

- **Sentences as phrases**
- **Complement options**

Background reading:

- CL Ch 5, §1 through §1.3 (§1.1 is review)
- CL Ch 5, §2

0. Course information and reminders

- Are you reviewing the **lecture slides** as you work on homework assignments or practice exercises?
- Are you taking advantage of **recitation** as a place to practice course concepts and ask questions?

0. Course information and reminders

- **HW #7** (due M Oct 23)
 - This assignment is **optional**, but will **replace** a lower grade if you complete it
 - It's also a good **opportunity to practice X' trees** for phrases and sentences, since there is no recitation this week

1. Syntax: Review and context

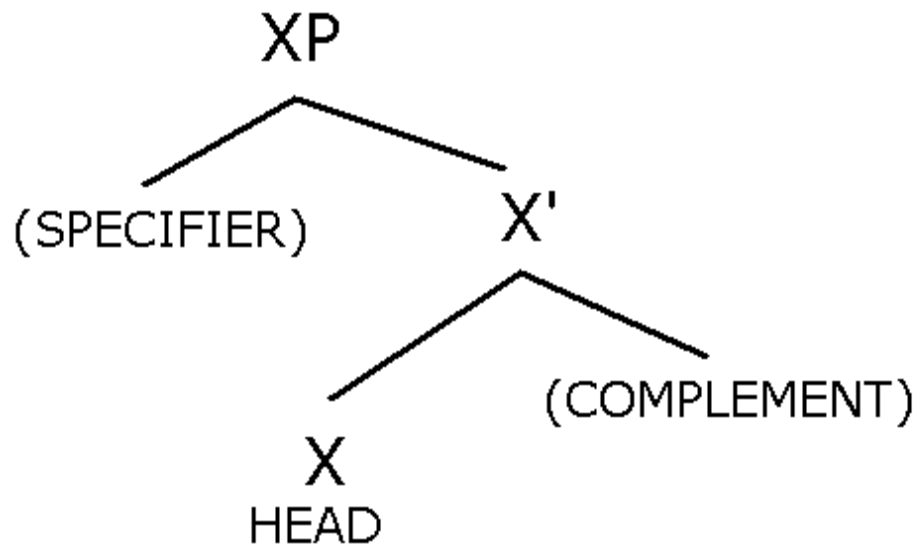
- Our goal for syntax is:

Develop a model of mental grammar that can **account for data** about grammaticality and constituents —

- Produce sentences that native speakers find **grammatical**, and not produce sentences that native speakers find ungrammatical
- Make the right predictions about which words in a sentence form **constituents** (units, subgroups)

1. Syntax: Review and context

- **X' schema:** blueprint for phrases
 - Proposal: **All phrases** fit into this structure



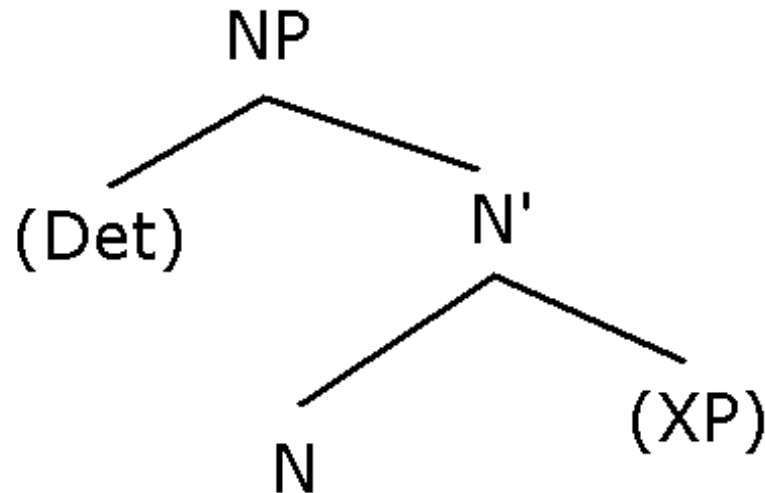
- An element in parentheses (...) is **optional**
 - **All** phrases have **heads**
 - **Not all** phrases have complements or specifiers

1. Syntax: Review and context

- Some tips for drawing X' structures:
 - Start by labeling all the word categories
 - Find constituents
 - All the words in a constituent should fit under a single XP
 - Look for heads, specifiers, and complements
 - Heads (N V A P T C) always project phrases
 - Complements are always phrases, not words
 - What will Det be? What about Adv? Deg?

1. Syntax: Review and context

- **NP:**



- Some examples to try

rabbits

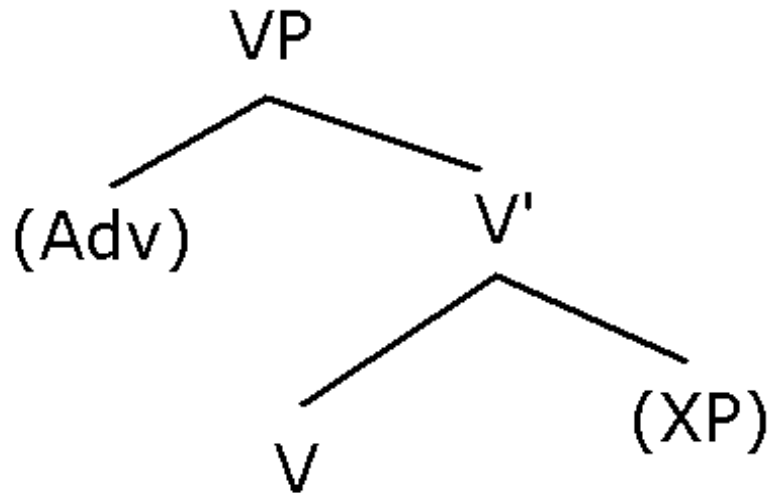
these rabbits

the child's rabbits

→ Any questions about these examples?
(answers were posted)

1. Syntax: Review and context

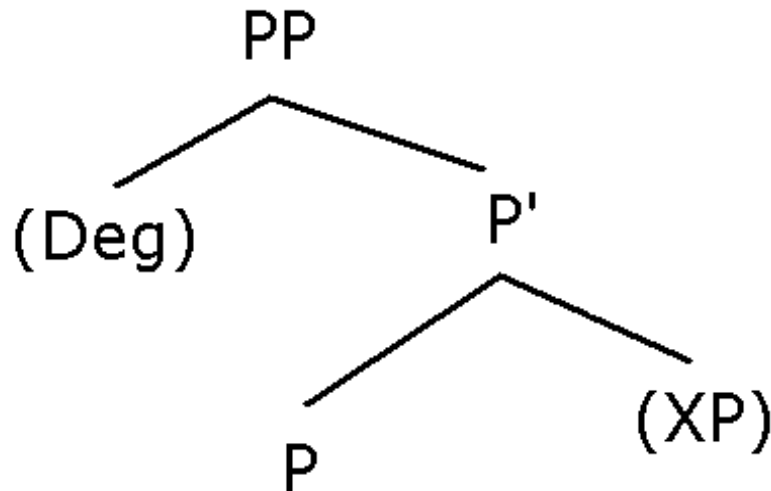
- **VP:**



- **Adv** = pre-V adverb (*always, never, happily, etc.*)
- Some examples to try
 - (Oscar) yawned*
 - (Grover) always smiles*
 - (Susan) read a book*
 - (Ernie) usually annoys Bert*

1. Syntax: Review and context

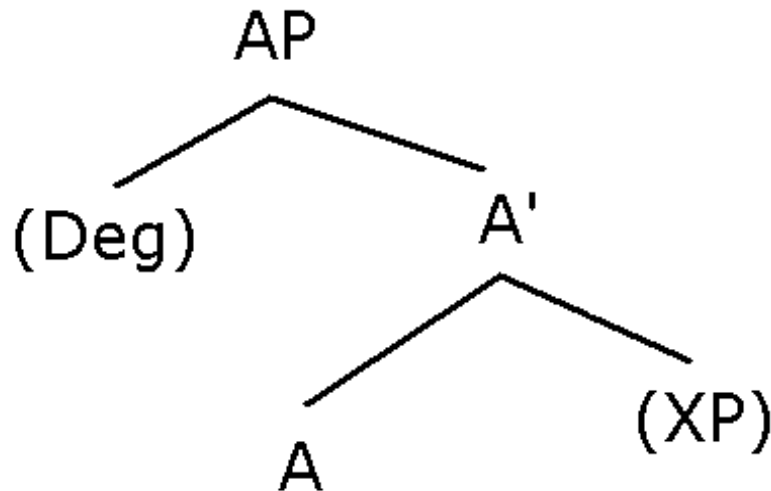
- **PP:**



- **Deg** = degree word (*right*, certain adverbs)
- Some examples to try
 - (Oscar went) out*
 - (Susan put the basketball) right in*
 - (a book) about rabbits*
 - (a liking) for truffles from France*

1. Syntax: Review and context

- **AP:**



- **Deg** = degree word (*very, too, quite, almost, ...*)
- Some examples to try
 - happy*
 - very angry*
 - pleased with the results*
 - fond of her dog*

2. The X' structure of a sentence

- We have seen how NP, VP, PP, AP all follow the X' schema
- But what about a whole sentence?
 - A sentence can fit into our X' model as well
 - What are the head, complement, specifier in a sentence?

2. The X' structure of a sentence

- What are the main constituents inside a sentence?
 - Traditional grammar divides a sentence into a **subject** and a **predicate**
 - This corresponds pretty well to constituents!

The rabbit will **eat the carrot.**

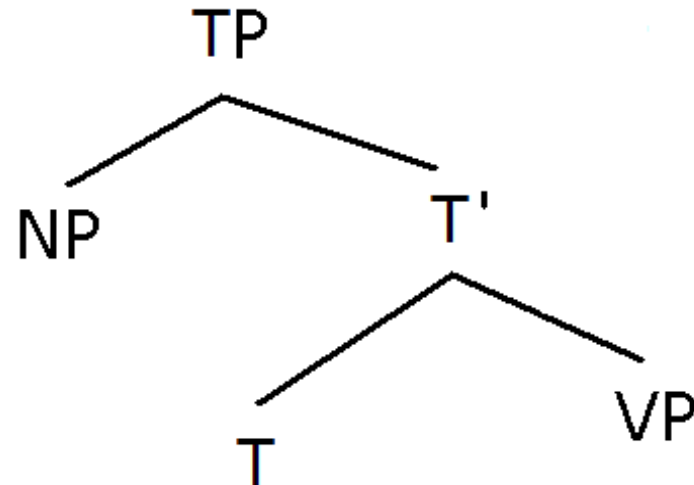
It will **eat the carrot.**

The rabbit will *do so.*

- We can model the subject as **specifier**, the predicate as **complement**, and the Aux as **head**

2. The X' structure of a sentence

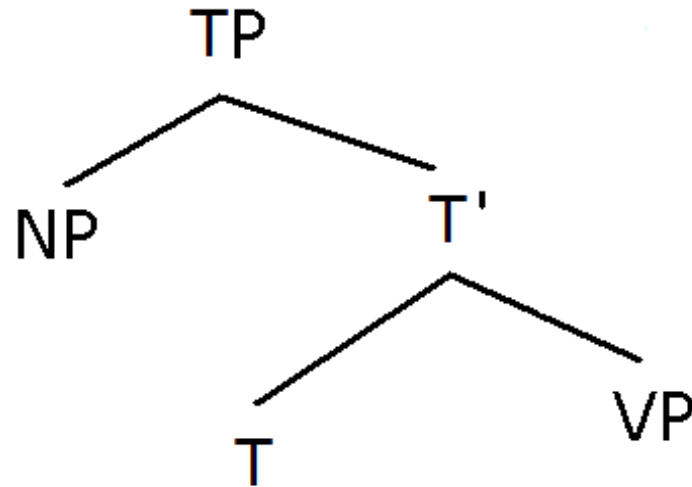
- Sentence = **TP**:



- The **head** of a sentence is category **T**, for “tense”
 - T contains a **tense feature** (+Pst or -Pst) or a **modal Aux** (which includes a tense feature)
 - Modal Aux: *may, might, can, could, will, ...*
(Non-modal Aux = *have, be, do*; these are different)

2. The X' structure of a sentence

- Sentence = **TP**:



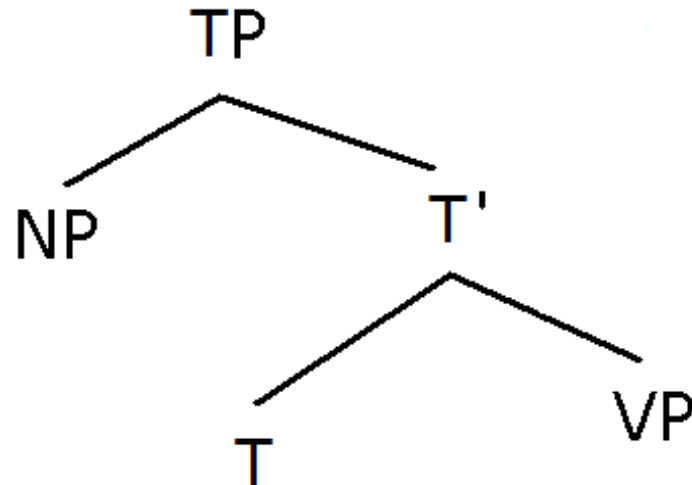
- The specifier and complement are not optional
- The **complement** of TP is a **VP** — this is the **predicate** of the sentence
- The **specifier** of TP is an **NP** — this is the **subject** of the sentence (note that this is a **phrase**, not a word)

3. Drawing the X' structure for a sentence

- Some tips for drawing X' structures, revised:
 - Start by labeling all the word categories
 - Find constituents
 - Find the subject and the predicate
 - All the words in a constituent should fit under a single XP
 - Look for heads, specifiers, and complements
 - Heads (N V A P T C) always project phrases
 - Complements are always phrases, not words
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3. Drawing the X' structure for a sentence

- Sentence = **TP**:



- Some examples to try (answers are posted!)

Oscar snores

This book is expensive

Ernie usually annoys Bert

Susan likes truffles from France

My friend might sometimes play the oboe

3. Drawing the X' structure for a sentence

- Let's try one example
 - What are the **categories** of each word in the sentence?

This book is expensive

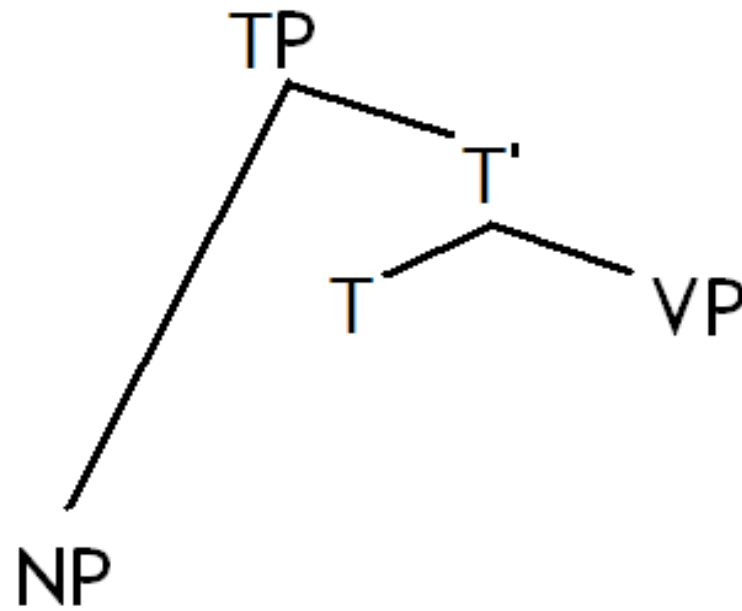
3. Drawing the X' structure for a sentence

- Let's try one example
 - Where are the **subject** and the **predicate**?

Det	N	V	A
<i>This</i>	<i>book</i>	<i>is</i>	<i>expensive</i>

3. Drawing the X' structure for a sentence

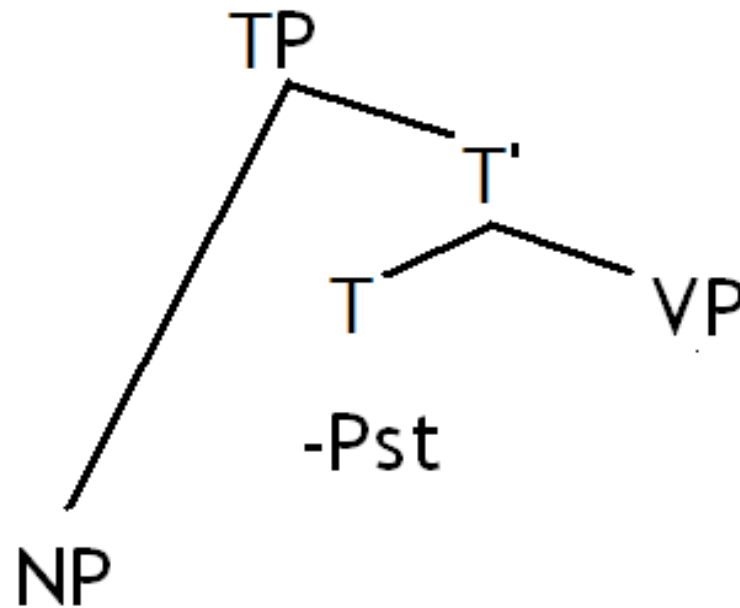
- Let's try one example
 - Is there a modal Aux to go in T? If not, use a tense feature



Det	N	V	A
<i>This</i>	<i>book</i>	<i>is</i>	<i>expensive</i>

3. Drawing the X' structure for a sentence

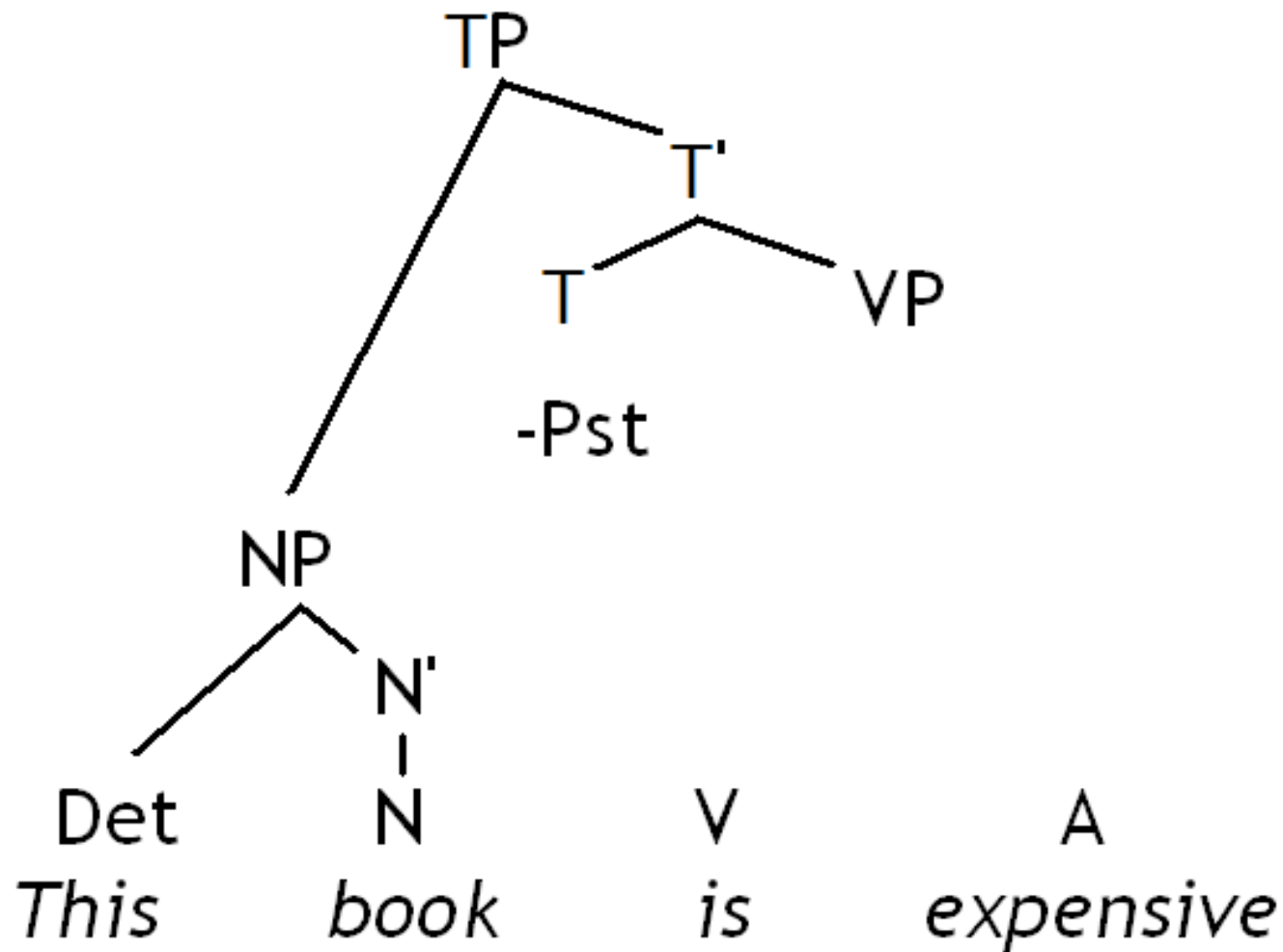
- Let's try one example
 - Can the subject phrase be combined as an NP?



Det	N	V	A
<i>This</i>	<i>book</i>	<i>is</i>	<i>expensive</i>

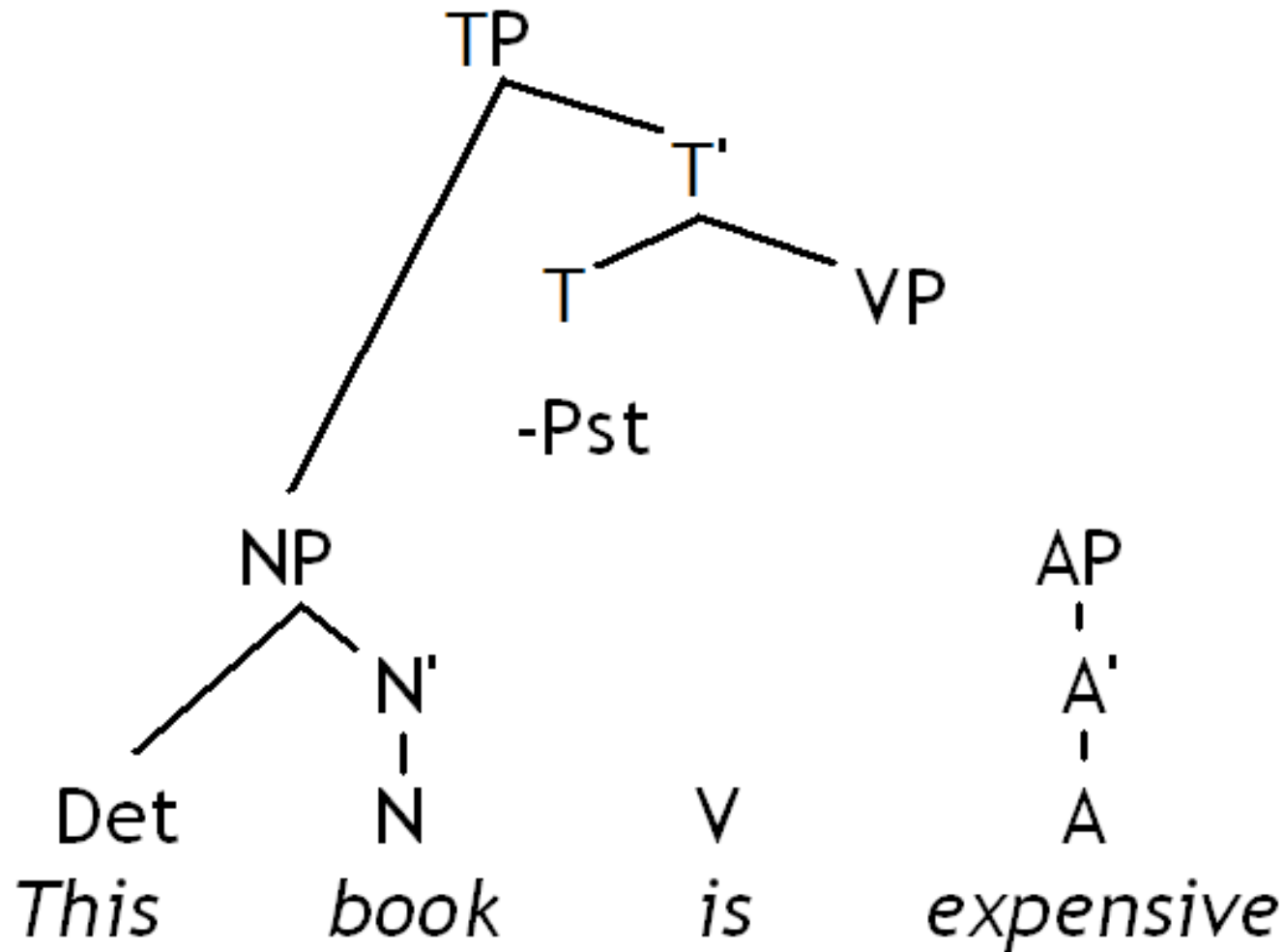
3. Drawing the X' structure for a sentence

- Let's try one example
 - For the predicate, starting from the right often helps



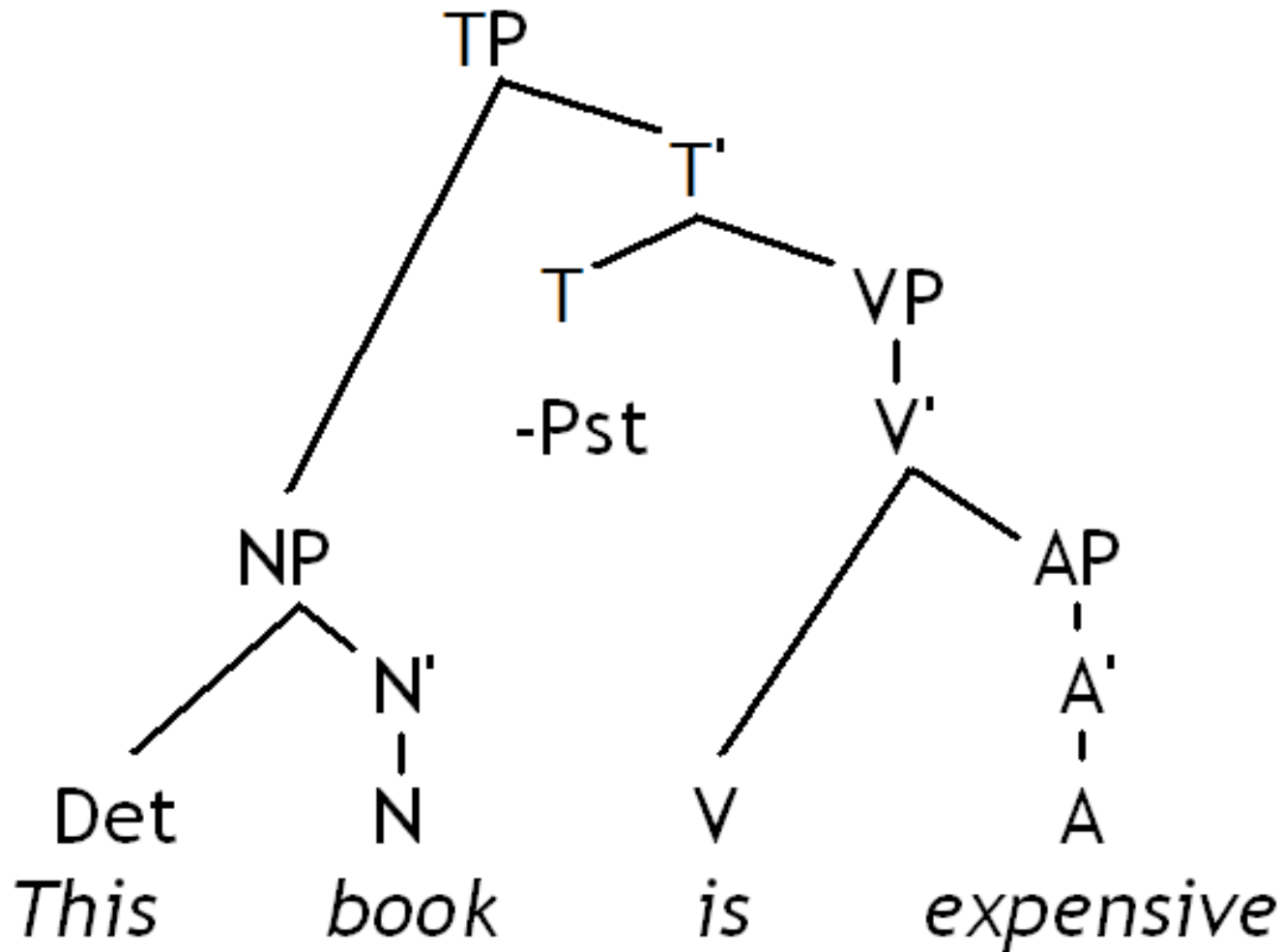
3. Drawing the X' structure for a sentence

- Let's try one example
 - Can everything in the predicate be combined into a VP?



3. Drawing the X' structure for a sentence

- Let's try one example
 - All the words fit into the X' schema! Nothing is left over.



4. Testing our model: Grammaticality

- Our model predicts that a phrase or sentence is **ungrammatical** if its words **don't all fit into the X' schema**
 - So, our model can already explain why these are not grammatical in English:
**book the* **Susan ate quickly the cookie*
- What we will look at next:
 - The X' schema is not enough to *guarantee* that a phrase or sentence is grammatical — **other requirements** may need to be met

4. Testing our model: Grammaticality

Here is a test for our model of the mental grammar:

- Are these sentences grammatical to a native speaker of English?
 - (1) *The puppy devoured.*
 - (2) *Oscar demanded.*
 - (3) *Grover slept the baby.*

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Here is a test for our model of the mental grammar:

- Are these sentences grammatical to a native speaker of English? | **No!**
 - (1) **The puppy devoured.*
 - (2) **Oscar demanded.*
 - (3) **Grover slept the baby.*
- Does the X' schema correctly **predict** this grammaticality judgment?
 - Try it: Can we draw 'legal' trees for these?

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- Does the X' schema correctly **predict** this grammaticality judgment? | **No!**
 - Try it: Can we draw 'legal' trees for these?
Yes! (oops) — *model doesn't match speakers here*

4. Testing our model: Grammaticality

- The X' schema does not correctly predict that (1)–(3) are ungrammatical to native speakers
 - The trees *fit* the X' model!
 - We need to **modify our model** of mental grammar, because it isn't predicting the same grammaticality judgments as native speakers

5. Complement options

- The X' schema does not correctly predict that (1)–(3) are ungrammatical to native speakers
 - The trees *fit* the X' model!
 - We need to **modify our model** of mental grammar, because it isn't predicting the same grammaticality judgments as native speakers
- We need to add another element to our model of syntax: **complement options**

A head can have **requirements** about complements: they can be mandatory, prohibited, or optional

5. Complement options

- These sentences are ungrammatical not because of their overall X' structure, but because the requirements of some head are not being met

(1) **The puppy devoured.*

*devour*_V requires NP complement in its VP

(2) **Oscar demanded.*

*demand*_V requires NP complement in its VP

(3) **Grover slept the baby.*

*sleep*_V does not permit NP complement in its VP

5. Complement options

- Are complement options **predictable** from the meaning of the verb?
- No! Compare these two verbs:
 - (1) **The puppy devoured.* | NP complement **required**
 - (4) *The puppy ate.* | NP complement **optional**
- The meanings of these two verbs are very similar
 - But they have different complement requirements

5. Complement options

- Are complement options **predictable** from the meaning of the verb? | **No!**
- Where is **unpredictable information** represented in the linguistic knowledge of a native speaker?

5. Complement options

- Where is **unpredictable information** represented in the linguistic knowledge of a native speaker?
 - In the mental lexicon
- So: the **lexical entry** of a head contains...
 - its sound shape
 - its meaning
 - its irregular morphology, if any
 - **its complement options**
 - (...other unpredictable information...)

6. Verbs with two complements

- Some verbs have **two** mandatory complements
 - (5) *I put the book on the table.* | *put*_v: NP, PP **required**
 - (5') **I put the book.*
 - (5'') **I put on the table.*
(note: this is not the particle-verb 'put on' meaning 'to wear')
- How do we include this in the X' schema, where there is only space for **one** complement in an XP?

6. Verbs with two complements

- How do we include this in the X' schema, where there is only space for one complement in an XP?
 - We could expand the lowest V' level to include **both** complements when a verb really does **require** both (see Figure 5.13 on p 181 of *CL*)
 - *Alternative:*
We could put one of the complements **outside** the lowest V' level, and basically not allow the model to represent its status as a complement

6. Verbs with two complements

- This is a controversial topic in linguistic theory
 - Advantage of 3-branch V' approach:
All **complements** are sisters of the head, so they all have the **same structure**
 - Disadvantage of 3-branch V' approach:
Now, some X' nodes have >2 branches
(otherwise, all nodes in the tree have at most 2 branches)
- We will follow the textbook and use the 3-branch V'
 - This prioritizes the **structural** definition of complement (as sister to the head)

6. Verbs with two complements

- Try it — How would you draw a tree for:
(6) Grover put the book on the table.

(answer is on next slide — but try it yourself first)

6. Verbs with two complements

- Both NP and PP complements are in the V'

