

# Chapters 12 and 13

Distinctive feature geometry



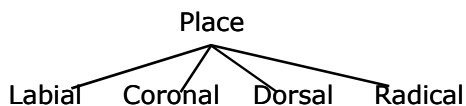
## Introduction

- Motivation for distinctive features?
  - natural classes
  - natural processes
  - segment inventories of languages
- Different types of features
  - major class (consonant, sonorant, ...)
  - voicing (voice, aspiration, ...)
  - place of articulation
    - consonants
    - vowels

## Feature organization

- Some features behave as a group
- English:
  - in [m] Paris,  $n \rightarrow m / \_ \_ p$
  - in [ŋ] Kenya,  $n \rightarrow \eta / \_ \_ k$
  - two separate rules?
    - they seem like one rule
  - one rule, with "Place" as a variable

## Grouping



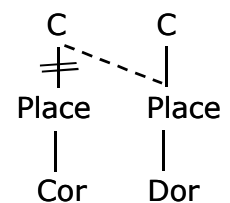
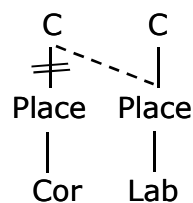
"Place" as a dominating node, part of a tree

So English place assimilation does not affect the separate Labial or Dorsal feature, but the entire Place **node**

## Place assimilation

in Paris

in Kenya



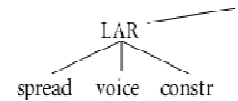
## Arguments

- Labial, Dorsal: the same kind of features
  - reflected in feature “tree”
- Place assimilation can be described as one simple rule
  - no effect for Coronal (in Tunis)

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## Other feature grouping(s)

- Laryngeal features

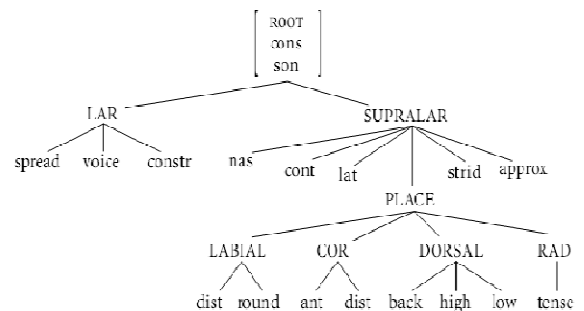


- Evidence: e.g. Thai (data next slide)
  - in initial position: contrast between t, d and t<sup>h</sup>
  - in final position: only t allowed
  - so [voice] and [asp] both deleted
    - or: Laryngeal node deleted

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haa	'five'	plaa	'fish'
diu	'good'	saan	'dish'
thee	'pour'	thuumeen	'Truman'
k'eng	'hard'	panyaa	'brains'
laay	'pass'	ph'jaa	[title]
luak	'choose'	klaag	'middle'
ɛ'hat	'clear'	traa	'stamp'
riip	'hurry'	sok	'exit'
ph'rae	'silk cloth'	kaa	'wooden shoes'
k'h'waa	'right side'	ke	'old'
dray	'drive (golf)'	duu	'pull'
kan	'ward off'	ɛuak	'pure white'
ph'leeg	'song'	ɛ'an	'me'
staa	'money'	rap	'take'
yiisip	'twenty'	ph'aa	'cloth'
k'aa	'kill'	daa	'black'
raay	'case'	thi	'get stuck'
sip	'ten'	pen	'alive'

## Tree as a whole



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## Rule format

- Place assimilation: shows **spreading**
  - just like tones (Ch. 10)
- Only features and nodes can spread
  - better theory of what kinds of rules are possible and natural
- Also delinking: loss of a node or feature
  - in place assimilation, [n] loses its original place of articulation (coronal)

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## Conclusion so far (Ch. 12)

- Good evidence for features
  - although no-one has an exact list
- Evidence for grouping
  - phonetic similarity (place, larynx)
  - simple characterization of rules
- Implication: rules as spreading and delinking

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## Exploiting the feature tree

- Some features (or nodes) may be absent (underspecification)
- Various examples in book

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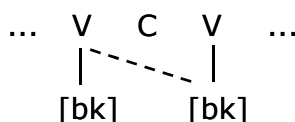
## Vowel harmony

- Vowels in a word often agree for some feature, e.g. [back] or [round]
    - Uyghur
    - Old Japanese, Middle Korean
    - Finnish, Hungarian
- [mitæ]      'what'  
 [suomi]     'Finland' (i = 'neutral')  
 [talo]       'house'  
 \*[tymo]    \*[tumæ]

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## Vowel harmony

- Consonants don't (usually) participate in vowel harmony. Why?
- Because consonants are (usually) not specified for features like [back]



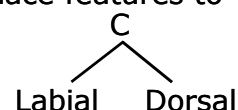
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## Complex segments

- Remember the place node



- Possibility for two Place features to be specified:



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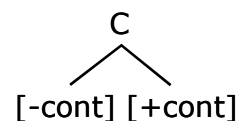
## Labial-velars

- /kp/ in Bantu languages (Africa)
  - nasal before it may also be labial-velar
- /w/ in English
  - phonologically labial and velar?
  - one week
- Other Place-complex consonants?
  - labial-coronals /pt/

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## Affricates

- Affricates start out as a stop and end as a fricative
  - phonetics: release phase is slow
- In feature theory:



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## Affricates in English

- church
  - first ch does not violate **sonority**
  - could be two segments
  - if two segments, then no r/l following
  - \*chr- \*chl-
- second ch does violate sonority
  - could be one segment
  - if one segment, then n, l preceding
  - pinch, belch

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## Secondary articulation

- Also possible in feature tree: combination segments, consisting of consonant **and** vowel
  - secondary articulation
  - e.g. English dark l
  - [l] together with high back vowel

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## Conclusion

- Features can be organized into a "feature tree"
  - good idea in general
  - no agreement on which tree is the best
  - different languages, different trees??
  - arguments from rules and from types of segments
    - some exotic, some English

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## Homework

- Study Chapters 12 and 13 carefully
- Sections 13.3.2 and following are optional
- Excs: Qs 118, 121, 122, 127
- Thank you

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