

# Drawing X-bar Trees

How to draw trees in X-bar notation

# Drawing Trees

**Step 1:** Identify the parts of speech for all the words in the sentence

**Step 2:** figure out what words "go together in phrases"

**Step 3:** apply the rules backwards (bottom up) to build the tree.

- **Determine whether the modifier is a complement, adjunct, specifier** -- REMEMBER, adjuncts are sisters to X', complements to X.
- **Start with the modifiers closest to the head**

**Step 4:** now check your tree against your rules. Start at the top, and check that each set of lines can be generated by the rules.

# None of the Rules are optional

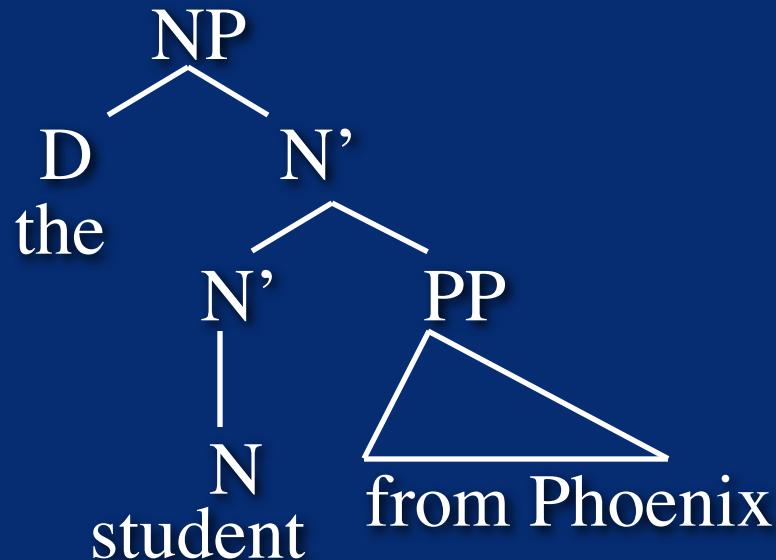
minimal X' structure

XP  
|  
X'  
|  
X

NP  
|  
N'  
|  
N  
people

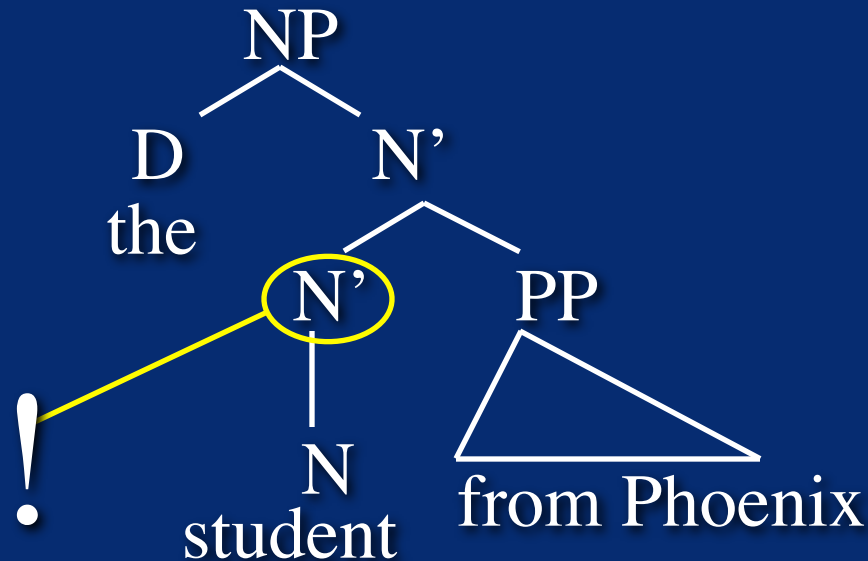
# Warning

Be very careful about Adjuncts!!!  
They must be daughter of X' and sister of X'



# Warning

Be very careful about Adjuncts!!!!  
They must be daughter of X' and sister of X'



The man from Brazil found a book of poems in the puddle

D N P N V D N P N P D N

The man from Brazil found a book of poems in the puddle

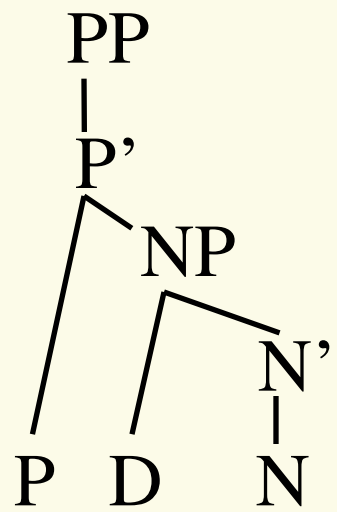


The man from Brazil found a book of poems in the puddle



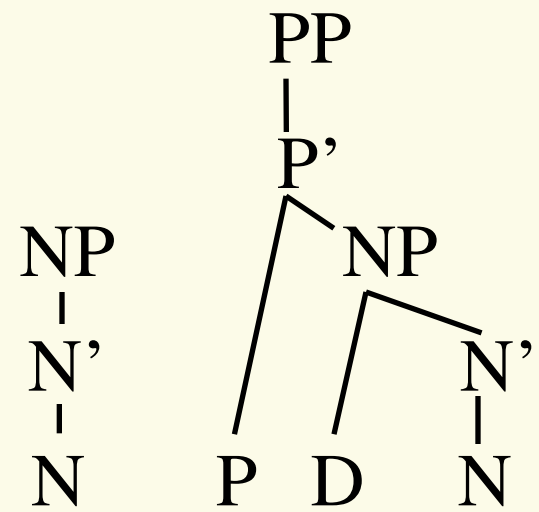
D N P N V D N P N P D N

The man from Brazil found a book of poems in the puddle



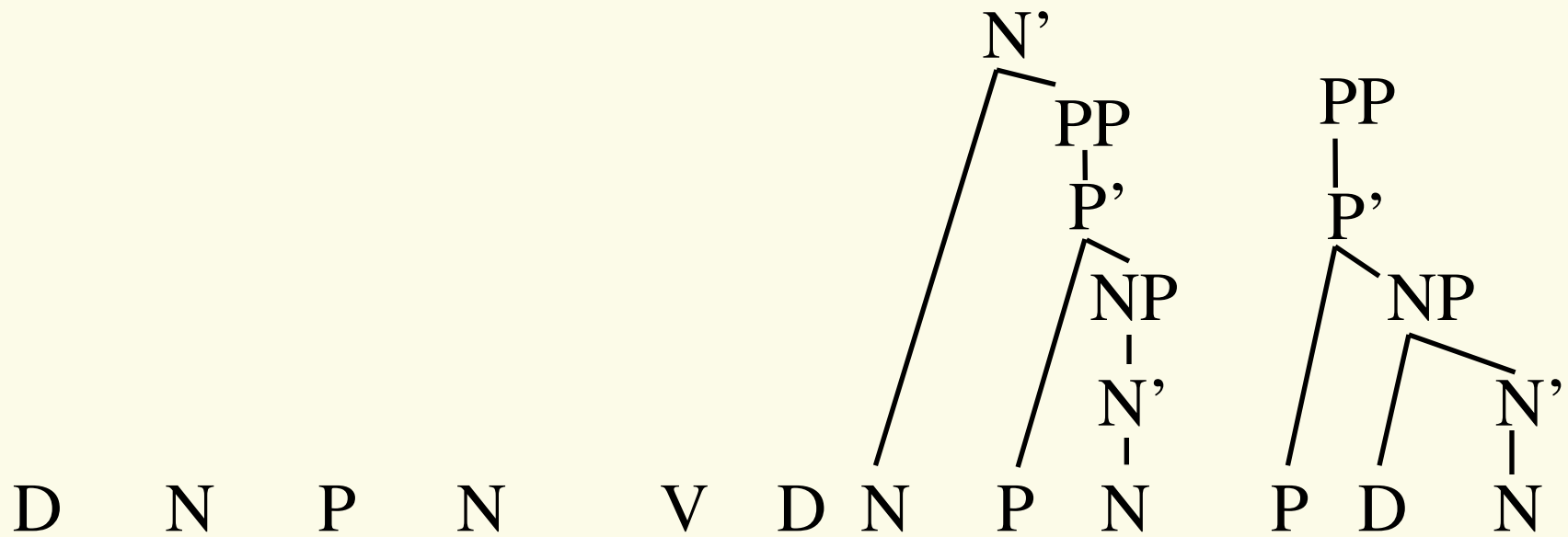
D N P N V D N P N P D N

The man from Brazil found a book of poems in the puddle

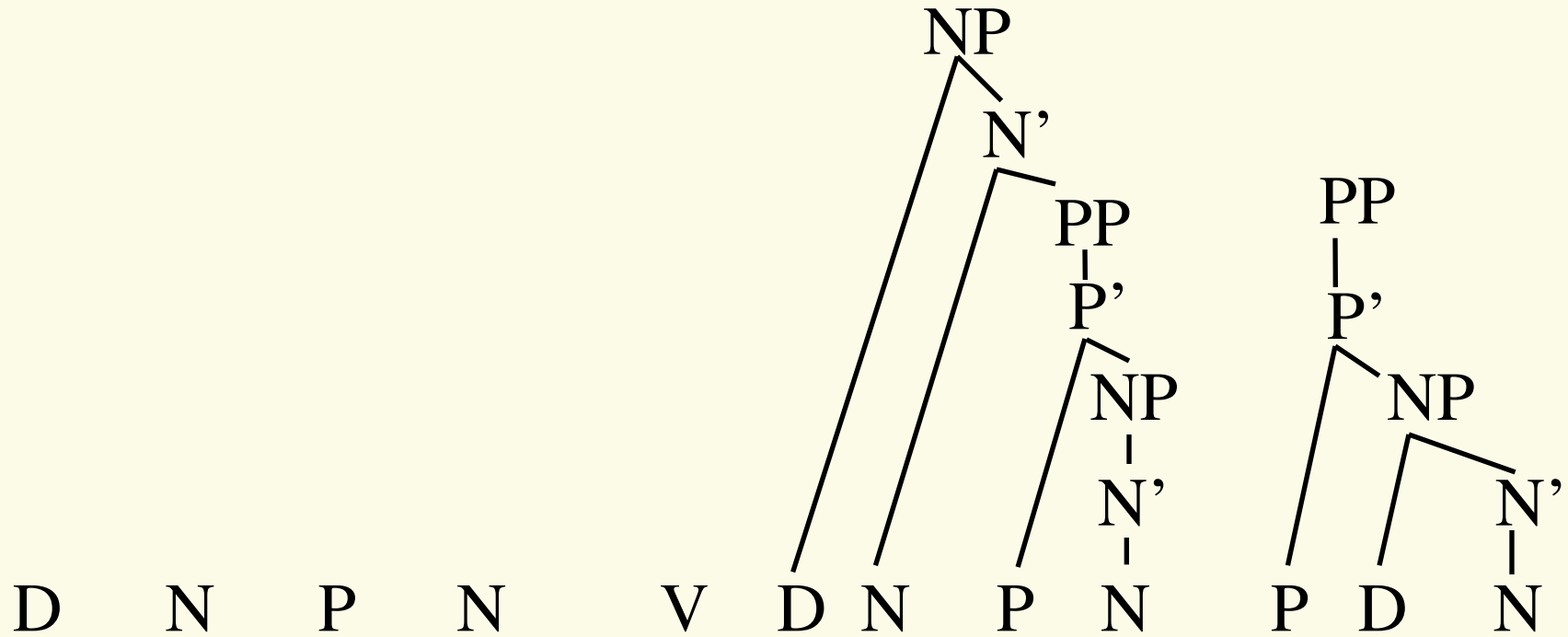




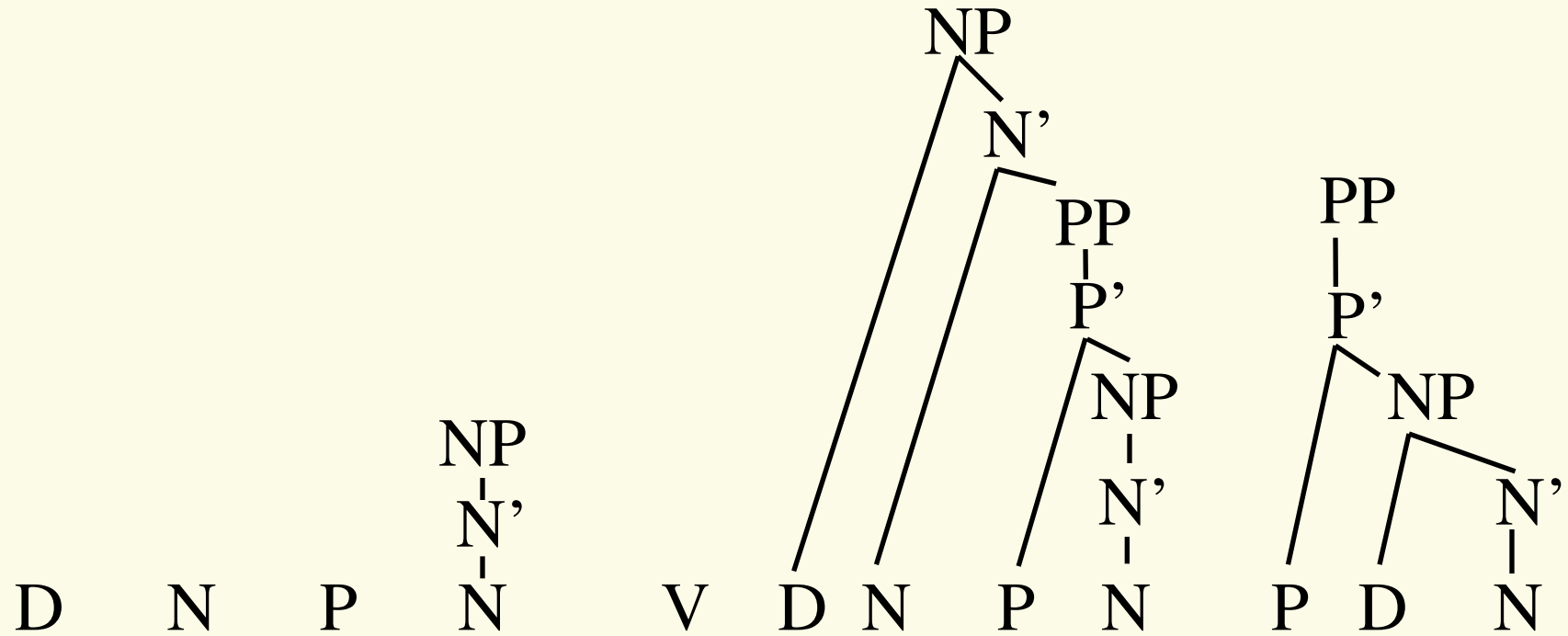
The man from Brazil found a book of poems in the puddle



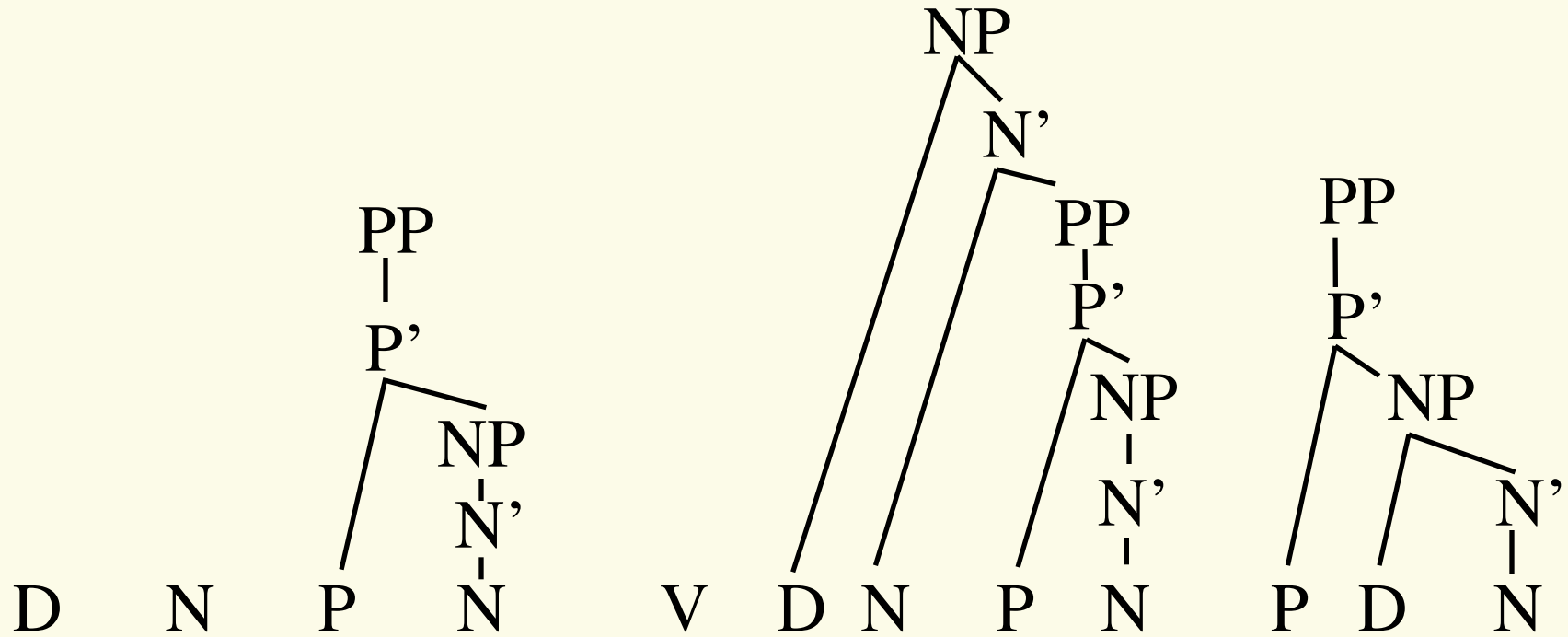
The man from Brazil found a book of poems in the puddle



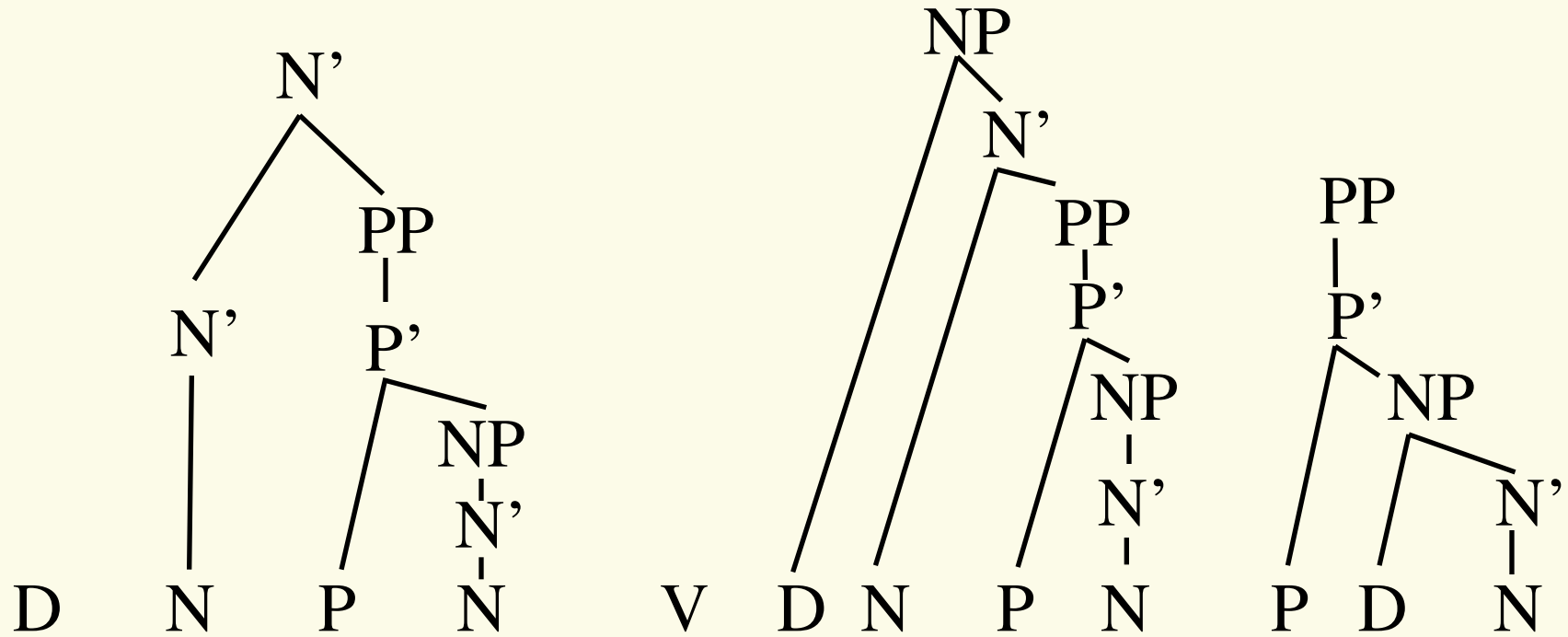
The man from Brazil found a book of poems in the puddle



The man from Brazil found a book of poems in the puddle

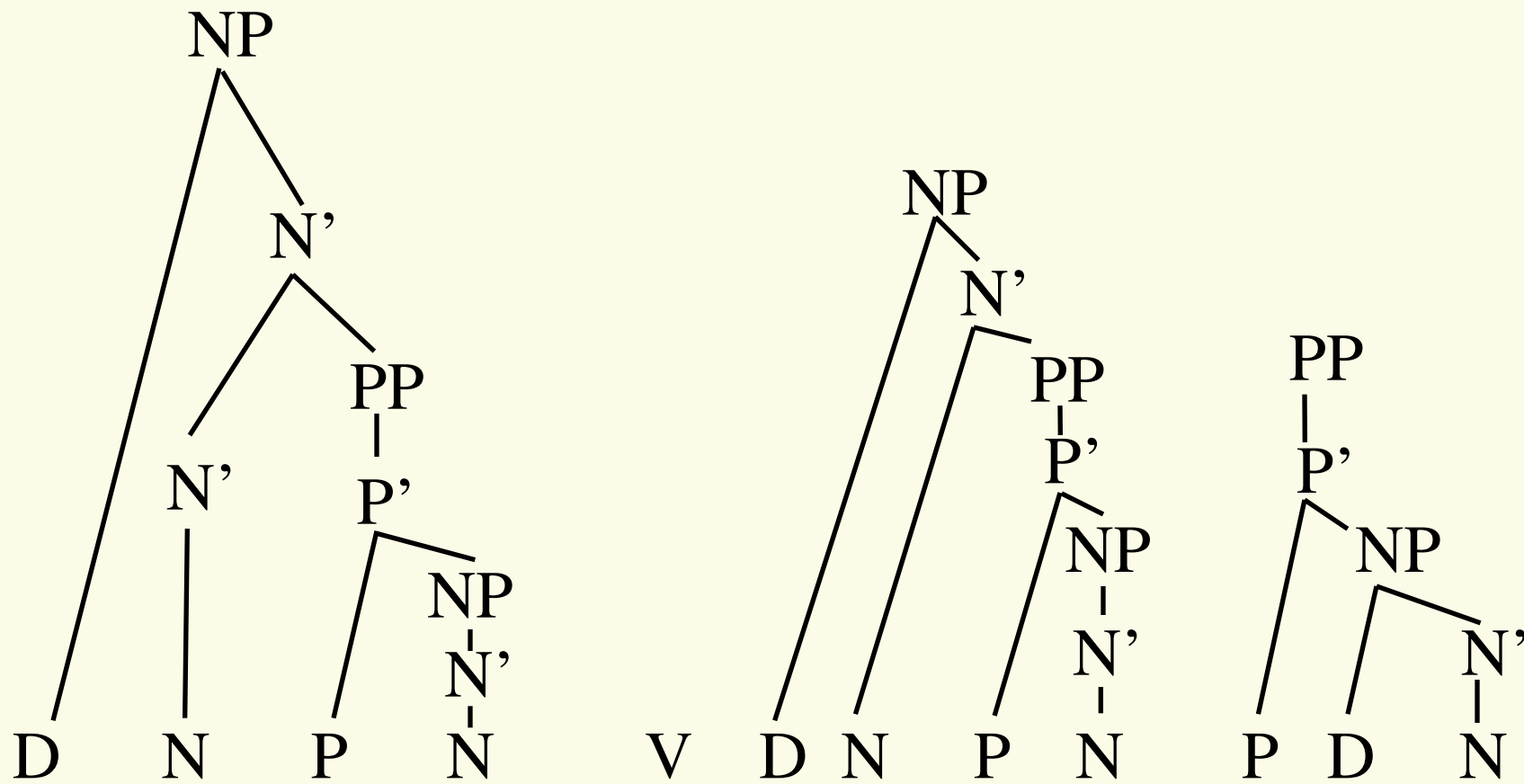


The man from Brazil found a book of poems in the puddle

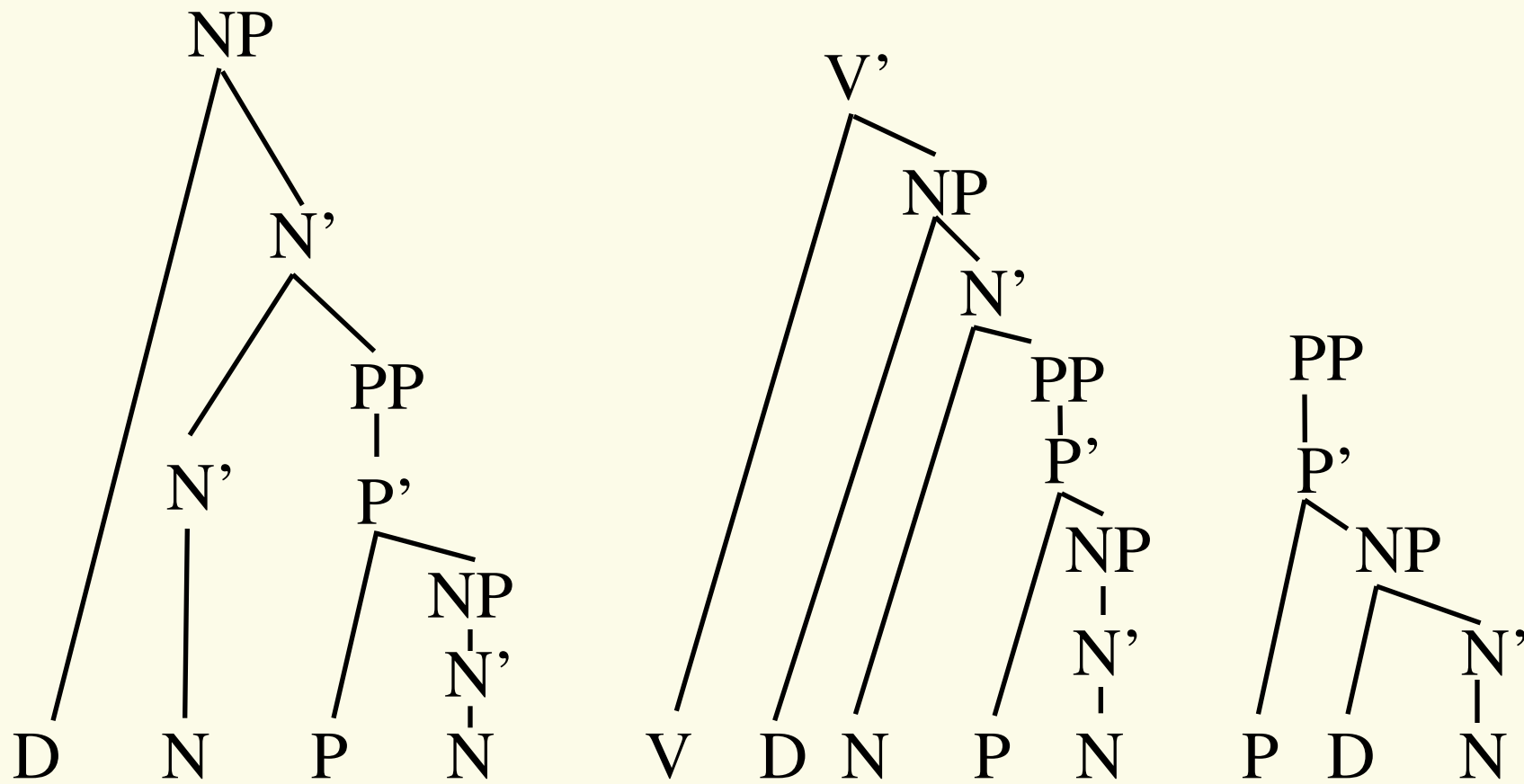


The man from Brazil found a book of poems in the puddle

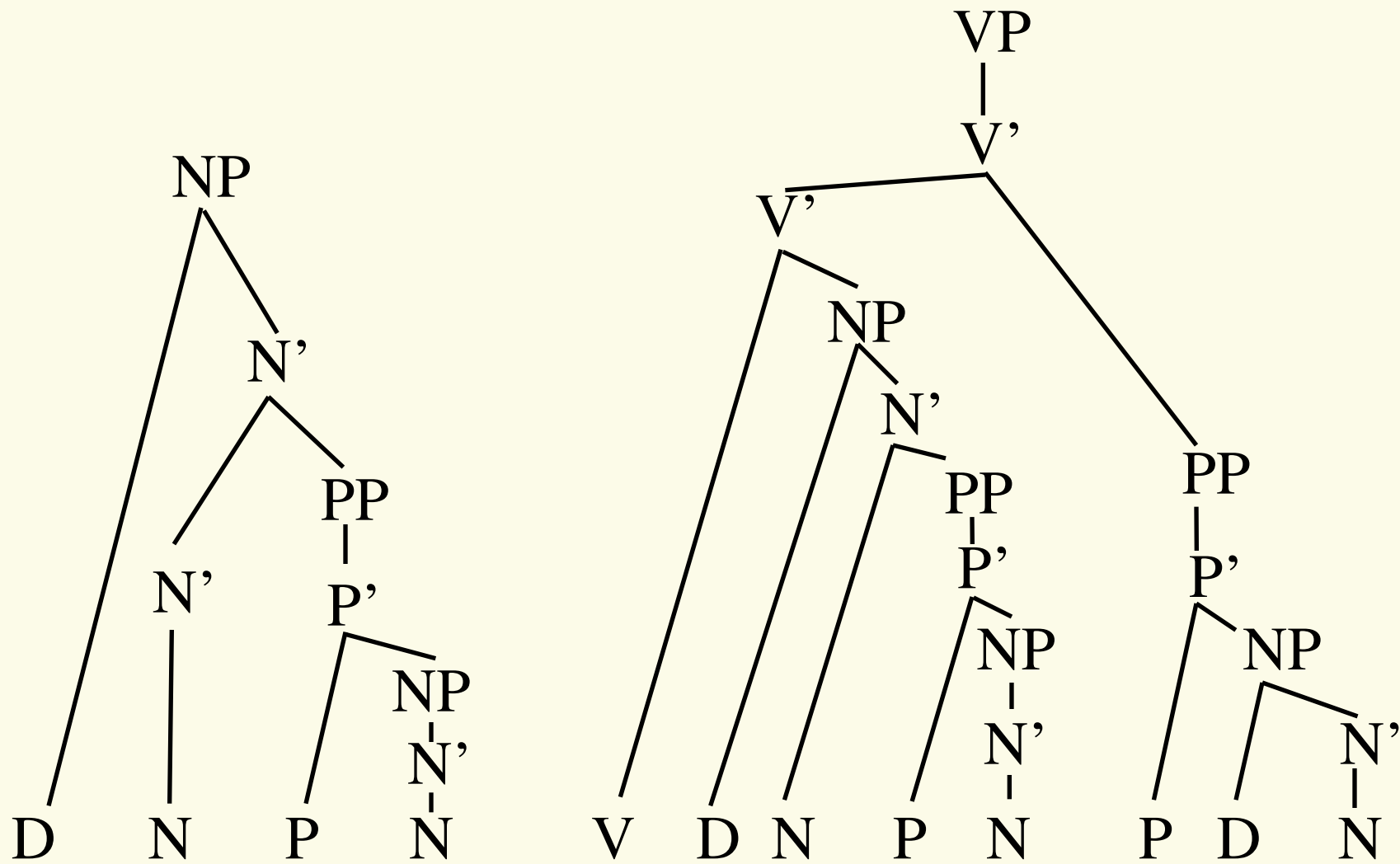




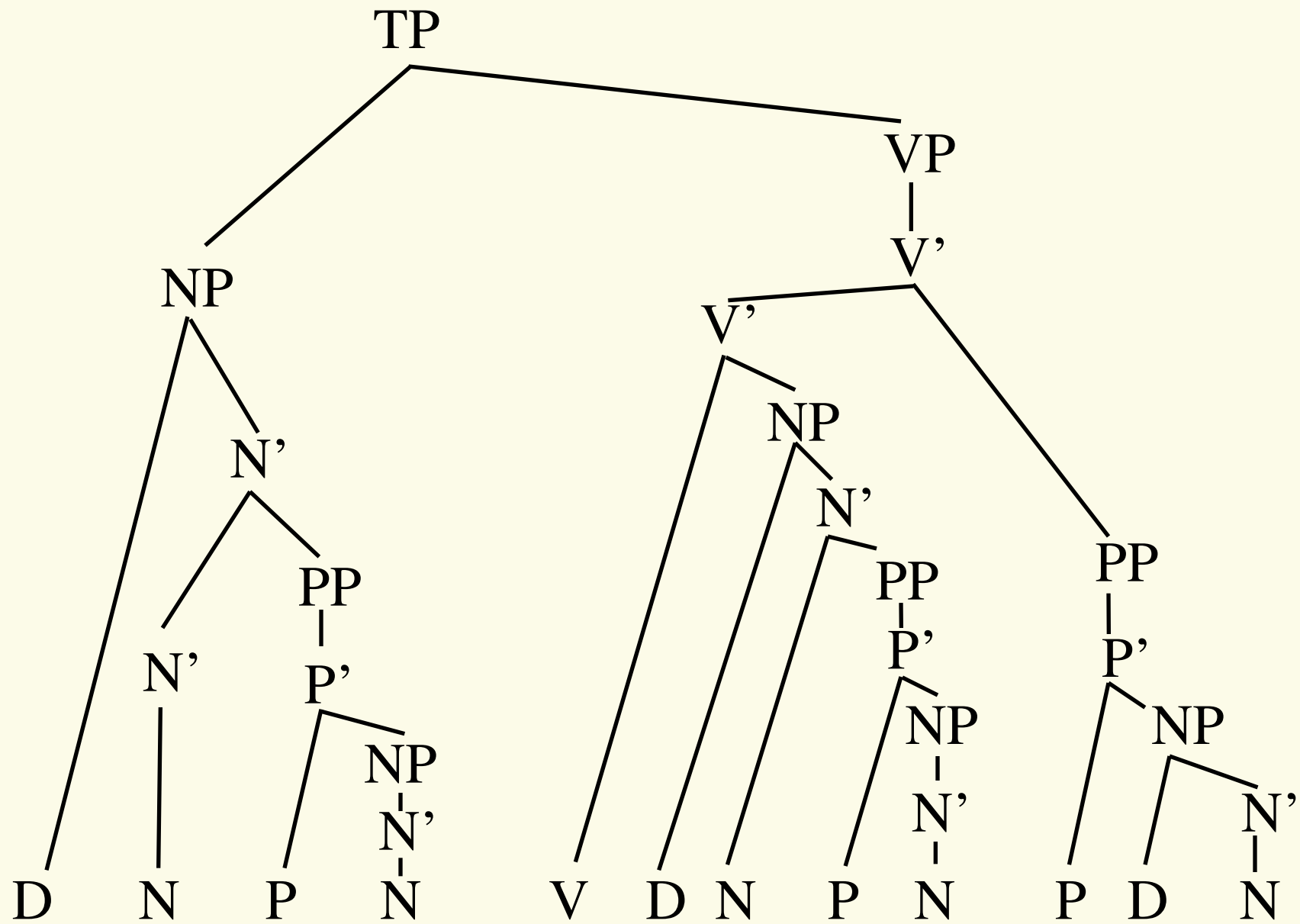
The man from Brazil found a book of poems in the puddle



The man from Brazil found a book of poems in the puddle



The man from Brazil found a book of poems in the puddle



The man from Brazil found a book of poems in the puddle

# Parameters of Word Order

How X-bar theory accounts for  
(some of) the word orders of the World's Languages

# The English X-bar rules

- The Specifier Rule:  $XP \rightarrow (YP) X'$
- The Adjunct Rule:  $X' \rightarrow X' (ZP) \text{ or } X' \rightarrow (ZP) X'$
- The Complement Rule:  $X' \rightarrow X (WP)$
  
- In English, the specifier is on the left, the complement on the right, and the adjuncts can appear on either side
  
- **PROPOSAL:** the side that specifiers/ adjuncts/ complements appear on can vary depending upon the language.

# Generalized X-bar Rules

# Generalized X-bar Rules

The Specifier Rule:

$XP \rightarrow (YP) X'$  *or*  $XP \rightarrow X' (YP)$





# Generalized X-bar Rules

The Specifier Rule:

$XP \rightarrow (YP) X'$  or  $XP \rightarrow X' (YP)$



The Adjunct Rule:

$X' \rightarrow X' (ZP)$  or  $X' \rightarrow (ZP) X'$



# Generalized X-bar Rules

**The Specifier Rule:**  $XP \rightarrow (YP) X' \text{ or } XP \rightarrow X' (YP)$



**The Adjunct Rule:**  $X' \rightarrow X' (ZP) \text{ or } X' \rightarrow (ZP) X'$



**The Complement Rule:**  $X' \rightarrow X (WP) \text{ or } X' \rightarrow (WP) X$



\*[<sub>TP</sub>[<sub>NP</sub> Policeman the] [<sub>VP</sub> Mary kissed]]

\*[<sub>TP</sub>[<sub>NP</sub> Policeman the] [<sub>VP</sub> Mary kissed]]

!

# Parameters



# Parameters

- The basic idea:

# Parameters

- The basic idea:
  - Every speaker has the generalized X-bar theory as part of their minds (part of Universal Grammar (UG))

# Parameters

- The basic idea:
  - Every speaker has the generalized X-bar theory as part of their minds (part of Universal Grammar (UG))
  - Each language only uses a subset of the options. These options are called parameters.

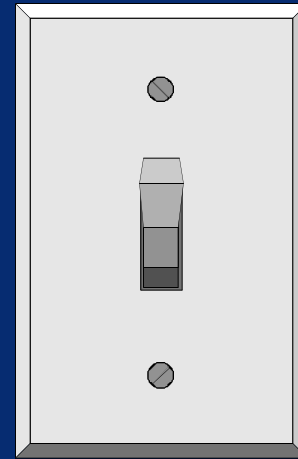
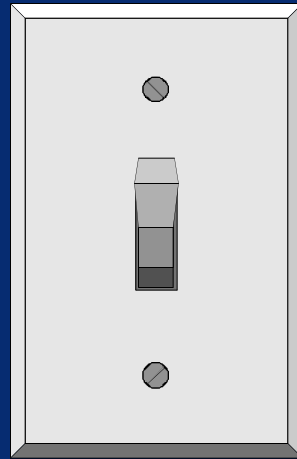
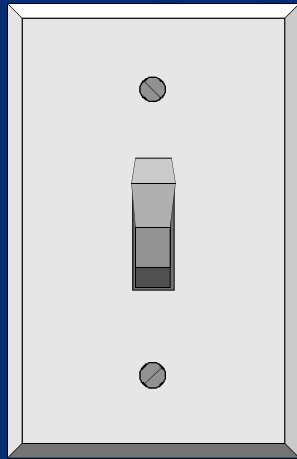


# Parameters

- The basic idea:
  - Every speaker has the generalized X-bar theory as part of their minds (part of Universal Grammar (UG))
  - Each language only uses a subset of the options. These options are called parameters.
  - When a child learns a language it looks for certain cues in the input data to set its parameters

# Parameters

$XP \rightarrow (YP) X'$     $X' \rightarrow X' (ZP)$     $X' \rightarrow X (WP)$



$XP \rightarrow X' (YP)$     $X' \rightarrow (ZP) X'$     $X' \rightarrow (WP) X$

# English Parameter settings

- Specifiers precede heads:

the basketball

$XP \rightarrow (YP) X'$

- Adjuncts can be on either side:

often kiss intensely.

$X' \rightarrow X' (ZP) \text{ or } X' \rightarrow (ZP) X'$

- Complements are on the right (follow the head)

bucket of chicken

$X' \rightarrow X (WP)$

# Turkish, an OV language

Hasan kitab-i oku-du

Hasan-subject book-object read-past

“Hasan read the book”

complement parameter set to:  $X' \rightarrow (WP) X$

we will assume that the side that subjects appear on is the same as the side as specifiers, so the specifier rule of Turkish is set the same as English.

# Summary Parameters

- By choosing the precise set of the three parameters we can derive the word order of most of the world's languages
- But not all! (e.g., VSO languages) more on this in later units.