24.901 Tone-2 Asian Languages

1. general
   • larger number of levels and shapes
   • transcription: Chao numbering
     Mandarin
     1. mā 55 'mother'
     2. má 35 'hemp'
     3. mà 214 'horse'
     4. mà 51 'scold'

2. register
   • In many Asian lgs. the pitch space is divided into an upper and lower region
   • parallel tones in each region
   • register often correlated with laryngeal specification of onset consonant
   • Cantonese (Bauer 1997)
     live syllables: CV:C, CVN
     high level ji 'clothes' 55
     high fall ji 'to cure' 51
     high rise ji 'chair' 25
     mid ji 'idea' 33
     low level ji 'two' 22
     low fall ji 'suspicious' 21
     low rise ji 'ear' 23
     dead syllables CVT, CV:T
     high stopped jek 'benefit' 5
     mid stopped ja:k 'to eat' 33
     mid-low stopped jek 'also' 2

     pi:n jam 'changed tones'
     high level a:-ji: 'auntie' 55
     high rising a:ji: 'no. 2' 25

     earlier suffix/particle loses its segmental structure but retains high tone

Bao (1990, 1999)
   • formal distinction between register (h,l) and "contour" (H,L)
   • contour node may be sequenced; permits four levels and parallel contours in upper and lower register
3. Middle Chinese (Norman 1988)
- ternary contrast of voiceless aspirate [ph], plain voiceless [p], and voiced [b]
- tone: four pitch shapes divided into two registers as function of laryngeal category of onset consonant

<table>
<thead>
<tr>
<th></th>
<th>ping</th>
<th>shang</th>
<th>qu</th>
<th>ru</th>
</tr>
</thead>
<tbody>
<tr>
<td>yin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>yang</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ping level, high
shang rise
qu departing, fall
ru entering, short fall, stop in coda

- tonal correspondences in Mandarin

<table>
<thead>
<tr>
<th></th>
<th>ping</th>
<th>shang</th>
<th>qu</th>
<th>ru</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yin</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Yang</td>
<td>2</td>
<td>3,4</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

Middle Chinese Beijing Mandarin correspondences (Ramsey 1989)

- 'pass through' vs. 'boy' and 'sad' vs. accompany' show the split of the MC level tone category into Modern Mandarin level high [55] vs. rise [35] based on voicing of MC onset
- the MC voiced stops merged with Modern Mandarin aspirated or plain voiceless as a function of the MC tonal category
- in ping they merged with aspirated ('boy', 'accompany', 'head')
- elsewhere they simply devoiced ('double', 'bean')
- Xu & Xu (2003) find that aspirated consonants lower F0 in Modern Mandarin
- thus the aspirated consonants would be a natural outcome in the [35] tonal context
- here F0 effects of the laryngeal contrasts determine the split of the MC ping tone as well as the direction of merger of the voiced stops
4. Sandhi-1: Mandarin (Duanmu 2000)

- Mandarin third tone sandhi: 214 -> 35 / __ 214
- cyclic vs. not
  
  \[
  [[3 3] 3] \rightarrow 2 2 3 \quad [3 [3 3]] \rightarrow 3 2 3 \approx 2 2 3
  \]

  [mai hao] jiu 'finished buying wine' \quad mai [hao jiu] 'buy good wine'

- Mandarin minor tone sandhi (in casual, fast speech)
  
  35 -> 55 / \{35, 55\} _____ X
  
  cong you bing \quad shei neng fei
  55 35 214 \rightarrow 55 55 214 \quad 35 35 55 -> 35 55 55
  'onion oil cake' \quad 'who can fly'?

- elimination of contour
- 55-2-55 preserved: too big a difference perceptually?
- Cantonese: Yip (2002:176) "Even for those speakers who have both 53 and 55 underlying tones, the high falling tone 53 becomes level 55 before another tone that begins with high, i.e. 53, 55, or 5."
- rule does not apply to 35: 53 -> 55 / ____ 5

5. Sandhi-2: Shanghai (Wu) Duanmu 1993

- se52 + pe52 \rightarrow 55 21 'three cups'
- se52 + bø23 \rightarrow 55 21 'three plates'
- sz34 + pe52 \rightarrow 33 44 'four cups'
- sz34 + bøo23 \rightarrow 33 44 'four plates'

- Contour tone separates into two components
- First syllable stressed
- loss of information from unstressed syllables
- spread in longer domains
- Shanghai has no coda consonants


- Inventory H, L, HL, LH
- sandhi-dissimilation for shape or elimination of turning point
  
  xi LH lian LH \rightarrow HH LH 'wash face'
  song HL xian HL \rightarrow LL HL 'send letter'
  kan HL shu LL \rightarrow HH LL 'read book'
  chou LL yan LL \rightarrow LH LL 'smoke cigarette'
   • as in Shanghai, initial tone preserved in two syllable sandhi and second one deleted
   • but initial tone may be shifted to second syllable when the latter is stressed
   • tone shift provides strong evidence for the Bao notation distinguishing tone contour and register

8. Citation tones:

<table>
<thead>
<tr>
<th>tone</th>
<th>example</th>
<th>tone value</th>
<th>notation</th>
<th>gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>high register</td>
<td>1 tɕi</td>
<td>441</td>
<td>HL</td>
<td>“to fill”</td>
</tr>
<tr>
<td>low register</td>
<td>2 tɕiʔ</td>
<td>323</td>
<td>MH</td>
<td>“chicken”</td>
</tr>
<tr>
<td>high register</td>
<td>3 tɕi</td>
<td>231</td>
<td>ML</td>
<td>“to ride”</td>
</tr>
<tr>
<td>low register</td>
<td>4 tɕiʔ</td>
<td>213</td>
<td>LM</td>
<td>“he/she/it”</td>
</tr>
<tr>
<td>high register</td>
<td>5 tɕiʔ</td>
<td>5</td>
<td>H?</td>
<td>“knot”</td>
</tr>
<tr>
<td>low register</td>
<td>6 tɕiʔ</td>
<td>23</td>
<td>L?</td>
<td>“straight”</td>
</tr>
</tbody>
</table>


10. Details
   • contrast of metrical structure: SW and WS (weak, strong)
   • registers
   • syllable length

11. Sandhi pattern

WS

A. 'spring' 'western calendar'
   tshyŋ tʰi či lʔ?
   441-441 441-23 citation tone
   33-441 33-4 sandhi tone

B. 'coal mine' 'hair'
   mei khwa tær faʔ
   231-231 231-5
   11-441 11-4
C. 'place'  'yesterday'
   ti fa     sa ni?
   213-441   213-23
   11-334    11-4

D. 'tongue'  'special'
   çé tæy    ta pe?
   23-21     23-5
   1-242     1-25

12. generalizations
   • tone of initial syllable retained, second is suppressed
   • initial syllable reflects underlying register of first tone
   • second syllable reflects the contour of the first syllable tone
   • second syllable register is H
   • first syllable contour is level (l)

13. analysis
   • delete noninitial tone
   • reassociate c node of surviving tone to stressed syllable
   • assign H register to stressed syll (a natural correlation in Zhenhai and cross-
     linguistically)
   • assign l to contour node of unstressed syll