Chapters 6 and 7

Distinctive features

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Introduction

- Different languages have different segments
- Some segments are more similar than others
  - groups / natural classes: e.g. consonants and vowels
    - stops, fricatives, sonorants
    - smaller groups: voiceless stops, bilabial consonants, etc.
    - front vowels, rounded vowels, etc.

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Distinctive features

- Groups can be characterized by assuming that they have something in common:
  - **a distinctive feature**
  - e.g. all consonants have [+consonantal]
  - all high vowels have [+high]
  - all voiced segments have [+voice]
    - compare: chemical elements
- Clear principle, but details are controversial
  - which features exactly are needed?
  - do all languages use the same set of features?
  - what about + / - ?

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Motivation

- Natural classes
  - some classes of segments often play a role in languages (e.g. all voiceless stops, all front vowels, etc.)
    - in particular (synchronic or diachronic) rules
    - (or in constraints)
  - natural rules, e.g. p → b, t → d, k → g
    - e.g. after a nasal or in between vowels
    - natural class (voiceless stops) captured by feature combination (e.g. [-cont, -voice])
    - what happens is captured by one feature [+voice]

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Phonetic motivation

- Most or all features correspond to what we know about phonetics
  - voicing, place of articulation, manner
- **Theories** of distinctive features
  - which set exactly?
  - how are they organised?
  - how are they specified (+, -, 0, *n*)?

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Why a theory?

- If we have a theory of distinctive features, we can use that about what kinds of natural classes and processes are possible in languages
  - even what kinds of segments are possible, because segments are combinations of these features
- No agreement about exact set among linguists
  - or about 'innateness' of features

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Types of distinctive features

- Different "aspects" of segments correspond to groups of features
  - place of articulation
  - manner of articulation / major class
  - laryngeal features
- One particular theory: Halle and Clements (1983)
  - also Clements & Hume 1995, and many many many many others

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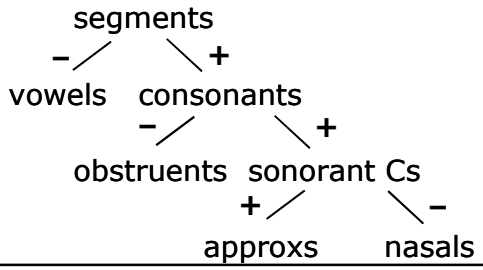
Major class features

- [±consonantal], [±sonorant] and [±approximant]: phonetic definitions



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Terms

- Approximants: l, r, j, w
  - e.g. English approximant devoicing (please, pray, pure, quite)
- Approximants can still be divided into two classes:
  - Liquids: l, r
  - Glides or semivowels: j, w

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Major classes

- Each group can now be defined uniquely:
  e.g. obstruents:
  [+consonantal, -sonorant, -approx.]
- Definition of the features
  in terms of phonetics, e.g.
  [consonantal]: involving "major, central, obstruction" in vocal tract (p.75)

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Laryngeal features

- [±voice], [±spread glottis] and [±constricted glottis]: phonetic definitions
- spread glottis: aspiration and /h/
  - these have [+spread glottis], other segments have [-spread glottis]
- constricted glottis: glottalization and /ʔ/
  - these segments have [+cons. glottis]

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Manner features

- [±continuant], [±nasal], [±strident] and [±lateral]
  - stops vs. fricatives: [-cont] vs. [+cont]
  - nasal consonants and vowels [+nasal]
  - strident vs. non-strident fricatives
    - s [+strident], θ [-strident]
  - l vs. r : [+lat] vs. [-lat]

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Place features

- Major areas of articulation: the features [labial], [coronal], [dorsal] and [radical]
  - only '+' value in this case
  - [labial]: all labials, etc.
  - used for finer divisions among the consonants: e.g. dark l vs. clear l
  - [round]: rounded vowels [+] vs. unrounded vowels [-]

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Coronal

- Important natural class
  - many finer divisions
    - [strident] s vs θ
    - [anterior] t vs ʈ (retroflex)
    - [distributed] s vs ʃ
- exact phonetic definitions: not important

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Dorsals

- Tongue body
  - velar and uvular consonants
  - vowels
- **vowel features**, e.g. [high], [low] and [back] make distinctions between vowels, and also dorsals
  - e.g. uvulars are [+low]

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Radical

- For pharyngeal sounds (Arabic)
  - (pharyngeal stop not possible)
- Some segments are combinations of place features, e.g. labial-velars /kp/

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Examples

- Italian vowels

	[−back] [−round]	[+back] [−round]	[+back] [+round]
[−high, −low]	i		u
[−high, −low]	e		o
[high, low]	ɛ	a	ɔ

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Table 6.1 (partly)

Table 6.1
Feature specifications of 23 representative consonants for 16 fe
indicate that the consonant is not specified for the feature. The

	p	t̪	t	pf	tʃ	kʰ	b	f
cons	+	+	+	+	+	+	+	+
son	−	−	−	−	−	−	−	−
approx	−	−	−	−	−	−	−	−
cont	−	−	−	−	−	−	−	+
nas	−	−	−	−	−	−	−	−
lat	−	−	−	−	−	−	−	−
voice	−	−	−	−	−	−	+	−
spread	−	−	−	−	−	+	−	−

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Conclusion

- Segments are not like atoms, but like molecules: they consist of smaller units, called distinctive features
  - different kinds/groups of features
    - Major Class, Laryngeal, Place
  - different theories about exact set
  - some feature values are predictable
    - either in general [-low] from [+high]
    - or for particular languages ([+voice] from [+son] in Chinese)

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Practice makes perfect

- Familiarize yourself with the most important features
- Many exercises in this chapter and Ch. 7 (esp. exercises 7.1-7.3)
  - Please read Ch. 7 for yourself

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Homework

- Study chapter 6 carefully and note down any questions
  - read Ch.7 *for yourself*
- Do exercises Qs 45, 46, 51, 52, 55, 56, 57, 60
- Next time: Ch. 8
- Thank you~~~

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