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  - The [<sub>N</sub>sun] shines too brightly in Tucson
  - \* [<sub>V</sub>Will glow] shines too brightly in Tucson
- Also called:  
Syntactic Categories.

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- **Adjective:**
  - Modifier that expresses quality, quantity or extent.

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- **Preposition:**
  - Modifier that indicates location or origin.

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  - The **assassination** of the president...
  - **Sincerity** is an important quality
  - **Tucson** is where New Yorkers flee for the winter

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- Multiple parts of speech?
  - Gabrielle's **father** is an axe-murderer
  - Anteaters **father** attractive offspring
  - ?Wendy's **father** country is Iceland

Time flies like an arrow;  
fruit flies like a banana.


Time flies like an arrow;  
fruit flies like a banana.

(first *flies* is a verb, second *flies* is a  
noun. First *like* is a comparative  
conjunction, second *like* is a verb. )

# Problems with the semantic def.

- Cross-linguistic Problems

- Irish Gaelic:

a) Ní **ith**-eann Seán   
Neg eat-3sm John  
"John doesn't eat."

b) Ní **dochtúir**-é Seán  
Neg doctor-3sm John  
"John is not a doctor" (lit. John doctors not)

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- Kwamera:

a) *lak-imiki* Kuri u  
1s.dislike dog this  
“I don’t like this dog”

b) *ianpin iak-am-óihi* ihi  
when 1s-prog-small still  
“when I was still small”

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- Cross-linguistic Problems
  - Warlpiri:

**Wita**-rlu ka maliki wajilipinyi  
Small-subj aux dog chase.present  
“The small one is chasing the dog”

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  - quastofically -adverb
  - nindin -noun
  - pidibs -noun

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What do the underlined words mean?



I think that John is in the kitchen

A picture of Mary

I want very much for you to win the prize

# Distributional definitions

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- The definition of P.O.S is *distributional*
- Because they are distributional, POS definitions are *language specific*.

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(affixes --prefixes, suffixes etc.-- which appear on the word)
- **Syntactic distribution**  
(position relative to nearby words.)

# P.O.S distributionally

## (English) -- Nouns

- **Derivational Suffixes:**

- *-ment, -ness, -ity, -ty, -(t)ion, ation, -ist, -ant, -ery, -ee, -ship, -aire, -acy, -let, -ling, -hood, -ism, -ing*

- **Inflectional Suffixes:**

- plural *-s, -es, -en, -ren, -i, -a*.

- **Syntactic Distribution:**

- after determiners such as *the, those, these*, (e.g., *these peanuts*)
- can appear after adjectives (*the big peanut*).
- follow prepositions (*in school*).
- subject of the sentence or as the direct object
- negated by *no*

# P.O.S distributionally

## (English) -- Verbs

- **Derivational Suffixes:** -ate, and ize/-ise,
  - **Inflectional Suffixes:**
    - In the past tense, -ed or -t
    - Present tense, third person singular -s.
    - progressive -ing perfective -en passive -ed and -en
  - **Syntactic Distribution:**
    - Follow auxiliaries and modals and the special infinitive marker *to*
    - follow subjects\*
    - can follow adverbs such as *often* and *frequently*.\*
    - can be negated with *not* (as opposed to *no* and *un-*)
- \*not very reliable

# P.O.S distributionally

## (English) -- Adjectives

- **Derivational Suffixes:** *-ing, -ive, -able, -al, -ate, -ish, -some, -(i)an, -ful, -less, -ly*
- **Inflectional Suffixes:**
  - comparative form *-er* (or follow *more*).
  - superlative form *-est* (or follow *most*).
  - negated used the prefix *un-*
- **Syntactic Distribution**
  - between determiners and nouns.
  - They also can follow the auxiliary *am/is/are/was/were/be/been/being* (warning: this distribution overlaps with verbs).
  - adjectives can be modified by the adverb *very* (warning: this distribution overlaps with adverbs).

# P.O.S distributionally

## (English) -- Adverbs

- **Derivational Suffixes:** Many adverbs end in -ly: quickly, frequently, etc.
- **Inflectional Suffixes:**
  - generally don't take any inflectional suffixes.
  - on rare occasions they can be used comparatively and follow the word more: She went more quickly than he did.
- **Syntactic Distribution**
  - Adverbs can't appear between a determiner and a noun or after *is* and its variants.
  - can really appear pretty much anywhere else in the sentence, although typically they either appear at the beginning or end of the clause/sentence.
  - can be modified by the adverb very.

# Cross-Linguistic Variation in POS

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- Each language has its own set of distributional criteria.
- Not all languages have the same sets of parts of speech as English. Some may have less (eg. They may not distinguish verbs from adjectives) or they may have more!

# Open vs. Closed P.O.S

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## Open Class POS:

- ♦ allow neologisms (new words)
- ♦ express content
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## Closed Class POS:

- ♦ don't allow new additions
- ♦ express function
- ♦ Prepositions, conjunctions, modals, auxiliaries, determiners (articles), pronouns, among others.

# Lexical vs Functional

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- **Lexical Parts of Speech:** (usually open class, but some exceptions, e.g. pronouns) Express the contentful/referential part of the meaning. (N (including pronouns), V, A,). All that is usually left when you speak telegraphically.

# Lexical vs Functional

- **Lexical Parts of Speech:** (usually open class, but some exceptions, e.g. pronouns)  
Express the contentful/referential part of the meaning. (N (including pronouns), V, A,). All that is usually left when you speak telegraphically.
- **Functional Parts of Speech:** (closed class).  
Expresses the grammatical information in the sentence. The “glue” that holds the sentence together. (P, T, C, D, Neg, Conj)

# Some closed class POS

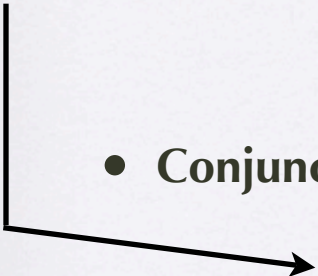
- **Prepositions (P):** *to, from, under, over, with, by, at, above, before, after, through, near, on, off, for, in, into, of, during, across, without, since, until*
- **Determiners (D)**
  - a) Articles: *the, a, an*
  - b) Deictic articles: *This, that, these, those, yon*
  - c) Quantifiers: *Every, some, many, most, few, all, each, any, less, fewer, no*
  - d) Numerals: *one, two, three, four, etc.*
  - e) Possessive pronouns: *my, your, his, her, its, our, their.*
  - f) Some wh-question words: *which, whose*

# Some closed class POS

- **Conjunctions** (Conj): *and, or, nor, neither... nor, either ... or*
- **Complementizers** (C): *that, for, if, whether*
- **Tense** (T)
  - Auxiliaries: *have/has/had, am/is/are/was/were, do*
  - Modals: *will, would, shall, should, can, could*
  - Non-finite Tense marker: *to*
- **Negation** (Neg): *not*

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Note spelling!

- 
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# Subcategories

- Within categories we want to make distinctions. These are **subcategories**.
- For example within nouns:
  - Count nouns require a determiner, Mass nouns do not:
    - \*cat / the cat
    - sugar / the sugar
- We capture this with features: *cat* is of category  $N_{[+Count]}$

# Subcategories of T

- Auxiliaries (can have more than 1, usually *do*, *have* and *be*)
  - [-modal, -nonfinite]
- Modals (can only have 1, must come first, e.g. *should*, *can* etc.)
  - [+modal, -nonfinite]
- Infinite marker *to*: appears only in non-finite contexts:
  - [-modal, +non-finite]
- Can also make tense distinctions using [ $\pm$ past]

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- The **arguments** are the individuals who are participating in the relation.
- The philosopher loves caramel apples.  
argument predicate argument

# Argument Structure

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  - The philosopher loves caramel apples 2 arguments
  - The philosopher gave the book to the linguist 3 arguments

# Transitivity

## some loose definitions

Name	# of Arguments	example
intransitive	1 argument	smile, arrive
transitive	2 arguments	hit, love, kiss
ditransitive	3 arguments	give, put.

# Subcategories of V

- More fine tuned restrictions:
  - Intransitive **arrive** does not allow an object
    - The package arrived.
    - \*The man arrived the package.
    - $V_{[NP \text{ \_\_\_}]}$
  - **Hit** only allows NP complements
    - I hit  $[_{NP} \text{ the ball}]$
    - \*I hit  $[_{CP} \text{ that you knew the answer}]$
    - $V_{[NP \text{ \_\_\_ } NP]}$
  - **Ask** allows both NP and clausal complements (objects)
    - I asked  $[_{NP} \text{ the question}]$
    - I asked  $[_{CP} \text{ if you knew the professor}]$
    - $V_{[NP \text{ \_\_\_ } \{NP/CP\}]}$

# Subcategories of V

- More fine tuned restrictions:
  - Spare requires two NP objects
    - I spared [NP him] [NP the trouble.]
    - \*I spared [NP the trouble] [PP to him.]
    - $V_{[NP\_ \{NP/PP\}]}$
  - Put requires 1 NP and 1 Prepositional Phrase (PP)
    - \*I put [NP the box] [NP the book]
    - I put [NP the book] [PP in the box]
    - $V_{[NP\_ NP PP]}$
  - Give allows either two NP objects or an NP and a PP
    - I gave [NP the box] [PP to Leah]
    - I gave [NP Leah] [NP the box]
    - $V_{[NP\_ NP \{NP/PP\}]}$

# Subcategories of V

- More fine tuned restrictions:
  - Tell allows an NP object and either another NP, CP or PP
    - I told [NP Daniel] [NP the story]
    - I told [NP Daniel] [CP that the exam was cancelled]
    - I told [NP the story] [PP to Daniel]
    - V [NP \_\_ {NP/CP/PP}]
- There are many other types of verbs (e.g. *happen* takes a CP subject). But the ones listed here should be a start.

# Subcategories of V

[NP __]	intrans 1	<i>arrive</i>
[NP __ NP]	trans 1	<i>hit</i>
[NP __ {NP/CP}]	trans 2	<i>ask</i>
[NP __ NP NP]	ditrans 1	<i>spare</i>
[NP __ NP PP]	ditrans 2	<i>put</i>
[NP __ NP {NP/PP}]	ditrans 3	<i>give</i>
[NP __ NP {NP/PP/CP}]	ditrans 4	<i>tell</i>

# Subcategories of Other Categories

- Nouns: [ $\pm$ count], [ $\pm$ pronoun], [ $\pm$ plural], [ $\pm$ anaphor]
- Determiners [ $\pm$ deictic], [ $\pm$ quantifier], [ $\pm$ wh] etc.
- Adverbs & Adjectives -- there is an optional problem set on this in the textbook.

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- Open vs. Closed classes
- Lexical vs. Functional