

## 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.	mǎ	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

	ping	shang	qu	ru
yin				
yang				

ping	level, high	yang	voiced obstruent
shang	rise	yin	voiceless obstruent
qu	departing, fall		
ru	entering, short fall, stop in coda		

- tonal correspondences in Mandarin

	ping	shang	qu	ru
Yin	1	3	4	1,2,3,4
Yang	2	3,4	4	2

Middle Chinese Beijing Mandarin correspondences (Ramsey 1989)

MC		Mand			
t'ung <sup>1</sup>	[tʰūŋ]	t'ūng	[tʰóŋ]	55	'pass through'
dung <sup>1</sup>	[dūŋ]	t'úng	[tʰǒŋ]	35	'boy'
puai <sup>1</sup>	[pʰēi]	pēi	[péi]	55	'sad'
buai <sup>1</sup>	[bʰēi]	p'ēi	[pʰěi]	35	'accompany'
buai <sup>3</sup>	[bʰēi]	pèi	[pei]	214	'double'
dəu <sup>1</sup>	[dǔu]	t'óu	[tʰǒu]	35	'head'
dəu <sup>3</sup>	[dǔu]	tòu	[tou]	214	'bean'

- '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] -> 2 2 3                      [3 [3 3]] -> 3 2 3 ≈ 2 2 3  
[mai hao] jiu 'finished buying wine'      mai [hao jiu] 'buy good wine'

- Mandarin minor tone sandhi (in casual, fast speech)

35 -> 55 / {35, 55} \_\_\_\_ X

cong you bing                      shei neng fei  
55 35 214 -> 55 55 214          35 35 55 -> 35 55 55  
'onion oil cake'                      '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 -> 55 21 'three cups'  
se52 + bø23 -> 55 21 'three plates'  
sz34 + pe52 -> 33 44 'four cups'  
sz34 + bøo23 -> 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

#### 6. Sandhi-3: Tianjin (Chen 1985, 2000)

- Inventory      H, L, HL, LH
- sandhi-dissimilation for shape or elimination of turning point

xi LH lian LH                      ->      HH LH                      'wash face'  
song HL xian HL                      ->      LL HL                      'send letter'  
kan HL shu LL                      ->      HH LL                      'read book'  
chou LL yan LL                      ->      LH LL                      'smoke cigarette'

7. Sandhi-4: Zhenhai (N. Wu, Rose 1990, Li 2003)

- 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:

		tone	example	tone value	notation	gloss
long tone	high register	1	tɕi	441	HL	"to fill"
		2	tɕi?	323	MH	"chicken"
	low register	3	tɕi	231	ML	"to ride"
		4	tɕi?	213	LM	"he/she/it"
short tone	high register	5	tɕi?	5	H?	"knot"
	low register	6	tɕe?	23	L?	"straight"

9. Bao (1999) representation

HL	MH	ML	LM	H?	L?
tone 1	tone 2	tone 3	tone 4	tone 5	tone 6
∧	∧	∧	∧	∧	∧
r c	r c	r c	r c	r c	r c
∧	∧	∧	∧		
h H L	h L H	l H L	l L H	h H	l L

10. Details

- contrast of metrical structure: SW and WS (weak, strong)
- registers
- syllable length

11. Sandhi pattern

WS

A.	'spring'	'western calendar'	
	tshyŋ thr	ɕi li?	
	441-441	441-23	citation tone
	33-441	33-4	sandhi tone

B.	'coal mine'	'hair'
	mei khwa	tɕey fa?
	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'
	ɕɛ tɕey	ta pɕi?
	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

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