

## 1 Constituents

- (1) They stole a barrel of syrup from Québec.

**Part 1.** Show that *a barrel of syrup from Québec* is a constituent by creating test sentences using the proform replacement and clefting tests.

**Part 2.** Show that *from Québec* is a constituent by creating test sentences using the proform replacement and clefting tests.

**Part 3.** Show that *a barrel of syrup* is a constituent by creating test sentences using the proform replacement and clefting tests.

- (2) Mary heard the rumor that Pat kissed Chris.

**Part 4.** Use the same kind of examples to show that *the rumor that Pat kissed Chris* is a constituent, but that *Chris* seems not to be. Give the test sentences as above and a sentence that says how you reach the conclusion about what is and isn't a constituent. You should wind up with four test sentences (two for the proform replacement test, two for the clefting test).

Now, of course—*of course*—*Chris* is a constituent in (2). So why is it failing some of the constituency tests? It turns out that the displacement and clefting test *systematically fail* when trying to test a constituent that is inside a noun phrase (like *the rumor that Pat kissed Chris*, which is ultimately a noun phrase headed by *rumor*). In other words, something about this is incompatible with the *test* and therefore we can't trust its results.

Let me make that salient by putting it in bold in a box.

**The displacement and clefting tests will fail (will produce ungrammatical test sentences) if you test a constituent that is inside a larger noun phrase.**

Now, back to Québec and syrup. The sentence in (1) is ambiguous—it can mean a couple of different things, depending on what you understand to be *from Québec*. First, convince yourself of that. (1) can describe a situation where the *syrup* is from Québec, but could have been stolen from anywhere, and the barrel containing the syrup could

be from anywhere. So, for example, in a barrel from Peru, stolen from Paris. That's one meaning. It can also describe a situation in which the *barrel* is from Québec, but could have been stolen from anywhere and contain any kind of syrup. For example, a barrel from Québec full of Portuguese syrup, stolen from Seattle. Lastly, it can describe a situation where the stealing was from Québec, and the barrel and syrup could have been from anywhere. The difference in the meanings depends on what *from Québec* is understood to modify.

We hypothesize that the syntax and semantics of sentences are tied together fairly closely, and in particular, we will be assuming the following (which I will again make bold and enbox):

**A modifier must form a syntactic constituent with the thing it modifies.**

Although we aren't yet looking at trees specifically, only at constituent structure, this means that if *from Québec* is understood to be a modifier of *syrup*, then *syrup from Québec* must be a constituent. It must act as a unit. When we draw a tree eventually, there must be a single node of the tree that dominates the modifier, modifiee, and nothing else. Now we come to your task.

**Part 5.** Notice that the test sentences you created *for the clefting test* in parts 1–3 are not as ambiguous as the original sentence in (1). Specifically, the sentences in parts 2 and 3 must mean that the *stealing* was from Québec (it can't be just the barrel or just the syrup that are québécois), while the sentence in part 1 can mean either that the syrup or the barrel is from Québec, but not the stealing. Your task for this part is to explain why the test sentences are less ambiguous than the original sentence in (1). Start with the test sentences for part 1, consider what I said above, and explain why the test sentences only allow interpretations where *from Québec* modifies *syrup* or *barrel (of syrup)*. Then, explain why the test sentences for parts 2–3 only allow modification of *stole (a barrel of syrup)*. These last two are a bit more complicated, but consider the implications of the bold things in boxes above. Just write your explanation of why certain meanings are missing from the test sentences in (relatively succinct) prose, making reference to the principles outlined above.

## 2 PSRs and Trees V

Here is a set of phrase structure rules for English.

$S \rightarrow NP VP$	$Conj \rightarrow and$
$VP \rightarrow Vi$	$Conj \rightarrow or$
$VP \rightarrow Vt NP$	$Det \rightarrow a$
$VP \rightarrow Vd NP NP$	$Adj \rightarrow big$
$NP \rightarrow Det N$	$Adj \rightarrow fancy$
$N \rightarrow Adj N$	$Adj \rightarrow expensive$
$NP \rightarrow Nn$	$N \rightarrow beer$
$NP \rightarrow N$	$N \rightarrow gift$
$NP \rightarrow NP Conj NP$	$Nn \rightarrow Bart$
$VP \rightarrow VP Conj VP$	$Nn \rightarrow Marge$
$S \rightarrow S Conj S$	$Nn \rightarrow Homer$
	$Nn \rightarrow Lisa$
	$Vt \rightarrow drank$
	$Vi \rightarrow slept$
	$Vd \rightarrow gave$

**A.** Give the tree that these rules generate for the sentence *Marge and Homer gave Bart and Lisa a big expensive gift*. This tree is relevant for B–F below.

**B.** Write “B” by the nodes that the Adj node over *big* c-commands.

**C.** Write “C” by the nodes that the Vt node over *gave* c-commands.

**D.** Write “D” by the nodes that the NP-daughter-of-S dominates.

**E.** Write “E” by the nodes that dominate *Bart*.

**F.** Write “F” by the nodes that precede *Bart*.

**G.** Give the tree that the rules generate for the sentence *Homer drank a beer and slept*.