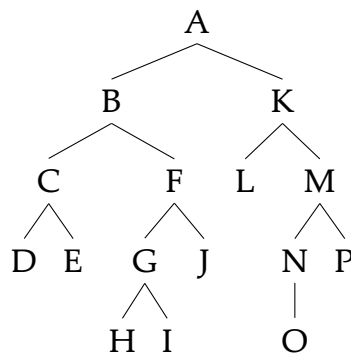# LING:3010 – Homework 2

Oliver Emery

27 February 2022

Exercise 1: Structural Relations in the Tree   *13 pts*

Look at the tree below and answer the questions about the relations in the tree shown there. For those True/False, indicate whether the statement is True or False.

1.	List all the nodes c-commanded by K.	B, C, D, E, F, G, H, I, J
2.	List all the nodes c-commanded by J.	G, H, I
3.	List all the nodes c-commanded by A.	∅
4.	List all the nodes c-commanded by D.	E
5.	List all the nodes c-commanded by P.	N, O
6.	The node I precedes K here.	**True** / False
7.	The nodes L and F are sisters.	True / **False**
8.	The node L c-commands F.	True / **False**
9.	The node B c-commands C.	True / **False**
10.	The set {H, I, J} is a constituent here.	**True** / False

1

## Exercise 2: Binding Principles (Carnie, Chapter 5 – GPS 4)   *12 pts*

Explain why the following sentences are ungrammatical. For each sentence, say what the binding domain of the NP causing the problem is, whether it is c-commanded by its binder (antecedent), and name the binding condition that is violated.

*binding domain*: the clause (TP) containing the NP (anaphor, pronoun, or R-expression)

a) *Michael$_i$ loves him$_i$.

domain	*Michael loves him*
c-command	*[$_{NP}$ Michael]* c-commands *[$_{NP}$ him]*
condition	pronoun must be free in its binding domain

```
            TP
          /    \
       NP_i     VP
        |      /  \
        N     V    NP_i
                    |
                    N
     Michael  loves  him
```
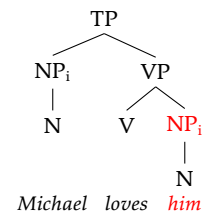
b) *He$_i$ loves Michael$_i$.

domain	*He loves Michael*
c-command	*[$_{NP}$ Michael]* does not c-command *[$_{NP}$ he]*
condition	binder must c-command bindee
	pronoun must be free in its binding domain

```
            TP
          /    \
       NP_i     VP
        |      /  \
        N     V    NP_i
                    |
                    N
      He    loves  Michael
```
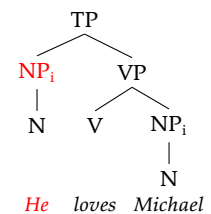
c) *Michael$_i$'s father$_j$ loves himself$_i$.

domain	*Michael's father loves himself*
c-command	*[$_{NP}$ Michael]* does not c-command *[$_{NP}$ himself]*
condition	binder must c-command bindee
	anaphor must be bound in its binding domain

```
                 TP
               /    \
            NP_j     VP
           /   \    /  \
        NP_i    N  V    NP_i
         |               |
         N               N
     Michael's father loves himself
```
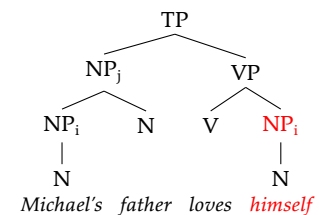
d) *Michael$_i$'s father$_j$ loves him$_j$.

domain	*Michael's father loves him*
c-command	*[$_{NP}$ Michael's father]* c-commands *[$_{NP}$ him]*
condition	pronoun must be free in its binding domain

```
                 TP
               /    \
            NP_j     VP
           /   \    /  \
        NP_i    N  V    NP_j
         |               |
         N               N
     Michael's father loves  him
```
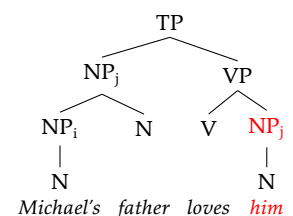
e) *Susan$_i$ thinks that John should marry herself$_i$.

domain	*John should marry herself*
c-command	*[$_{NP}$ Susan]* c-commands *[$_{NP}$ herself]*
condition	anaphor must be bound in its binding domain

```
            TP
          /    \
       NP_i     VP
        |      /  \
        N     V    CP
                  /  \
                 C    TP
                    / | \
                  NP  T  VP
                   |     / \
                   N    V   NP_i
                            |
                            N
  Susan thinks that John should marry herself
```
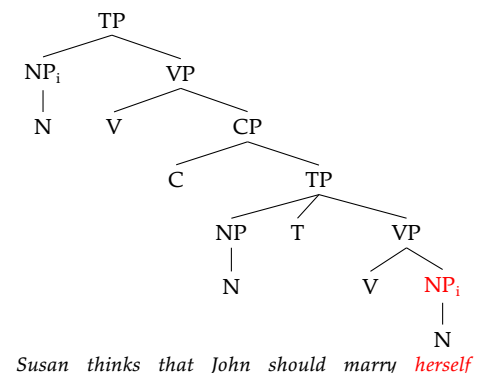
f) *John thinks that Susan_i should kiss her_i.

domain	*Susan should kiss her*
c-command	$[_{NP}$ *Susan]* c-commands $[_{NP}$ *her]*
condition	pronoun must be free in its binding domain

```
                                    TP
                              ┌─────┴─────┐
                             NP           VP
                              │       ┌────┴────┐
                              N       V         CP
                                            ┌───┴───┐
                                            C       TP
                                                ┌───┼───┐
                                              NP_i   T   VP
                                                │       ┌─┴─┐
                                                N       V   NP_i
                                                            │
                                                            N
                            John  thinks  that  Susan  should  kiss  her
```
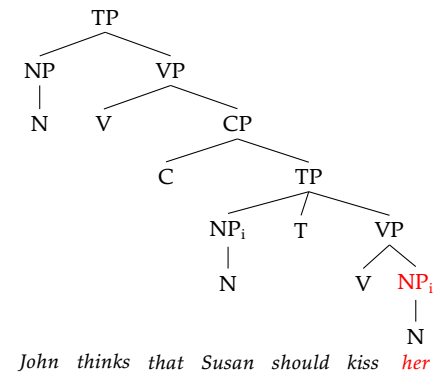
Exercise 3: Binding and Wh-questions (Carnie, Chapter 5 – CPS 1)   *4 pts*

What problem(s) does the following sentence raise for the binding theory as we have sketched in this chapter? **Think of a solution that could explain why this sentence is grammatical. It's ok to speculate and think of more than one potential explanation.** Hint: consider the non-question form of this sentence *John despises these pictures of himself.* (Another hint: one possible solution can relate to one of the possibilities explored in Crain and Nakayama's paper we read).

(1) Which pictures of himself$_i$ does John$_i$ despise?

Assume the following tree for this sentence:
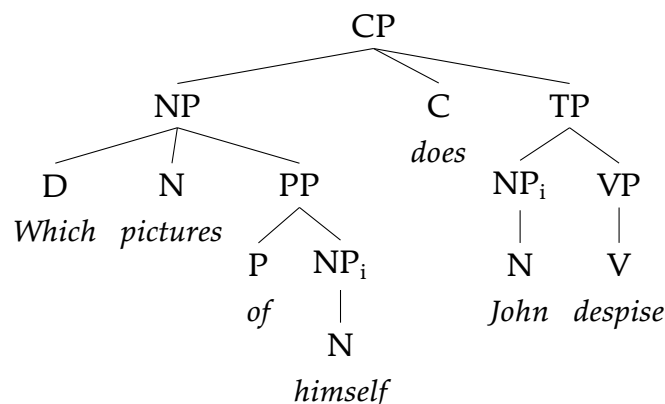
- The given tree breaks currently established PS-rules for CPs
  expected   CP $\rightarrow$ (C) TP   **encountered**   CP $\rightarrow$ NP C TP
- The given tree contradicts our current defition of **binding**, which requires the binder to c-command the bindee.
- The given tree violates **Binding Principle A**, which states that an anaphor must be bound in its own binding domain.
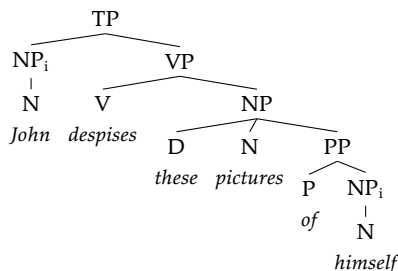
After examing the non-question form of the given sentence, I think the only problem with binding theory that this example reveals is the definition of **binding domain**. Primarily, I believe that this is an example of some sort of syntactical restructuring to signify a question unrelated to binding; maybe [$_{NP}$ *Which pictures of himself*] has some sort of dependence relationship to [$_{TP}$ *John despise*]. I think this restructuring may alter the definition of not only **binding domain**, but the definitions of some of the structural relations between tree nodes as well.

Exercise 4: Complements & Adjuncts (Carnie, Chapter 6 – GPS1) *12 pts*

Using the tests you have been given in chapter 6 (reordering, adjacency, conjunction of likes, *one*-replacement) determine whether the PPs in the following NPs are complements or adjuncts. Use at least 3 tests for each PP. Give the examples that you used in constructing your tests. Some of the NPs have multiple PPs. Be sure to answer the question for every PP in the NP.
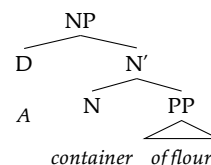
a) A container [of flour]
   Reordering
   (1) A container [of flour] [beside the dumpster]
   (2) *A container [beside the dumpster] [of flour]
   Conjuction of Likes
   (3) A container [of souls] and [of flour]
   (4) *A container [beside the dumpster] and [of flour]
   One-replacement
   (5) The one of flour

I believe that (5) can be grammatical, but many do not. [PP *of flour*] can be neither reordered nor conjoined with known adjunct [PP *beside the dumpster*]. Thus, [PP *of flour*] is a complement.

b) A container [with a glass lid]
   Reordering
   (1) A container [with a glass lid] [abaft the deckhouse]
   (2) A container [abaft the deckhouse] [with a glass lid]
   Conjuction of Likes
   (3) *A container [with a glass lid] and [of heroin]
   (4) A container [with a glass lid] and [betwixt those junkies]
   One-replacement
   (5) The one with a glass lid
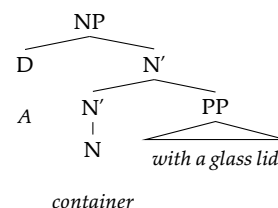
[PP *with a glass lid*] can be reordered with other PPs, can be conjoined with adjuncts but not complements, and can stand next to the word *one*; it is an adjunct.

c) The collection [of figurines] [in the window]
   Reordering
   (1) *The collection [in the window] [of figurines]
   (2) The collection [in the window] [along the sill]
   Conjuction of Likes
   (3) *The collection [of figurines] and [in the window]
   (4) The collection [of figurines] and [of marsupials]
   (5) The collection [under the bed] and [in the window]
   One-replacement
   (6) The one [in the window]
   (7) *The one [of figurines] [in the window]
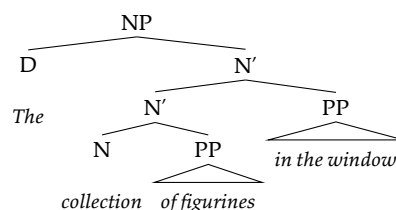
[PP *of figurines*] is a complement: it cannot be reordered (1), it can be combined with other complements (4) but not adjuncts (3), and it cannot stand by *one* (7). Examples (2), (3), (5), and (6) show that [PP *in the window*] is an adjunct.

Exercise 5: X'-theory (from Carnie, Chapter 6 – GPS 7)   *39 pts*

Draw the X-bar-theoretic trees for the following sentences.

a) Abelard wrote a volume of poems in Latin for Héloïse.
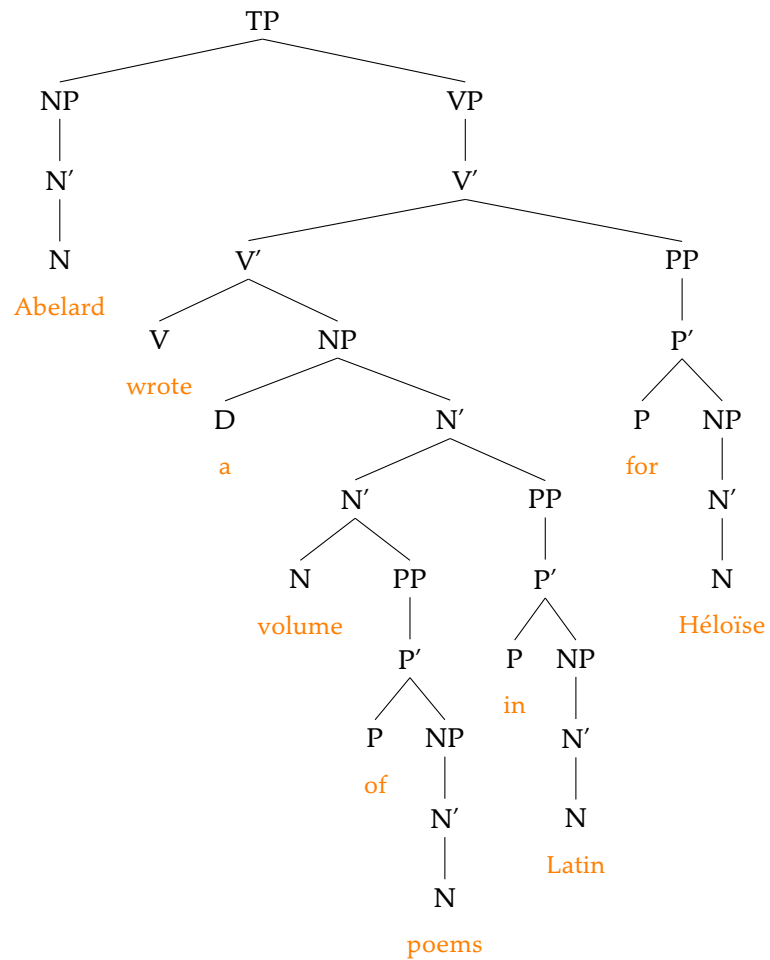
In addition to the position shown in the tree as an adjunct of [*NP* *a volume of poems*], [*PP* *in Latin*] can be an adjunct of either [*NP* *poems*] or [*VP* *wrote a volume of poems for Héloïse*].

b) Armadillos from New York often destroy old pillowcases with their snouts.

TP
- NP
  - N′
    - N′
      - N
        - Armadillos
    - PP
      - P′
        - P
          - from
        - NP
          - N′
            - N
              - New York
- VP
  - V′
    - V′
      - AdvP
        - Adv′
          - Adv
            - often
      - V′
        - V
          - destroy
        - NP
          - N′
            - AdjP
              - Adj′
                - Adj
                  - old
            - N′
              - N
                - pillowcases
    - PP
      - P′
        - P
          - with
        - NP
          - D
            - their
          - N′
            - N
              - snouts
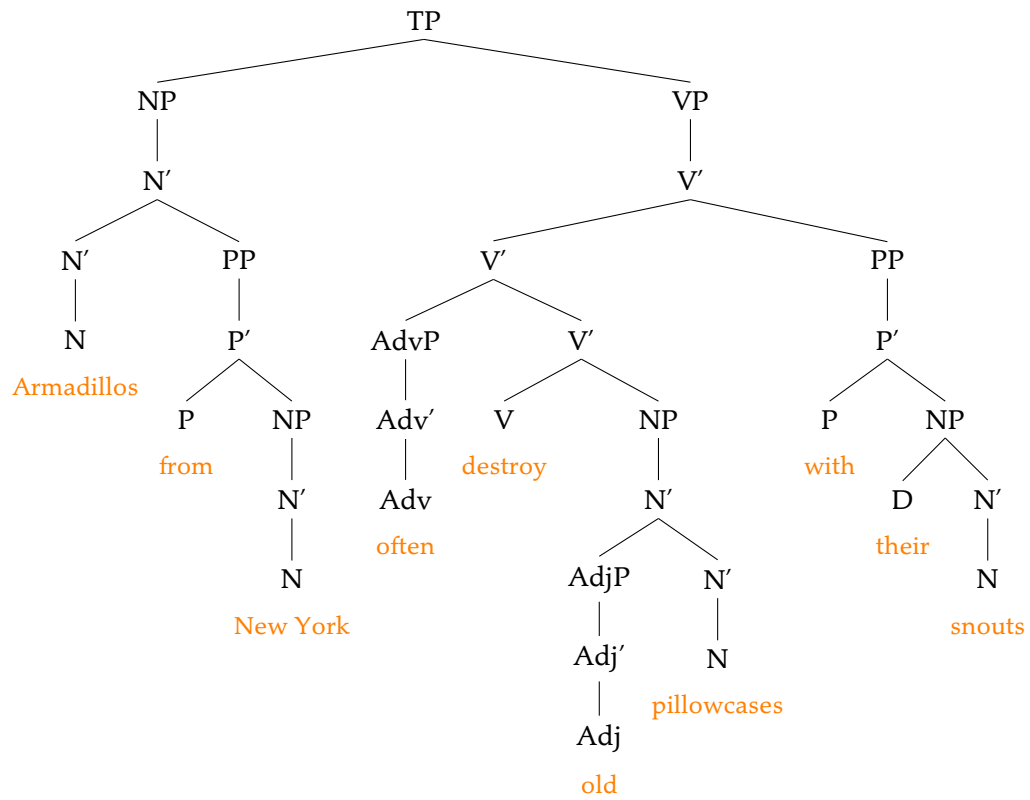
c) People with boxes of old clothes lined up behind the door of the building with the leaky roof.

TP
- NP
  - N′
    - N′
      - N: People
    - PP
      - P′
        - P: with
        - NP
          - N′
            - N: boxes
            - PP
              - P′
                - P: of
                - NP
                  - N′
                    - AdjP
                      - Adj′
                        - Adj: old
                    - N′
                      - N: clothes
- VP
  - V′
    - V′
      - V: lined up
    - PP
      - P′
        - P: behind
        - NP
          - D: the
          - N′
            - N: door
            - PP
              - P′
                - P: of
                - NP
                  - D: the
                  - N′
                    - N′
                      - N: building
                    - PP
                      - P′
                        - P: with
                        - NP
                          - D: the
                          - N′
                            - AdjP
                              - Adj′
                                - Adj: leaky
                            - N′
                              - N: roof

8
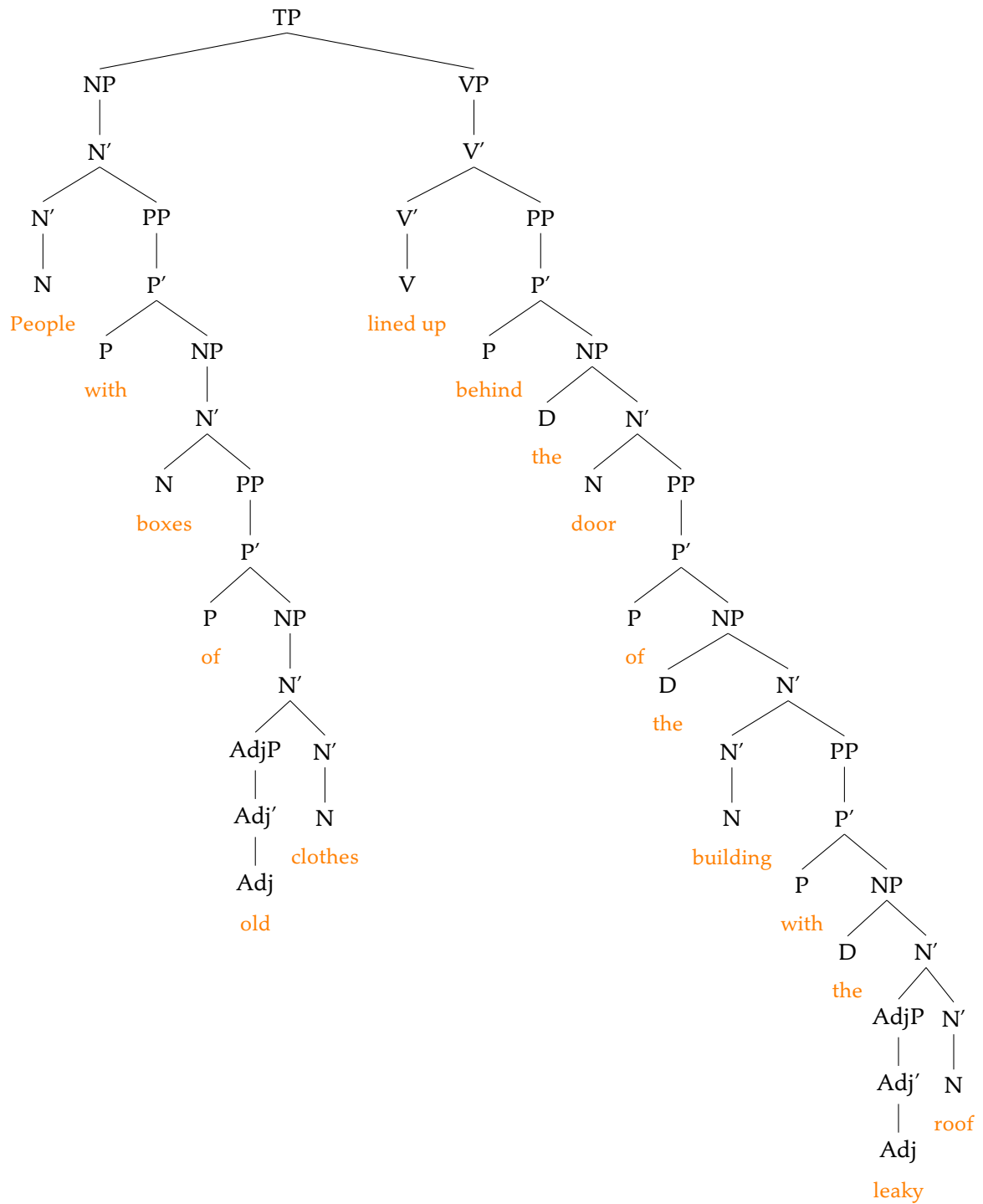
d) My favorite language is a language with simple morphology and complicated syntax.

```
                              TP
                    ┌──────────┴──────────┐
                   NP                      VP
              ┌────┴────┐                  │
              D         N′                 V′
             My     ┌───┴───┐         ┌────┴────┐
                  AdjP      N′         V         NP
                   │        │         is    ┌────┴────┐
                  Adj′      N               D         N′
                   │      language          a     ┌───┴───┐
                  Adj                            N′        PP
                favorite                         │         │
                                                 N         P′
                                              language  ┌───┴───┐
                                                        P       NP
                                                      with       │
                                                                 N′
                                                    ┌────────────┼────────────┐
                                                    N′          Conj          N′
                                                 ┌──┴──┐        and        ┌───┴───┐
                                               AdjP    N′               AdjP      N′
                                                │      │                 │        │
                                               Adj′    N                Adj′      N
                                                │   morphology           │      syntax
                                               Adj                      Adj
                                              simple               complicated
```

9
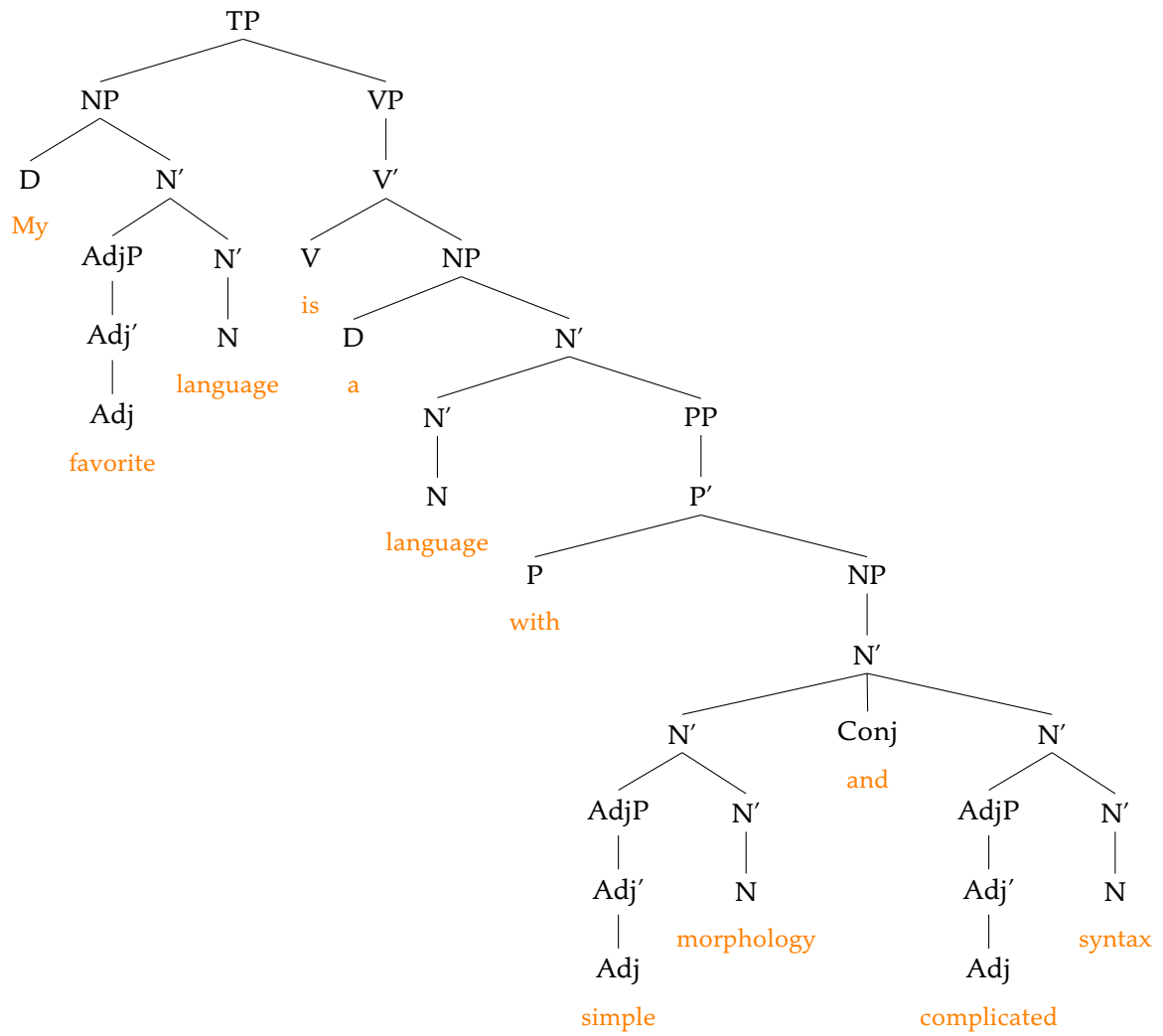
e) The collection of syntax articles with the red cover bores students of syntax in Tucson.

TP
- NP
  - D: The
  - N′
    - N′
      - N: collection
      - PP
        - P′
          - P: of
          - NP
            - N′
              - AdjP
                - Adj′
                  - Adj: syntax
              - N′
                - N: articles
    - PP
      - P′
        - P: with
        - NP
          - D: the
          - N′
            - AdjP
              - Adj′
                - Adj: red
            - N′
              - N: cover
- VP
  - V′
    - V: bores
    - NP
      - N′
        - N′
          - N: students
          - PP
            - P′
              - P: of
              - NP
                - N′
                  - N: syntax
        - PP
          - P′
            - P: in
            - NP
              - N′
                - N: Tuscon