Today

- What is syntax?
- Grammaticality
- Ambiguity
- Phrase structure

Readings: 6.1 – 6.2
Productivity

e.g., Laura ate two peanuts.
Laura ate three peanuts.

…
Laura ate forty-three million, five hundred and nine peanuts.

…

→ Laura ate X peanuts. (where X = number)
Productivity

- We do not store whole sentences, but the words (mental lexicon) and the rules that combine them
- The set of rules is finite, but the set of possible sentences is not
Syntax

- The study of the structure of phrases/sentences and the *rules* governing how words are combined to form phrases/sentences
- These rules are acquired at a very young age and *internalized*. 
Grammaticality

- Sequences of words that conform to the rules of a language are *grammatical* (well-formed)
- “Grammatical” is different from “comprehensible”
Grammatical or ungrammatical?

The cat is on the mat.
The mat is on the cat.
*The cat on is the mat.

‘*’ = an ungrammatical or ill-formed sentence

→ Word order is important.
Grammatical or ungrammatical?

*This sentence no verb.
*Contains a verb.

→ Sentences need a subject and a verb

*This sentence has cabbage six carrots.
Grammatical or ungrammatical?

Colorless green ideas sleep furiously.
*Sleep furiously ideas green colorless.

→ Grammaticality and sense/meaning can be independent of one another. This shows the independence of syntactic rules.
Ambiguity

- The property of having two or more meanings.
  - Lexical ambiguity
  - Structural ambiguity
Lexical ambiguity

Headlines:
- PROSTITUTES APPEAL TO POPE
- IRAQI HEAD SEEKS ARMS
- SOVIET VIRGIN LANDS SHORT OF GOAL AGAIN
- CHILD’S STOOL IS GREAT FOR USE IN GARDEN

- Lexical ambiguity: when a word has more than one meaning
Structural ambiguity

- “I once shot an elephant in my pajamas.”
- “Tonight’s program will discuss sex with Dr. Ruth Westheimer.”
- “We will not sell gasoline to anyone in a glass container.”
- “This mixing bowl is designed to please any cook with a round bottom for efficient beating.”
Structural ambiguity

- Ambiguity resulting from the *structure* of the phrase or sentence

  e.g., discuss [sex with Dr. Ruth Westheimer]
  [discuss sex] [with Dr. Ruth Westheimer]

  e.g., a large [man’s hat]
  [a large man’s] hat
Hierarchy and ambiguity

large man’s hat
(unlockable)

large man’s hat
(unlockable)
Phrase structure

1) Every word belongs to a *lexical category*

2) Lexical categories forms heads ("main words") of *phrases* which can function as a unit

3) How phrases are formed is governed by rules (= ‘*phrase structure rules*’
Lexical categories

- Nouns (N): Laura, peanut, house
- Verbs (V): eat, see, sleep, dive
- Adjectives (Adj): big, lazy, colorless
- Determiners (Det): the, a, those, every
- Prepositions (P): in, of, over, with
- Adverbs (Adv.): quickly, often

→ A word’s lexical category determines what kind of *phrasal category* it can form
Phrases

- Built up from lexical categories (their heads)
- May consist of one or more words
- They function as a unit
- These units come together to form sentences
Types of phrases

- Noun phrase (NP)
  - John
  - the boy
  - a book about a boy
  - a big picture of the boy in a bubble
  - A friend that I’ve known for a long time
Types of phrases

- Verb phrase (VP)
  - fall
  - fell slowly
  - fell (slowly) into the pond
  - buy the book
  - *buy slowly the book
  - buy the book with a credit card
Types of phrases

- Prepositional phrase (PP):
  - in
  - with a smile
  - of my little teeth
  - between a rock and a hard place
  - at the store by my house