

# Sounds of Standard Chinese



09/13/2016

# Review

- z [ts] and c [ts<sup>h</sup>]:
  - 早 zao 3 ‘morning’ vs. 草 cao 3 ‘grass’
- zh [tʂ] and ch [tʂ<sup>h</sup>]:
  - 找 zhao 3 ‘to look for’ 炒 vs zhao 3 ‘to fry’
- s [s] and sh [ʂ]:
  - 十 shi 2 四 si 4 ‘fourteen’
- r [ʐ]: 人 ren 2 ‘people’
- x [ɕ]: 笑 xiao 4 ‘laugh’

# j [tɕ] and q [tɕʰ]

- Voiceless alveo-palatal affricate
- Unaspirated: j [tɕ]
  - 鸡 ji 1 [tɕi] ‘chicken’
- Aspirated: q [tɕʰ]
  - 七 qi 1 [tɕʰi] ‘seven’
- 机器 ji 1 qi 4 [tɕi tɕʰi] ‘machine’

# h [x]

- Voiceless velar fricative
- [xu] 'lake' 湖 hu 2
- [xai] 'sea' 海 hai 3
- [xʁ] 'river' 河 he 2
- [xʁ] 'and' 和 he 2
- [xʁ] 'drink' 喝 he 1
- [xɛn] 'the biggest ethnic group in China' 汉 han 4

# y [ɥ]

- Labialized palatal approximant

Vowels	Glides
u	w
i	j
y	ɥ

- 远 yuan 3 [ɥɛn] ‘distant’
- 永 yong 2 远 yuan 3 [jʊŋ ɥɛn] ‘eternity’

# Don't Forget Pinyin

• <u>IPA</u>	<u>Pinyin</u>
• p, p <sup>h</sup> , m, f	b, p, m, f
• t, t <sup>h</sup> , n, l	d, t, n, l
• k, k <sup>h</sup> , x	g, k, h
• tʂ, tʂ <sup>h</sup> , ʂ	j, q, x
• tʃ, tʃ <sup>h</sup> , ʃ, ɹ	zh, ch, sh, r
• ts, ts <sup>h</sup> , s	z, c, s
• j, w, ɥ	y/i, w/u, yu/ü

# Exercise 1

- Transcribe the sound in either pinyin or IPA.
  - 1. 八 1 'eight' \_\_\_\_
  - 2. 爬 2 'crawl' \_\_\_\_
  - 3. 马 3 'horse' \_\_\_\_
  - 4. 拉 1 'pull' \_\_\_\_
  - 5. 拿 2 'take' \_\_\_\_
  - 6. 戴 4 'wear' \_\_\_\_
  - 7. 改 3 'change' \_\_\_\_
  - 8. 开 1 'open' \_\_\_\_
  - 9. 摘 1 'pick' \_\_\_\_
  - 10. 菜 4 'vegetable' \_\_\_\_
  - 11. 年 2 'year' \_\_\_\_
  - 12. 钱 2 'money' \_\_\_\_

# Chinese Syllables

- Syllable = Initial (Onset) + Final (Rhyme)
- Final (Rhyme) = Medial + Nucleus + Coda
- Initial: Consonant
- Medial: Glide\*
- Nucleus: Vowel(s)
- Coda: Nasal



# Syllable structure

- GV: [wu] 五 ‘five’ (wu 3)
- GVN: [wuan] 万 ‘10,000’ (wan 4)
- CV: [ba] 八 ‘eight’ (ba 1)
- CVV: [bai] 百 ‘hundred’ (bai 3)
- CVN: [san] 三 ‘three’ (san 1)
- CGVV: [ljou] 六 ‘six’ (liu4)
- CGVN: [ljan] 两 ‘two(both)’ (liang 3)
- Vr: [ə] 二 ‘two(second)’ (er 4)

# Finals

	a [a]	o [ɔ]	e [ə]	e [ɛ]	ai [aɪ]	ei [eɪ]	au [aʊ]	ou [oʊ]	an [an]	en [ən]	ang [aŋ]	eng [ɛŋ]	er [ə]	i [i]
yi [j]	ia [ja]			ie [jɛ]	iai [jaɪ]		iau [jaʊ]	iou [joʊ]	ian [jan]	in [jən]	iang [jaŋ]	ing [jɛŋ]		
wu [w]	ua [wa]	uo [wo]			uai [waɪ]	uei [weɪ]			uan [wan]	uen [wən]	uang [waŋ]	ung [wɛŋ]		
yu [ɥ]				iue [ɥɛ]					uan [ɥan]	iun [ɥən]		iung [ɥɛŋ]		

- /ə/ → [ɛ] / [j, ɥ] \_\_\_\_
- /a/ → [ɑ] / \_\_\_\_ [ŋ]
- /i/ → [i] / [tɕ, tɕ<sup>h</sup>, ɕ, ɹ, ts, ts<sup>h</sup>, s] \_\_\_\_

# Exercise 2

- Transcribe the sound in either pinyin or IPA.
  - 1. 跑 3 'run' \_\_\_\_
  - 2. 别 2 'not' \_\_\_\_
  - 3. 亮 4 'bright' \_\_\_\_
  - 4. 贵 4 'expensive' \_\_\_\_
  - 5. 花 1 'flower' \_\_\_\_

# Supra-segmentals

- Prosodic properties
  - Pitch
  - Length
  - Loudness
  - Stress: higher pitch, longer, louder
    - pérmít vs. permít

# Pitch

- Intonation

- Pitch movement that is not related to differences in word meaning
  - Wh-questions
  - Listing

- Tone

- Pitch movement that is used to distinguish word meaning
  - Level tone
  - Contour tone

# Tones in Standard Chinese

Tone #	Pitch value	Diacritic	Character	Gloss
1 <sup>st</sup>	[ma55]	[mā]	妈	'mother'
2 <sup>nd</sup>	[ma34]	[má]	麻	'hemp'
3 <sup>rd</sup>	[ma214]	[mǎ]	妈	'horse'
4 <sup>th</sup>	[ma51]	[mà]	骂	'to scold'

# Exercise 3

- Mark the tone.
  - 1. lian 'face' \_\_\_\_
  - 2. qiang 'gun' \_\_\_\_
  - 3. pa 'scared' \_\_\_\_
  - 4. pin 'patch up' \_\_\_\_
  - 5. gua 'scrape' \_\_\_\_

# Tone Sandhi

- Tonal alternations when syllables are connected in natural speech
- No consecutive 3<sup>rd</sup>-tone syllables
  - /ní / + /hǎo/ → [ní hǎo]  
3        3        2    3  
you      good      'hello'
- A third tone changes to the second tone if followed by another third tone
  - (3+3) → (2 3)



# Three Third-Tones

- $((3+3)+3) \rightarrow ((2\ 3)+3) \rightarrow (2\ 2\ 3)$

- /shǔi-cǎi/ + /bǐ/  $\rightarrow$  [shúi cái bǐ]

3      3      3                  2    2    3

water-painting pen      ‘water painting brush’

- $(3+(3+3)) \rightarrow (3+(2\ 3)) \rightarrow (3\ 2\ 3)$

- /mǔ / + /lǎo-hǔ/  $\rightarrow$  [mǔ láo hǔ]

3                  3    3                  3    2    3

female      tiger                  ‘tigress’

# 'One' and 'No'

- yī 'one'

- (1+1) → (4 1)

- (1+2) → (4 2)

- (1+3) → (4 3)

- (1+4) → (2 4)

yì tiān

'one day'

yì nián

'one year'

yì wǎn

'one night'

yí cì

'one time'

- bù 'no'

- (4+1)

- (4+2)

- (4+3)

- (4+4) → (2 4)

bù shuō

'not speak'

bù néng

'not able'

bù hǎo

'not good'

bú yào

'not want'