Case	m indef	m def	f indef	f def	n indef	n def
Nom Sg	-er	-e	-e	-e	-es	-e
Gen Sg	-en	-en	-en	-en	-en	-en
Dat Sg	-en	-en	-en	-en	-en	-en
Acc Sg	-en	-en	-e	-e	-es	-e
Nom Pl	-e	-en	-e	-en	-e	-en
Gen Pl	-er	-en	-er	-en	-er	-en
Dat Pl	-en	-en	-en	-en	-en	-en
Acc Pl	-e	-en	-e	-en	-e	-en

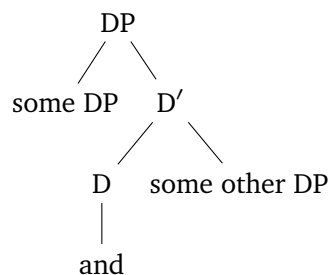Which one of the two grammars is easier to expand accordingly?   ⊙

Exercise 5.4. Try writing a bottom-up tree automaton that checks agreement for NP-internal adjectives. Is this easier or harder than writing a grammar with meta-rules? ⊙

Exercise 5.5. In Icelandic, adjectives in predicative position display resolved agreement if the subject is a coordination of multiple DPs:

1. If all conjuncts are masculine, the adjective displays masculine agreement.

2. If all conjuncts are feminine, the adjective displays feminine agreement.

3. In all other cases, the adjective displays neuter agreement.

Write a tree automaton that correctly assigns to each DP its resolved gender. For example, a DP that contains a single masculine noun should be assigned a state for masculine gender, a DP that is a coordination of two feminine DPs should receive feminine, and a DP that is a coordination of a masculine and a feminine noun receives the state for neuter gender. You may assume that all coordinations have a binary branching tree structure:

```
                    DP
                   /  \
            some DP     D′
                       /  \
                      D    some other DP
                      |
                     and
```
                                                                    ⊙

Exercise 5.6. This continues the previous exercise. A complicating factor is that Icelandic has *hybrid nouns*, i.e. nouns whose syntactic gender differs from their semantic gender. The best-known example is *hetja* 'hero', which is syntactically feminine but usually refers to a man and thus is semantically masculine. Another one is *skáld* 'poet', which is syntactically neuter but may refer to a man or a woman. Do you need to modify the automaton from the previous exercise to accommodate hybrid agreement? If so, what changes are necessary?   ⊙

References and Further Reading

Steedman, Mark. 2001. *The syntactic process*. Cambridge, MA: MIT Press.