Syntax 1
Assignment 15 (Mid Term Exam)

Joshua Leihe

Collaborators:
Faith Curtis
Anu Korada
Anissa Zaitsu

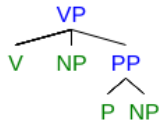
This assignment has several sections. I will go through each section solving the problems presented one by one and make connections between the content of different sections where necessary. To begin, here are our current grammar rules and transformations.

Our current grammar:

S -> {NP, CP} TP
TP -> T {NegP, VP}
VP -> V (NP)(NP) (AP) (PP)*(CP)
VP -> V VP
V -> V Part
NegP -> Neg VP
NP -> {(PossP) (AP)* N (PP)* (CP), PN, Name}
AP -> (Deg) A (PP) (CP)
PP -> P NP
CP -> C S
PossP -> {NP Poss, D}
XP -> XP C XP

Our Transformations:

Do Insertion	SD: Take a S that has T = +-past and No +XVerb	SC: Insert “do” at T (ajoin it to T)
V -> T movement	SD: Take a S that has a +XVerb and T = +- past	SC: Move the T (whatever it is) to the left of the subject
T - C movement (YNQ)	SD: Take a S that is a complement of Q	SC: Move the T (whatever it is) to the left of the subject (where Q is)
Argument Preposing	SD: Take a S that has a {CP, NP, PP} in the verb phrase	SC: Ajoin the {CP, NP, PP} to S (to the left)
Particle Movement	SD: Take a S that has a particle verb and a direct object NP	SC: Move the particle to the right of the NP

Passive	SD: Take a S with a subject VP and a direct object VP	SC: (1) Put the subject NP in a By phrase (2) Move the object VP to the now empty subject position (3) Insert be2 as the head of a new VP with the original VP as its complement
Dative Shift	SD:  	SC: Delete the P. Move the NP from the PP just to right of the V

The first section presents a collection of sentences that contain an as yet unknown (to our grammar at least) word “there”. The sentences are shown below.

A

1. There is a fly in the Pope’s soup
2. There emerged a gopher from the hole
3. There must have arisen a great wave of protest against the sin tax
4. There may exist very large prime numbers
5. There was a pig eating my garbage

We are told to refer to the “there” that appears in the above sentences as there1 (which I will later argue has no meaning). This should not be confused with what is presented as there0 which does mean something (examples shown below).

B

1. The fly will land there
2. I put it there
3. There she goes

Notice that in each of these sentences (A 1-3) there0 is a location. In sentences B 1-5 however there1 does not have any particular meaning of its own. It is simply a filler word used in this particular sentence construct.

We are going to concentrate on there1 and completely ignore all sentences containing there0.

There one does not in itself have any meaning. “There is a fly eating” and “A fly is eating” mean the same thing. There is simply a word (similar to “Do”) that we use in certain sentence

constructs. We will later see that there1 only appears after the *There insertion rule* (which we we shortly create) is applied to a sentence. It does not appear in the deep structure. For the sake of this assignment however, we will be considering a change to the grammar that does allow there1 to appear in the deep structure of the sentence before we move on to the correct way of handling there1 sentences using transformations.

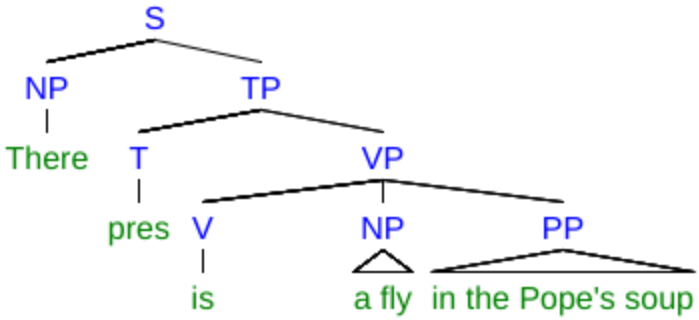
Looking at the following sentences

C

1. Will there remain many species of fish in the next century?
2. Have there been signs of progress?
3. Is there a gopher in that hole?

We see that the "there" in these and similar sentences is in the subject NP position. There1 may only appear at the head of a sentence (unless a transformation is applied). There1 also has a limited number of verbs with which it can occur. The verbs which there1 can occur with are Be, Have, Emerge, Arise, Exist, Appear, and modals. We can create a new set of verbs containing these verbs called ThV.

If we are going to allow there1 to appear in the deep structure then it would look something like this:



This structure is going to give us the same nightmare scenario that trying to using the deep structure for yes-no questions and passive sentences gave us. There are a whole lot of sub categorizations that need to occur to even start to make this possible (not allow it to generate ungrammatical stuff).

Using transformation on the other hand we can say:

There insertion

SD: Take a S with a ThV (there verb*)	SC: Move the subject NP to the right of the ThV and insert "There" in the (now empty) subject position

*Be, Have, Emerge, Arise, Exist, Appear, and modals

Using this transformation we can change the sentence “A fly is in the Pope’s soup” to “There is a fly in the Pope’s soup”.

The argument for the transformation method is that inserting there1 in the deep structure does not allow the form rules to properly form the deep structure of the sentence. Without a whole lot of subcategorization there is going to appear in a lot of sentences where it does not belong. Using the transformation on the other hand the form rules do almost all of the work for us.

Sentences like:

A. *There emerged the fly from his nose
B. *There arose the disturbance among the students

Suggests that the determiner in the subject NP before the transformation must be a “a” and not “the”. We can specify that in our structural description of the There insertion rule.

The transformation and form rules need to happen in a certain order. The order is Passive -> form rules -> there insertion.

Another problem is introduced by the following sentences.

D

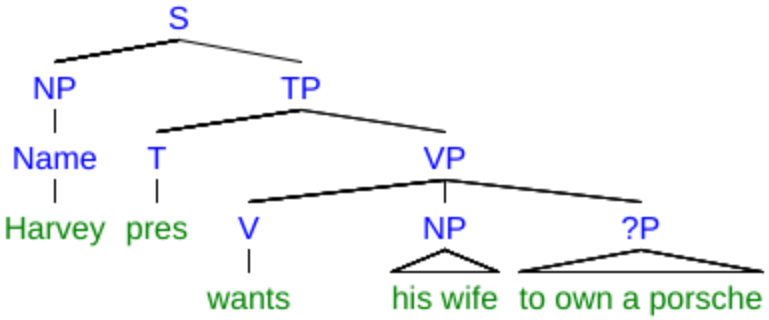
1. Harvey wants his wife to own a Porsche
2. Harvey expect his sons to be admired by women
3. Harvey likes for his monkey to wash him

and

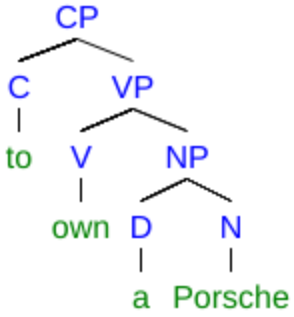
E

1. Harvey wants to own a Porsche
2. Harvey expects to be admired by women
3. Harvey likes to wash himself

Subdividing sentence D1 using a tree we get:



We can make the ?P be a CP where the CPs structure is

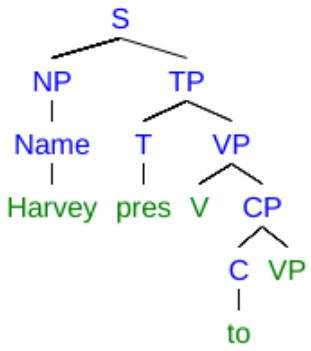


This requires a slight change to the grammar to allow CPs with VP complements.
CP -> C VP

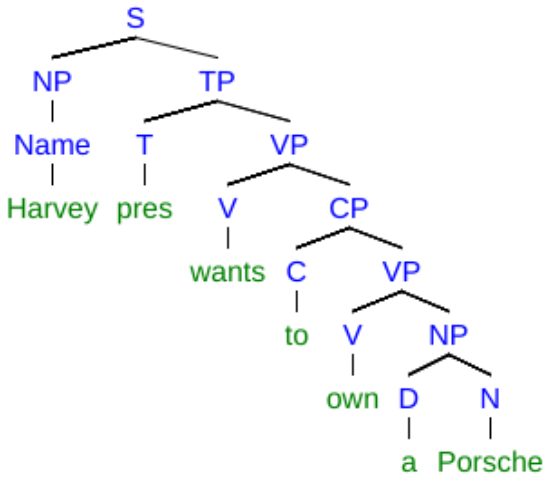
This mean that we need to add some stuff to the lexicon. The lexicon will now contain:

to C

In E 1-3 the general structure is



E1 for example would be



In E 1-3 “to” is a C. This can cause some issues, however. What if we replace the C in the above structure with “that”? We would get, “*Harvey wants that own a Porsche” which is not grammatical. We are going to need to add some subcategorization rules to fix this.

that C [_ S]
to C [_ VP]

This should take care of ungrammatical sentences like “*Harvey wants that own a Porsche”.

In E1, “Harvey wants to own a Porsche” the theta-roles are: Agt (Harvey), Thm (a Porsche). “Want” can also have a Recip as in “Harvey wants Sue to have a Porsche”. Here the recip is “Sue”. In general “want” assigns 3 theta-roles.
In the same sentence (E1), own does not assign any theta-roles. In general “own” assigns two roles. For example, “Harvey owns a dog”. Here we have an Agt (“Harvey”) and a Thm (“a dog”).

The ungrammatical sentence *”There expects to be a beer at the party” is not generated because “expects” is not a ThV.
In the sentence, *”Tabs expect to be kept on Betty”, subcategorization applies to “Tabs” and “expect” is not one of the verbs that “Tabs” can take.

F

1. Harvey expects to be admired by women
2. Women expect to admire Harvey

In F 1 and 2, the theta-roles are different. For 1 they are: Agt (“Harvey”), Thm (“women”). In 2 they are switched. The Agt is “Women” and the Thm is “Harvey”.

Derivations

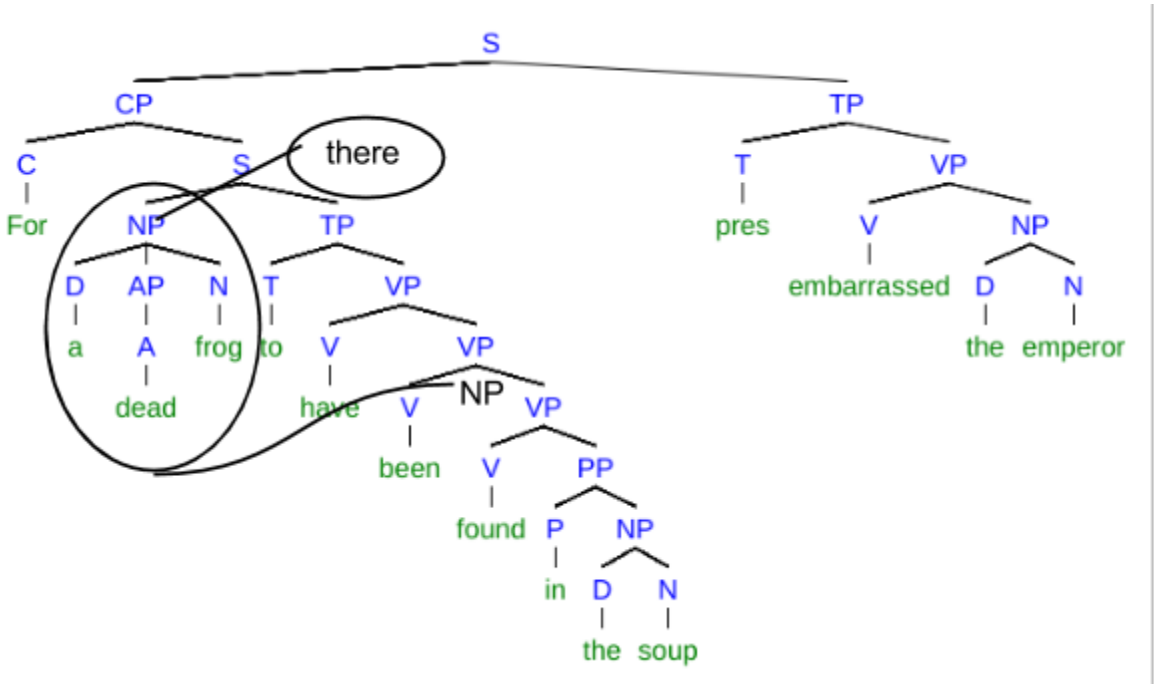
1. For there to have been a dead frog found in the soup would have embarrassed the emperor
2. We believe that for students to be given course credit for participation in protests would set a bad precedent
3. My uncle's belief that there will be insects found on Mars is supported by the fact that there have been insects discovered inside volcanoes and under the polar ice
4. Weren't there several students offered jobs by the newspaper?
5. They said there would be hard questions asked on this exam, and there were.

For each of these sentences I will first trace back to the sentences deep structure and then use that structure and the transformation rules to derive the sentence shown in 1-5 above.

1.

"[For [$^{\text{There Insertion}}$there to have been a dead frog found in the soup]$_S$]$_{CP}$ would$_T$ [have embarrassed the emperor]$_{VP}$"

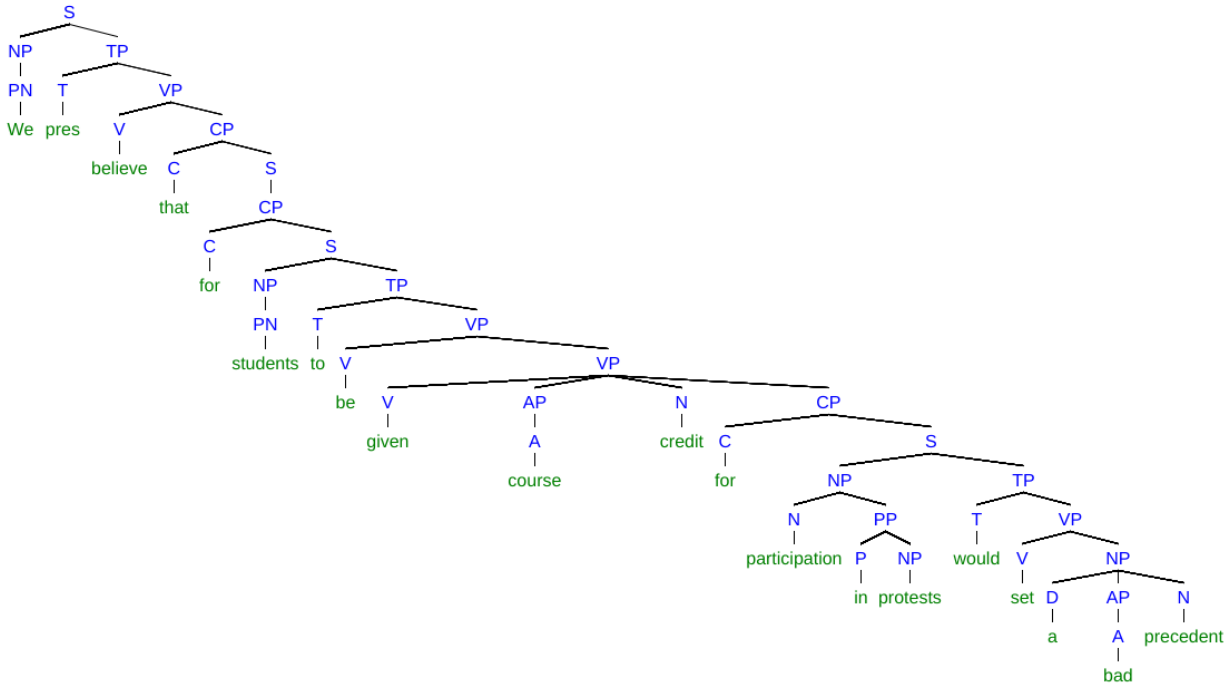
First we reverse the *there insertion* rule, and get:
"For a dead frog to have been found in the soup would have embarrassed the emperor" which has the following deep structure (from which we can regenerate the original sentence using *there insertion* again).



2.

"We$_{PN}$ believe$_V$ that for students to be given course credit for participation in protests would set a bad precedent"

This can be generated without any transformation as shown in the following tree.



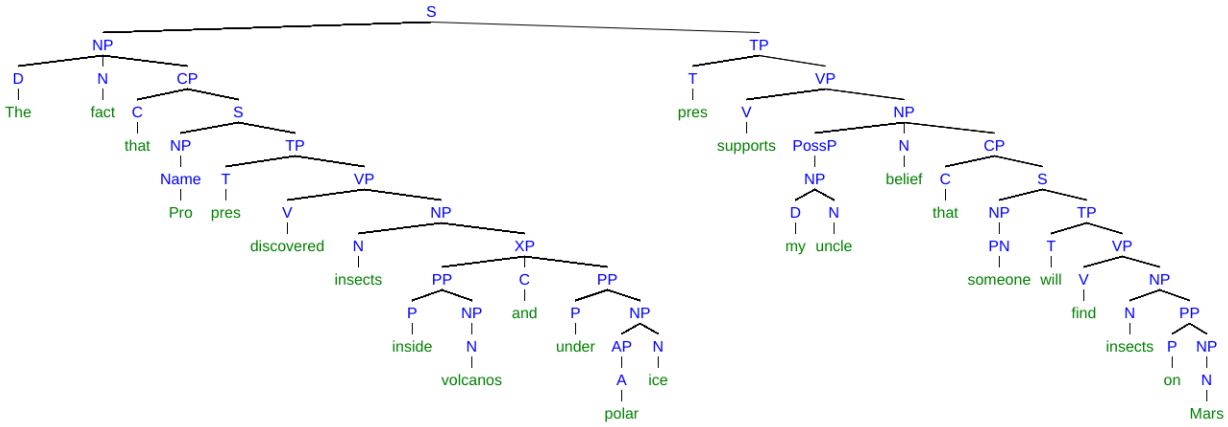
3.

“My uncle’s belief that there will be insects found on Mars is supported by the fact that there have been insects discovered inside volcanoes and under the polar ice”

The first step is to find the deep structure of the sentence. We will start by reversing both the *there insertions.* We get:

“My uncle’s belief that insects will be found on Mars is supported by [the fact [that$_C$ [insects have been discovered [[inside volcanoes]$_{PP}$ and$_C$ [under the polar ice]$_{PP}$]$_{XP}$]$_{CP}$]$_S$]$_{NP}$”

Next we reverse Passive movement, and get:



“The fact that Pro discovered insects inside volcanos and under polar ice supports my uncle’s belief that someone will find insects on Mars”

This base sentence will generate the original sentence provided that Passive -> there insertion is applied to the sentence.

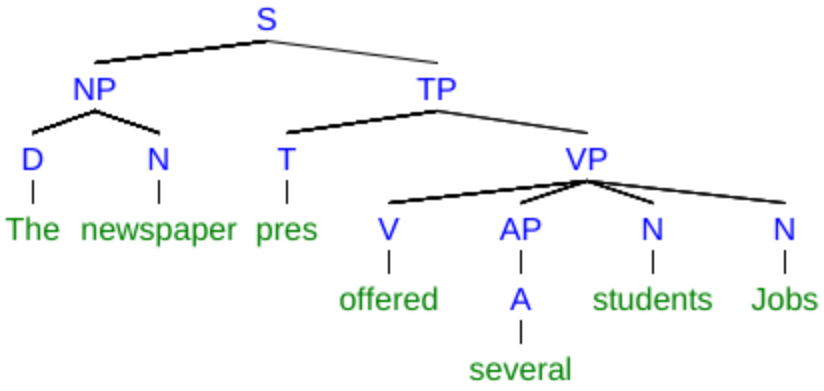
4.
“Weren’t there several students offered jobs by the newspaper?”

First we reverse There insertion, and get:

“[Weren]$_{Be2}$’t [several students]$_{NP}$ [offered jobs]$_{VP}$ by [the newspaper]$_{NP}$?”

Then we reverse Passive movement, and get:

“The newspaper offered several students jobs”



,

Applying Passive -> there insertion we get the original sentence.

5.
“They$_{PN}$ said$_{V}$ there would$_{T}$ be$_{V}$ hard$_{AP}$ questions$_{N}$ asked$_{V}$ on$_{P}$ this$_{D}$ exam$_{N}$, and there were”

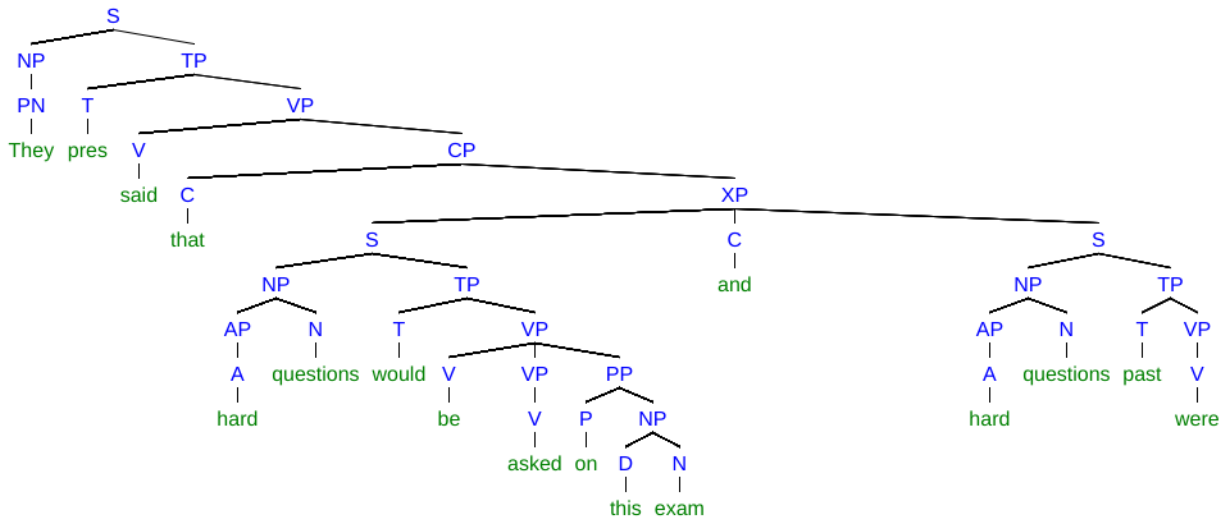
First we reverse there insertion:

“They said hard questions would be asked on this exam, and hard questions were”

Then reverse *that deletion*:

“They said that hard question would be asked on this exam, and hard questions were”

Which gives us the deep structure below:



Using this deep structure and applying that deletion and there insertion we get the original sentence.

In the above example the verb “were” gets it’s form when form rules apply in the deep structure before any X^ns are applied.