6.2.3. Examples and problems

We will begin with a couple of extended but straightforward examples.

*If Dan is the winner and Portugal is the place he would most like to
visit, he will visit there before long*

*Dan is the winner and Portugal is the place he would most like to
visit*
   → *Dan will visit Portugal before long*

(*Dan is the winner* ∧ *Portugal is the place Dan would most like to
visit*)
   → *Dan will visit Portugal before long*

(*Dan is the winner* ∧ *Portugal is the place Dan would most like to
visit*)
   → *Dan will visit Portugal before long*

(*Dan = the winner* ∧ *Portugal = the place Dan would most like to
visit*)
   → [λxy (x *will visit* y *before long*)] *Dan Portugal*

(d = n ∧ p = [λx (*the place* x *would most like to visit*)] *Dan*) → Vdp

$$(d = n \land p = ld) \rightarrow Vdp$$
`if both d is n and p is l of d then V fits d 'n p`

[V: λxy (x *will visit* y *before long*); l: λx (*the place* x *would most like to
visit*); d: *Dan*; n: *the winner*; p: *Portugal*]

*Al won't sign the contract Barb's lawyer made out without
speaking to his lawyer*

¬ *Al will sign the contract Barb's lawyer made out without
speaking to his lawyer*

¬ (*Al will sign the contract Barb's lawyer made out* ∧ ¬ *Al will
speak to his lawyer*)

¬ (*Al will sign the contract Barb's lawyer made out* ∧ ¬ *Al will
speak to Al's lawyer*)

¬ ([λxy (x *will sign* y)] *Al the contract Barb's lawyer made out* ∧
   ¬ [λxy (x *will speak to* y)] *Al Al's lawyer*)

¬ (S a (*the contract Barb's lawyer made out*) ∧ ¬ P a (*Al's lawyer*))

¬ (S a ([λx (*the contract* x *made out*)] *Barb's lawyer*) ∧ ¬ P a ([λx
(x*'s lawyer*)] *Al*))

¬ (S a (c ([λx (x*'s lawyer*)] *Barb*)) ∧ ¬ Pa(la))

$$\neg (Sa(c(lb)) \land \neg Pa(la))$$
`not both S fits a 'n c of l of b and not P fits a 'n l of a`

[P: λxy (x *will speak to* y); S: λxy (x *will sign* y); c: λx (*the contract* x

made out); l: λx (x*'s lawyer*); a: *Al*; b: *Barb*]

Apart from telling the difference between individual terms and quantifier phrases, the chief problem that is likely to arise in analyzing predications is making sure that you have identified the whole of a definite description you locate in an atomic sentence. What you are most likely to miss are modifiers, usually prepositional phrases or relative clauses, that follow the main common noun of the definite description. For example, although *the place* might be an individual term in its own right in other cases, here is it only part of the term *the place Dan would most like to visit*. Similarly, *the contract* is only the beginning of the individual term *the contract Barb's lawyer made out*. In both of the these cases, the rest of the definite description is a relative clause with a suppressed relative pronoun; that is, they might have been stated more fully as *the place **that** Dan would most like to visit* and *the contract **that** Barb's lawyer made out*, respectively. Notice that relative clauses are not individual terms that are components of larger individual terms (in the way *Barb* is a component of *Barb's lawyer*), for they do not appear as components of the final analysis at all.

Let's look at these issues in more detail by returning to the example at the end of 6.2.2 .

The cat on the mat was asleep and the dog that had chased it was, too
The cat on the mat was asleep ∧ the dog that had chased the cat on the mat was asleep

It would be wrong to remove only *the cat* from the first conjunct because the sentence-with-a-blank ____ *on the mat was asleep* does not express a predicate any more than does the sentence-with-a-blank ____ *tle were in the meadow* that would be obtained by removing *the cat* from *The cattle were in the meadow*. Of course *cat* is a separate word in the first case, but the two words *the* and *cat* do not form a separable unit because *the* properly applies to the common-noun-plus-modifier *cat on the mat*. This means that the phrase *the cat*, although often an individual term, is not an individual term in this sentence. Similarly, the sentence-with-a-blank ____ *that had chased the cat on the mat* does not express a predicate and it would be wrong to remove only *the dog* from the second conjunct.

There are some cases where a prepositional phrase or relative clause following a common noun should not be counted as part of a definite description. Some prepositional phrases can modify both nouns and verbs, and a prepositional phrase following a noun within a grammatical predicate might be understood to modify either it or the main verb. The sentence *The dog chased the cat on the mat* is ambiguous in this way

since the mat might be understood to be either the location of the chase or the location of the cat, who might have been chased elsewhere. This sort of ambiguity can be clarified by converting the prepositional phrase into a relative clause, which can only modify a noun; if this transformation—e.g.,

The dog chased the cat that was on the mat

—preserves meaning, then the prepositional phrase is part of the definite description. On the other hand, since anaphoric pronouns cannot accept modifiers, replacing a possible noun phrase by a pronoun will show the result of taking a prepositional phrase to modify the verb. This can be done by moving the noun phrase to the front of the sentence, joining it to the remaining sentence-with-a-blank by the phrase *is such that*, and filling the blank with an appropriate pronoun (*he*, *she*, or *it*). In this example, that would give us

The cat is such that the dog chased it on the mat

So, if the *on the mat* should be taken to modify *cat* or *chased* depending on whether the first or second of the displayed sentences best captures the meaning of the original. Of course, when a potentially ambiguous sentence is taken out of context, it may not be clear which of two alternatives does this; in such a case, either analysis is legitimate.

Not all relative clauses contribute to determining reference. Those that do are **restrictive** clauses while others are **non-restrictive**. Non-restrictive clauses cannot use the word *that* and, when punctuated, are marked off by commas. Restrictive clauses are not marked off by commas in standard English punctuation and may use *that* (but are not limited to this relative pronoun), and they can in some cases be expressed without a relative pronoun. The sorts of relative clause are most sharply distinguished when more than one of these differences is exhibited. For example, the relative clause *The cat that the dog had chased was asleep* or *The cat the dog had chased was asleep* is clearly restrictive while the one in *The cat, who the dog had chased, was asleep* is clearly non-restrictive. This means that the relative clause in the first is part of the definite description *the cat that the dog had chased*. The relative clause in the second would instead be analyzed as a separate conjunct:

The cat, who the dog had chased, was asleep
the dog had chased *the cat* ∧ *the cat* was asleep
[λxy (x *had chased* y)] *the dog* *the cat* ∧ [λx (x *was asleep*)] *the cat*

Adc ∧ Sc
both A `fits` d `'n` c and S `fits` c

[A: λxy (x *had chased* y); S: λx (x *was asleep*); c: *the cat*; d: *the dog*]

When the relative pronouns *who* or *which* are used without commas, both interpretations are possible; and *The cat who the dog had chased was asleep* might be given either analysis depending on what was meant. The differences in meaning between these two interpretations are subtle. When the relative clause is restrictive, the property of being chased by the dog is used to narrow down the class of cats to the point where *the* is appropriate. When the sentence is true on the second analysis, this narrowing is possible; but it might be appropriate to use it if a particular cat is sufficiently salient in any case that adding this qualification to the definite description would lead someone to wonder what other cats were around.

Another indication of the difference between the two sorts or relative clause is that the non-restrictive clause can modify a proper name—as in *Puff, who the dog had chased, was asleep*. And, since neither prepositional phrases nor restrictive relative clauses can modify a proper name, putting a proper name in the blank or blanks of a sentence-with-blanks can show whether it really expresses a predicate. For example, *Puff on the mat was asleep* and *Puff that the dog had chased was asleep* are both ungrammatical. (You may need to shift between *which* and *who* in order for a sentence that applies a non-restrictive relative clause to a proper name to sound grammatical since these relative pronouns are appropriate for different names and for uses of the same name to refer to different things: when *Old Betsy* names a cow, *who* can be used, but *which* is used when *Old Betsy* names a car.)

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