff for everything, if it’s a dog, it does not bark.
  - ‘Some dog barks’ is true iff something is a dog and barks.



## The Meaning of Definite Descriptions

- Notice that 'the' is structurally very similar to 'every', 'no', 'some', etc.



## The Meaning of Definite Descriptions (cont.)

- So, what is the meaning of a sentence such as (2)?

(2) The F is G.

- According to Russell, 'the F' belongs to the family of denoting phrases—for example, to know that the F is G, one need not intuitively be acquainted with whoever is the F. One just needs to know that there is some (unique) F and that this individual is G.
- So, the meaning of 'the F' should be similar in some relevant way to the meanings of 'every F', 'no F', and 'some F'. Russell thus proposes:
  - 'The F is G' is true iff  $\exists x(F(x) \wedge \forall y(F(y) \rightarrow x = y) \wedge G(x))$
- Or equivalently:
  - 'The F is G' is true iff (a) there is an individual  $x$  who is F, (b) there is at most one individual  $x$  who is F, and (c)  $x$  is G.



## Surface Form vs. Logical Form

- Notice, Russell draws a sharp distinction between what we might refer to as the **surface form** of a sentence and its **logical form**.
  - The **surface form** is how the sentence immediately appears orthographically and phonologically.
  - The **logical form** is the structural form that reveals its *fundamental* structure and meaning of the sentence, i.e. its truth conditions.
- On the surface, sentences containing denoting phrases appear to be simple subject–predicate sentences.



## Surface Form vs. Logical Form (cont.)

- But Russell's point is that this is misleading, since at the deeper level of **logical form**, these sentences are in fact complex quantificational sentences.
  - (2) The F is G.
    - a.  $\exists x(F(x) \wedge \forall y(F(y) \rightarrow x = y) \wedge G(x))$
    - b. There is an  $x$  who is F and there is only  $x$  who is F and  $x$  is G.
- (2) may appear to consist of a subject ('the F') and a predicate ('is G'), but according to Russell, at the level of logical form, the structure of (2) is really (2a).
- And the sentence in (2a) has no grammatical/logical subject. After all, (2a) is equivalent to (2b).



## Outline

Denoting Phrases

Problems and Puzzles  
 Non-Denoting Descriptions  
 Puzzles

Russell's Solutions

Objections



## Nonsense vs. Falsity

- Just as 'an F' or 'some F' is naturally interpreted as a referential term, so one might think that 'the F' is a referential term. However:

*If we say "the King of England is bald," that is, it would seem, not a statement about the complex meaning "the King of England," but, about the actual man denoted by the meaning. But now consider "the [present] King of France is bald". By parity of form, this also ought to be about the denotation of the phrase "the [present] King of France". But this phrase, though it has a meaning provided "the King of England" has a meaning, has certainly no denotation, at least in any obvious sense. Hence one would suppose that "the [present] King of France is bald" ought to be nonsense; but it is not nonsense, since it is plainly false. (Russell, 1905, 483-484)*





## Nonsense vs. Falsity

- In other words, a theory of the meaning of (3) should predict that it is false rather than neither true nor false.
  - (3) The king of France is bald.
- Russell also observes (somewhat obscurely) that some sentences with non-denoting descriptions can nevertheless be true, e.g. (4).
  - (4) If there is a king of France, the king of France is a king.
- Russell goes on to raise three puzzles for the referential view of definite descriptions.



## Three Puzzles)

### P1. Substitution and Propositional Attitudes

If two terms refer to the same individual, substituting those terms in a sentence should not make any difference to the truth value.

- But consider the attitude report in (5):

(5) George IV wished to know whether Scott was the author of *Waverley*.

- This obviously differs in meaning from the sentence in (6).

(6) George IV wished to know whether Scott was Scott.

- What George IV is described as wanting to know in (5) and (6) is intuitively not the same.



## Three Puzzles (cont.)

### P2. Law of Excluded Middle

The Law of Excluded Middle (LEM) is the logical principle that for any sentence  $S$ , either  $S$  is true or its negation is. In other words, there is no middle ground.

- Intuitively, LEM seems quite plausible. Consider, for example, (7).
  - (7) Scott is the author of Waverley.
- It seems natural to think that this sentence must either be true or false—either Scott is the author or he is not.



## Three Puzzles (cont.)

- However, if definite descriptions are referential expressions, this leads to violations of LEM. Consider (8).
  - (8) The king of France is bald.
- Let's assume that the truth value of (8) depends on the *reference* of 'the king of France' (as Frege assumes). If so...
  - (8) is *true* iff the referent of the description is in  $\{x \mid x \text{ is bald}\}$
  - (8) is *false* iff the referent of the description is *not* in  $\{x \mid x \text{ is bald}\}$
- But 'the king of France' has no reference, so (8) cannot be true and it cannot be false. So, it must be *neither* true nor false.
- And this, of course, is a violation of LEM.



## Three Puzzles (cont.)

**P3. Negative Existentials**

*Consider the proposition “A differs from B”. If this is true, there is a difference between A and B, which fact may be expressed in the form “the difference between A and B subsists”. But if it is false that A differs from B, then there is no difference between A and B, which fact may be expressed in the form “the difference between A and B does not subsist”. But how can a non-entity be the subject of a proposition?*

*(Russell, 1905, 485)*



## Three Puzzles (cont.)

- Suppose, again, that definite descriptions are referential terms. If so, how come it is possible to use definite descriptions to assert non-existence?
  - (9) The king of France does not exist.
- (9) seems intuitively true, but if definite descriptions are referential terms, it would seem that for (9) to be true, the referent of 'the king of France' must be such that he is not among the things that exist?
- But that doesn't really make sense.



## Outline

Denoting Phrases

Problems and Puzzles

Russell's Solutions

Puzzle 1

Puzzle 2

Puzzle 3

Frege's Puzzle

Objections



## Puzzle 1: De Dicto vs. De Re

- Russell's first puzzle concerned the contrast between (5) and (6).
  - (5) George IV wished to know whether Scott was the author of *Waverley*.
  - (6) George IV wished to know whether Scott was Scott.
- Russell's solution is to analyze 'the author of *Waverley*' as a denoting phrase rather than a referential term:
  - That is, what George IV wants to know in (5) is whether there is a unique  $x$  such that  $x$  is the author of *Waverley* and whether  $x$  is identical to Scott.
  - By contrast, what George IV wants to know in (6) is whether Scott is identical to Scott.
- But with respect to attitude reports, Russell's analysis has even further advantages.





## Puzzle 1: De Dicto vs. De Re (cont.)

- Consider the sentence in (10)
  - (10) Mary believes that the president of the United States is a Harvard graduate.
- There are two distinct scenarios in which it seems that (10) could be truthfully asserted.
  - **Scenario 1:** Mary knows Barack Obama and believes that *he* graduated from Harvard. However, Mary is unaware that Obama is the president of the United States.
  - **Scenario 2:** Mary has never met Barack Obama and has no idea who he is. However, she believes that the one can only be elected president in the United States if one has graduated from Harvard.



## Puzzle 1: De Dicto vs. De Re (cont.)

- But notice also the following contrast:
  - (11) Mary believes that the president of the United States is a Harvard graduate.
  - (12) Mary believes that Barack Obama is a Harvard graduate.
- The sentence in (12) does not have the two interpretations mentioned above. In other words, it looks like the description and the name cannot be treated analogously.
- So, the question is, how is this contrast to be captured?



## Puzzle 1: De Dicto vs. De Re (cont.)

- Remember, according to Russell, a sentence such as (13) really should be analyzed as (13a).

(13) The president of the United States is a Harvard graduate.

a.  $\exists x(\text{President}(x) \wedge \forall y(\text{President}(y) \rightarrow x = y \wedge \text{Harvard-graduate}(x)))$

- The belief report in (11) may therefore be construed as ambiguous, i.e. as having two potentially different **logical forms**.



- First, it may have the logical form in (11a) representing a **de dicto** belief:

(11) a. Mary believes:  $\exists x(\text{President}(x) \wedge \forall y(\text{President}(y) \rightarrow x = y \wedge \text{Harvard-graduate}(x)))$  (de dicto)

- Second, it may have the logical form in (11b) representing a **de re** belief:

(11) b.  $\exists x(\text{President}(x) \wedge \forall y(\text{President}(y) \rightarrow x = y \wedge \text{Mary believes: Harvard-graduate}(x)))$  (de re)

- This explains why (11) has two different possible meanings.



## Puzzle 2: The Law of Excluded Middle

- Russell observed that when definite descriptions are analyzed as referential terms, a sentence such (8) is neither true nor false.

(8) The king of France is bald.

- However, given Russell's analysis of definite descriptions, this problem is avoided. Remember, according to Russell, the proper analysis of (8) is (8a).

(8) a.  $\exists x(\text{KoF}(x) \wedge \forall y(\text{KoF}(y) \rightarrow x = y) \wedge \text{bald}(x))$

- The sentence in (8a) expresses a conjunction and a conjunction is true if and only if all of its conjuncts are true. If any conjunct is false, the whole conjunction is false.



## Puzzle 2: The Law of Excluded Middle (cont.)

- Given this, notice now that on Russell's analysis of (8), it is false (rather than neither true nor false), because it expresses a false conjunction!

(8) The king of France is bald.

a.  $\exists x(\text{KoF}(x) \wedge \forall y(\text{KoF}(y) \rightarrow x = y) \wedge \text{bald}(x))$

- That is, it expresses the conjunction that:

- There is a king of France ( $\Leftarrow$  false)
- There is at most one king of France.
- He is bald.

- But, the very first conjunct is false, so the whole conjunction is false.



## Puzzle 2: The Law of Excluded Middle (cont.)

- This means that Russell's analysis can now also explain why sentences such as (14) are necessarily true.

(14) The king of France is bald or the king of France is not bald.

- Remember, for a disjunction, i.e. (14), to be true, one of its disjuncts must be true. And, given Russell's analysis, the logical form of (14) is (14a):

(14) a.  $\exists x(\text{KoF}(x) \wedge \forall y(\text{KoF}(y) \rightarrow x = y) \wedge \text{bald}(x)) \vee$   
 $\neg \exists x(\text{KoF}(x) \wedge \forall y(\text{KoF}(y) \rightarrow x = y) \wedge \text{bald}(x))$

- The second disjunct is true, so the whole disjunction is also true. Consequently, Russell's analysis avoids violating LEM.



## Puzzle 3: Negative Existentials

- Russell's third puzzle concerned so-called negative existential statements involving definite descriptions, e.g. (9).

(9) The king of France does not exist.

- The puzzle is how to explain that this sentence is true and Russell's analysis provides a very simple explanation.
- The logical form of (9) is simply (9a).

(9) a.  $\neg \exists x(\text{KoF}(x) \wedge \forall y(\text{KoF}(y) \rightarrow x = y))$

- Translated into English:

(9) b. It's not the case that there is a king of France and that there is at most one king of France.





## Frege's Puzzle?

- Russell's analysis of descriptions clearly provides a number of advantages over Frege's analysis, but what about Frege's Puzzle?
- Remember, Frege's Puzzle is a problem about the meaning of *names*, namely explaining the cognitive difference between sentences such as (15) and (16).
  - (15) Bob Dylan is Bob Dylan
  - (16) Bob Dylan is Robert Zimmerman
- But since Russell's theory is about **definite descriptions**, how is Russell's analysis supposed to deal with these cases?



## Frege's Puzzle? (cont.)

- In response to this problem, Russell proposes the following solution:

*The whole realm of non-entities, such as “the round square,” “the even prime other than 2,” “Apollo,” “Hamlet,” etc., can now be satisfactorily dealt with. All these are denoting phrases which do not denote anything. A proposition about Apollo means what we get by substituting what the classical dictionary tells us is meant by Apollo, say “the sun-god”. (Russell, 1905: 491)*

- In short, Russell assumes that names are covert descriptions.



## Frege's Puzzle? (cont.)

- Russell's idea seems to be the following: For any name, there is some associated description.
- Typically, this will be a uniquely identifying description concerning something that the individual is known for, e.g.
  - 'Plato'  $\Rightarrow$  'the author of *The Republic*'
  - 'Aristotle'  $\Rightarrow$  'the greatest student of Plato'
  - 'Gödel'  $\Rightarrow$  'the mathematician who proved the incompleteness of arithmetic'
- Like Frege, Russell's analysis of names is a **descriptivist** analysis. Sometimes, this particular brand of descriptivism is referred to as 'famous deeds' **descriptivism**.



## Outline

Denoting Phrases

Problems and Puzzles

Russell's Solutions

Objections

Presupposition

Incomplete Descriptions

Compositionality



## Asserting Existence vs. Presupposing Existence

- The perhaps most famous objection to Russell's analysis comes from P. F. Strawson:

*Now suppose some one were in fact to say to you with a perfectly serious air: "The king of France is wise". Would you say, "That's untrue"? I think it's quite certain that you wouldn't. But suppose he went on to ask you whether you thought that what he had just said was true, or was false; whether you agreed or disagreed with what he had just said. I think you would be inclined, with some hesitation, to say that you didn't do either; that the question of whether his statement was true or false simply didn't arise, because there was no such person as the king of France. You might, if he were obviously serious (had a dazed astray-in-the-centuries look), say something like: "I'm afraid you must be under a misapprehension. France is not a monarchy. There is no king of France." (Strawson, 1950, 330)*



## Assertion vs. Presupposition (cont.)

- Strawson's point is this:
  - On Russell's analysis, 'The F is G' *asserts* the existence of a unique F. This is part of the **logical form** of the sentence.
  - But 'The F is G' seems to simply presuppose the existence of a unique F — or at least the speaker seems to presuppose this when asserting 'The F is G'.
- Strawson's proposed presuppositional view explains a range of facts about uses of 'the F' in discourse. For example, it's not generally acceptable to use 'the F' in a conversation unless it's commonly known that there is a unique F.



- For example, suppose I start a conversation with you by asserting (17):  
(17) #I discovered that the man with a pink hat walked into a bar.
- There is something weird about starting a conversation in this way. For example, a natural response to this would be ‘what man?’
- By contrast, there is nothing weird about starting a conversation as follows:  
(18) I discovered that there is a man with a pink hat and that he walked into a bar.
- But according to Russell, (17) and (18) mean literally the same thing.



## Assertion vs. Presupposition (cont.)

- But this issue is more complicated than it might immediately seem.
- While Strawson might be right about 'the king of France is bald' being neither true nor false, many people intuitively judge the following sentences false.
  - (19) Who owns this pen?  
The king of France owns that pen.
  - (20) You say you had dinner with a famous person last night. Who was it?  
I had dinner with the king of France.
  - (21) Name just one important climate change denier!  
Well, the king of France is a climate change denier.





- So whether sentences with non-denoting descriptions should be predicted to be **false** rather than **neither true nor false** is a difficult question.
- That said, many researchers today agree with Strawson's main point that descriptions presuppose rather than assert existence, but maintain that these kinds of judgments about when a sentence is **false** vs. **neither true nor false** are not reliable.



## Denying the Uniqueness Assumption

- On Russell's analysis of 'the F is G', the sentence is true iff there is exactly one thing in the world that is F.
- However, this seems clearly problematic. There are numerous contexts in which a speaker could intuitively assert e.g. the following sentences truthfully.
  - (22) I parked **the car** in **the garage**.
  - (23) I met **the dean of admissions** at **the graduation party**.
- Yet, there is not just one car, one garage, one dean of admissions nor one graduation party in the world.
- So, one might conclude that Russell's uniqueness condition should be relinquished.



## Contextual Domain Restrictions

- There are, however, reasons not to be particularly worried about this objection to Russell's analysis. Consider the following sentences.
  - (24) Every bottle broke.
  - (25) Most students passed.
  - (26) Many professors complained.
- The domains that these quantifier phrases (denoting phrases) quantify over must be contextually restricted in order to get the right truth-conditions.
- So, Russell could argue that exactly the same is the case for sentences involving definite descriptions.
  - (22) I parked **the car** in **the garage**.



## Revisionary Syntax and Compositionality

- On Russell's analysis of 'the F is G', the surface form of the sentence is entirely different from its logical form
  - (2) The F is G.
    - a.  $\exists x(F(x) \wedge \forall y(F(y) \rightarrow x = y) \wedge G(x))$
- Indeed, according to Russell, the sentence in (2a) simply has no logical/grammatical subject, but the sentence in (2) intuitively does.



## Revisionary Syntax and Compositionality (cont.)

- This raises two distinct worries for Russell's analysis.
- First, how is the logical form related to the surface structure? That is, how is one supposed to derive the logical form from the surface structure?
- Second, on Russell's analysis, 'the' does not have any meaning in isolation. In technical terms, it is *syncategorematic*. That is, we cannot state the meaning of 'the' without considering it in a sentence.
- But that entails that the meaning of (2) is not compositionally determined (because if 'the' has no meaning in isolation, the meaning of (2) cannot simply be a function of the meaning of its individual constituents).



## Revisionary Syntax and Compositionality (cont.)

- There are many other interesting aspects/objections to Russell's analysis in addition to those briefly mentioned here.
- One of these objections, pertaining specifically to Russell's analysis of names, was put forward by Kripke. This is the topic of the next lectures.

