8.6.s. Summary

8.6.1. In order to assign a meaning to the description operator with respect to a referential range, a reference value must be singled out as the nil value. This serves as the reference value of the constant ∗ and as the reference value of the description ℩x ρx when the extension of ρ is empty or has more than one member. Then the law for descriptions asserts that either ℩x ρx is something that is the sole thing ρ is true of or ρ is not true of exactly one thing and ℩x ρx has the nil value.

8.6.2. A definite description is not a sentence, so it is handled in derivations not by exploiting it or planning for it as a goal but by securing it—that is, by insuring that its reference is settled in the way required by the law for descriptions. The rule for doing this is Securing a Description (SD). This rule is enough to enable us to establish meaning postulates, which state that definite descriptions are interpreted as we intend. Allow the argument used for completeness of the system of derivations no longer applies, is it easy to see that the system is complete if we allow the rule LFR to be used to introduce meaning postulates as lemmas. The rule SD introduces a new term, so when searching for finite counterexamples, it should be used in the alternative form Securing a Description Supplemented (SD+).

8.6.x. Exercise questions

Analyze each of the following first using Russell's approach to definite descriptions and then again using the description operator. Use derivations to check each form of the argument for validity.

1. *The winner was an amateur*
An amateur was a winner

2. *An amateur was a winner*
There was at most one winner
The winner was an amateur

Topics for test 5

The following are the topics to be covered. The proportion of the test covering each will approximate the proportion of the classes so far that have been devoted to that topic. Your homework and the collection of old tests will provide specific examples of the kinds of questions I might ask.

This test will have a few more questions than earlier ones (about 9 or 10 instead of about 7) and I will allow you as much of the 3 hour period as you want. The bulk of the questions (6 or 7 of the total) will be on ch. 8 but there will also be a few questions directed specifically towards earlier material (see below).

Analysis. This will represent the majority of the questions on ch. 8. The homework assignments give a good sample of the kinds of issues that might arise but you should, of consider, consider examples and exercises in the text as well. In particular, pay attention to the variety of special issues (e.g., how to handle *there is* or *else*) that show up.

Synthesis. You may be given a symbolic form and an interpretation of its non-logical vocabulary and asked to express the sentence in English. (This sort of question is less likely to appear than a question about analysis and there would certainly be substantially fewer such questions.)

Derivations. Be able to construct derivations to show that entailments hold and to show that they fail (derivations that hold are more likely). I may tell you in advance whether an entailment holds or leave it to you to check that using derivations. If a derivation fails, you *may* be asked to present a counterexample, which will involve describing a structure. You will have the option using the rules REP and REC (as well as RUP and RUC) in derivations for restricted quantifiers. You will *not* be responsible for the rule for the description operator introduced in §8.6 or for the supplemented rules (i.e., PCh+, etc.) used to find finite counterexamples.

Earlier material. These questions will concern the following topics.

Basic concepts. You may be asked for a definition of a concept or asked questions about the concept that can be answered on the basis of its definition. You are responsible for: entailment or validity, equivalence, tautologousness, relative inconsistency or exclusion, inconsistency of a set, absurdity, and relative exhaustiveness. (These are the concepts whose definitions appear in Appendix A.1.)

Calculations of the truth values. That is, you should be able to calculate the truth value of a symbolic sentence on an extensional interpretation of it. This means you must know the truth tables for connectives and also how to carry out the sort of calculation from tables introduced in ch. 6—see exercise 2 of 6.4.x).

Describing structures. Describing a structure that divides an open gap is the last step in a derivation that fails, but I may ask you simply to describe a structure that makes certain sentences true. The derivation exercises in chapters 7 and 8 have led only to very simple structures, but you can find more complex ones in the examples of 6.4.3 (as well as among the old tests—in old versions of both test 3 and test 5).