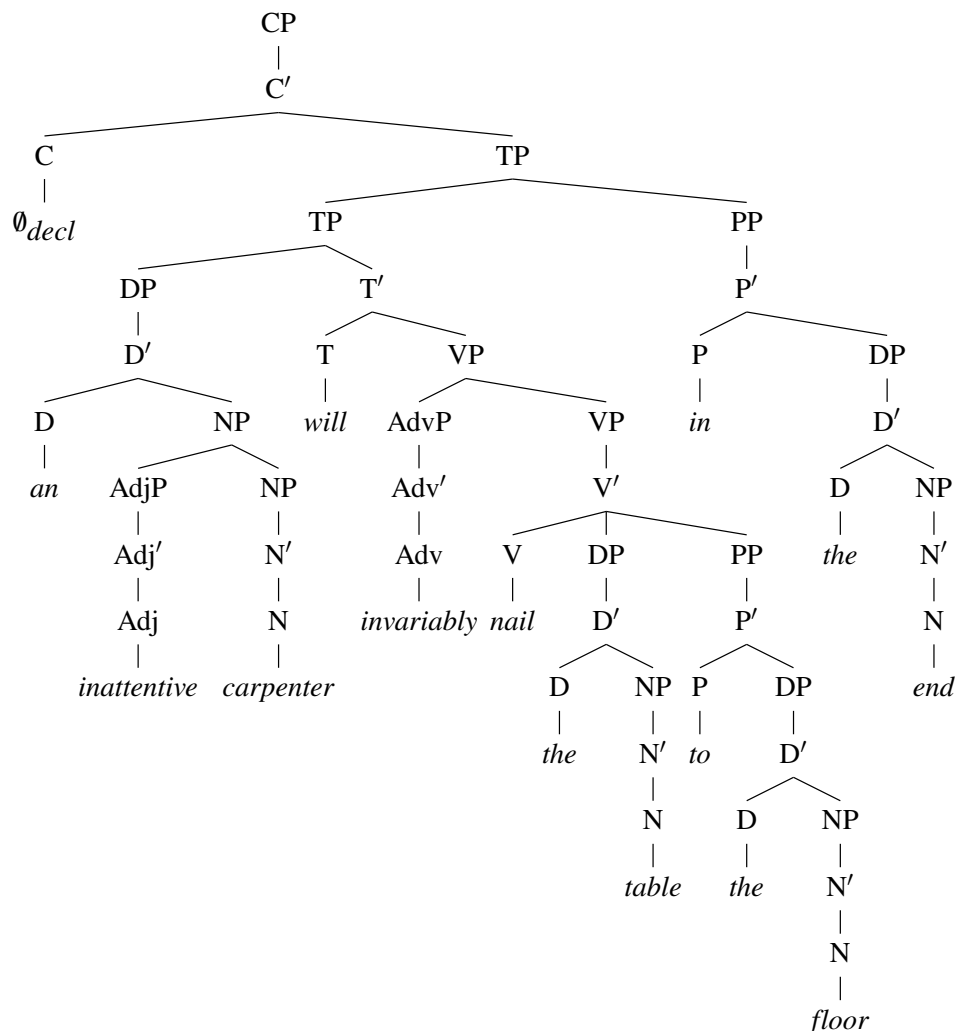


Version 1.4: Eliminated superfluous Adv rules in part 1.3 (there were no adverbs);
Version 1.3: Eliminated a superfluous *the* from (5g). Doesn't affect the problem much, but the fix makes (5g) informative rather than irrelevant; **Version 1.2:** Sentence (4g) used to be a duplicate of another sentence, updated now to reflect what I had intended. Not entirely necessary for the problem, but fixed anyway; **Version 1.1:** AdvP, Adv', AdjP, Adj' rules were added in problem 1.3 (they were accidentally omitted in v.1.0.)

1 From trees to rules and *vice versa* (13 points, combined)

1.1 Tree to PS rules [5 points]

Provide the PS rules that derive the following tree. Give the simplest rule system you can, avoiding redundancy. **For this question, also give the lexical items, but just with their category (no other features).** To give one example of a lexical item: *will*, T.



CP → C'	DP → D'		
C' → C TP	D' → D NP	\emptyset decl, C	
TP → TP PP	NP → AdjP NP	will, T	carpenter, N
TP → DP T'	NP → N'	nail, V	table, N
T' → T VP	N' → N	an, D	floor, N
VP → AdvP VP	AdjP → Adj'	the, D	end, N
VP → V'	Adj' → Adj	in, P	inattentive, Adj
V' → V DP PP	AdvP → Adv'	to, P	invariably, Adv
PP → P'	Adv' → Adv		
P' → P DP			

1.2 X-bar structure [1.5 points]

Which phrases are adjuncts in the structure above? (Based on the tree alone, use the words in the phrase to identify them)

This was originally worth 3 points, but that was too much for what this problem required (people who made little errors in here were disproportionately penalized). So, the value of this was cut in half, and now each part is worth .5 points, totaling 1.5, making the whole test worth a non-integer number of points. But, so it goes.

- AdjP *inattentive*
- AdvP *invariably*
- PP *in the end*

1.3 PS rules to tree [5 points]

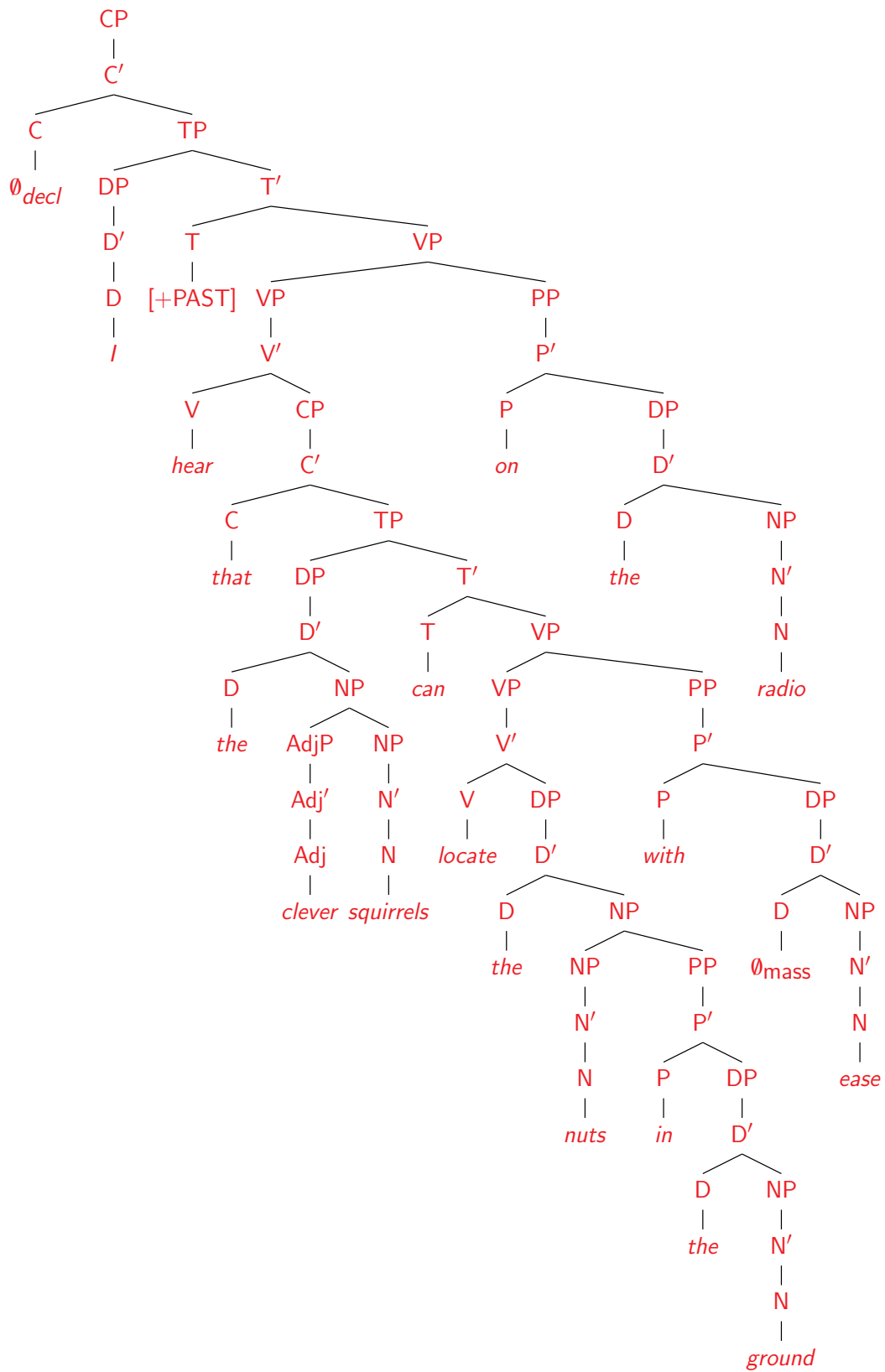
Provide a tree diagram for the following sentence based on the grammar below. (Assume the lexical items that would be appropriate, you can consider *can* to be a T, and *ease* to be a (mass) noun.) You may find that the rule system allows for more than one possible structure. If so, provide the structure that best captures the most likely meaning of the sentence. The root node of the tree should be CP.

I heard that the clever squirrels can locate the nuts in the ground with ease on the radio

CP	→	C'
C'	→	C TP
TP	→	DP T'
T'	→	T VP
DP	→	D'
D'	→	D (NP)

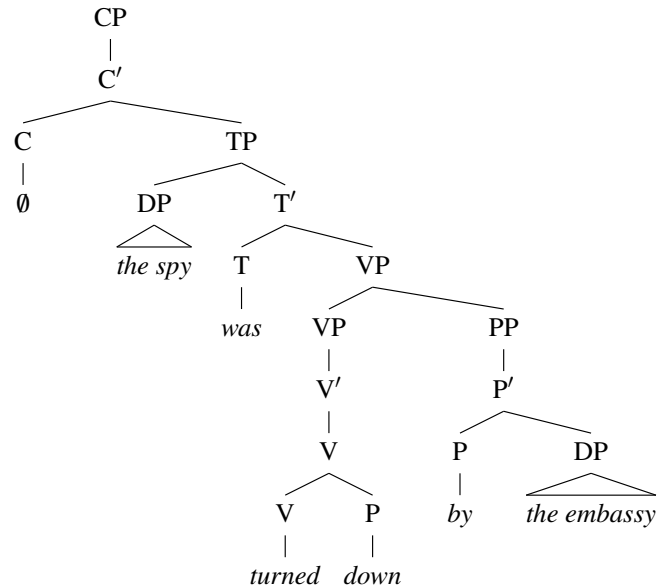
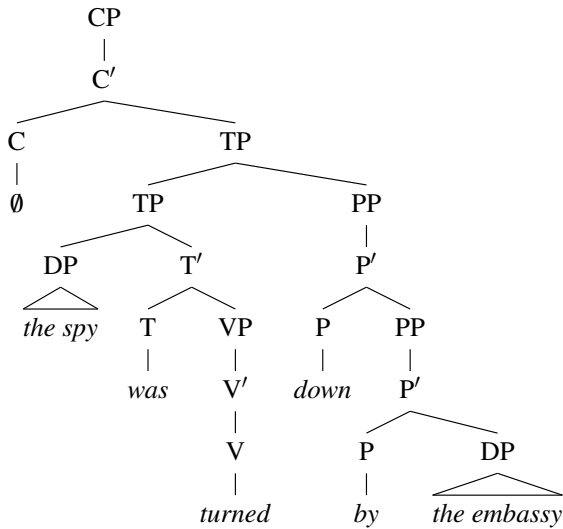
VP	→	V'
VP	→	AdvP VP
VP	→	VP PP
V'	→	V DP
V'	→	V CP
AdjP	→	Adj'
Adj'	→	Adj

NP	→	N'
NP	→	AdjP NP
NP	→	NP PP
N'	→	N
PP	→	P'
P'	→	P DP



Turns out we didn't need the AdvP, Adv' rules for this sentence.

2 Developing an argument (4 points)



Task. The two tree diagrams above are two candidate structures for *The spy was turned down by the embassy*. Neither is fully correct, but that doesn't matter for the purposes of this problem.

- **Part A:** Provide a sequence of words that form a constituent only in the first tree.
- **Part B:** Provide a sequence of words that form a constituent only in the second tree.
- **Part C:** Write two constituency test sentences for each of those potential constituents you identified in the two parts above (so, four test sentences in total), and indicate what you expect the available meanings will be for each. (You don't need to judge whether they do in fact have the predicted meanings, just say what the predictions are.) You can refer to the meanings as the “cooperating-spy” (alliances have been turned, changed sides) meaning and the “disappointed-spy” (spy was rejected) meaning.

Part A. down by the embassy – or the spy was turned – or was turned. **Part B.** turned down — or turned down by the embassy. **Part C.** Here are some tests and predictions.

- It is down by the embassy that the spy was turned. (cooperating-spy)
- Down by the embassy the spy was turned. (cooperating-spy)
- ?It is turned down by the embassy that the spy was. (disappointed-spy)

- Turned down by the embassy the spy was (disappointed-spy)
- ?It is turned down that the spy was by the embassy. (disappointed-spy)
- Turned down the spy was by the embassy (disappointed-spy)

There were a few cases of creative uses of constituency tests other than the ones we talked about in class. Generally I was pretty liberal in accepting those.

I'm seeing a number of references to Yoda there in some of the later examples, but consider: *I said that John would be turned down by the embassy. . . and turned down by the embassy he was!*—that doesn't really seem to need to be spoken by Yoda to be ok.

3 Building a lexicon (5 points)

Observe the following data. For each, come up with a lexical entry for the underlined word. (Primarily, this is about constructing (a) subcategorization frame(s) for each.) You may add a few words how your lexical entry explains the data in question, if there is anything you'd want to say beyond just what it says in the lexical entry. (No need to just restate the lexical entry in prose.)

- (1) a. Pat depends on the MBTA
- b. * Pat depends
- c. * Pat depends near the MBTA
- d. * Pat depends on the MBTA on the rental income

depend, V, [+ _ PP_{on}]

There were surprisingly many people who seemed to think *on* is a PP and the object of *on* is a further, independent, DP. See all the trees on the handouts, etc.: *on* is a P, it heads a PP, its sister is a DP, and both the P and the DP are within the PP constituent. More concretely, this is incorrect: [+ _ PP_{on} DP].

- (2) a. Tracy approves.
- b. Tracy approves of science.
- c. Tracy approves at lunch.
- d. Tracy approves of science at lunch.
- e. * Tracy approves at lunch of science.

approves, V, [+ _ PP_{of}]

Approves takes an *of*-PP, possibly implicit. I think conceptually one can't just approve in the abstract, but must be approving of something. I didn't take points off for not making the *of*-PP required, but I think it should be required (but potentially unpronounced).

Also, while I don't disagree that (c) (*Tracy approves at lunch*), sounds kind of weird, it is basically as good as (a) (*Tracy approves*) is. Tracy is a hypocrite. Tracy privately disapproves of mining Bitcoin. But at lunch, to fit in with the cool kids, Tracy approves (of mining Bitcoin).

The pattern of data doesn't really prevent assuming that both *of*-PPs and *at*-PPs are optional arguments, appearing in a fixed order. I had to kind of rely on intuitions about the meaning that locations are optional, not part of a general *approve* event, whereas the *of*-PP is a fundamental part of what it means to *approve*. Fun exercise: what kind of example would have helped? (One answer: "Tracy approves of science at lunch at school on Wednesdays during November.")

- (3) a. The fire melted the ice.
b. The ice melted.
c. * The fire melted the ice the plastic figure.

melt, V, [+ _ DP]; *melt*, V, [+ _]

"Melt" seems to have two senses. One is causing a melting, one is a melting itself. The transitive (causing a a melting) requires something being melted.

- (4) a. John deposited the check.
b. * John deposited.
c. John deposited the check at noon.
d. John deposited the check in the slot.
e. * John deposited the check at noon in the slot.
f. * John deposited the check in the bank in the slot.
g. John deposited the check in the slot at noon.

deposit, V, [+ _ DP PP_{in}]

It seems as if *deposit* can have an implicit PP but that PP seemed (to me, at first glance) to need to be an *in*-PP. The other PPs (like *at noon*) are doing some sort of scene-setting, they're not a crucial part of what it is to be a *depositing* event. So, if the *at noon* PP is included in the subcategorization frame, this was considered to be incorrect.

I am not as convinced as I was at first glance that the argument PP needs to be an *in*-PP. Potentially, the same sense of this verb is being used for *deposit the shopping bag near the door* or *deposit the file on the desktop*. If those are good, but I think they're pretty much ok. So, it is (not really surprisingly) some kind of locational PP that is involved there, something that indicates the end of a path perhaps. The more I think about this, the more I'm convinced that it's really a location there. So either [+in] or [+loc] is ok for the argument PP.

There does need to be an argument PP, though, in order to explain (e–f). I was a bit lenient in allowing parentheses here around the argument PP to indicate “able to be left unpronounced” although I think the more correct answer is the one I gave above—the ability to leave a required argument unpronounced is something handled elsewhere, not in the subcategorization frame.

- (5)
- a. The blacksmith convinced the clients that the Earth is flat.
 - b. The blacksmith convinced the apprentice of the conspiracy.
 - c. The blacksmith convinced the apprentice.
 - d. The blacksmith convinced the apprentice in 20 minutes.
 - e. * The blacksmith convinced that the Earth is flat.
 - f. * The blacksmith convinced of the conspiracy.
 - g. * The blacksmith convinced the apprentice that the Earth is flat of the conspiracy.
 - h. * The blacksmith convinced the apprentice the clients.
 - i. * The blacksmith convinced.

convince, V, [+ _ DP CP]

convince, V, [+ _ DP PP]

There are two possible frames here, but *convince* is a ditransitive verb. Someone is being convinced, they are being convinced of something. That something of which they are being convinced can be represented as a full clause (CP) or something a bit more compact (PP). It seems that the CP/PP can be phonologically omitted, but it is still conceptually part of a convincing.