Generative vs. structuralist approaches to alternations

LING 451/551
Spring 2011
Generative view of phonology

• Hayes 6.1.1
  – ‘The morphology of a language places morphemes in different phonological contexts…’

• Different pronunciations of same morpheme can be a source of information about phonology

• Not always thought to be the case...
Structuralist phonology

• Dominant model of phonology prior to the Chomskyan “revolution” (late 1950s, early 1960s)

• Who were the structuralists?
And others...

• Bernard Bloch, George Trager, Henry Lee Smith, Archibald Hill, Martin Joos, Morris Swadesh, Stanley Newman, Carl Voegelin, Charles Fries, ...
Structuralist phonology

• A.k.a. “taxonomic” phonology, i.e. ‘not explanatory’
  “its striking reliance, in almost all versions, on procedures of segmentation and classification (identification of variants)” (Chomsky 1964)
Structuralist model of grammar

• Levels of representation

Morphological component
  ↓ (morphological rules)
Morphophonemic component
  ↓ (morphophonemic rules)
Phonemic component
  ↓ (phonological rules)
Phonetic component
Structuralist prohibition against “mixing levels”

- Only “purely” phonological information could be used to abstract away from phonetic rep
- Alternations—evidence from morphophonemic component—could not be a source of evidence for phonological component
- Why mixing of levels outlawed
  - assumptions about how linguistic data is processed, like descriptive linguist working from the “bottom up”
Biuniqueness requirement

• ‘each sequence of phones is represented by a unique sequence of phonemes, and ... each sequence of phonemes represents a unique sequence of phones.’

• not okay: /t/ /d/ 
  [tʰ t d]

• okay: /t/ /d/ 
  [tʰ t d]
How structuralists handled neutralization

• “complete overlapping”

• German Final Devoicing
  – [bunt] ‘colorful’       [buntes] ‘colorful’ (gen.)

• Most abstract phonological representations possible:
  – /bunt/           /buntes/
  – /bunt/           /bundes/

• Since [t d] contrast ([buntes] vs. [bundes]), by Biuniqueness [t] cannot belong to both /t/ and /d/
Morphophonemic level of representation

• A.k.a. dictionary level of representation

• Represents relationship between forms of ‘federation’
  – |bunt| |bunt-es| ‘colorful’
  – |bund| |bund-es| ‘federation’
Argument against biuniqueness

• Made by Morris Halle, 1957 Linguistic Society of America meeting
Russian obstruent voicing assimilation

- Obstruents agree in voicing with following obstruent

\[-\text{sonorant}] \rightarrow [\alpha \text{ voiced}] / \quad [\sim \text{sonorant}] \]

- [t] [d], [tʃ] [dʒ] contrast before vowels (and sonorants)
  - [tam] ‘there’
  - [dam] ‘I’ll give’
  - [xo|tʃitʃe] ‘you want’
  - [xo|dʒitʃe] ‘walk!’
Voicing alternations involving /t d/

- Structuralist analysis
- Voicing Assimilation (for [t]~[d], [tʲ]~[dʲ]) must be a morphophonemic rule (by Biuniqueness, since [t], [d]; [tʲ] [dʲ] contrast)

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<thead>
<tr>
<th>phonetic</th>
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<th>morphophonemic</th>
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<tbody>
<tr>
<td>[datʲli]</td>
<td>/datʲli/</td>
<td></td>
</tr>
<tr>
<td>[dadʲbi]</td>
<td>/dadʲbi/</td>
<td></td>
</tr>
<tr>
<td>[godlʲi]</td>
<td>/godlʲi/</td>
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<tr>
<td>[godbʲ]</td>
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More alternations

• In Russian, [x] [ɣ], [ts] [dz], [ʧ] [ʤ] are in complementary distribution, also participate in obstruent voicing assimilation

• Structuralist analysis

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Halle’s observation

- Russian Voicing Assimilation is a morphophonemic rule when segments contrast ([d]~[t]), a phonemic rule when segments in complementary distribution ([ʧ]~[ʤ])
- Structuralists’ theory therefore leads to loss of generalization
Result

• General abandonment of biuniqueness as constraint on phonological representations.

• Collapse of phonological and morphophonemic levels of representation in generative phonological approaches.
  – Generative “underlying representation” = structuralists’ morphophonemic level.
Development of classical generative phonology

- Chomsky and Halle 1968 and later work
  - Phonological representations consist of features (< Trubetzkoy)
  - Restrict architecture for description
    - formal simplicity should reflect phonological naturalness
  - Source-oriented model
    - Rules generate phonetic representations from more abstract phonological ones.
Abstract analyses on the rise

• Underlying representations in generative phonology can be more abstract---further removed from surface pronunciation---than a phonemic representation that abstracts away from complementary distribution

• (Later backlash against abstractness)