Phonetics 1.1
Introducing Phonetics

April 13, 2020

Phonetics

Phonetics is the study of speech sounds.

How can this be interesting or useful? Some examples...

(i) 't' in Spanish and 't' in English have similar status phonologically (both are contrastive in the language), but have different phonetic realities.
(Spanish 't' is phonetically closer to English 'd') INTERESTING

(ii) speech recognition.... 'I bought balms' v. 'I bought bombs'
. [bɑlmz] v. [bɑmz] USEFUL

Phonetics

Question phonetics wants to answer: How do we *describe* speech sounds?

There are multiple ways to answer this question $\rightsquigarrow$ different subfields

(i) **Articulatory phonetics: Describe speech sounds in terms of how they are produced (articulated)**

(ii) Acoustic phonetics: Describe speech sounds in terms of their physical reality (waveforms)

(iii) Auditory phonetics: Describe speech sounds in terms of how they are perceived

Articulatory phonetics

Question to be answered: How do we characterize speech sounds in terms of how they are produced?

Why is this important or useful?

(i) A lot of phonological processes are driven by articulatory properties; these properties are prevalent in how linguists *represent* phonemes

IMPORTANT

(ii) We have roughly the same vocal tract anatomy, so it provides a good basis for describing sounds for all languages

USEFUL

(iii) Makes learning the pronunciation of non-native languages (exponentially) easier in my experience

USEFUL

Come back to this note in 1.5–2 weeks: I emphasized *represent* above because I want to contrast it with *describe*. Phonetics is **mostly** concerned with *describing* speech sounds while phonology is **sometimes** concerned with *representing* speech sounds.

Articulatory phonetics — where to start?

Want: consistent / standard / lightweight way to talk about speech sounds of language (since humans have the same basic vocal tract anatomy)

Need: notation which is robust enough to handle most (if not all) of world's languages but notation that is abstract enough so that we don't use unimportant information (**want** to abstract from speech signal)

A good first answer: International Phonetic Alphabet (IPA)

Why not use orthography?

Don't need to look past English...

(i) Multiple letters can map to one sound

Ste**ph**en Cu**rr**y / Klay **Th**ompson

(ii) Same sound can have different letter(s)

phobia / **f**ree; **k**ick / **c**all

Phonetics has an important rule....

Don't trust spelling!

End of this video's lecture material. Rest is for pleasure (?)

How we think about IPA

IPA is an attempt at an optimal characterization of the speech sounds found in spoken languages — i.e. there is a tradeoff between generalizations captured and information loss

- More notation / symbols can be (and are sometimes) used for less information loss (e.g. not every [t] — even within a speaker — is articulated equally)
- Further reduction would lose too much information (e.g. omission of voiced / voiceless would miss the fact that almost every language has some voicing contrast, so it would be nice to reflect that in the notation)

Take-home: IPA is not a substitute for reality, as there is a step in abstraction going from the acoustics to a symbol in an alphabet, but this alphabet is still an excellent tool.