2.1.5. Some sample analyses

Here are a few example analyses written out in full as models for the exercises to this section. In each case a few comments follow the actual analysis.

<div align="center">

Roses are red and violets are blue
Roses are red ∧ violets are blue

R ∧ B
both R and B

[R: *roses are red*; B: *violets are blue*]

</div>

As a last step here, we have abbreviated unanalyzed components with capital letters in order to highlight logical forms. The final form is stated both symbolically and using our English expression for conjunction, something that will be done also in the examples to follow.

<div align="center">

It's cool even though it's bright and sunny
It's cool ∧ it's bright and sunny
It's cool ∧ (it's bright ∧ it's sunny)

C ∧ (B ∧ S)
both C and both B and S

[C: *it's cool*; B: *it's bright*; S: *it's sunny*]

</div>

This example was worked out in two steps, first analyzing the whole sentence as a conjunction and then analyzing one of its components. The parentheses in the final result correspond to the grouping of *bright* and *sunny* together in the predicate of the second clause of the original sentence.

<div align="center">

He was cool, calm, and collected
He was cool ∧ he was calm ∧ he was collected

C ∧ M ∧ T
C and M and T

[C: *he was cool*; M: *he was calm*; T: *he was collected*]

</div>

Here parentheses would be an artifact of our analysis and correspond to nothing in the English. Accordingly we have used run-on conjunction in the symbolic version, and use of both is similarly suppressed in the English statement of the form. There would be nothing wrong with an analysis that specified the relative scope of the two conjunctions but, in this case, nothing is lost by

not doing so.

> *It is a two-story brick building with a slate roof*
> *It is a two-story brick building* ∧ *it has a slate roof*
> (*it is a building* ∧ *it is made of brick* ∧ *it has two stories*) ∧ *it has a slate roof*
>
> (B ∧ R ∧ T) ∧ S
> (B `and` R `and` T) `and` S
>
> [B: *it is a building*; R: *it is made of brick*; S: *it has a slate roof*; T: *it has two stories*]

No grouping is used within the first three components because it is not obvious that any is imposed by the phrase *two-story brick building*. The English statement employs parentheses because there is no good way of indicating the combination of run-on conjunction with ordinary conjunction using `both`. Again, there would be nothing wrong with imposing a grouping. If we were to group the first three components to the left, for example, we would end up with the following in symbols and English:

> ((B ∧ R) ∧ T) ∧ S
> `both both both` B `and` R `and` T `and` S

In the English notation, the first `both` tells us that the whole sentence is a conjunction, the second that the first component is, and the third that the first component of the first component is a conjunction; and this settles the scope of the `and`s that follow. The value of English notation does not lie in such calculations but in our ability to understand the significance `both` automatically; however, that ability to fairly simple forms, and a row of three `both`s is hard to follow without reflection.