8.4.1. Definite descriptions as quantifier phrases

We have been treating definite descriptions as individual terms and analyzing them only by extracting component terms. In the early years of the 20th century the British logician and philosopher Bertrand Russell (1872-1970) proposed a way of analyzing definite descriptions that, in effect, treats them as quantifier phrases. For example, he would treat the sentence *The house Jack built still stands* as making a claim that could be stated more explicitly as:

Something such that it and only it is a house Jack built is such that (it still stands)

If we make this restatement the starting point of a symbolic analysis, we will get the following:

The house Jack built still stands
Something such that it and only it is a house Jack built is such that (it still stands)
(∃x: x *and only* x *is a house Jack built*) x *still stands*
(∃x: x *is a house Jack built* ∧ *only* x *is a house Jack built*) Sx
(∃x: (x *is a house* ∧ *Jack built* x) ∧ *only a thing identical to* x *is such that (it is a house Jack built)*) Sx
(∃x: (Hx ∧ Bjx) ∧ (∀y: ¬ y = x) ¬ y *is a house Jack built*) Sx
(∃x: (Hx ∧ Bjx) ∧ (∀y: ¬ y = x) ¬ (y *is a house* ∧ *Jack built* y)) Sx

(∃x: (Hx ∧ Bjx) ∧ (∀y: ¬ y = x) ¬ (Hy ∧ Bjy)) Sx
∃x ((Hx ∧ Bjx) ∧ ∀y (¬ y = x → ¬ (Hy ∧ Bjy)) ∧ Sx)

[B: λxy (x *built* y); H: λx (x *is house*); S: λx (x *still stands*); j: *Jack*]

Notice that the sentence *A house Jack built still stands* could be restated as *Something such that it is house Jack built is such that (it still stands)*, so the difference between the indefinite and definite article on Russell's analysis lies in the extra phrase *and only it*. In the analysis above, that phrase yields an added conjunct in the restricting formula that appears in English as *only* x *is a house Jack built* and in symbols as (∀y: ¬ y = x) ¬ (Hy ∧ Bjy). This reflects the requirement of uniqueness noted in 6.2.1 as a condition for the reference of definite descriptions, and the analysis above entails *Jack built at most one house*.

Notice that Russell does not treat *The house Jack built still stands* as *Exactly one house Jack built still stands*. The latter sentence makes a claim of uniqueness, too, but a weaker one. It entails only *Jack built at most one house that still stands* and not *Jack built at most one house*. Russell's analysis also entails *Any house Jack built still stands* and this means that, with a little artificiality, the difference between it and the weaker claim of uniqueness can be expressed as the difference between a non-restrictive and a restrictive relative clause—i.e., between the stronger *The houses Jack built, which still stand, number one* and the weaker *The houses Jack built that still stand number one*. Notice that the first of these cannot be treated as a simple claim that there is exactly one example of a certain sort.

In general, Russell recommended that we analyze a sentence of the form *The* C *is such that (… it …)* as equivalent to

(∃x: x *is a* C ∧ (∀y: ¬ y = x) ¬ y *is a* C) … x …

—i.e., as we might analyze *Something such that it and only it is a* C *is such that (… it…)*. It is sometimes convenient to use instead the shorter form

(∃x: x *is a* C ∧ (∀y: y *is a* C) x = y) … x …

which amounts to *Some* C *that is all the* C*s there are is such that (… it…)*. As was noted in 8.3.3 for a similar restatement of sentences using *exactly 1*, this is equivalent to the first form by principle of contraposition and the symmetry of identity.

Russell's analysis of definite descriptions has been widely accepted, but it is not uncontroversial since it opens up the possibility of scope ambiguities that many do not find in sentences involving definite descriptions. In particular, if we analyze a negative sentence containing a definite description using Russell's approach, we can regard the negation either as the main logical operator or as a part of the quantified predicate that is left when we remove the definite description. To choose one of Russell's own examples, we could regard *The present king of France is not bald* as making either of the claims below.

¬ *the present king of France is bald*
The present king of France is such that he is not bald

Russell's analysis of the positive claim *The present king of France is bald* implies that there is at present a king of France, so it is false (and was false already when Russell proposed the analysis). Russell then held that the first of the sentences above is true because it is the negation of a false statement. But, by the same token, the second sentence claims in part that there is presently a king of France, so it is false on his view. Thus *The present king of France is not bald* is, on Russell's analysis, open to two interpretations, one on which it is true and another of which it is false, and many philosophers have found no such ambiguity in the sentence. Indeed, many would claim that the sentence is neither true nor false since the definite description *the present king of France* does not refer to anything.

Glen Helman 25 Nov 2004