Autosegmental Phonology
Autosegmental Phonology

- Most languages have tone
  - Igala in Nigeria
    - Two high tones áwó  “fowl”
    - High then low áwò “hole”
    - High then mid áwō “comb”
Autosegmental Phonology

- Chinese uses tone for lexical contrast
  - Mid tone  mā  “mother”
  - High tone  má  “hemp”
  - Low tone  mà  “scold”
  - Rising tone  mˇa  “horse”
  - Neutral tone  ma  question particle
  - Falling tone  mâ  ---
  - **Listen**: mā má mˇa mà
Autosegmental Phonology

- Luganda uses tone for grammatical function
- Àtúsómélá He reads for us (main clause)
- Àtúsómèlá He who reads for us (subordinate clause)
Autosegmental Phonology

- Two kinds of tone
  - Register tone
    - Tone stays stable
      - mā
      - má
      - mà
Autosegmental Phonology

• Two kinds of tone
  • Register tone
    – Tone stays stable
      • mǎ
      • má
      • mà
  • Contour tone
    – Tone changes pitch
      • mǎ
      • mà
Autosegmental Phonology

• Generativist view of a segment
  • /e/ is
    • - High
    • - Low
    • - Back
    • + ATR
Autosegmental Phonology

• Generativist view of a segment
  • /e/ is
    • - High
    • - Low
    • - Back
    • + ATR
  • So if it has a high tone add a feature
    • - High
    • - Low
    • - Back
    • + ATR
    • +high tone
Autosegmental Phonology

• Generativist view of a segment
  • So you could just add a new set of features
    - \( \overline{\text{high}}, \overline{\text{rising}}, \text{etc.} \)
Autosegmental Phonology

- **Generativist view of a segment**
  - So you could just add a new set of features
    - \(\bar{\text{high}}, \bar{\text{rising}}, \text{etc.}\)
  - **Problem (from Margi)**
    - Indefinite  definite
    - sál  sálári
    - fà  fàrì
    - tì  tjári
  - You could have a rule that makes high into rising
Autosegmental Phonology

• Generativist view of a segment
  • So you could just add a new set of features
    – ✓ high, ✓rising, etc.
  • Problem (from Mende)
    – Word game (reverse the syllables)
    – kwélì > líkwè
    – Tones don't move with vowels
    – Tone are autonomous, autosegmental
Autosegmental Phonology

- Autosegmental theory is an enhancement of generativism
  - It claims that the features of a sound can be treated separately from other features of a sound
  - It claims that two sounds can share one feature
Autosegmental Phonology

- Tone are autosegmental

kwéli > likwè becomes

<table>
<thead>
<tr>
<th>H</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>L</td>
</tr>
</tbody>
</table>

kweli likwe

Switch syllables but keep tones in same place
Autosegmental Phonology

- Contour tones are two tones on same vowel
  - Rising tone
    \[ \text{L H} \]
    \| / \\
    o
  - Falling tone
    \[ \text{H L} \]
    \| / \\
    o
Autosegmental Phonology

• Contour tones are two tones on same vowel
  • Rule: On tone level, two identical tones together not allowed
    \[ H \quad H \quad L \quad H \quad L \]
    \[ \text{\textbackslash/} \quad \text{\textbackslash/} \quad \text{\textbackslash/} \quad \text{\textbackslash/} \]
    /sá\l + árì/ \rightarrow [sálári]
  • Rule: Two identical vowels merge
    \[ L \quad H \quad L \quad LH \quad L \]
    \[ \text{\textbackslash/} \quad \text{\textbackslash/} \quad \text{\textbackslash/} \quad \text{\textbackslash/} \]
    /fà + árì/ \rightarrow [fàrì]
  • Rule: [i] next to another vowel becomes glide to form a diphthong
    \[ L \quad H \quad L \quad LH \quad L \]
    \[ \text{\textbackslash/} \quad \text{\textbackslash/} \quad \text{\textbackslash/} \quad \text{\textbackslash/} \]
    /tì + árì/ \rightarrow [tjári]
Autosegmental Phonology

• Autosegmental is an extension to generativism
• It assumes that features can be manipulated separately from each other
• Features can be shared between segments
• If features are individuals they are autonomous from the segment--autosegmental
Autosegmental Phonology

- Generative view of /e/

\[
\begin{array}{c|c|c|c|c|}
\text{-back} & \text{-round} & \text{-high} & \text{+ ATR} & \text{-HIGH} \\
\hline
\end{array}
\]
Autosegmental Phonology

• Autosegmental view of /e/

[-high]  [+ATR]
\ /  \
V
/ \  \
[-low] [-back]
In Igbo all vowels in a word must have same ATR specification

- [i e o u] are [+ATR]
- [ɪ a ʊ ɔ] are [-ATR]

Vowel harmony tier  [+ATR]  [-ATR]
\ /
\ /
Segmental tier  riri  piri
Autosegmental Phonology

\[ \text{o zoro} \text{ he did} \quad \text{[o dɔrɔ] he pulled} \]

Vowel harmony tier \( [+\text{ATR}] \quad [+\text{ATR}] \)

\[ /\quad / \quad / \quad / \]

Segmental tier \( /\text{O + zoro}/ \quad > \quad [\text{o + zoro/}] \)

Vowel harmony tier \( [+\text{ATR}] \quad [+\text{ATR}] \)

\[ /\quad / \quad / \quad / \]

Segmental tier \( /\text{O + dɔrɔ}/ \quad > \quad [\text{ɔ + dɔrɔ/}] \)
In Desano, all words have all nasal or all oral vowels

- **Nasal tier**  
  [+nasal]  [+nasal]  
  / | | \  
  **Segmental tier**  
  /mininu/ → [mĩnĩnũ]

- **Nasal tier**  
  [-nasal]  [-nasal]  
  / | | \  
  **Segmental tier**  
  /wyariru/ → [wyariru]
Autosegmental Phonology

In English, vowels nasalize before a nasal consonant in the same syllable

- Nasal tier [±nasal] [±nasal]
- Segmental tier /pæm/ $\rightarrow$ [pãm]