

Language

The gift of language is the single human trait that marks us all genetically, setting us apart from the rest of life.

–LEWIS THOMAS, *The Lives of a Cell*

Course Details

- 8 classes
- 6 optional problem sets (psets)
- Solutions up by Saturday afternoon

What Is Linguistics?

- Not just a humanities subject!

English professor

Books

Movies?

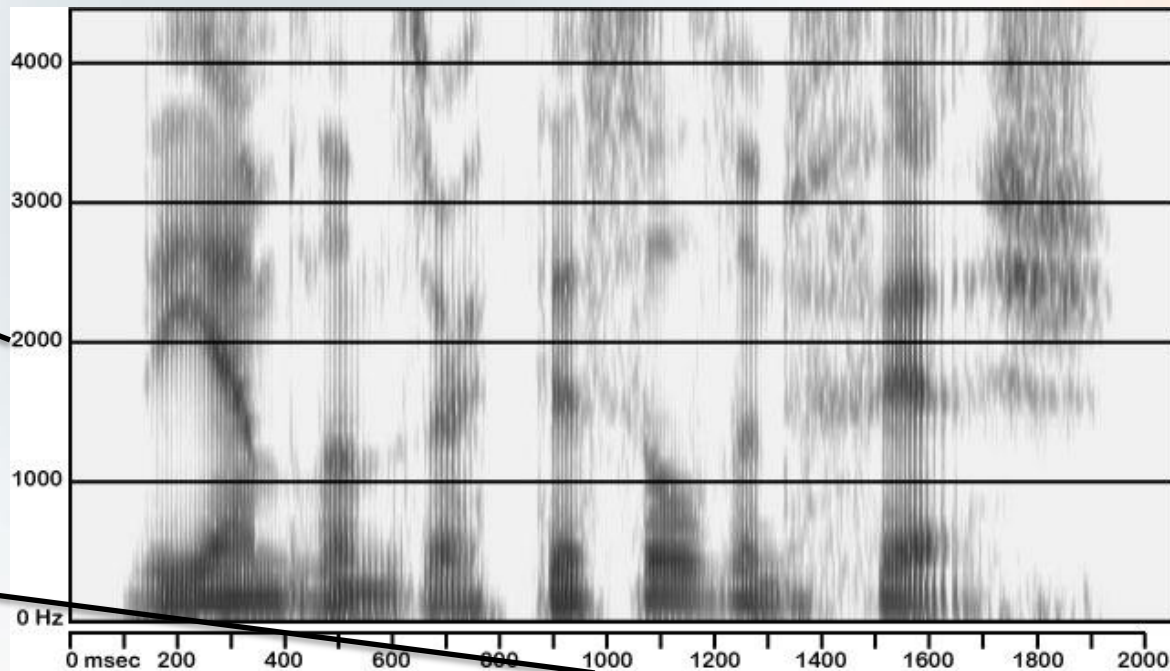


What Is Linguistics?

- Scientific study of language

Sound frequency (Hz)

Time (ms)



What Is Linguistics?

- Morphology – analysis of word structure
- Phonetics – sounds of languages
- Phonology – function and patterning of sounds
- Syntax – analysis of sentence structure
- Semantics – analysis of meaning
- Historical linguistics – study of language change

Morphology

- Compounds:
- “*Bat*” + “*man*” = “*Batman*”



+



=

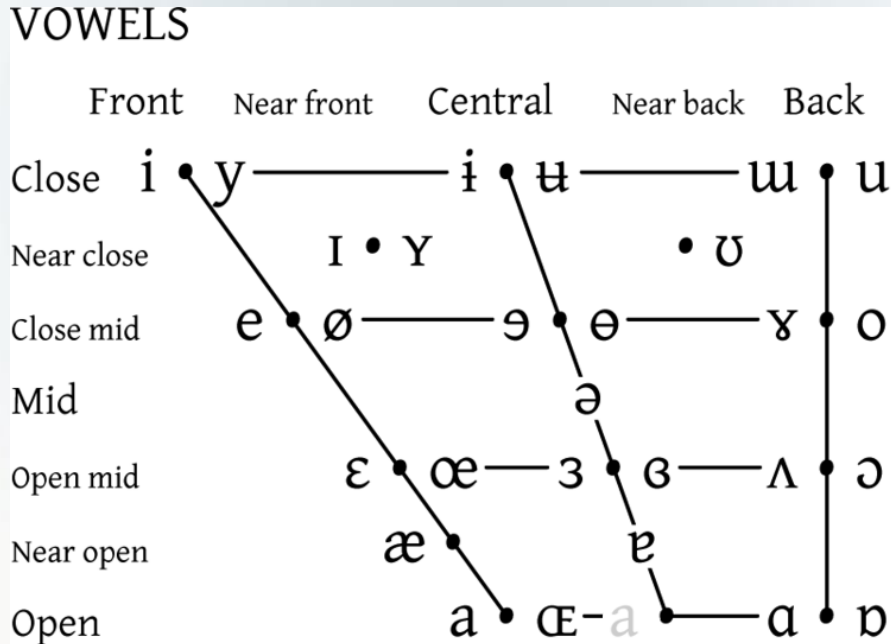


Morphology

- Inflection:
 - “I am.”
 - “You are.”
 - “He/she/it is.”

Phonetics

- Vowels:



Vowels at right & left of bullets are rounded & unrounded.

Phonetics

- Consonants:

THE INTERNATIONAL PHONETIC ALPHABET (2005)

CONSONANTS (PULMONIC)

| | Bilabial | Labio-dental | Dental | Alveolar | Post-alveolar | Retroflex | Palatal | Velar | Uvular | Pharyngeal | Epi-glottal | Glottal |
|---------------------|----------|--------------|--------|----------|---------------|-----------|---------|-------|--------|------------|-------------|---------|
| Nasal | m | ɱ | n | | ɳ | ɲ | ɲ | ŋ | ɴ | | | |
| Plosive | p b | ɸ β | t d | | ʈ ɖ | ɕ ɟ | k ɡ | q ɢ | ʔ ʕ | | | |
| Fricative | ɸ β | f v | θ ð | s z | ʃ ʒ | ʂ ʐ | ç ʝ | x ɣ | χ ʁ | ħ ʕ | ħ ʕ | h ɦ |
| Approximant | | ʋ | ɹ | | ɻ | j | ɰ | | | | | |
| Trill | ʙ | | r | | | | | | ʀ | | ʀ | |
| Tap, Flap | | ⱱ | ɾ | | ɽ | | | | | | | |
| Lateral fricative | | | ɬ ɮ | | ɮ | ɬ | ɬ | ɬ | | | | |
| Lateral approximant | | | l | | ɭ | ʎ | ʎ | ʎ | | | | |
| Lateral flap | | | ɺ | | ɻ | | | | | | | |

Where symbols appear in pairs, the one to the right represents a modally voiced consonant, except for murmured *ɦ*.
Shaded areas denote articulations judged to be impossible. Light grey letters are unofficial extensions of the IPA.

Phonetics

- Speech:
- Tone:
 - “You went home.”*
 - “You went home?”*
- Stress:
 - “I object.”*
 - “This object...”*

Phonology

- Minimal pairs:
- Difference between “*bat*” and “*pat*”
- One slight change = totally different word

Phonology

- Variation:
- Vowels: “*Not*”
- Consonants: “*Butter*”

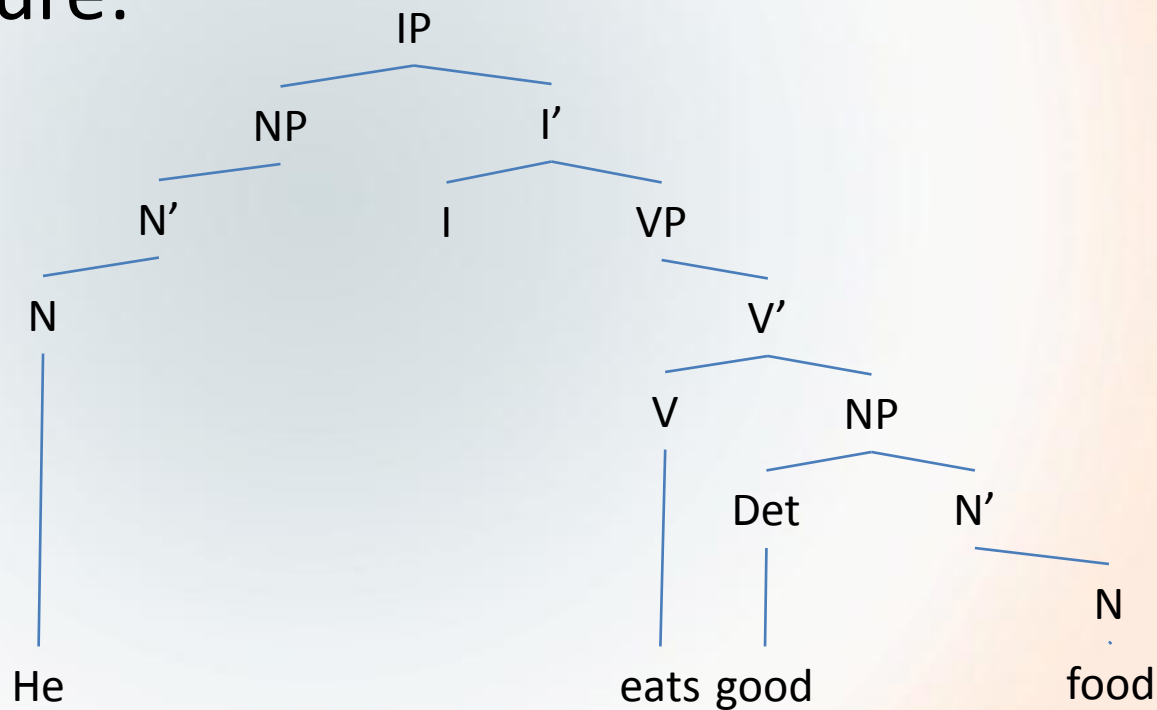
Syntax

- Parts of speech:
- Nouns, verbs, adjectives, adverbs, conjunctions, prepositions, interjections, etc.

Syntax

- Phrase structure:

- Syntax trees



Semantics

- Ambiguity:
- “Wealthy men and women”
- “Wealthy men and women”

Historical Linguistics

- Word change:
- ganra → gandra → gender
- slæpde → slæpte → slept

Historical Linguistics

- Grammar change:
- *“He ne speketh nawt.”*
- *“He does not speak.”*

What Do Linguists Do?

- Talk to people?
- Teach linguistics?

What Do Linguists Do?

- Help program machines to talk:
- [C-3PO?](#)
- [Repliee Q2](#)

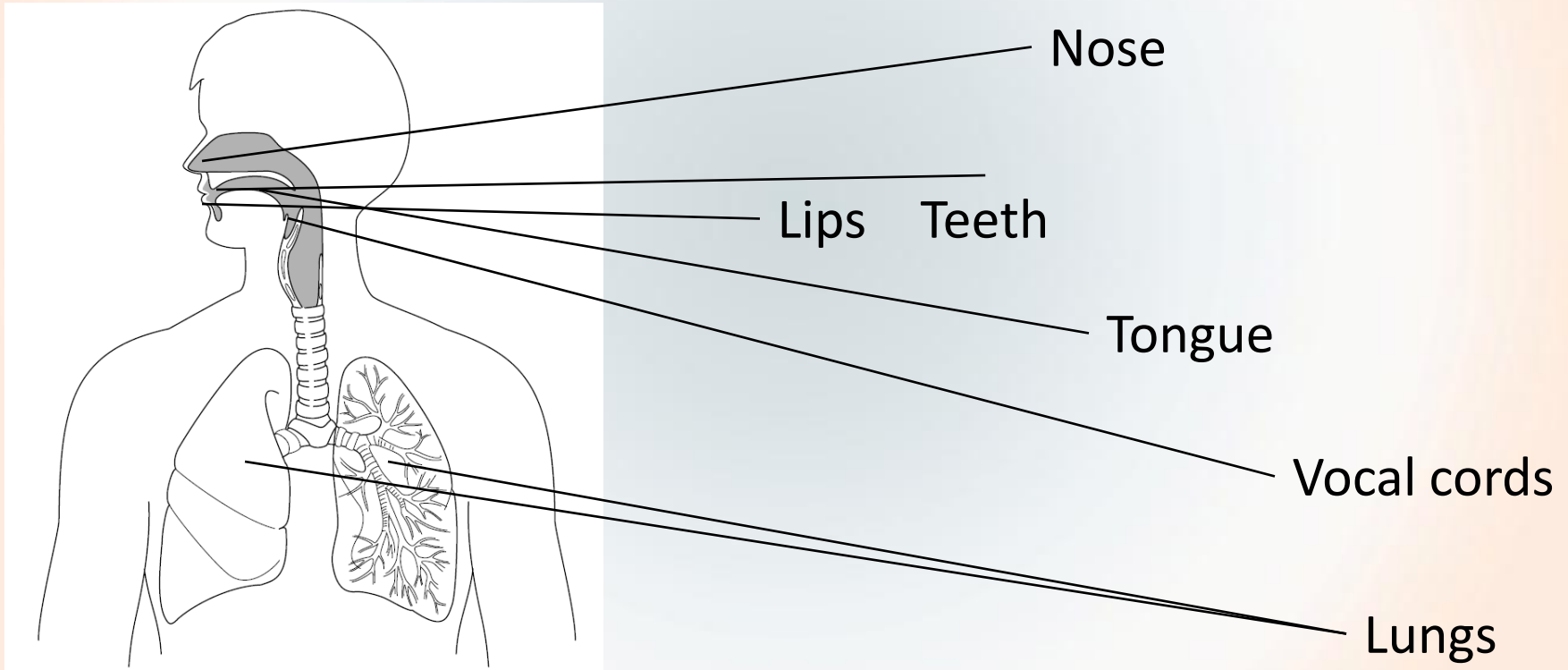
What Do Linguists Do?

- Make connections between languages:
Proto-Indo-European (PIE)
- Document language and languages

Specialization

- Humans are specialized for language
- Some organs have vocal functionality

Specialization



Specialization

| Organ | Vital function | Speech function |
|-------------|--|---|
| Lips | to close the mouth | to articulate sounds |
| Teeth | to break up food | to produce consonants |
| Tongue | to taste and move food through the mouth | to produce and articulate consonants sounds |
| Nose | to breath and smell | to produce nasal sounds |
| Vocal cords | to seal passage to lungs | to produce voice and tone |
| Lungs | to exchange CO ₂ and H ₂ O | to supply air for sounds |

Specialization

- Not just specialized for sound production
- Sound perception
- Cognitive abilities:
 - word formation
 - sentence formation
 - sentence interpretation



H... INT... DU... P...

ti... S

ã... s... m...

Creative System

- Creativity involved
- Can create and understand the unheard of
- *“My purple anteater walked his dog yesternight inside the chocolate cloud in the strawberry sky below my feetsies.”*

Creative System

- Nouns as verbs
- “Put wine into bottles.”
- “Bottle the wine.”
- Noun as a noun
- Noun as a verb

Creative System

- What about words?
- Kreechure
- Trasklip
- Umdaugger

Creative System

- What about these?
- Kzrsinger
- Shshlyam
- Qphmeoeo

Creative System

- There are limitations...
- “*Put the prisoner in prison.*”
- “**Prison the prisoner.*”
- We have “imprison”

Generality

- All languages have a grammar
- Grammar is a mental system

Generality

- Grammar defines rules
- Word order
- Word formation

Generality

- *“I can see two dogs.”*
- *“I see can two dogs.”*
- *“I two can see dogs.”*
- Grammatical
- Ungrammatical
- Ungrammatical

Parity

- All grammars are equal
- No primitive languages
- Any language is sufficient for its people

Parity

- Hawaiian has small sound inventory
- English has a larger sound inventory
- English speakers can interpret more sounds?
- Hawaiian < English?

Parity

- No!
- Hawaiian words are complex
- Hawaiian “*Mele Kalikimaka*”
- English “*Merry Christmas*”
- 7 syllables vs. 4 syllables

Universality

- Grammars are alike in basic ways
- *“I eat food.”* (SVO)
- *“I food eat.”* (SOV)
- *“Eat I food.”* (VSO)
- Majority adopt SOV word order

Mutability

- Grammars change over time
- Refer back to slide on historical linguistics
- *“He ne speketh nawt”*
- *“He does not speak”*

Inaccessibility

- Grammatical knowledge is subconscious
- Try explaining what's wrong below:
- *“*Frightened dog this the cat that chased mouse a.”*

Inaccessibility

- What is the plural of “*meemeem*”?
- “*meemeems*”

- What is the plural of “*meemeet*”?
- “*meemeets*”

- Take note of the pronunciation of the “s”

Summary

- Linguistics = study of language
- Humans specialized for language
- Language = creative system
- Generality, parity, universality, mutability, inaccessibility

NT: Morphology

- Next time (NT):
- What could “*goldfishtank*” mean?
- “*goldfish tank*”?
- “*gold fish-tank*”?



LOTW: Old English

- “Language of the Week”
- Not LOTR (Lord of the Rings)

LOTW: Statistics

- ~0 speakers
- ∞^{th} largest by native speakers
- ~450 CE to ~1100 CE
- Official language in 0 countries

LOTW: Classification

- West-Germanic language
- Indo-European language family
- Anglo-Saxons runes (futhorc) / Latin alphabet
- Fusional
- SVO word order?

LOTW: History

- From Germanic tribes
- Influenced by Latin from Roman traders
- Germanic dialects dominated Brythonic languages
- Anglo-Saxons spoke Old English

LOTW: Written Sample

Hwæt! wē Gār-Dena in geār-dagum
 þeod-cyninga, þrym gefrunon
 hu ða æþelingas ellen fremedon.
 Oft Scyld Scefing sceaþena þreatum,
 monegum mægþum, meodosetla ofteah,
 egsode eorl. Syððan ærest wearð
 feascraft funden, he þæs frofre gebad,
 weox under wolcnum, weorðmyndum þah,
 oðþæt him æghwylc þara ymsittendra
 ofer hronrade hyran scolde,
 gomban gyldan. Þæt wæs god cyning!

–*Bēowulf*

Listen! We have heard of the glory of the
 Spear-Danes, of the kings of the people, in
 days of yore, [and] how those princes did
 deeds of glory. Often Scyld Scefing deprived
 armed bands of foes, many clans of mead-
 benches, [and] terrified warriors. Since he
 first was found helpless (he experienced
 comfort for that), he grew under the
 heavens, thrived with honors, until each of
 the nearby peoples over the sea were
 obliged to pay him tribute. That was a good
 king!

–Beowulf

LOTW: Spoken Sample

- Beowulf – The Telling of an Old Tale

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Uncited sources: spectrogram and human body (respiratory system).