

CHAPTER 1

INTRODUCTION

1.1 Background

Located in the distribution area of the Min dialect¹, Taiwan has its own diversity of language contact and development. As the official language and lingua franca in Taiwan, Mandarin has been strongly promoted since 1945 (Tse 1986) and obtains its active position. Taiwanese is more frequently used because its native speakers occupy up to 75% of the population of Taiwan (Tung 1991). According to the survey of Berg (2000), 90% of the respondents in his study considered themselves to have bilingual proficiency of Taiwanese and Mandarin. Therefore, Mandarin and Taiwanese have their dominances in particular aspects, and their mutual influence is inevitable.

1.2 Research Issues

Taiwanese-accented Mandarin (hereafter TM), which is one of the products of the phonological influences between Taiwanese and Mandarin, is the focus of the thesis. Previous phonological studies about TM (Kubler 1985, Tsao 2000) describe TM phenomena in detail; however, they seem to lack a large number of data for

¹ The Min dialect, which is composed of the Northern Min language and the Southern Min language, is one of the seven dialect families of Chinese (Yuan 1989), and the other dialect families include Mandarin, Wu, Yue, Hakka, Xiang, and Gan.

analysis in common. The purpose of this study is to provide a more objective and quantitative analysis of the Taiwanese accent in Mandarin speech. To achieve this goal, we have two tasks to be fulfilled. The first task is the establishment of the TM corpus. The collected data and the coding in the TM corpus are introduced, and moreover, the patterns found in the corpus are analyzed in the thesis. The second task is to provide an Optimality Theory (Prince and Smolensky 1993) (hereafter OT) analysis of the TM phenomena.

The theoretical questions discussed in the study are as follows. First, how the monophthongization and fricative reconfiguration in TM are treated in the perspective of OT, and what are the relevant constraints? Second, how do the constraints deal with TM monophthongization and fricative reconfiguration² (Paradis and Prunet 2000; Kenstowicz 2001) ranked in Taiwanese and Mandarin? Do they require a re-ranking in the TM hierarchy? Third, through the case of TM accent formation, how could we evaluate the advantages or the disadvantages of the constraint-based grammar? Further, this thesis concentrates on the monophthongization and fricative reconfiguration in TM, because the two phonological processes show opposite operations in this accent formation. Monophthongization is the process in which two segments become one segment (for example, /ej/ becomes /e/), whereas

² ‘Unpacking’ in Paradis (2000) and ‘reconfiguration’ in Kenstowicz (2001) refer to the same concept.

reconfiguration is the process in which one segment becomes two segments (for example, /ɥ/ becomes /ju/).

Based on Kubler's (1985) and Tsao's (2000) descriptions and Wu's (2004; and Hsiao 2005) observation of TM, the present corpus collects syllables containing /ej/, /ow/, /je/, and /wo/ and the fricative /f/ in the TM speech. These structures reveal monophthongization and fricative reconfiguration behaviors in the accent.

1.3 Phonological Basics

(1)

		vowels											
		Taiwanese ³						Mandarin ⁴					
		front		central		back		front		central		back	
		-rnd	+rnd	-rnd	+rnd	-rnd	+rnd	-rnd	+rnd	-rnd	+rnd	-rnd	+rnd
high	i,ĩ							u					
mid	e,ẽ							o				ɤ	o
						ɔ,õ			e		ə		
low				a,ã						a			

Chart (1) shows the vowel systems of Taiwanese and Mandarin. The high front

³ The sound inventory of Taiwanese here is principally based on Chung (1996) with minor modifications. Chung uses the sign 'y' to indicate the high front unrounded glide, but this thesis uses 'ɥ' to refer to the same glide.

⁴ With minor modifications of Yin (1991), the sound inventory of Mandarin adds the upper-mid back unrounded vowel /ɤ/, which is listed as one of the Mandarin vowels in Cheng (1973). Also, this study uses 'y', instead of 'ü', to indicate the high front rounded vowel, and adds the velar nasal /ŋ/ and the high front unrounded glide /ɥ/, which are not included in Yin, into the consonant chart of Mandarin.

rounded vowel /y/, high central vowel /i/, and the close-mid back unrounded tense vowel /ɤ/ in Mandarin do not occur in Taiwanese. On the other hand, Taiwanese has nasal vowels /ĩ/, /ẽ/, /ã/, and /õ/ while Mandarin does not.

The consonants of Taiwanese and Mandarin are listed in the following charts:

(2)

Taiwanese consonants							
	bilabial	labiodental	alveolar	retroflex	palatal	velar	glottal
stop	p p ^h b		t t ^h			k k ^h g	ʔ
fricative			s z				h
affricate			ts ts ^h				
nasal	m		n				
lateral			l				
glide	(w)				j	w	

(3)

Mandarin consonants							
	bilabial	labiodental	alveolar	retroflex	palatal	velar	glottal
stop	p p ^h		t t ^h			k, k ^h	
fricative		f	s	ʂ ʐ	ç	x	
affricate			ts ts ^h	tʂ tʂ ^h	tç tç ^h		
nasal	m		n			ŋ	
lateral			l r				
glide	(ɥ)				j ɥ	w	

Taiwanese has the voiced bilabial stop /b/, the voiced alveolar fricative /z/, the glottal fricative /h/, and the glottal stop /ʔ/, whereas Mandarin does not; Mandarin has the voiceless labio-dental fricative /f/, the alveolar liquid /r/, and the voiceless velar

fricative /x/, but those sounds do not appear in Taiwanese. Taiwanese does not have a rounded palatal glide /ɥ/, nor any retroflexed consonant. The palatal sounds /tɕ, tɕʰ, ɕ/ listed in (3) follows the tradition (Cheng 1973), but they are in fact in complementary distribution with their alveolar counterparts /ts, tsʰ, s/, the retroflex counterparts /tʂ, tʂʰ, ʂ/, and the velar counterparts /k, kʰ, x/. The palatal sounds / tɕ, tɕʰ, ɕ/ only occur before the high vowels /i, y/ and the glides /j, ɥ/ respectively, as shown in (4).

(Duanmu 2000:27)

(4)

Series	/tɕ, tɕʰ, ɕ/	/k, kʰ, x/	/ts, tsʰ, s/	/tʂ, tʂʰ, ʂ/
with /j ɥ/, /i y/	yes	no	no	no
without /j ɥ/, /i y/	no	yes	yes	yes

Diagrams (5) and (6) present rime structures of Taiwanese and Mandarin.

(5) Taiwanese rime structure⁵

	i/ĩ	e/ẽ	a/ã	ja/jã	wa/wã	o/õ	jo/jõ	ũ	we/wẽ	ɔ
-i			aj/ãj		waj/wãj			ui/ũĩ		
-u	iu/ĩũ		aw/ãw	jaw/jãw						
-m/p	im/p		am/p	jam/p						
-n/t	in/t		an/t	jan/t	wan/t			un/t		
-ŋ/k		eŋ/k	aŋ/k	jaŋ/k		oŋ/k	joŋ/k			

⁵ The Taiwanese rime structure is based on Chung (1996:50) with some modifications. Chung uses VV to mean diphthongs, whereas we use VG or GV to indicate diphthongs.

Excluded two syllabic nasals /m̩, ŋ̩/, diagram (5) shows 56 rimes of Taiwanese. Taiwanese allows three pairs of consonants m/p, n/t, and ŋ/k to occur in coda position. The combinations /je, ej, wo, ow/ are not allowed in Taiwanese, and Chung (1996) calls this phenomenon as “Dissimilatory Constraint.”

(6) Mandarin rime structure⁶

ī	i	u	y	a	ɤ	
aj	ej	aw	ow			
ja	je	wa	wo	ɥe		
jaw	jow	waj	wej			
an	aŋ	ən	əŋ	in	iŋ	uŋ, yŋ
jen	jan	wan	waŋ	wən	ɥen	ɥaŋ

Mandarin has 34 rimes, and only two nasals /n, ŋ/ are allowed in coda position. As shown in diagram (6), the combinations /je, ej, wo, ow/ are legal structures in Mandarin. In chapter 4, we will show how these phonotactic differences can be accounted for by OT.

1.4 Organization of the Study

This thesis has seven chapters, and the organization is as follows. Chapter 2

⁶ The Mandarin rime structure is based on Chu (2004:78) with some modifications. Chu chooses VV to indicate diphthongs, whereas we use VG or GV to indicate diphthongs. In Chu, /i/ represents three apical vowels /ɿ, ʅ, ɻ/.

reviews some studies of accents, the related phonological theories, and studies with the application of corpus. Chapter 3 illustrates the design of the present TM corpus and shows the statistic information sorted in the corpus. Chapter 4 applies an OT approach to the TM postnuclear and prenuclear glides. Chapter 5 is the analysis of the fricative /f/ in TM. Chapter 6 concludes the thesis.