



Palacký University
Olomouc

Acquisition of Chinese Phonological System

A Case Study of Czech Native Speakers

CPD-CT2016

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Introduction

- perception of the Chinese phonological system by Czech native speakers
- most productive types of errors: initial, final, tone combination
- comparison with production of speech sounds
- the role of the native language

- target group: first-year undergraduate students of Chinese Philology
- analysis of dictation tests
- tool for testing the students' perception ability at the end of the *Introduction to Chinese Phonology* course
- since 2002, over 1,000 tests were collected
- Oldřich Švarný, David Uher



Structure of the Dictation Test

- 100 disyllabic compounds, divided into four parts:

01-25 initials

01	l ái	r ì	26	b		zh		51	pingdeng	76	
02	ch ú	q ù	27	t		x		52	houguo	77	
03	s ù	x iě	28	b		n		53	dongfeng	78	
04	j ià	zh í	29	y		x		54	jiejue	79	
05	k ū	g ān	30	h		t		55	jinyu	80	
06	ch ā	c uò	31	f		m		56	lianxu	81	
07	t è	d ì	32	j		x		57	haijun	82	
08	sh ǎo	x ū	33	q		x		58	gaobie	83	
09	z ì	zh uàn	34	t		x		59	tigang	84	
10	r è	l iè	35	r		ch		60	gudai	85	
11	p ù	b ù	36	z		l		61	huanying	86	
12	z á	j ì	37	x		q		62	qichuang	87	
13	x ùn	s ù	38	j		q		63	paidui	88	
14	f ù	h è	39	d		zh		64	huacao	89	
15	c ān	ch ē	40	w		y		65	didian	90	
16	sh ū	s àn	41	sh		r		66	yinyue	91	
17	d ài	t ì	42	y		j		67	yinman	92	
18	b ī	p ò	43	l		q		68	shugen	93	
19	q ū	ch ú	44	x		y		69	yichuan	94	
20	x iāo	sh òu	45	sh		sh		70	tudi	95	
21	zh ì	z uò	46	j		q		71	sangshi	96	
22	g ǎn	k ǎi	47	d		f		72	yanchu	97	
23	s ù	sh è	48	d		s		73	budui	98	
24	h ào	f èi	49	d		q		74	lianhuan	99	
25	zh á	j ì	50	ch		k		75	yunxing	100	



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26-50 finals

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25	zh	á	j	ì	50	ch	én	k	ěn	75	yùnxíng	100	dāngxīn



Analysis

- tests from academic years 2002/03 and 2004/05
- 265 tests
- orthography errors:
 - influence of the Czech orthography system
 - yán yén
 - xiū xiōu
 - dōng tūng
 - hǎifēng chǎifēng
 - wrong position of the tone mark: **caí shǔi jǐe lían**
 - errors in umlaut: **jüé, jǔn, luè**
- tests with less than 10 errors (24%)
- errors in tones less than 20 errors (51%)



Initials

- errors occur rarely, small sample

manner of articulation →	Stops		Fricatives	Nasals	Others
	unaspirated	aspirated			
place of articulation ↓					
Labials	b [p]	p [p']	f [f]	m [m]	
Alveolars	d [t]	t [t']		n [n]	l [l]
Dentals	z [ts]	c [ts']	s [s]		
Retroflexes	zh [tʂ]	ch [tʂ']	sh [ʂ]		r [ʐ]
Palatals	j [tɕ]	q [tɕ']	x [ç]		
Velars	g [k]	k [k']	h [x]		

(Norman, 1988, p. 139; simplified)

- palatals q/x: xúnsù **qúnsù**
- aspirated stops c/ ch/ q: qìchē **cìchē** / chǔcún **qǔcún** / chāoqún **qāoqún**
- fricatives sh/x: shìxiàng **xìxiàng** / xīnshāng **xīnxǎng**
- velars k/g: kékě **gékě** / chéngkěn **chénggěn**



Finals

others	5%	
apical vowels vs. mid back unrounded vowel e	9%	quèshí – quèshé
unrounded front high –i vs. rounded –ü	16%	rénqún – réngín
nasal finals	70%	

- ❑ alveolar or velar nasals (-in/ -ing, -uan/-uang, -an/-ang + –ong noted as –un)

guāngmíng guāngmín guānmíng

bānzhǎng bāngzhǎng

gǎndòng gǎndùn

- ❑ finals –ang and –eng **mùpéng mùpáng**

- ❑ syllable ying: noted as **yong, yun, yung**

- ❑ final –un: noted as –uan, –ang, –ong

dōngsǔn dōngsuǎn dōngsǎng dōngsǒng



Tones

1 – 1	0,6%
1 – 2	4,7%
1 – 3	14,4%
1 – 4	2,2%
2 – 1	8,4%
2 – 2	0,6%
2 – 3	7,8%
2 – 4	11,3%
3 – 1	8,8%
3 – 2	4,7%
3 – 4	15,3%
4 – 1	2,8%
4 – 2	6,3%
4 – 3	10,9%
4 – 4	1,3%

39% as **2 – 3**
33% as 1 – 2

89% as **3 – 4**

78% as **2 – 4**

51% as **2 – 3**
20% as 4 – 2

first syllable	68%
second syllable	22%
both syllables	9%



Conclusion

– perception

- initials: velars k/g, aspirated stops c/ch/q, fricatives s/sh/x
- finals: finals with nasal ending, front high vowels, apical vowels –i/ – e
- tone combinations: 1 – 3, 2 – 4, 3 – 4, 4 – 3

– production

- initials: palatals q- and x-
- finals: same as above
- tone combinations: 2 – 4, 3 – 4, **2 – 3, 3 – 2**

- influence of the Czech phonological system on **acquisition** of the Chinese language speech sounds



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THANK YOU FOR YOUR ATTENTION!

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