

A Grammar of Mandarin Chinese

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Table of Contents

CHAPTER 1. INTRODUCTION	1
1.1 A BRIEF HISTORY.....	2
1.2 THE CHINESE DIALECTS.....	5
1.2.1 <i>The Northern Dialect</i>	7
1.2.2 <i>Yue</i>	11
1.2.3 <i>Min</i>	14
1.2.4 <i>Kejia</i>	17
1.2.5 <i>Wu</i>	19
CHAPTER 2. PHONETICS AND PHONOLOGY	23
2.1 THE SOUNDS.....	24
2.1.1 <i>Consonants</i>	25
2.1.2 <i>Vowels</i>	26
2.2 THE SYLLABLE.....	27
2.2.1 <i>The Initial And the Final</i>	29
2.2.2 <i>Phonotactic Constraints</i>	34
2.3 THE PROCESSES.....	36
2.3.1 <i>Consonants</i>	37
2.3.2 <i>Vowels</i>	39
2.3.3 <i>Pinyin and IPA</i>	41
2.4 THE TONES.....	44
2.4.1 <i>Basic Tones</i>	44
2.4.2 <i>Neutral Tone</i>	48
CHAPTER 3. MORPHOLOGY	52
3.1 THE MORPHEME.....	52
3.1.1 <i>Monosyllabicity</i>	52
3.1.2 <i>Free and Bound</i>	54
3.2 THE WORD.....	55
3.3 WORD STRUCTURE.....	55
3.3.1 <i>Affixation</i>	56
3.3.2 <i>Compounding</i>	62
3.3.3 <i>Reduplication</i>	69
3.3.4 <i>Abbreviations</i>	78
3.3.5 <i>Disyllabicity</i>	82
3.4 HOMOPHONES.....	84
3.4.1 <i>Lucky and Taboo Expressions</i>	85
3.5 WORD STRESS.....	86
3.5.1 <i>Meaningful Stress</i>	87
3.6 TRANSLITERATION OF FOREIGN WORDS.....	88
3.6.1 <i>Sound Route</i>	89
3.6.2 <i>Meaning Route</i>	90
3.6.3 <i>Sound and Meaning Combined</i>	91
3.6.4 <i>From Cantonese</i>	92
CHAPTER 4. PARTS OF SPEECH	94
4.1 NOUNS.....	96

4.1.1	Types of Nouns	96	5.5.1	Yes-or-No Questions.....	176
4.1.2	Syntactic Properties	97	5.5.2	Wh-Questions	179
4.2	VERBS	99	5.5.3	Choice and Counterfactual Questions.....	181
4.2.1	Types of Verbs	99	5.6	COMPLEX SENTENCES	182
4.2.2	Syntactic Properties	100	5.6.1	Coordinate Complex Sentences.....	183
4.3	ADJECTIVES.....	103	5.6.2	Endocentric Complex Sentences.....	186
4.3.1	Types of Adjectives.....	103			
4.3.2	Syntactic Properties	104			
4.4	NUMBERS	105			
4.4.1	Types of Numbers.....	105			
4.4.2	Syntactic Properties	106			
4.5	CLASSIFIERS	106			
4.5.1	Types of Classifiers.....	107			
4.5.2	Syntactic Properties	108			
4.6	PRONOUNS.....	108			
4.6.1	Types of Pronouns.....	108			
4.6.2	Syntactic Properties	110			
4.7	ADVERBS.....	111			
4.7.1	Types of Adverbs	111			
4.7.2	Syntactic Properties	112			
4.8	PREPOSITIONS.....	112			
4.8.1	Types of Prepositions	112			
4.8.2	Syntactic Properties	113			
4.9	CONJUNCTIONS.....	114			
4.9.1	Types of Conjunctions	114			
4.9.2	Syntactic Properties	115			
4.10	AUXILIARY PARTICLES.....	117			
4.10.1	Types of Auxiliary Particles	117			
4.10.2	Syntactic Properties	117			
CHAPTER 5	SYNTAX	120			
5.1	GENERAL CHARACTERISTICS	122			
5.2	PHRASES.....	126			
5.2.1	Noun Phrases	127			
5.2.2	Verb Phrases	132			
5.2.3	Adjective Phrases	143			
5.2.4	Prepositional Phrase.....	146			
5.3	FUNCTIONAL COMPONENTS.....	151			
5.3.1	Subjects	151			
5.3.2	Predicates.....	153			
5.3.3	Objects.....	154			
5.3.4	Attributives	156			
5.3.5	Adverbials.....	157			
5.3.6	Complements	158			
5.3.7	Functional Usage of Various Words and Phrases	163			
5.4	ASPECTS AND NEGATION.....	168			
5.4.1	The Perfective Aspect.....	169			
5.4.2	The Experiential Aspect.....	171			
5.4.3	The Progressive Aspect.....	173			
5.4.4	Negation	174			
5.5	INTERROGATIVE SENTENCES	176			

To my beloved mother, Liu Sui

献给我慈祥的母亲隋柳

Preface

I first thought of writing a book about the linguistics of Mandarin Chinese some ten years ago while teaching a course on this subject at the University of Victoria, British Columbia, Canada. I found that in preparing for my lectures there were no published works in English specifically on the major aspects of Mandarin from a descriptive, linguistic perspective, rather, just a few grammar books on the prescriptive, pedagogical elements of Mandarin. There were excellent works such as Chinese (1988) by Jerry Norman and Languages of China (1987) by Robert Ramsey. Both of these books focus on the major Chinese dialects and more, rather than aspects of Mandarin. The well-known classics such as A Grammar of Spoken Chinese (1968) by Yuen Ren Chao and Mandarin Chinese: A Functional Reference Grammar (1981) by Charles Li and Sandra Thompson deal primarily with the syntax, rather than the phonology of Mandarin. In China, there are a good number of grammar books on Mandarin, but all are in Chinese and written in a descriptive framework somewhat unfamiliar to linguists in the West. Additionally, I was presented with the problem of approaching the Mandarin aspects from a more or less current theoretical perspective. Thus, after teaching the course for nearly ten years while all the time hoping that such a book would come along, I decided in 1999 that I should write one such book myself. Hence the birth of the current book.

This book may be used by both beginners and professionals. It can be used as a textbook for Mandarin linguistics, or by professionals as a reference book on the major aspects of the language. There are parts in which some long standing theoretical issues are dealt with; and there are parts in which putative solutions are proposed which, I hope, will provoke debate or lead researchers into further studies.

In the course of writing this book, I received generous help and support from many individuals. While it is not possible to mention everyone here, I will take this opportunity to express my gratitude to a few. My thanks are due first of all to my colleagues, Drs. Thomas M. Hess, Daniel J. Bryant and Edward E. Owen, to my student Mr. Darryl Sterk and my graduate students Miss Lei Hong and Ms. Lili Ma. Each read at least three chapters of the book, and provided most valuable comments. I am particularly indebted to Professor Hess, who gave a final careful perusal of the whole book and not only provided valuable comments but also corrected typographic errors and inconsistencies. I am also grateful to my many students, who, during my ten years of teaching Chinese linguistics, have contributed much to my knowledge of the field through their own research and through our discussion and debate in and out of class. Finally, I thank my dear mother. As a mother of two children myself, holding a full-time academic appointment, I could not have found the time to write this book if my seventy-five year old mother had not taken on the domestic chores and cared for my five-year-old daughter.

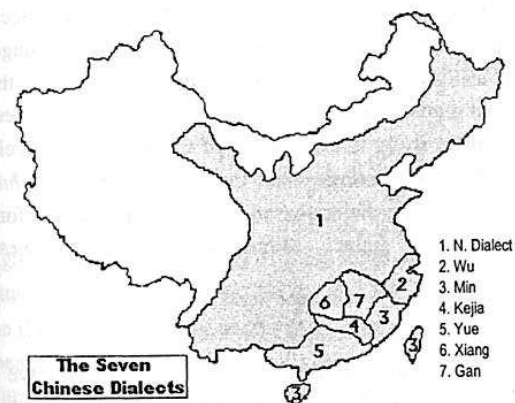
Needless to say, all errors in this book are entirely mine.

January 17, 2001

Chapter 1. Introduction

Mandarin Chinese claims the largest number of speakers among all languages of the world. According to *Ethnologue: Languages of the World* (Grimes 2000), Mandarin has 885 million speakers, surpassing English, the most widely-spoken language, by 63 million. Of Mandarin speakers, eighty-seven percent live in China; the rest are found in countries and regions such as Taiwan (4.3 million), Indonesia (0.46 million), Malaysia (0.42 million), and Singapore (0.2 million).¹ It is the standard dialect of the People's Republic of China and Taiwan and is one of the official languages of Singapore.²

The term 'Mandarin Chinese' is not a monosemy, but has at least three references. In a broader sense, it refers to the native dialect of approximately two-thirds of China's population, most of whom reside north of the Yantze River. Also known as the Northern Dialect, Mandarin Chinese in this sense refers to one of the seven major Chinese dialects that include Yue



(Cantonese), Min (Fukien), Kejia (Hakka), Wu (Shanghainese), Xiang and Gan. (See the map of China on the left.) This Northern version of the Chinese language is by no means homogenous internally. While practically all its sub-dialects are mutually intelligible, regional differences are often more conspicuous than those among the various dialects of English in England and North America. The differences lie chiefly in the sound systems. The Mandarin dialect

spoken in the city of Jinan in the northern coastal province of Shandong, for instance, has distinctive phonetic and phonological qualities different from those in the dialect of Chengdu, Sichuan Province, in Southwest China. Even within the same province, say, Shandong, Mandarin dialects can vary considerably phonetically and phonologically. Take tonal difference for an example. The dialect of Pingdu (K. R. Yu 1992) and Zichuan (Meng and Luo 1994) have only three tones, as opposed to the four tones found in most other Mandarin dialects of the province. Even the dialects with the same categories of tones may differ in the values of these tones. A word with a Yin Ping,³ for instance, is high-level in Beijing, but low-dipping in Jinan (Z. Y. Qian 1963 and Qian *et al.* 1998).

¹ All figures are from Grimes (2000).

² Other official languages in Singapore are English, Malay and Tamil.

³ See the coming subsection for information about this tone.

More narrowly, the term Mandarin Chinese means any one of the individual Mandarin dialects such as those of Jinan and Chengdu mentioned above. This second reference is, however, not a much used one, that being the third reference—Mandarin as Standard Chinese. Mandarin as Standard Chinese is officially defined in the People's Republic of China as 'the modern Han⁴ people's common language, taking the Beijing sound system as its pronunciation standards, the vocabulary from the Northern Dialect as its foundation, and the grammar from the model modern writings in the vernacular as its grammar standards' (Y. Chen 1974, p.1).⁵ It is the dialect used in all the major media systems in China, comparable to BBC English in the United Kingdom, and is used extensively in school teaching in China. It is widely spoken in non-Mandarin areas as a second or an additional dialect (or language) in the country.

Widely referred to as Mandarin in the West, Modern Standard Chinese has more than one name in the Chinese language. It has been officially designated and popularly accepted as *Pǔtōnghuà* 普通话, literally, Common Language, in the People's Republic of China (often referred to as Mainland China). There, it is also frequently called *Hànyǔ* 汉语, the Language of the Han People, although the latter term can be ambiguous since it can refer to Chinese dialects other than Mandarin. Outside the mainland, it is referred to as *Guóyǔ* 国语, National Language, in Taiwan, and before 1997, in Hong Kong. In Singapore, it is referred to as *Huáyǔ* 华语, the Language of the Hua People, the word Hua being an archaic term for Chinese. In schools where Chinese is taught in and outside China, *Zhōngwén* 中文, the Language of China, is extensively used. Historically, what is known as *Pǔtōnghuà* today corresponds more or less to *Guānhuà* 官话, the Official Language, used to refer to the Beijing-dialect-based *lingua franca* used before modern times. This book is devoted to this standard dialect—Mandarin as Standard Chinese (MSC).

1.1 A Brief History

To gain a better perspective of and to better understand MSC, it is useful to first have a look at Chinese dialects in general and the history of these dialects. Theoretically speaking, all the modern Chinese vernaculars except Min are descendents of what have come to be known as Middle Chinese (MC); Min has been found to have inherited directly certain features of Old Chinese (around 1700-200 BC)⁶ not found in other modern dialects. Although the periodization of the history of the Chinese language is far from resolved (see M. Chan 1999 for details), MC roughly refers to the period of Chinese history around the time when the famous dictionary

⁴ Han, otherwise known as Chinese, is the largest ethnic group in China, constituting 93 percent (figure from Microsoft Bookshelf 1996 Basic Edition) of the population. See the term *Hànyǔ* 汉语 in the next paragraph.

⁵ This standard definition appears in numerous books on *Pǔtōnghuà* 普通话 published in China. Chen's is only one of them.

⁶ Refer to P. H. Ting (1993).

Qieyun was published in 601 AD (P. H. Ting 1993, and L. Wang 1958).⁷ Due to the non-phonetic nature of the Chinese writing system, much information about MC, especially about its sound system, remains unknown. However, from *Qieyun* and other literary works, and from historical comparative studies of today's dialects, linguists have been able to identify a number of important characteristics of the MC system. First, MC had primarily monosyllabic words. Second, its closed syllables⁸ ended in one of the six consonants /-p, -t, -k, -m, -n, -ŋ/, namely three stops and three nasals. A third important feature of MC is that it had three sets of syllable-initial obstruents (stops and affricates⁹), two voiceless sets and one voiced set. The two voiceless sets are an aspirated set and an unaspirated one. Take the bilabial stops for an example. During MC time, there were three contrastive bilabial stops: a voiceless aspirated /p^h-, a voiceless unaspirated /p-/ , and a voiced /b-/, which roughly correspond to the stops in *pit*, *spit*, and *bit*, respectively, in English. The following are the three sets of the initial obstruents of MC:

(1.1)

	stops				affricates		
[-vc, +asp]	p ^h	t ^h	k ^h	k ^{wh}	ts ^h	chr ^h	chy ^h
[-vc, -asp]	p	t	k	k ^w	ts	ch	chy
[+vc]	b	d	g	g ^w	dz	dzr	dzy

A fourth known fact about MC is that it had four tones. Although the exact values (e.g., high, low, rising or falling) of these tones are still a mystery, we know that these four tones were named *Píng* 平, *Shǎng* 上, *Qù* 去, and *Rù* 入 and that the Ru¹⁰ tone syllables all ended in one of the three stops /-p/, /-t/, or /-k/ (e.g., *lyəp* 立 'stand', *byət* 别 'separate', and *muk* 木 'tree'). Strictly speaking, the Ru tone is not exactly a tonal category, but a category made up of syllables with a common segmental feature—ending in a stop. Here one may pause and think of this intriguing question: if MC had four tones, what was the case prior to MC? Or, has the Chinese language always been a tonal language since its inception? The answers to these questions have not been decisively achieved, although the generally held position is that the Chinese language has not always been tonal. One important clue for this conjecture comes from the observation that some relatives of the Chinese language, such as the Tibetan dialect of Amdo, are atonal (Baxter 1992).

⁷ In view of sound changes, MC is dated around AD 420-900 while Old Chinese around 1700-200 BC (P. H. Ting 1993).

⁸ Closed syllables are those that end in a consonant (e.g., *pat*), as opposed to open syllables, which end in a vowel (e.g., *me*).

⁹ Stops are consonants that are typified by a complete blockage of airflow and a sudden release from it. Affricates start out like a stop with an airflow blockage but continue into a fricative sound that does not have complete air blockage.

¹⁰ Tone marking on names of tones will be largely omitted in regular paragraphs.

The clue thereby gives rise to the question: did Amdo Tibetan lose its tones or did Chinese generate tones? A number of scholars have been able to argue for the emergence of tones in Chinese (e.g., T. L. Mei 1970, and Pulleyblank 1962a, 1962b, and 1986). According to these scholars, tones were developed in Chinese when a group of syllables ending in the glottal stop /-ʔ/ began to be spoken with a higher or rising pitch, and those ending in another consonant, /-h/, began to be spoken with a lower or falling pitch. When these final consonants disappeared due to a historical attrition of the Chinese syllables, the pitch differences remained, thereby giving rise to genuine tonal contrast. Across languages, tonogenesis has been found to be fairly common (Haudricourt 1954, P. Ramsey 2000 and Svantesson 2000), and there is phonetic research which supports the possibility that tones can develop from syllable-final consonants (Hombert 1978). If tones developed from a non-tonal state, the exact time when these tones were developed remains controversial (M. Chan 1989). Some believe that they were developed after the Old Chinese period of time (e.g., Pulleyblank 1986); others believe in a much earlier time (e.g., S. Z. Zhang 1985).

If tonogenesis which led to the beginning of tones in Chinese is still an unresolved issue, linguists of Chinese generally agree that another type of tonogenesis, a very important one as far as understanding today's dialects is concerned, did occur in the language, and it happened more recently in history. It was established that some time between the MC of the seventh century and the emergence of the early vernaculars of the thirteenth century, the four MC tones went through a split. Each of them was split into two tones, a higher-pitched one and a lower-pitched one. What this means is that if there was a level tone with the value of 33¹¹ in MC, after the split, some syllables with this level tone were pronounced with a high tone of, say, 44 in value, and others with a low tone, say, 22 in value. Or, if at that time there was a rising tone 24, after the split, two tones 35 and 13 emerged.¹² The result of the split was that now in the Chinese language, there were eight rather than four tones. Traditionally, the Chinese term *yīn* 阴 and *yáng* 阳 have been used for the higher and lower tones respectively. Combining *yīn* and *yáng* with *Píng*, *Shǎng*, *Qù*, and *Rù*, we now have the following eight tones:

(1.2)

	<i>Yīn</i> 阴	<i>Yáng</i> 阳
<i>Píng</i> 平	1. <i>Yīn Píng</i>	2. <i>Yán Píng</i>
<i>Shǎng</i> 上	3. <i>Yīn Shǎng</i>	4. <i>Yáng Shǎng</i>
<i>Qù</i> 去	5. <i>Yīn Qù</i>	6. <i>Yáng Qù</i>
<i>Rù</i> 入	7. <i>Yīn Rù</i>	8. <i>Yáng Rù</i>

¹¹ Such tonal values are given in Y. R. Chao's scale of five pitch levels. See Figure (2.27) in the next chapter for a diagram of the scale.

¹² It should be emphasized that all values here are hypothetical since we do not know for sure what values MC tones had. The values are just used here to exemplify what may have happened during the split. Furthermore, the original processes may have been much more complex than what is exemplified here.

Similar to tonogenesis that brought tones into Chinese, this tonal development was caused by certain consonants, albeit this time by syllable-initial consonants. As mentioned previously, MC of the seventh century had two series of voiceless obstruents and a series of voiced ones at the syllable-initial position. Later, the syllables with the voiceless obstruents (e.g., /p^h-,p-,t^h-,t-/) began to be pronounced with a higher pitch, while those with the voiced (e.g., /b-,d-/) began to be pronounced with a lower pitch. At this time, the pitch difference was still part of a segmental or consonantal difference, and not a genuine tonal difference. The language then went through another significant change in which the voiced obstruents began to disappear by becoming devoiced, merging with the two voiceless series. But what did not disappear with them was the lower pitch they effected. Thus, what started out as segmental difference became genuine tonal difference, and there were now eight rather than four tones.

In addition to the reduction in the number of syllable-initial consonants in Chinese, at around the same time, the language also experienced reduction in its syllable-final consonants such as /-p, -t, -k/. The reduction processes were in fact part of a continuous process of syllable simplification that may have started during Old Chinese or earlier and has continued in the Chinese dialects to the present. Here it should be noted that neither reduction processes consistently occurs in all Chinese dialects, nor have all the eight tones from the tone split remained intact in all Chinese dialects. As well, the syllable simplification in time caused more changes that went along varied courses in Chinese dialects. It is exactly such difference that has helped shape dialect variations in Chinese, which will be elaborated on below.

1.2 The Chinese Dialects

Before turning to the Chinese dialects, it is important to address a controversial issue that concerns the definition of the term 'dialect'. Traditionally, the various versions of the Chinese language have always been regarded as dialects of the same language by language specialists in China. However, more recently, some linguists outside of China began to criticize this traditional approach, and began to refer to the Chinese dialects as languages. The controversy stems from the observation that the seven Chinese dialects are mutually unintelligible. According to standard linguistic theories in the West, when two language forms are mutually intelligible, they are dialects; otherwise, they are languages. Since the seven versions of Chinese are not mutually intelligible, they should be regarded as individual languages rather than dialects. As Steibergs (1987) remarked, 'we often speak of Chinese as if it were a single language, even though it is actually a number of separate, mutually unintelligible languages..., each with a host of dialects (p.228).'

However, it seems that the mutual intelligibility criterion was based on languages such as those found in Europe, and because of such an origin, it is simplistic to apply to Chinese. It is true that what are traditionally considered dialects of Chinese are no more intelligible among each other than, say, English is to a German, or French is to an Italian, yet the differences among the Chinese dialects are not analogous to those among the European languages. First, the unintelligibility among the Chinese dialects is caused mainly by differences in their sounds and sound structures. Although phonologically the Chinese dialects vary enough to mar mutual

understanding, they share more or less the same word structures and fairly identical syntactic ones. In the European case, the languages such as French and Italian are not only significantly different phonologically, but they also have quite distinctive word and sentence systems. Thus, to consider the Chinese dialects as different languages ignores other and perhaps more important aspects of language and it is no wonder that it should appear quite counterintuitive to native speakers of the Chinese dialects.

In the second case, when making dialect versus language judgement, other non-language-specific factors also need to be considered. In the Chinese case, these factors include history, culture, and identity. Although the Chinese people today cannot communicate with each other if they do not speak the same dialect, they have shared a more or less common and continuous history that goes back several millenniums. The Wu-speaking people, for instance, do not have a history distinctive enough to establish them as an ethnic or national group separate from, say, the Yue-speaking people. Along with history and nationality, the Han (or Chinese) people as a whole have also shared a common cultural heritage, and it is no wonder that they all identify themselves as members of the same ethnic group of Chinese regardless of what versions of Chinese they speak. The situation is very different in Europe where groups with different languages often have their own sufficiently distinctive history and cultural heritage.

Third, all Chinese dialects are able to share one and the same writing system. Even though a written text is based on Mandarin in vocabulary and syntax, literate Chinese of all dialects can understand it, in spite of the fact that they may be pronouncing the words in their own dialects. Such sharing of a writing system has not only helped foster a common identity and a sense of culture and linguistic unity. By comparison, imagine using a common writing system in Europe! Although it may be true that the unique non-phonetic, logographic nature of the Chinese writing system is somewhat responsible for the sharing capability, it would be unthinkable to have a text written in English in a logographic writing system and be readily read by a German. It seems therefore that considering all the factors, the Chinese language is best left to be regarded as one with dialects rather than as several individual languages.

There is another issue that needs to be mentioned before the discussion of the Chinese dialects. Although we have been considering major Chinese dialects, dialect division within the Chinese language has never been an easy task. Different theories exist. Most approach the problem from the perspective of the historical lineage using the standard historical comparative method. Others divide them based on the degree of mutual intelligibility calculated from the similarities and differences among various aspects of the dialects.¹³ In spite of these different approaches, the most widely held position nowadays is that the Chinese language has seven

¹³ One very interesting study in the latter fashion is recently done by the well-known linguist of Chinese, Professor Chin Chuan Cheng (1996), who quantified the differences in vocabulary, tone, initial consonants, and final rhymes of various Chinese dialects and came up with a fascinating scheme of dialect division.

major dialects,¹⁴ a position that will be followed here.

In the remainder of this section, the Chinese dialects will be reviewed. Due to a shortage of space, the review will be brief and selective. It will address only five important ones¹⁵ of the seven: Mandarin (as the Northern Dialect), Yue (Cantonese), Min, Kejia (Hakka), and Wu. As these dialects are differentiated among one another especially phonologically, this brief discussion will focus on their sound systems, particularly their consonantal systems. Further, focus will be on features that make each dialect stand out from the rest, and where applicable, reference will be made to aspects of MC and their development in the dialect under concern. Because all these dialects comprise sub-dialects which may vary considerably, the well-established approach of focusing on the typical and representative sub-dialect will be adopted here.

1.2.1 The Northern Dialect

In the previous discussion of the historical development of the Chinese language, it was



mentioned that the four MC tones were later developed into eight. What then happened to the eight tones in Mandarin or *běifānghuà* 北方话, the Northern Dialect? In contrast to other Chinese dialects, Mandarin as the Northern Dialect has moved furthest away from MC in tonal development. Typically, the eight tones merged into four: Yin Ping, Yang Ping, Shang and Qu, which have traditionally been referred to as, respectively, the First, Second, Third and Fourth Tones of Mandarin.¹⁶ While almost all Mandarin dialects have these four

tonal categories, the value of each tone can vary greatly from one dialect to another. Take Beijing, Jinan and Xi'an for example:¹⁷

¹⁴ They are Mandarin (as the Northern Dialect), Yue (Cantonese), Min, Kejia (Hakka), Wu, Xiang and Gan.

¹⁵ Important in the sense that they are more influential in the country and outside of it, or better understood today.

¹⁶ In a few Mandarin dialects, the number can be more or less than four (see W. S-Y. Wang 1991 for details).

¹⁷ The data are from *Hànyǔ Fāngyán Cíhuì* 汉语方言词汇 (1995) 'Dictionary of a Collection of Chinese Words' (See the third item in References).

(1.3)

	1 st Tone	2 nd Tone	3 rd Tone	4 th Tone
Beijing	55	35	214	51
Jinan	213	42	55	21
Xi'an	21	24	53	55

All three are Mandarin dialects, yet their tonal values vary. For instance, the First Tone is high-level in Beijing, low-dipping in Jinan, and low-falling in Xi'an. Consistently missing from almost all Mandarin dialects is the Ru tone, which, as mentioned earlier, was not strictly a tonal category but one that includes all the MC syllables that end in either /-p/, /-t/ or /-k/.

A second important development that sets Mandarin apart from most other Chinese dialects is the completeness of the syllable simplification processes as described earlier in Section 1.1. Of the six syllable-final consonants of MC, only two nasals have survived: /-n/ and /ŋ/. The other four have disappeared. The MC words such as *lap* 'pull', *byɛt* 'separate', *muk* 'tree', and *sam* 'three' are no longer pronounced as such in Mandarin, and in their place are *la*, *pyɛ*, *mu*, and *san*, respectively.¹⁸ The final stops disappeared, and the final bilabial nasal merged with another nasal. Earlier we mentioned that all the MC Ru-tone syllables ended in one of the three stops /-p,-t,-k/, and that the Ru tones no longer exist in Mandarin. It is now clear why there is no longer the Ru tone in this dialect: it has gone with the disappearance of the final stops. The MC syllables that used to bear the Ru tone can now be found in the other three tonal categories in Mandarin. Such merging process has traditionally been called *rù pài sān shēng* 入派三声: assigning Ru syllables to the other three tones.

Syllable-initially, Mandarin has also undergone significant change; all the MC voiced obstruents have disappeared, becoming devoiced and merged with either their aspirated voiceless counterparts or the unaspirated ones. Thus, instead of the MC forms such as *t^hung* 'through' with an aspirated voiceless initial and *dung* 'boy' with a voiced initial, the voiced initial *d-* in the latter lost its voicing quality and became *t^h-* in Mandarin. This resulted in the two words becoming homophones of each other, sharing the same phonetic form: *t^hung*¹⁹ in the dialect. Besides merging with an aspirated voiceless initial, some MC voiced initials merged with their unaspirated voiceless counterparts. For instance, the MC words 'sad' and 'double' were *puay* and *buay* respectively in form, but the voiced initial *b-* later became unaspirated and voiceless, and as a result, the two words are united into one form—*pey* in today's Mandarin. With regard to tones, the devoiced MC obstruents became aspirated in the Ping tone, but unaspirated in other tones.²⁰

¹⁸ The phonetic transcriptions are in IPA (International Phonetic Alphabet).

¹⁹ Tones are ignored here, as are those in the following example.

²⁰ A few Mandarin dialects do not obey this rule. See S. Q. Qiao (1983), and Yang *et al* (1971) for details.

A third development in Mandarin is a direct result of the syllable simplification. In fact, the effect of syllable simplification in Mandarin goes far beyond the reduction of the number of syllables in the dialect. One immediate and quite significant result is that many words which used to be different in form are now homophones. The effect can be simply illustrated with the bilabial stops /p-, p^h-, b/ using hypothetical words. Suppose in MC, there were the following eighteen words, each with a different form.

(1.4)

		-p	-t	-k	-m	-n
<i>p-</i>	pa	pap	pat	pak	pam	pan
<i>p^h-</i>	p ^h a	p ^h ap	p ^h at	p ^h ak	p ^h am	p ^h an
<i>b-</i>	ba	bap	bat	bak	bam	ban

After the disappearance or devoicing of the voiced initial *b-*, the forms in the bottom row would disappear, and the eighteen words would now share twelve forms. Then after the dropping of the three final stops /-p,-t,-k/, only six forms were left, shared by the eighteen words. Finally, after the merging of the final /-m/ with /-n/, there were only four forms (shown below in the shaded boxes) left to be shared by the eighteen words:

(1.5)

		-p	-t	-k	-m	-n
<i>p-</i>	pa	pap	pat	pak	pam	pan
<i>p^h-</i>	p ^h a	p ^h ap	p ^h at	p ^h ak	p ^h am	p ^h an
<i>b-</i>	ba	bap	bat	bak	bam	ban

Of course, what has been illustrated here is simplistic and extreme. The reality is more complicated and perhaps less dramatic. Yet, it serves the purpose of illustrating the extensiveness of homophones resulting from the impact of the syllable simplification in Mandarin. One survey (B. Y. Yin 1984) finds that among the 1200-1300 syllable types of Mandarin,²¹ only 297, or about a quarter of them, are syllables with just one meaning attached. The rest are all associated with two or more meanings. Examine the following.

(1.6)

jiàng	降	'fall, descend'
jiàng	匠	'craftsman'
jiàng	酱	'soya sauce'
jiàng	绛	'crimson'
jiàng	糗	'pasty, thick'
jiàng	将	'army general'
jiàng	犟	'stubborn'

²¹ Mandarin has about 400 syllables if tonal difference is disregarded, but about 1300 if tonal difference is considered a difference in syllable.

The above is an example of a group of homophones from today's Mandarin given in Pinyin; all have the same pronunciation, tone included. Now let us look at a fourth development in Mandarin. The change that started out with syllable simplification did not stop at the production of homophones. Indeed, one should not normally expect one change in a language to have no further effect, as chain reactions are common in language evolution. In the case of Mandarin, it is at least partially due to the great number of homophones in the language that another significant historical development was effected—the disyllabification of words. Earlier, we mentioned that MC had predominantly single-syllable words. However, when the syllable simplification was producing a great number of homophones, the dialect had to make some adjustment to avoid ambiguity. One logical measure would be to enlarge the word in size, and that was exactly what happened. Today in Mandarin disyllabic words prevail (see Chapter 2 for further details), thereby greatly reducing the number of homophones at the word level. The following illustrates how enlarging word size can solve ambiguity in Mandarin, using examples from (1.6):

(1.7)

	<i>Monosyllabic → Disyllabic</i>		
a.	jiàng → jiàngluò	降落	'fall, descend'
b.	jiàng → gōngjiàng	工匠	'craftsman'
c.	jiàng → jiàngyóu	酱油	'soya sauce'
d.	jiàng → jiàngsè	绛色	'crimson'
e.	jiàng → jiànghú	糨糊	'pasty, thick'
f.	jiàng → jiànglǐng	将领	'army general'
g.	jiàng → jiàng	犟	'stubborn'

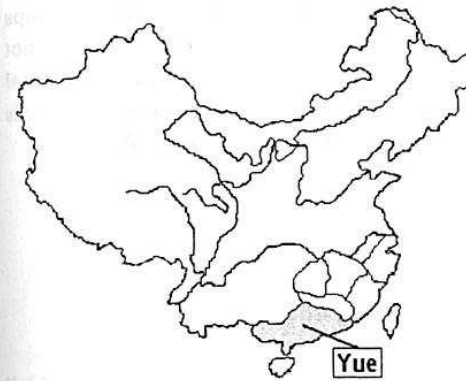
By the disyllabification process of compounding, the first six words become two syllables in size, their original meanings intact. The resultant two-syllable words are no longer homophones of one another in spite of their sharing the common form *jiàng*. Disyllabification has not wiped out the monosyllabic homophones; it has merely demoted them from the level of the word to the level of the morpheme in the dialect.²²

Finally, there is an important feature in Mandarin that distinguishes it from the southern dialects: there is a set of palatal consonants /tɕ-, tɕ^h-, ɕ-/ (*j, q* and *x* in Pinyin), which were mainly evolved from the MC velar consonant /k-, k^h-, g-, x/. For instance, the MC *ka* 'family' is *tɕya* in Mandarin, where the velar *k-* has evolved into the palatal *tɕ-*. We will return to this point in the next section on the Yue dialect.

²² This does not mean, however, that there are no longer homophones at the two-syllable word level. However, the number of homophones at this level is no longer 'abnormal' compared with that in other languages. For more information, refer to Chapter 2.

1.2.2 Yue

Other than Mandarin, the most well-known Chinese dialect in the West is the Yue dialect



粤语, better known as Cantonese. However, the popular term 'Cantonese' suffers the same vagueness as 'Mandarin' by having at least three references: first Yue, the term parallel to the Northern Dialect and referring to the Chinese dialect spoken as in Hong Kong, the adjacent Province of Guangdong, and part of the Province of Guangxi; second, any of the sub-dialects of Yue (e.g., Siye dialect and Kaiping dialect); third, the Guangzhou (Canton) dialect, the representative dialect of Yue, spoken in the capital city of Guangzhou, Guangdong Province. What is

examined in this section is primarily the Guangzhou dialect.

Guangzhou is well-known for having as many as nine tones while most Chinese dialects have less than that. How then are the nine tones related to the eight tones that were derived from the four MC tones? Now examine the following table:

(1.8)

	<i>Tone Category</i>	<i>Value</i>	<i>Examples</i>
1.	Yin Ping	53\55	ɕi 师 'teacher'
2.	Yang Ping	21	ɕi 时 'time'
3.	Yin Shang	35	ɕi 史 'history'
4.	Yang Shang	13	ɕi 市 'market'
5.	Yin Qu	33	ɕi 试 'try'
6.	Yang Qu	22	ɕi 是 'be'
7a.	Yin Ru (upper)	5	ɕik 识 'know'
7b.	Yin Ru (lower)	3	ɕip 涉 'wade'
8.	Yang Ru	2	ɕik 食 'food'

The tone evolution in Guangzhou was much simpler than in the case of Mandarin: all eight MC derivatives have remained, although the Yin Ru tone is split into two, resulting in a

total of nine tones.²³ Note that Tone Number 7 is split into two.

A second feature of the Guangzhou dialect is that it has preserved the higher-versus-lower-pitch difference between the Yin and Yang tones. As seen in the above illustration, all the Yin tones are higher-pitched than their Yang counterparts. As well, the set of syllable-final stops has been preserved, which, as shown in the last section, disappeared in Mandarin. In fact, not only has Guangzhou preserved all these stops, but it has also kept the final bilabial nasal consonant /-m/, which is also lost in Mandarin. The following are examples of Guangzhou words ending in these consonants. Compare them with their Beijing cognates given alongside:²⁴

(1.9)

Guangzhou	Beijing	
lap ⁶	li	立 'stand'
lɔt ⁸	li	栗 'chestnut'
lak ⁸	ley	肋 'rib'
lam ²	lin	林 'forest'
tʃ ^h a:p ^{7a}	tʃ ^h a	插 'insert'
tʃ ^h a:t ^{7a}	tʃ ^h a	察 'observe'
tʃ ^h a:k ⁸	tsey	贼 'thief'
tʃ ^h a:m ¹	ts ^h an	参 'participate'

Guangzhou, like Mandarin, has lost the MC voiced initials, which are merged with their voiceless counterparts. As to which merges with the aspirated and which with the unaspirated set, Guangzhou is similar to Mandarin; that is, those in the Ping-toned syllables became aspirated and those in other tones became unaspirated (F. K. Li 1939). However, there are exceptions in which Guangzhou differs from Mandarin. For instance, the MC word *buay* 倍 'double' with a voiced initial is *p^huy* with an aspirated voiceless initial in Guangzhou, but *pey* with an unaspirated voiceless initial in Beijing.

The palatalization of MC velars, which is a typical feature of Mandarin, has not occurred in Guangzhou. Compare the following examples from Guangzhou and Beijing:

²³ In the discussion of the Chinese dialects in this chapter, the tonal data are taken from the 1995 *Hànyǔ Fāngyán Cíhuì* 汉语方言词汇 'Dictionary of a Collection of Chinese Words' with slight adaptation (See the third item in References). Unless otherwise noted, all word data in this chapter, except those for Mandarin, are taken with slight adaptation from the 1962 *Hànyǔ Fāngyán Zìhuì* 汉语方音字汇 'Dictionary of a Collection of the Chinese Characters.' (See the second item in References.) The Mandarin examples are provided by the author based on the IPA system given in the second chapter.

²⁴ The numbers in superscript are the tonal numbers as assigned to the eight derivatives of the MC tones (cf. (1.2) and (1.8)).

(1.10)

Guangzhou	Beijing	
ka ¹	tɕya	家 'family'
ka:w ⁵	tɕyaw	教 'education'
k ^h iw ²	tɕ ^h yaw	桥 'bridge'
k ^h ey ²	tɕ ^h i	骑 'ride'
ha ¹	ɕya	虾 'shrimp'
hat ⁸	ɕya	瞎 'blind'

Moreover, Guangzhou has a vowel-length contrast not found in most other dialects:

(1.11)

la:m ²	蓝 'blue'	pa:y ⁶	败 'fail'
lam ²	林 'forest'	pay ⁶	稗 'barnyard grass'
ka:ŋ ¹	羹 'soup'	ma:u ⁶	貌 'looks'
kaŋ ¹	耕 'plough'	mau ⁶	茂 'luxuriant'
tʃa:k ^{7a}	责 'duty'	ka:m ¹	监 'jail'
tʃak ^{7a}	则 'standard'	kam ¹	金 'gold'

For instance, the two words *la:m²* 'blue' and *lam²* 'forest' are differentiated from each other simply by the length of the vowel [a], which is long in the former but short in the latter. By comparison, vowel length variation does not create this kind of meaning contrast in Mandarin.

Still another feature of Guangzhou is that it does not have the so-called syllable medials or *jièyīn* 介音 [y] or [w], the glides that are found between an initial consonant and the following vowel of a syllable, as found in such Mandarin syllables:

(1.12)

pyɛn	边 'side'
ɕwey	摔 'break'
tɕya	家 'family'

The [w] sound does occur after the velar initials /k-,k^h-,ŋ-/ , yet it has been generally considered a secondary feature of these initials rather than a separate member of the phoneme. That is, in addition to these velars /k-,k^h-,ŋ-/ , the language has /k^w-, k^{hw}-, ŋ^w-/ (see Norman 1988) in its phonemic inventory. Finally, Guangzhou has the following consonants:

(1.13)

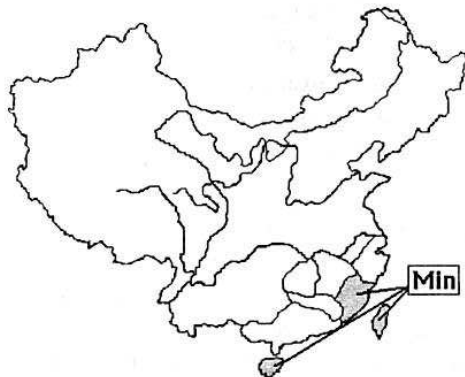
Manner \ place		Labial	alveolar	alveo-palatal	velar	labiovelar	glottal
Stop	[+asp]	p ^h	t ^h		k ^h	k ^w h	
	[-asp]	p	t		k	k ^w	(?)
affricate	[+asp]			tʃ ^h			
	[-asp]			tʃ			
fricative		f		ʃ			h
nasal		m	n		ŋ	ŋ ^w	
liquid			l				

1.2.3 Min

The Min dialect 闽语 is another conservative dialect of Chinese. Traditionally, it has been divided into two branches, Minnan or Southern Min, and Minbei or Northern Min. The representative dialect of the former is Xiamen (Amoy), and that of the latter Fuzhou. This view of Min division has been challenged by several researchers. Some uphold an East-West division (see Norman 1991). The sub-grouping of the Min dialects is complicated by the fact that it is very heterogeneous, and some of its dialects are so different that they are mutually unintelligible. Min is better known in the West as Fukienese, after the name of the Min-speaking Province of Fujian (Fukien or Hokkian, in an earlier non-Pinyin spelling

based on non-Mandarin pronunciation). Yet the term Fukienese is ambiguous since it can mean the Min dialect as a whole or one of its sub-dialects such as Fuzhou. Another often-heard name related to the dialect is Taiwanese, which is a Southern Min dialect fairly similar to Xiamen, and is widely spoken in Taiwan. Other than Fujian and Taiwan, another major Min-speaking area is the Province of Hainan, a large island off the South China coast. In the present discussion of Min, we will focus on Xiamen.

Xiamen has seven tones. As the following examples show, a merging process occurred, resulting in that Tone Number 4 is missing. In particular, the two Shang tones merged into one category, while the other six tonal categories from Ping, Qu and Ru remained intact:



(1.14)

	Tone Category	Value	Examples
1.	Yin Ping	55	i 衣 'clothes'
2.	Yangping	24	i 移 'move'
3.	Shang	51	i 椅 'chair'
5.	Yin Qu	11	i 意 'meaning'
6.	Yang Qu	33	i 易 'easy'
7.	Yin Ru	32	it 乙 'second'
8.	Yang Ru	5	rk 译 'translate'

As discussed previously, the presence of the Ru tone indicates that some syllables in this dialect have final stops. That is indeed the case. Like the Yue dialect of Guangzhou, all three MC final stops are found in Xiamen. Moreover, the MC bilabial nasal that disappeared in Mandarin and remained in Guangzhou is found in Xiamen. The following are examples of these syllables from Xiamen. Compare them with their Beijing cognates:

(1.15)

Xiamen	Beijing	
sip ⁸	ɕi	习 'exercise'
sit ⁷	ɕi	息 'breath'
sɪk ⁷	ɕi	析 'analyze'
sim ¹	ɕin	心 'heart'
tap ⁷	ta	答 'answer'
tat ⁸	ta	达 'reach'
tak ⁸	tʂwɔ	浊 'muddy'
tam ²	t ^h an	谈 'talk'

Today, many of the final MC stops in Xiamen have been weakened into a glottal stop. Compare the Xiamen syllables with their Guangzhou cognates:

(1.16)

Xiamen	Guangzhou	
aʔ ⁸	kap ^{7a}	匣 'small box'
tʂaʔ ⁸	tʂa:t ^{7b}	铡 'hand hay cutter'
toʔ ⁷	tʂæk ^{7b}	桌 'table'

The three words, which end in /-p/, /-t/, or /-k/ in Guangzhou, are now all neutralized to a common final glottal stop /-ʔ/ in Xiamen. Syllable-initially, the MC voiced obstruents were also devoiced, as was the case in Mandarin and Guangzhou. However, unlike those, in which the obstruents went two separate ways, some becoming aspirated and others unaspirated depending on their tonal categories, these devoiced obstruents tend to become unaspirated in Xiamen:²⁵

(1.17)

MC	Xiamen	Guangzhou	Beijing	
b-	pa ²	p ^h a ²	p ^h a	爬 'climb'
b-	pɔ ²	p ^h ow ²	p ^h u	葡 'grape'
d-	tay ²	t ^h ay ²	t ^h ɛy	台 'platform'
d-	tay ⁶	tɔy ⁶	tɛy	袋 'pocket'
d-	to ⁶	tow ⁶	taw	道 'road'
dz-	tsa ^{ʔ8}	tʃa:t ^{ʔ8}	tʃa	铡 'hand hay cutter'

These examples illustrated that the MC voiced initials, when devoiced, became aspirated in Guangzhou and Beijing in Ping-tone syllables, as the first three examples illustrate, and became unaspirated in syllables with other tones, as the last three cases indicate. However, all became consistently unaspirated in Xiamen regardless of their tonal categories.

Historically, the Min areas were, for a long time, quite isolated from the rest of the vast Chinese-speaking land, and because of this isolation, the Min dialects inherited features from Old Chinese that were later unaffected when these features were transformed in other Chinese dialects. For instance, Xiamen has retained the old dental stops /t-/ and /t^h-/, which in MC were palatalized into /tʃ-, tʃ^h-, dʃ-/ , and later changed into affricates in most other Chinese dialects:

(1.18)

Xiamen	Guangzhou	Beijing	
tiɔk ⁷	tʃuk ⁷	tʃu	筑 'build'
tu ¹	tʃu ²	tʃu	蛛 'spider'
ti ²	tʃ ^h i ²	tʃ ^h	迟 'late'

At about the time of the Tang period, a labial-dental /f-/ (*qīngchún yīn* 清唇音) was developed in Chinese from the MC bilabial stops. However, such a change did not happen in Min.

²⁵ See Norman (1991) for a non-traditional view as well as for further details about Min.

(1.19)

Xiamen	Guangzhou	Beijing	
pɔŋ ²	fɔŋ ²	faŋ	房 'house'
pun ⁵	fan ⁵	fən	粪 'manure'
pɔŋ ²	fuŋ ²	fəŋ	冯 'a surname'
pu ¹	fu ¹	fu	斧 'axe'

A number of other features distinguish Min from the other dialects. It has a great number of nasal vowels; before oral vowels, the nasal initials /m-/ and /ŋ-/ become denasalized and are pronounced as voiced stops /b-/ and /g-/ respectively; many of its words have two or more readings, a colloquial one and another which appears more frequently in written form. Finally, the typical Min dialect of Xiamen has the following consonants:

(1.20)

		place	Labial	dental	alveolar	velar	glottal
Manner	Stop	[+asp]	p ^h		t ^h	k ^h	
		[-asp]	p		t	k	(ʔ)
affricate	[+asp]			ts			
	[-asp]			ts ^h			
fricative				s			h
nasal			m (b)		n	ŋ (g)	
liquid					l		

1.2.4 Kejia

Min is the most heterogeneous dialect, Yue has dialects with the largest number of tones, and Mandarin has the most homophones. The remarkable feature about the Kejia (Hakka) dialect



客家话 is that it is scattered over a large geographic area. Although some degree of higher concentration of Kejia speakers is found around the city of Meixian in the northeast corner of Guangdong, small areas of Kejia are found throughout South China, including Guangdong, Fujian, Guangxi, Jiangxi and Taiwan. According to J. H. Yuan (1989), ancestors of Kejia speakers migrated from the north; there were five large-scale migrations mostly due to wars. These northern migrants, or 'guests' as the name 'Kejia' means, arriving in

the unknown 'barbaric' south, tended to seek out isolated mountainous areas to live both for defence and to preserve their own cultural traditions.

In spite of its separate origin, the Kejia dialect shares a number of important characteristics with Min and Yue. According to Norman, the three dialects form a Southern group, distinct from other Chinese dialects, and can be traced back to a common Old South Chinese origin. The typical and representative Kejia dialect of Meixian, for instance, has the Ru tone, which is characteristic of dialects of the Southern group. There are six tones in Meixian, which are given below. Note that Tones Numbers 4 and 6 are missing.

(1.21)

	Tone Category	Value	Examples
1.	Yin Ping	44	pa 爸 'father'
2.	Yang Ping	11	p ^h a 爬 'climb'
3.	Shang	31	pa 把 'handle'
5.	Qu	52	p ^h a 怕 'afraid'
7.	Yin Ru	1	pat 八 'eight'
8.	Yang Ru	5	p ^h at 拔 'pull'

Although Meixian has preserved the Ru tones, not all eight tones have remained. Like most other Chinese dialects, tone merging processes occurred, the result of which is that there is only one tonal category left for Shang and one left for Qu tones. The fact that both the Ru tone categories have survived means that the dialect has preserved at least some of the three final /-p,-t,-k/ stops. In fact, all the six syllable-final consonants of MC are found in Meixian, just like Guangzhou and Xiamen. The following shows such cases and compares them with the Mandarin ones, where the final stops have disappeared and the final bilabial nasal has merged with the alveolar nasal.

(1.22)

Meixian	Beijing	
lip ^s	li	立 'stand'
lat ^s	la	辣 'spicy hot'
lok ^s	lwɔ	落 'to fall'
liam ²	lyɛn	廉 'honest'
t ^h at ^s	ta	达 'to reach'
t ^h iap ^s	tyɛ	蝶 'butterfly'
t ^h uk ^s	tu	毒 'poison'
t ^h iɛm ⁵	tyɛn	电 'electricity'

One historical development Meixian shares with the other three dialects discussed is that the MC-voiced-initial obstruents, shown in the bottom row of (1.1), have disappeared by merging with their voiceless counterparts. However, Meixian differs from the others in that these syllables with voiced obstruents almost all became their aspirated voiceless counterparts, as an observant reader may have discovered from the above illustrations. The last four examples given all have voiceless aspirated initial /t^h-/ corresponding to its unaspirated counterpart /t-/ in Mandarin. Lack of velar palatalization is another feature Meixian shared with the other dialects of the Southern group. Compare the following Meixian and Mandarin examples:²⁶

(1.23)

Meixian	Beijing	
ka ¹	tɕya	家 'family'
kaw ⁵	tɕyaw	教 'education'
k ^h iaw ²	tɕ ^h yaw	桥 'bridge'
k ^h i ²	tɕ ^h i	骑 'ride'
ha ²	ɕya	虾 'shrimp'
hat ⁷	ɕya	瞎 'blind'

Finally, a table of Meixian consonants is given below:

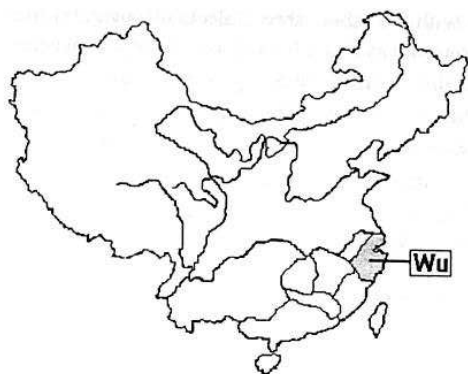
(1.24)

Manner \ place		Labial	dental	alveolar	palatal	velar	glottal
Stop	[+asp]	p ^h		t ^h		k ^h	
	[-asp]	p		t		k	(ʔ)
affricate	[+asp]		ts				
	[-asp]		ts ^h				
fricative	[+vc]	f	s				h
	[-vc]	v					
nasal		m		n	ɲ	ŋ	
liquid				l			

1.2.5 Wu

If there is a division between dialects of the North and South, the Wu dialect 吴语 is one that falls somewhere in between; it shares some features with the Northern Dialect and others with the Southern ones. Needless to say, like all the other dialects, it also has its unique

²⁶ See also (1.10).



characteristics. One most important feature that separates Wu from the dialects mentioned above is its preservation of the MC-voiced initials. Wu has by and large kept the three-way distinction of the obstruents as given earlier in (1.1). Now observe the following examples from Suzhou, the representative dialect of Wu and compare them with their Guangzhou and Beijing cognates:

(1.25)

Suzhou	Guangzhou	Beijing	
bo ²	p ^h a ²	p ^h a	爬 'climb'
da ² s	ta:t ^s	ta	达 'reach'
goŋ ⁶	kuŋ ⁶	kuŋ	共 'common'
zo ²	tʃ ^h a ^h	tʃ ^h a	茶 'tea'
dʒɤŋ ² s	k ^w at ^s	tɕüɛ	掘 'to dig'

In all cases, the initial consonants in Suzhou are voiced, as opposed to those in Guangzhou and Beijing where they are either voiceless aspirated or voiceless unaspirated. The last example is particularly interesting. Although the Suzhou initial has preserved the original voicing quality, it nevertheless has undergone the velar palatalization process just like Mandarin and unlike Guangzhou where the velar remains a velar. Suzhou's syllable-final consonants are another interesting aspect in view of their historical development from the six MC-final consonants. It resembles the Northern Dialect in having two syllable-final nasals /-n, and ŋ/, having lost the bilabial one /-m/. However, while Mandarin has lost all the /-p,-t,-k/ stops, Suzhou has retained the stops, albeit in a different fashion. Now look at the following:

(1.26)

Suzhou	Guangzhou	Beijing	
liɣ ² s	lap ⁶	li	立 'stand'
da ² s	ta:t ^s	ta	达 'reach'
o ² ʔ	ɔk ^{7b}	ɣ	恶 'vicious'
fiə ² s	kap ^{7a}	ɕia	匣 'small box'
za ² s	tʃa:t ^{7b}	tʃa	铡 'hand hay cutter'
tso ² ʔ	tʃæk ^{7b}	tʃwɔ	桌 'table'

All the /-p,-t,-k/ stops have disappeared, but they have not gone without a trace, as they did in Mandarin. Rather, they have neutralized into one sound, a glottal stop /-ʔ/. It is generally believed that the syllable-simplification process involving the three MC stops has an intermediate stage. They first become a glottal stop and then disappear altogether, namely,

$$(1.27) \quad \{-p,-t,-k\} \rightarrow ʔ \rightarrow \emptyset$$

In some dialects such as Xiamen, the glottal stop exists alongside the more conservative /-p,-t,-k/ stops, providing evidence for the theory of lexical diffusion which argues that phonological change may be gradual and occur gradually across lexical items (W. Wang 1969 and 1973). The retention of this vestige of the final stops means that Suzhou has the Ru tone in its tonal categories. In all, it has seven tones which are given below. Note that Shang has only one category, and therefore Tone Number 4 is missing:

(1.28)

	Tone Category	Value	Examples
1.	Yin Ping	44	p ^h u 铺 'arrange'
2.	Yang Ping	24	bu 葡 'grape'
3.	Shang	52	p ^h u 普 'general'
5.	Yin Qu	412	pu 布 'cloth'
6.	Yang Qu	31	bu 步 'step'
7.	Yin Ru	4	p ^h o ² 扑 'pounce on'
8.	Yang Ru	23	bo ² 仆 'servant'

While we have mostly focused on the consonantal systems of the dialects so far, Wu dialect has a unique feature in its vowel system. There are many more single vowels and fewer diphthongs in Wu than in other dialects. Examine the examples below:

(1.29)

Suzhou	Guangzhou	Beijing	
lɛ ²	la:m ^s	lan	蓝 'blue'
l ^s	yin ^s	iɛn	燕 'swallow'
sl ³	ʃün ³	ɕüɛn	选 'select'
tsɛ ^s	tʃæy ^s	tswey	罪 'guilt'
dɛ ⁶	tæy ⁶	twey	队 'line'
t ^h ɛ ^s	t ^h ay ^s	t'ay	态 'manner'

The abundance of single vowels and the paucity of diphthongs accounts for the fact that in many syllables, a Wu dialect has a single vowel, whereas dialects such as Mandarin and Guangzhou have diphthongs or a vowel followed by a nasal, as shown above. The extensive appearance of single-vowel syllables may explain why to the ears of a native Mandarin speaker, a Suzhou or Shanghai speaker often seems to speak fast. Finally, Suzhou has many more consonants than most other Chinese dialects due primarily to the presence of the voiced stops, affricates, and fricatives, shown below in the table of Suzhou consonants:

(1.30)

place		Labial	dental	alveolar	palatal	velar	glottal
Manner							
Stop	[+asp]	p ^h		t ^h		k ^h	
	[-asp]	p		t		k	ʔ
	[+vc]	b		d		g	
affricate	[+asp]		ts		tʃ		
	[-asp]		ts ^h		tʃ ^h		
	[+vc]				dʒ		
fricative	[+vc]	f	s		ʃ		h
	[-vc]	v	z		ʒ		ɦ
nasal		m		n	ɲ	ŋ	
liquid				l			
glide					y		

Chapter 2. Phonetics and Phonology

The study of the sound system of language normally starts with phonetics followed by phonology. However, it is widely acknowledged that the two are not mutually exclusive: The quality of phonological modeling crucially depends on the understanding of phonetic details, whereas phonetic description is often more insightful when done within a more explanatory framework of phonological constraints, rules and/or parameters. In this chapter, we will not attempt to separate the two, but each will be resorted to as required by the description and explanation of certain aspects of the Mandarin sounds and their patterns.

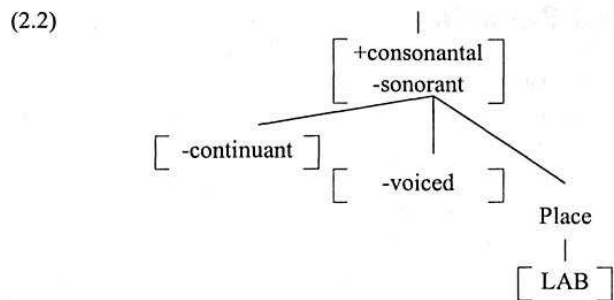
The theoretical framework used in this chapter will be Generative Phonology, a major influential phonological framework developed in the twentieth century. Within this framework, a sound (or in proper linguistic terms, a phone or a segment) is a bundle of binary features which encode such information as the position where the sound is produced (where the stricture is) by the speech organs and the manner in which the sound is uttered. Phonological processes are captured in terms of change in the configuration of the feature bundles in certain contexts. This theory of the sound patterns of language has gone through a great deal of change within the past two decades. An example of such change is that the place features, which used to be binary in standard Generative Phonology (Chomsky and Halle 1968), are now unitary features. The arrangement of features has also been completely revolutionized. To denote a segment, say [p], the features used to be placed, unordered, in a two-dimensional feature matrix such as this,

(2.1)

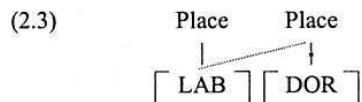
+consonantal
-sonorant
-continuant
-voiced
+labial
...

but they are now organized into a three-dimensional tree structure which branches out into several levels from a root node carrying the crucial information as to whether the segment is a consonant or a vowel. The same information given in (2.1) would be organized roughly as (2.2):²⁷

²⁷ This is a much simplified feature geometry tree, though adequate to illustrate here the difference between the old and new treatment of features. Interested readers may read Broe (1992) and Halle (1992) for details.



Phonological processes used to be described by rules in the form of 'A becomes B in the environment of C', but now may be indicated by lines linking among the nodes of features. The following dotted line represents a phonological process whereby the second segment assimilates the place feature of the first.



This newer version of Generative Phonology is more complex and abstract. The understanding of it entails a great deal of background knowledge of the various aspects of the theory. Because the scope of this descriptive grammar does not allow a full introduction of this new theory, for ease of comprehension on the part of the general reader, we will now and then adhere to more traditional ways of describing phonetics and phonological processes. The newer theory will be used where necessary, especially where the older theory is silent about the issues involved or is entirely inadequate.

This chapter addresses four aspects of the sound system of Mandarin: sounds, syllables, segmental processes and tone. The section on sounds will include the consonants, vowels, and glides. The section on the syllable will address such topics as the initials and finals, phonotactic constraints, syllable weight, etc. The third section discusses the phonological processes that occur between adjacent segments within a syllable. This section will also address the phonological versus phonetic representation of phonemes and allophones in the Pinyin transcription system. The section on tone consists of two parts, one devoted to the four basic tones and the other to the neutral tone.

2.1 The Sounds

A description of the phonetics and phonology of a language cannot be done without

resorting to the linguistic tool called the phonetic features. Each sound or segment²⁸ is identified by a unique set of distinctive features organized in a tree structure. Features can be contrastive in one language, but not in another. Some of the most important distinctive features for the description of Mandarin include 1) major features such as [±consonantal], [±vocalic], [±aspiration], and [±nasal]; 2) place features: [LABIAL], [CORONAL], and [DORSAL]; and 3) vowel features: [±high], [±back], and [±round].²⁹

2.1.1 Consonants

The phonetic features that distinguish consonants from vowels are [±consonantal] and [±vocalic]. While consonants are [+consonantal, -vocalic], vowels are exactly the opposite: [-consonantal, +vocalic]. There is a third group of phonemes called glides or semi-vowels that have negative values for both features: [-consonantal, -vocalic]. Strictly speaking, Mandarin has 20 phonemic consonants.³⁰ Traditionally, the [-consonantal] glides are grouped with the consonants. As the glides [w, y, ʅ] are not phonemic in Mandarin, we have chosen not to include them here, but will deal with them at a later point in this chapter.

(2.4)

Manner \ place		Labial	dental	alveolar	alveo-palatal	palatal	velar
Stop	[+asp]	p ^h		t ^h			k ^h
	[-asp]	p		t			k
affricate	[+asp]		ts ^h		tʃ ^h		
	[-asp]		ts		tʃ		
fricative	[+asp]	f	s		ʃ		x
	[-asp]				ʒ		
approximant	nasal	m		n			ŋ
	liquid			l			
	retroflex			ɻ			

Two major parameters are used in phonetics to differentiate sounds in language: place of articulation and manner of articulation. An important feature in the dimension of manner of articulation in Mandarin is [±aspiration] ([±asp] for short), denoted here by a superscript

²⁸ In autosegmental phonology, the segment does not have to be a fully specified pronounceable segment, but a partial one, a theory that will not be expounded here.

²⁹ These vowel features are terminal features of [LAB] ([round]) and [DOR] ([high] and [back]). See Broe (1992) for details.

³⁰ The three palatal obstruents [tʃ, tʃ^h, ʃ], which normally appear in a Mandarin table of consonants, are excluded here because they are not, strictly speaking, phonemic. They will appear later in a more inclusive table in the section on variations of phonemes (Section 2.3).

diacritic³¹ 'h', that divides the obstruents (stops, affricates and fricatives) into two groups: those that are aspirated and those that are not. In physical terms, aspirated consonants involve a strong puff of air coming out of the lungs, whereas unaspirated consonants do not have this trait. Regarding the difference between the alveopalatal fricatives [ʃ] and [ʒ], there has been controversy. Textbooks and grammar books published in the People's Republic of China (e.g., Wang and Pang 1996, p. 156) distinguish the two in terms of [voicing]; namely [ʃ] is voiceless while [ʒ] is voiced. However, that would mean the positing of a voicing feature which is otherwise unwarranted for the Mandarin obstruents. One way to avoid this theoretical inadequacy is to assume that [aspiration] is the feature which distinguishes the language's fricatives as with the other obstruents. This is the position held by many linguists outside China, and is adopted in the table above. It is interesting to note that [aspiration] as a distinctive feature is often hard to comprehend by speakers of a language making a distinction among its obstruents in terms of voicing rather than aspiration. For instance, to a speaker of English, the aspiration distinction in Mandarin sounds indistinguishable from the voicing distinction in English. The reverse situation is true for native-Mandarin-speaking learners of English.

From the point of view of place of articulation, the consonants can be classified into three major groups: [LABIAL] (or [LAB] for short) which include the labials, [CORONAL] (or [COR] for short) which include the dentals, the alveolars and the alveopalatals, and [DORSAL] (or [DOR]) which include the rest. The [COR] alveopalatals [tʃ^h, tʃ, ʃ, ʒ] are a special case. These sounds are similar to English [tʃ, dʒ, ʃ, ʒ] (the initial consonants in *church*, *judge*, *ship* and *genre*, respectively) in place and manner of articulation, but are different from their English counterparts in that they are pronounced without the protruding of the lips but instead with the additional feature of curling the tip of the tongue toward the front of the hard palate. The latter characteristic makes them [retroflex] sounds. Mandarin spoken as a second dialect in non-Mandarin-speaking areas, particularly in the Southeast provinces of China, normally does not have this [retroflex] feature. Taiwan Mandarin, for one, clearly lacks this feature.

2.1.2 Vowels

Mandarin has a relatively small set of phonemic vowels, compared with some other Chinese dialects (e.g. Shanghai). There are six phonemic vowels³² which are given below:

(2.5)

	front		central	back	
	unround	round		unround	round
high	i	ü			u
mid				ɤ	o
low			a		

³¹ Another very common way of transcribing aspiration is the use of the 'prime' sign, with which the aspirated [p] would be [p'].

³² The vowels after the sibilants [tʃ^h, tʃ, s, tʃ^h, tʃ, ʃ, ʒ] are dealt with later in this chapter.

Three features are sufficient in distinguishing the phonemic vowels in Mandarin: [backness] (front/back), [height] (high/low) and [roundness] (round/unround). Unlike many other Chinese dialects, Mandarin has two high front vowels, [i] and [ü]. While [i] is a very common vowel similar to the English vowel in *beat*, [ü], which is pronounced with the tongue positioned as in [i] and the lips positioned as in [u], is not as common. Not only is it often absent from other dialects of Chinese, but it is also occasionally absent from Mandarin as spoken in Taiwan. Thus, one sometimes hears *nǐ péngyǒu* 你朋友 '(literally) you friend' in place of the targeted *nǚ péngyǒu* 女朋友 'girl friend' in Taiwan Mandarin.

The mid-vowel /ɤ/ is often substituted for the English schwa [ə] by an English-as-a-second-language (ESL) learner whose mother tongue is Mandarin. Both are non-rounded mid-vowels, but the Mandarin one is tenser and further back in the oral cavity. The low vowel /a/ is fairly similar to the English vowel [a] in *father*, the mid vowel /o/ to that in *boat*, and the back vowel /u/ to that in *boot*. All five vowels have contextual variations, a topic to which we will return shortly.

2.2 The Syllable

One of the most remarkable phonological characteristics of Mandarin (and the Chinese language in general) is the salience of its syllable. The following quote from Jerry Norman (1988) is typical of linguists of Chinese:

'There is a sense that Chinese is also phonologically monosyllabic. In almost all descriptions of Chinese, the syllable is taken as a kind of self-contained entity which forms the basis of phonological description... In historical comparison, [the syllable] is the largest relevant unit; another important feature of Chinese dialects (and perhaps of other monosyllabic languages as well) is that any one dialect contains a fixed number of possible syllables. Even when new terms are borrowed from foreign languages, they are interpreted in terms of the existing set of syllables... A further consideration is that most phonological processes affect the syllable without reference to its lower level constituents.' (p: 138)

What is also remarkable about the Mandarin syllable is that there is a very limited number of them, just a little more than 400—the official figure from the PRC is 405—when tonal difference is disregarded. These 405 syllables are given in the following Table of Beijing Sounds and Syllables:

Standard Table of Beijing Sounds and Syllables

Initials	Open-Mouth (A)																	Close-Teeth (B)							Round-Lip (C)							Tense-Lip (D)					
	a	o	e	ɛ	ɛ	ai	ei	ao	ou	an	en	ang	eng	ong	i	ia	iao	ie	iou	ian	in	ing	ing	ong	u	ua	uo	ui	uan	uen	uang	ong	ü	üan	ün		
b	ba	bo				bai	bei	bao	ban	ben	bang	bang		bi	biao	biao	bie	biu	bian	bin	bing	bing		bu	buo			uan	uen	uang	ong	ü	üan	ün			
p	pa	po				pai	pei	pao	pan	pen	paang	paeng		pi	biao	biao	pie	piu	pian	pin	ping	ping		pu	puo			uan	uen	uang	ong						
m	ma	mo				mai	mei	mao	man	men	maang	maeng		mi	mao	mao	mie	miu	man	min	ming	ming		mu	muo			uan	uen	uang	ong						
f	fa	fo				fei			fan	fen	fang	fang												fu													
d	da	da	de			dai	dei	dau	dau	dau	dang	dang	dang	di	diao	diao	die	dieu	dian	ding	ding		du	duo			duan	duan	duang	ong							
t	ta	ta	te			tai	tei	tau	tan	tan	tang	tang	tang	ti	tiao	tiao	tie	tieu	tian	ting	ting		tu	tu			tuan	tuan	tuang	ong							
n	na	na	ne			nai	nei	nau	nan	nan	nang	nang	nang	ni	niao	niao	niet	nieu	nian	nin	ninang	ninang		nu	nuo			nuan	nuan	nuing	ong						
l	la	la	le			lai	lei	lau	lan	lan	lang	lang	lang	li	liao	liao	lie	liu	lian	lin	ling	ling		lu	luo			luan	luan	luang	ong						
z	za	za	ze	zi		zai	zei	zau	zan	zan	zang	zang	zang										zu	zuo			zuan	zuan	zuing	ong							
c	ca	ca	ce	ci		cai	cei	cau	cun	cun	cang	cang	cang										cui	cui			cuan	cuan	cuing	ong							
f	fa	fa	fe	fi		fai	fei	fau	fan	fan	fang	fang	fang										fu	fu			fuan	fuan	fuing	ong							
zh	zha	zha	zhe	zhi		zhai	zhei	zhau	zhan	zhan	zhang	zhang	zhang										zhu	zhuo			zhuo	zhuo	zhuang	ong							
ch	cha	cha	che	chi		chai	chei	chau	chan	chan	chang	chang	chang										chu	chuo			chuo	chuo	chuang	ong							
sh	sha	sha	she	shi		shai	shei	shau	shan	shan	shang	shang	shang										shu	shuo			shuo	shuo	shuang	ong							
r	ra	ra	re	ri		rai	rei	rau	ran	ran	rang	rang	rang										ru	ruo			ruo	ruo	ruang	ong							
j														ji	jia	jiao	jie	jiu	jian	jin	jing	jing	jong										ju	juo	juan	jun	
q														qi	qia	qiao	qie	qiu	qian	qin	qing	qing	qiong										qu	quo	quan	qun	
x														xi	xia	xiao	xie	xiu	xian	xin	xing	xing	xiong										xu	xuo	xuan	xun	
g	ga	ga	ge			gai	gei	gao	gan	gan	gang	gang	gang										gu	guo			guo	guo	guang	ong							
k	ka	ka	ke			kai	kei	kao	kun	ken	kang	kang	kang										ku	kuo			kun	kun	kuang	ong							
h	ha	ha	he			hai	hei	hao	han	han	hang	hang	hang										hu	huo			huan	huan	huang	ong							
a	a	a	a	e		ai	ei	ao	an	an	ang	ang	ang										ü	üo			üan	üan	üang	ong				yu	üo	juan	yun

Even when tonal difference is considered as a difference in syllable type, there are only about 1200 types. This number is remarkably small in contrast to that in English, which has more than 8,000 syllable types according to one source (De Francis 1984). One consequence of this paucity of syllable types is that in Mandarin there are a great many homophones, especially at the morpheme level. We will return to this topic of homophones in the next chapter.

2.2.1 The Initial And the Final

The Chinese syllable has been the substance of scholarly studies for centuries in China. As particularly evident in such rhyme dictionaries as *Qieyun* (Lu Fayuan, A. D. 601), a Chinese syllable is traditionally seen as having two parts: the initial (*shēngmǔ* 声母) and final (*yùnmǔ* 韵母).³³ The initial is usually the single consonant found at the beginning of a syllable while the final everything that follows. The initial may be empty, or a 'zero initial' (*língshēngmǔ* 零声母) in which case, the initial consonant is absent, and the syllable begins with a vowel³⁴ which is still considered to be part of the final.

The division of a syllable into just two parts seems to be psychologically real in the subconscious linguistic knowledge of native Mandarin speakers. Studies (e.g., S. Wang 1993) have shown that Chinese who have not learned an alphabetical system such as Pinyin or the writing system of English cannot further segment a Chinese syllable final into its component sounds³⁵—suggesting the integrity of the Chinese final. This bipartitional approach to syllable segmentation is still largely used in the dialect studies of Chinese in the People's Republic of China. There, in almost all books of dialect studies—a great number of which have been produced during the last ten years, one can find lists of all the initials and all the finals of the dialects under study.

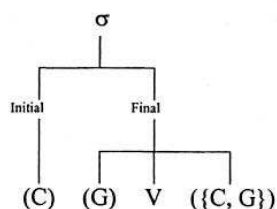
Scholars of the Chinese language perhaps would have been content with the initial-final partition of the Chinese syllable, had not Western linguistics been brought to China by such pioneering modern linguistic researchers as Yuen Ren Chao (or in Pinyin, Yuanren Zhao) early in the Twentieth Century. Today, many grammar books published in the People's Republic of China reflect the influence of modern linguistics from the West. One example is that in many grammar books, the Mandarin syllable is described in finer details, which we have distilled in the following notation:

³³ *Qieyun* 切韵 also indicates the existence of tone over the syllable. We will address tone later in this chapter.

³⁴ The vowel may change into a glide. See the sections on vowels.

³⁵ Samuel Wang found that some native speakers of Taiwanese, a subdialect of Min (or Fukienese) could not even segment a Taiwanese syllable into its initial and final. However, given the existence of many secret languages, language games and speech errors which move finals around, it is indisputable that initial-final segmentation is psychologically real.

(2.7)



Where G is a contextual variation of a high vowel, and C in the Final is a nasal consonant.

Among the symbols, 'σ' represents a syllable, C a consonant, V a vowel, and G a glide (which is a contextual variation of a high vowel). The use of the braces indicates that all but the nucleus vowel V is optional in a syllable; the use of the curly brackets means that only one of the members enclosed can appear at a time. The above schema, if spelt out, yields the following 12 syllable structures in Mandarin. For consistency, all examples given are first-toned monosyllabic words.³⁶

(2.8)

Syllable Types	Examples		
	IPA	Pinyin	
CGVC	pyɛn	bian	边 'side'
CGVG	ʃwɛy	shuai	摔 'break'
CVC	fɿŋ	feng	风 'wind'
CVG	xey	hei	黑 'black'
CGV	tɕya	jia	家 'family'
CV	t ^h a	ta	他/她/它 'he/she/it'
GVC	yɛn	yan	烟 'smoke'
GVG	wɛy	wai	歪 'not straight'
GV	ya	ya	鸭 'duck'
VC	an	an	安 'peace'
VG	aw	ao	凹 'convex'
V	u	wu	屋 'house'

The three parts which form the final of a syllable have been referred to as the 'head' *yùntóu* 韵头, (or 'medial' *jièyīn* 介音), the 'middle' *yùnfǔ* 韵腹 and the 'tail' *yùnwěi* 韵尾

³⁶ Please refer to (2.17) for the use of phonetic symbols for glides (e.g., [y]) in this chapter.

respectively. The head is a high vowel variation of a glide [y], [w] or [y̥].³⁷ The middle is any one of the vowels when a glide is not present. When it is, the middle is a non-high vowel. The tail has four forms: a glide [y] or [w], or a nasal [n] or [ŋ].

Depending on what sound starts them, the finals have traditionally been classified into four groups: 1) the 'open-mouth finals' (*kāikǒuhū* 开口呼) which begin with a non-high vowel (i.e., [a], [o] or [ɤ]), 2) the 'close-teeth finals' (*qíchīhū* 齐齿呼) which begin with the high front unround vowel [i], 3) the 'close-mouth (lip-rounding) finals' (*hékǒuhū* 合口呼) which begin with the high back rounded vowel [u], and 4) the 'tense-lip finals' (*cuōkǒuhū* 撮口呼) which begin with the high front rounded vowel [ü]. The columns of the Standard Table of Beijing Sounds and Syllables, given in (2.6), are normally arranged based on this four-way division. Mandarin finals have also been classified into simple finals, complex finals, and nasal finals. A simple final contains only one vowel. A complex final consists of a diphthong (two-vowel sequence³⁸) or a triphthong (three-vowel sequence). A nasal final ends in a nasal consonant. In Pinyin, the Mandarin finals are given below:

(2.9)

Type of Finals	Open-Mouth	Close-Teeth	Close-Mouth	Tense-Lip
Simple		i	u	ü
	a	ia	ua	
	o		uo	
	e	ie		üe
Complex	ai		uai	
	ei		uei(ui)	
	ao	iao		
	ou	iou(iu)		
Nasal	an	ian	uan	üan
	en	in	uen(un)	ün
	ang	iang	uang	
	eng	ing	ueng	
	ong	iong		

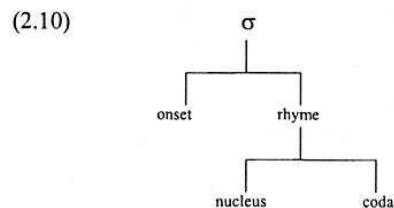
As shown above, a number of finals contain diphthongs. A noteworthy property of these two-vowel sequences is that, compared with similar strings in English, they are much more fused. A final with them often sounds more like single vowels (or monophthongs) to the ears of a native English speaker. For instance, the <ai> in 'Shanghai' is said with a lot less transition from the vowel to the glide than the similar [ay] in 'bye' in English. Thus, a native English speaker, when

³⁷ These glides are sometimes represented by [j], [w], [ɥ] respectively in previous works on Mandarin phonetics.

³⁸ One of the vowels appears in the form of a glide (see later in this chapter for details).

saying the word 'Shanghai', sounds to be exaggerating the <ai> to a native Mandarin speaker. Another notable matter in the above table is that there is a special final that is not included in it: <er>. The reasons for the omission are: One, it does not belong to any of the groups in the table. Two, morphemes/words that take <er> as their syllable final are so few as to be marginal. Three, it can only occur alone—neither with an initial consonant nor with a prevocalic glide.

The traditional initial-final division of the Mandarin syllable resembles the well-cited analysis of syllable structure in modern linguistics, as given below:



In this analysis, a syllable is first partitioned into an 'onset' and a 'rhyme' (also spelt 'rime'). The rhyme is further divided into a 'nucleus' vowel (or the 'peak') and a 'coda'—the final consonant or consonants of the syllable. Initially, one may think that 'onset' and 'rhyme' can be regarded as being the same as 'initial' and 'final'. However, they are not quite identifiable as will be seen in what follows.

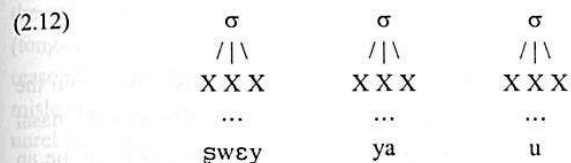
Several questions about the constituents of the Mandarin syllable can be raised within the syllable analysis in (2.10). One of the most well-known is where the prevocalic glide goes. This question has never been raised within the traditional initial-final framework, in which the glide is clearly indicated to be part of the final. There are at least two schools of theory regarding this issue. One treats the prevocalic glide as a secondary feature of the onset (S. Duanmu 1990), the other, the more traditional, considers it part of the nucleus. To understand this controversy, we need to digress a little to see another important characteristic of Mandarin syllables: that they all weigh the same.

It is clear from the table in (2.8) that Mandarin syllables may contain from 1 to 4 sounds, and there are altogether twelve patterns for their combination. However, these facts should not be construed as meaning that Mandarin syllables vary in weight. The truth is that, unlike many other languages in which the numbers of Cs and Vs (or Gs) in a syllable matter in the weight of the syllable, the weight of the Mandarin syllable remains constant across syllable types within a specific context of utterance. Thus, the metrics in Mandarin poetry do not normally count the number of sounds in a syllable, although they require the tone (a topic which will be addressed later) to be more or less of a certain type in a given environment.

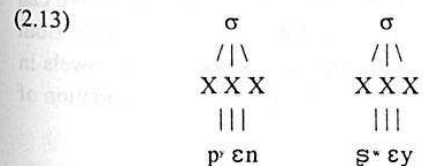
During the last decade, linguists have tried to capture the same-weight phenomenon in more formal terms. One way of doing this is to say that within the syllable, there is a fixed number of timing slots. For instance, [ʃwɛy] 'break', [ya] 'duck' and [u] 'house' would all have three timing slots within the syllable:



Depending on the theory one adheres to, the timing of a syllable can be analyzed and represented in several ways. What is shown above is one which uses a 'place holder' symbolized by 'X', to encode one timing unit within a syllable. With just three timing units, a question emerges immediately: how should the connection be made between these timing units and the actual Cs, Vs and Gs in Mandarin? The following illustrates the problem more visually:



If the first timing slot 'X' is in the onset position, and the second and third in the rhyme position,³⁹ where should the medial glide (e.g., [w] in [ʃwɛy]) go? Is it part of the timing of the onset, the first slot, or part of the timing of the rhyme in the second slot? As mentioned earlier, one theory holds that the medial glide is part of the first slot. To be more specific, it is a secondary feature of the onset. Or, if the initial consonant is absent, it is the onset itself. If the medial glide is [y], then the onset has a secondary feature of palatalization ([+high, -back]), and if it is [w], the onset has a secondary feature of [+round]. For example, the onset in the syllable [pyɛn] 'side' would be [pʲ], and the onset in [ʃwɛy] 'break' would be [ʃʷ]. The two syllables would be analyzed thus:



With the medial glide taken care of in this manner, the rest of the components in the syllable all fit into the syllable structure. This theory seems to have neatly solved the problem of the position of the prevocalic glide. Yet, it has done so at a high price. Such uniform treatment of the medial glide leaves unexplained a number of observations about the language. In secret

³⁹ Not all theories assume a multi-level representation of the syllable as shown in (2.10). Some assume a 'flat' structure without the intermediate level of onset/rhyme division. The difference is not crucial in our discussion, so it will be ignored here.

language, language play and speech errors in Mandarin, it is very common to see exchange or substitution of rhymes that are complete with the medial glide. In these language processes, the medial glide behaves quite obviously as a part of the rhyme. Also, to a native speaker, treating the medial glide as a mere secondary feature of the onset is quite counter-intuitive. Both the [y] and the [w] in the above two examples, for instance, require a fair amount of time to utter. They are by no means uttered simultaneously with the onset consonant, as a secondary feature is expected to be. It seems that the fault of this theory stems from a Procrustean bed or what a Chinese saying describes as 'cutting the feet to fit the shoes': trying to fit the language data into a theory rather than developing a theory based on the data. In brief, even though we know that the Mandarin syllable weighs the same across categories, how the weight is distributed across the phonemes in the syllable remains an outstanding problem.

2.2.2 Phonotactic Constraints

The twenty consonants in the table given in (2.4) do not occur in all positions within the syllable. Except [ŋ] and [ʁ], all occur at the beginning of the syllable. The [DOR] nasal consonant [ŋ] occurs only at the end of a syllable in Standard Mandarin, although it can be an important syllable-initial consonant in other dialects spoken in the greater Mandarin area (e.g., Jinan of Shandong Province). Another consonant that only occurs syllable-finally in Mandarin is the retroflex approximant [ʁ], which only combines with the mid-vowel [ɤ] to yield the form [ɤʁ] (Pinyin <er> mentioned previously in our discussion of Mandarin finals) for a very few lexical items; and it often appears as a sub-syllabic suffix⁴⁰ with a diminutive meaning. In fact, while all vowels (and glides) appear syllable finally, there are very few consonants that can occur at the end of a syllable. In addition to [ŋ] and [ʁ], there is the [COR] nasal [n]. This latter nasal consonant stands out from the rest of the consonants in that it is the only one that appears both at the beginning and end of a syllable (e.g., *nán* 男 'male'). Within the syllable, there is another important feature in Mandarin: there are no consonant clusters; that is, two consonants never occur adjacent to each other in a syllable. Immediately following an initial consonant, there can be a vowel which, if followed by another vowel, is a high vowel that has become a glide. Both high and low vowels can begin and end a syllable, but when there are more than two vowels in the syllable, one of them is always a high vowel. A glide which is the [-consonantal] variation of the high vowel may begin or end the syllable.⁴¹

2.2.2.1 Syllabic Consonants

We have learned that if a syllable has an initial consonant, that consonant always has to combine with a vowel to form a syllable. That is, a syllable has to have a vowel as seen in (2.7). However, there is a group of Mandarin consonants which can form the peak of a syllable and behave just like a vowel. These consonants are called syllabic consonants. Mandarin has two sets

⁴⁰ Mandarin, as all Chinese dialects, has no sub-syllabic suffix except for this one. We will address this matter further in the next chapter.

⁴¹ We will explain the vowel and glide correspondence in the next section.

of such consonants: the dentals [ts^h, ts, s] (Pinyin <c, z, s>) and the alveopalatals [tʃ^h, tʃ, ʃ, ʒ] (Pinyin <ch, zh, sh, r>). These consonants can form syllables on their own by being prolonged and voiced. The voiced part gives these consonants the vowel-like and syllabic quality. The representation of such syllables has always been challenging. One way of doing it is just to use the consonant symbol with or without the diacritic ' , ' underneath it to show that that consonant is syllabic. For instance, in Cantonese, a syllable with a nasal syllabic consonant is normally represented with just the consonant itself (e.g., [ŋ] for the Cantonese name *Ng*). Another way of doing it is to use a vowel symbol after the consonant (e.g., [tsɿ], [tʃɿ], and sometimes [tsz⁴²]). This is actually a very common practice among linguists of Chinese (e.g., C.C. Cheng 1973 and Lin and Wang 1992). They normally use the IPA symbol [ɿ] for the vowel after the dentals, and [ɿ] for the vowel after the alveopalatal retroflexes. Both vowels, according to Lin and Wang, are apical (tongue-tip) vowels. However, for the Mandarin syllables with syllabic consonants, there are four reasons that a vowel symbol should not be used.⁴³ The first is that using a vowel symbol gives the misleading indication that the consonant onset and the following vowel are two individual, unrelated sounds, and thus misses the fact that the voiced part of the syllable is just a continuation of the previous consonant. Secondly, the approach fails to explain why the vowel cannot take any other consonants as its onset. Thirdly, it fails to explain why the vowel cannot take a coda (a final consonant), while all the other vowels can. Fourthly, it fails to explain why the vowel cannot stand alone to form a syllable while all other vowels in Mandarin can. Lastly, when liaison occurs between a syllable and a following one with [a] (See Section 2.3), the added consonant initial of [a] is clearly a derivative of the preceding consonant—sharing at least its place of articulation—if the consonant is a syllabic one. Otherwise, the initial consonants of the two syllables have nothing to do with each other. Thus, in a tree-structure analysis, these syllables should be represented as follows:

(2.14)	σ	σ	σ	σ
	/\	/\	/\	/\
	C V	C V	C V	C V
	/	/	/	/
	tʃ ^h	tʃ	tʃ ^h	tʃ
	'to spray'	'capital'	'to eat'	'to know'

2.2.2.2 Syllable Gaps

Not all Mandarin consonants combine with all vowels to form a syllable, as the Standard Table of Beijing Sounds and Syllables (see (2.6)) shows. The missing combinations create two types of gaps in syllable types. One type of gap is created when a natural class of consonants does

⁴² This last symbol [z], of course, is not a conventional vowel symbol, but it has been used by linguists of Chinese for the purpose in discussion.

⁴³ See Section 2.3.3 for more discussion.

not combine with a certain final. For instance, the whole class of labial obstruents <b, p, m, f> fails to combine with the 'open-mouth' final <ong>, even though all the rest of the classes of consonants do combine with it. There are also gaps in which a natural class of consonants does not combine with a group of finals beginning with a certain vowel. For instance, all labial obstruents <b, p, m, f> fail to combine with finals beginning with the high-front-rounded vowel <ü>. The other type of gaps, on the other hand, are created when a certain consonant fails to combine with certain final even though all the rest of the consonants within the same natural class do combine with that final. An example of such a syllable gap is <bou> which does not exist even though <pou, mou, fou> do. Another example is the absence of <shong>: The retroflex <sh> cannot combine with <ong> while the rest of the retroflex consonants can: <zhong, chong, rong>.⁴⁴ Presumably, the second type of gaps may be more of an accident than the first, and therefore, may potentially enter the syllable set more easily.

Synchronically speaking, however, syllable gaps are seldom, if ever, filled in Mandarin; the set of Mandarin syllables (as given in the Table of Mandarin Sounds) is closed. Syllables that do not exist today are ill-formed and rejected by native speakers. The relative uniqueness of this situation is better understood if we consider the accidental gaps in, say, English. In this language, a native speaker will accept a gap such as 'blick' as being a well-formed syllable, even though it is not in use—there is no meaning attached to it. The same is not true for the gaps in Mandarin. If not in use, it is not normally accepted. The closedness of the syllable set in Mandarin is manifested in the transliteration of foreign words, as mentioned earlier in the quote from Norman (1988). Foreign syllables (and sounds) are not allowed into the system, but are normally rendered into syllables that are members of the closed set. Diachronically speaking, when a two-syllable word contracts into a single-syllable one, the output syllable is usually among the synchronically acceptable set and not the phonological combination of the two original syllables.

2.3 The Processes

One important characteristic of Mandarin (as well as other Chinese dialects) is that segmental phonological processes (i.e., processes not involving tone) almost always occur within the syllable. One rare exception is an assimilatory segment addition process whereby a following single-vowel syllable [a] copies, in its onset position, the last segment from the preceding syllable. Examples of this process are given below in (2.15). The addition is shown in the IPA illustration. These examples show that the last segment of the previous syllable is invariably a high vowel (or its glide variant⁴⁵) or one of the two nasal finals. This last segment is copied in the following syllable of the interjective particle [a] in the neutral tone.⁴⁶

⁴⁴ See S. Wang (1994) for a discussion of phonotactic gaps in Chinese.

⁴⁵ By the Glide-Formation Rule given later in (2.18), a high vowel becomes a glide when adjacent to a non-high vowel.

⁴⁶ See the section on Mandarin neutral tone in this chapter.

(2.15)

	IPA	Pinyin		
a.	xwey̯ya	huì a	会啊	'(pronoun) can!'
b.	tɕ ^h ü̯ya	qù a	去呀	'Go!'
c.	xaw̯wa	hǎo a	好哇	'Good!'
d.	ɕiŋ̯ga	xíng a	行啊	'Will do!'
e.	k ^h anna	kàn a	看那	'Look!'
f.	tʂ ^h ɣa	chī a	吃啊	'Eat!'
g.	tʂ tsa	zì a	字啊	Words!

Similar cross-syllable processes are quite rare. For instance, the alveolar nasal [n] is not copied in the second syllable even though that syllable starts with a low vowel [a] (e.g., *mián'ǎo* 棉袄 'cotton-padded coat', but not *mián nǎo*),⁴⁷ indicating the unity and independence of the syllables in Mandarin. Interestingly, two reviewers of this book, both native American English speakers who are competent users of Mandarin-as-a-second-language, expressed difficulties with such lack of liaison between syllables in their Mandarin. One avoided using such terms as *mǐn-nán-yǔ* 闽南语 'Min dialect' since he would produce *mǐn-nán-nǚ* 闽南女 'Min girl' instead. The other has been heard to say *huā-níng* when he meant to say *huān-yíng* 欢迎 'welcome.' In both cases, the speakers applied English liaison rule to their production of Mandarin.⁴⁸

2.3.1 Consonants

In sharp contrast to the single phonological process across syllable boundaries, there are many such processes within the syllable. Mandarin phonemic vowels and consonants may have allophones: variants brought about by some contextual difference. In the Table of Consonants (2.4), we listed twenty consonants. However, all are phonemes—sounds that have minimal pairs to show that they are in contrast. Before we proceed to the Mandarin segmental phonological processes, an explanation of the concept of minimal pairs is in order here. Let us see an example from English. We know that the consonants [p] and [b] in English are phonemes because there are minimal pairs such as [pɛt] 'pet' and [bɛt] 'bet' to show that they are in contrastive distribution. The only significant difference between the two is that [p] is voiceless while [b] is

⁴⁷ By Pinyin spelling conventions, if the non-initial syllable of a word begins with a vowel, that syllable is separated from the preceding one by an apostrophe (e.g., *mián'ǎo* 棉袄 'cotton-padded coat', and *xī'ān* 西安 'Xi'an, a city in Northwest China').

⁴⁸ Note that in both cases, the liaison occurred between a previous consonant and a following vowel. In phonetic terms, *yǔ* and *yíng* begin with a vowel; the use of <y> in both is based on Pinyin spelling convention.

voiced. The feature [voicing], therefore, is a contrastive feature in English. On the other hand, the aspirated [p^h] and the unaspirated [p] are variations of the same [p] and not two individual phonemes in English, even though both forms exist: [p^h] in [p^hɪt] 'pit' and [p] in [spɪt] 'spit'. The crucial difference is that here [p^h] and [p] are not in contrastive distribution, but in complementary distribution: the unaspirated stop occurs only after the sibilant [s] while the other occurs in syllable-initial position. In this case, the feature [aspiration] which differentiates the two is therefore not a contrastive feature.

Complementary distribution is one of the most important pieces of information used to determine whether or not two or more sounds go together as allophones of the same phoneme. Sometimes, however, complementary distribution alone is not sufficient. Consider the set of palatal consonants listed in (2.6), the Standard Table of Beijing Sounds and Syllables. These three sounds [tɕ, tɕ^h, ɕ] are heard only before high, front vowels (i.e. [i] and [ü]). On the other hand, there are three series of obstruents that are never heard before these two vowels, the dentals [ts, ts^h, s], the alveopalatals [tʃ, tʃ^h, ʃ], and the velars [k, k^h, x]; therefore, the palatals are in complementary distribution with all three. The question is to which one of these obstruent series should the palatals be assigned as allophonic variants?

One might be inclined to let the historical development of the palatals decide the matter. Most cases of these palatals have evolved from velars at an earlier time. The [x]-[ɕ] and [k]-[tɕ] correspondences⁴⁹ are clear comparing Cantonese [hakaw] 'shrimp dumpling' with Mandarin [ɕya-tɕyaw] 'shrimp dumpling'. One could, therefore, conclude that the palatals should be considered variants of the velars (i.e., [k] → [tɕ], [k^h] → [tɕ^h], [x] → [ɕ]). However, some of today's Mandarin palatals have developed from the dental series; and there is no way for modern Mandarin speakers to distinguish a palatal of the velar origin from one with a dental origin—at least not without philological study which is irrelevant for a synchronic study.

A better criterion for a decision on the allophonic membership of palatals rests on the concept of phonetic similarity. Presumably contemporary speakers of Mandarin feel palatals to sound more like alveopalatals than like either dentals or velars. One bit of evidence for this assumption is the fact that native Mandarin speakers are often heard replacing the English alveopalatals with the Mandarin palatals before high front vowels: [dʒɪp] 'jeep' becomes [tɕɪp]; [tʃɪz] 'cheese' becomes [tɕ^hɪz]; and [ʃɪp] 'sheep' becomes [ɕɪp]. The evidence suggests that the native Mandarin speakers cannot produce the alveopalatals before a high front vowel or glide. On the other hand, the same is not true for velars and dentals. Both seem to induce fewer problems for the Mandarin speakers. The velar-initial English words [ki] 'key', and [gis] 'geese', and the alveolar-initial English word [sik] 'seek', for instance, are usually mastered without much problem. Thus, evidence from the ESL learning by native Mandarin speakers suggests that synchronically, the alveopalatals are the underlying phonemes from which the palatals are derived. If this is indeed the case, the phonological process of palatalization can be written as follows:

⁴⁹ The Mandarin consonant [x] in contemporary Cantonese is a glottal fricative [h].

(2.16) The Synchronic Palatalization Rule

alveopalatals → [+high, -back] / _____ [+vocalic, +high, -back]

Having given this tentative synchronic rule, we should mention that it is perhaps not unreasonable to assume that the phonemic origin of the palatals simply does not exist synchronically. The complementary distribution of the palatals versus the dentals, the alveopalatals, and the velars does not have synchronic significance, but is just a result of the historical development which palatalized some velars and dentals.

The following table gives a summary of all the consonants and glides in Mandarin. Non-phonemic ones are enclosed in braces (cf. (2.4)).

(2.17)

Manner \ place		Labial	dental	alveolar	alveo-palatal	palatal	velar
Stop	[+asp]	p ^h		t ^h			k ^h
	[-asp]	p		t			k
affricate	[+asp]		ts ^h		tʃ ^h	{(tɕ ^h)}	
	[-asp]		ts		tʃ	{(tɕ)}	
fricative	[+asp]	f	s		ʃ	{(ɕ)}	x
	[-asp]				ʒ		
approximant	nasal	m		n			ŋ
	liquid			l			
	retroflex			ɻ			
glide		{(w)}				{(y)} { (y̥)}	

2.3.2 Vowels

While it is evident that in Mandarin, there are only three outstanding allophones (the palatals) in consonants, there are more contextual variants in vowels. In fact, all six of the phonemic vowels have variations. A high vowel, for example, when occurring before or after another vowel (which is, incidentally, always [-high] in Mandarin), assumes the form of a glide; namely, [i] becomes [y], [u] becomes [w], and [ü] becomes [y̥]. The processes can be captured by the following two mirror image rules. The first says that a high vowel becomes a corresponding glide if appearing before another vowel, and the second that a high vowel becomes a corresponding glide if appearing after a vowel.

(2.18) Glide Formation Rules

- a. [+vocalic, +high] → [-vocalic] / _____ [+vocalic]
 b. [+vocalic, +high] → [-vocalic] / _____ [+vocalic]

Non-high vowels [ɤ] and [a] also have variations. However, the variation does not involve categorical change; their allophones remain vowels regardless of environment. The mid vowel [ɤ] has three context-induced allophones: [e, ɛ, ə] whose distribution is given below:

- (2.19) a. /ɤ/ → [e] / _____ i
 b. /ɤ/ → [ɛ] / [+high,-back] _____ Σ
 c. /ɤ/ → [ə] / _____ [+nas]

The rules say /ɤ/ appears as [e] before the high-front-unrounded vowel [i] (see (a)), as [ɛ] after [i] or [u] and before the syllable boundary, denoted by 'Σ' (see (b)), as [ə] before the nasals (see (c)), and as [ɤ] elsewhere. The following are examples that show the operation of these rules:

(2.20)

	IPA	Pinyin	
[e]	peɤ	bei	杯 'cup'
[ɛ]	ye	ye	叶 'leaf'
	pyɛ	bie	鳖 'turtle'
	ÿɛ	yue	约 'approximate'
[ə]	ən	en	恩 'gratitude'
	təŋ	deng	灯 'light'
[ɤ]	lɤ	le	乐 'happy'
	kɤ	ge	歌 'song'
	p ^h wɤ ⁵⁰	po	坡 'slope'

The low vowel [a], on the other hand, has just two context-induced allophones: [ɛ] and [ɑ]. Their distribution is illustrated below:

- (2.21) a. /a/ → [ɛ] / [+high, -back] _____ n
 b. /a/ → [ɛ] / _____ i
 c. /a/ → [ɑ] / _____ ŋ

⁵⁰ Many native speakers of Mandarin insert a high vowel [u] between the labial consonants [p, p^h, m, f] and [ɤ]. After glide formation, the syllables become [pwɤ], [p^hwɤ], [mwɤ], and [fwɤ] respectively (Pinyin <bo>, <po>, <mo>, and <fo>).

These rules spelt out in plain English are that the low vowel /a/ is raised to [ɛ] between the high front vowels [i] and [u] and the alveolar nasal [n], or before the high vowel [i], but is backed before the velar nasal [ŋ]. Elsewhere, it remains as an [a]. Examples of these allophones are given below:

(2.22)

	IPA	Pinyin	
[ɛ]	yɛn	yan	烟 'smoke'
	tɕ ^h yɛn	quan	圈 'circle'
[ɛ]	wɛy	wai	歪 'not straight'
[ɑ]	fɑŋ	fang	方 'square'
[a]	fan	fan	翻 'turn over'
	ma	ma	妈 'mother'

To summarize, all the Mandarin vowels, phonemic or phonetic (in braces), are given in the table below:

(2.23)

	front		central	back	
	unround	round		unround	round
high	i	ü			u
mid	(e)		(ə)	ɤ	o
	(ɛ)				
low			a	(ɑ)	

2.3.3 Pinyin and IPA

Pinyin, literally 'spell sounds', is a Latin-letter-based alphabetic system that was initially developed in the 1950s in the People's Republic of China to replace Chinese characters. No sooner had the system been officially promulgated in 1958 than that purpose was abandoned. Thereafter Pinyin began to be used as a phonetic aid for the promotion of *Pǔtōnghuà* 普通话, literally, Common Language, the official name for Standard Mandarin.⁵¹ Because it was developed as a writing system, Pinyin is not exactly a purely phonemic system. Rather, some symbols are phonemically oriented whereas others embody phonetic details.

Most consonant symbols are faithful representation of the phonemes of the language. There are three notable exceptions. As discussed in the last section, the palatal consonants [tɕ, tɕ^h, ɕ] are not underlying phonemes, but allophones that appear only before high front vowels. They should, therefore, be missing from an inventory of phonemes in Mandarin. In Pinyin, they

⁵¹ See Chapter 1 for a description of the various names for Mandarin.

are treated as separate individual sounds from those from which they are derived and are represented by the symbols <j, q, x> respectively. Such treatment of these allophones is not without good reasons. As discussed previously, the phonemic origin of these allophones is still largely a mystery. This raises the question of which set of symbols to use for the representation of the palatals, those for the dentals, the alveopalatals or the velars? For instance, how should <ji> 'chicken' be written? Should it be written as <zi>, <zhi>, or <gi>? Besides, as mentioned earlier, it is perhaps not unreasonable to assume that the phonemic origin of the palatals simply does not exist synchronically. If this assumption is valid, it makes sense to represent these palatal sounds separately even from a phonemic point of view. In terms of dialect division, the palatalization serves to identify dialects of the north which have this feature from dialects of the south which generally lack it. Without representing the palatals separately, this important distinction between Mandarin in the North and Non-Mandarin Chinese dialects in the South would not be represented.

Compared with the consonant symbols, the vowel symbols of Pinyin are more faithful representations of phonemes in Mandarin. In (2.5), we saw that Mandarin has six phonemic vowels [a, o, ɤ, i, u, ü], and in Section 2.3.2, we learned, in addition, that two non-high vowels have allophones, and the high vowels have glide counterparts. Pinyin has six vowel symbols <a, o, e, i, u ü> and two glide symbols. They cover all the phonemic vowels, but not all the allophones. In particular, we have Pinyin <a> to stand for the allophones [ɛ] between [i] and [n], [ɛ] before [i], [ɑ] before [ŋ], and [a] elsewhere. For the phonemic vowel /ɤ/, Pinyin has [e] before the high vowel [i], [ɛ] after the high vowel [i] and before the syllable boundary, [ə] before the alveolar and velar nasals, and [ɤ] elsewhere. For the three glides [w, y, ʏ] which are de-vocalicized high vowels, Pinyin has just two symbols: <y> and <w>. The former, <y>, is also the symbol for the de-vocalicized high front umlaut vowel [y̥] when used in conjunction with a following <u> symbol (e.g. <yuan> [y̥ɛn] 'circle').

In addition to not completely matching phonemic or phonetic information at the individual sound level, Pinyin differs somewhat from a strictly linguistic representation of the syllable. From (2.7) in the section on syllables, we learned that a syllable never has two high vowels adjacent to each other. Whenever two vowels appear together, one must be a non-high vowel, or whenever two high vowels are present, they would flank a [-high] vowel. In Pinyin representation, when the initial position is not empty (i.e. not a zero initial), the syllable final [yow] is <iu> (e.g., *liú* 溜 'to flee'), and the syllable final [wey] is <ui> (e.g., *tui* 推 'to push'). In both cases, the middle non-high vowel is omitted. When there is a zero initial, however, this vowel is shown (e.g., *yǒu* 友 'friend' and *wěi* 尾 'tail'). Also shown is the glide formation of the initial high vowels. At the syllable level, another piece of information that is not codified in Pinyin concerns the umlaut vowel [ü]. Where the information is predictable from context, the diacritic is not shown in Pinyin. After the palatals <j, q, x>, for instance, the <ü> is simply <u> (e.g., *jū* 橘 'orange', *qū* 区 'region', and *xū* 需 'need'). When [ü] begins the syllable, it is represented with a <y> followed by <u> (e.g., *yū* 愚 'stupid', *yuán* 圆 'circle', *yuè* 月 'moon'). In fact, <ü> is spelt only after the initials <l> and <n> (e.g., *nǚ*, 女 'woman', *lǜ* 绿 'green', and *lù* 略 'omit').

At the syllable level, Pinyin representation does not correspond to the phonemic information in yet another area: the representation of the syllables formed by only one syllabic consonant. As mentioned in Section 2.2.2.1, Mandarin has seven syllabic consonants: the sibilants alveolars and alveopalatals [ts^h, ts, s, tɕ^h, tɕ, ʃ, z]. These consonants provide substance for both the initial consonant and the peak vowel positions in the syllable structure. Pinyin uses the symbol <i> to represent the voiced part of the syllable, so that these seven syllables are represented with both a consonant and a vowel symbol: <zhi, chi, shi, ri, zi, ci, si>. Such representation does not create problems for native speakers of Mandarin learning Pinyin, but may cause trouble for Chinese-as-a-second-language learners who may mistake the vocalic part of the syllable for the high front unround vowel [i] found in *tī* 踢 'to kick' and *mǐ* 米 'rice'.

Some people may argue that the vocalic part in the syllables of syllabic consonants is actually a vowel that is in complementary distribution with the high front vowel [i], and therefore, the use of the <i> in both cases is justified. This usage signifies that the vowel of the syllabic consonant is just an allophone to the underlying vowel [i]. Such a relation, however, cannot be established. We learned previously in Section 2.3.1, that the dentals, alveopalatals, and velars are in complementary distribution with the palatals. The complementary distribution is quite clear cut, and there is no reason to believe that the complementary distribution has just one exception: the syllables with a single high front vowel [i]. Additionally, some dentals before high front vowels became palatals historically. Treating the vowel in the syllabic-consonant syllables as underlyingly a high front vowel would leave unanswered the question why these consonants have not become palatals. A third argument against assuming the vocalic part of these syllables to be the high front vowel is that the vowel part in the dental syllables and those in the alveopalatal syllables do not have the same value⁵²; it is not clear if they are the same vowel.

Since the oldest system of romanization for Chinese was introduced by Sir Thomas Wade in 1859 and developed by Herbert Giles in his 1912 dictionary, some half a dozen alphabetic systems have been developed and used for writing and teaching Chinese. In addition to varied choices of symbols for certain sounds, one major difference among them lies in how they treat phonemic and phonetic information. In particular, an allophone represented separately from its phoneme in one system may not be so in another. For instance, in the Wade-Giles system, the palatals [tɕ, tɕ^h, ɕ] are treated as if they are allophones of the alveopalatals⁵³ since both sets share the same set of symbols as the retroflex [tʂ, tʂ^h, ʂ]; namely <ch, ch', sh> respectively. In Pinyin, on the other hand, symbols for the former are <j, q, x> while those for the latter <zh, ch, sh>. Another example is that the Wade-Giles system does not distinguish between the aspirated affricates [tʂ, tʂ^h] in the primary symbols; both are <ch>, although they are distinguished by a secondary symbol, an apostrophe: <ch, ch'>. In Pinyin, they are represented distinctively in primary symbols as <zh> and <ch>. In sum, segmental phonology sometimes is and sometimes is not encoded in the alphabetic systems of Chinese.

⁵² They do not rhyme with each other. Neither do they rhyme with [i].

⁵³ Incidentally, this is the position mentioned in (16).

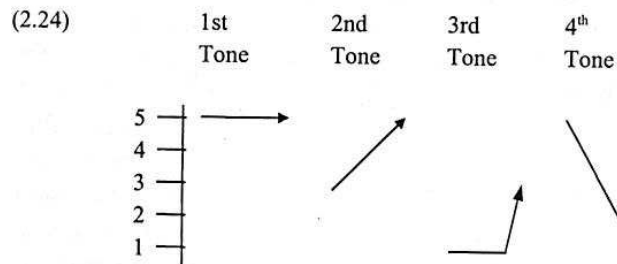
2.4 The Tones

In the last section, we looked at segmental processes in Mandarin. Now let us turn to the suprasegmentals, in particular, the tones of Mandarin. That Mandarin is a tone language is one of its most well-known features. But what is a tone? How does it work in language? In particular, what are tones like in Mandarin? These are among the questions that will be explored in this section.

The understanding of tone relies on knowledge of another linguistic entity called pitch. Acoustically, pitch can be measured in terms of fundamental frequency (F_0). Phonetically, the production of pitch involves the tensing of the laryngeal muscles. All languages manipulate pitch to encode meaning. However, while all languages do so at the phrase or sentential level which is called intonation, only some languages use pitch variation at the word/morpheme level. Languages that vary pitch at the word/morpheme level are said to be tone languages. A very simple example of the linguistic use of pitch at the word level can be found in Nupe, a language spoken in Nigeria. In this language, the syllable *ba* means 'to count' if said with a low pitch, but it means 'to be sour' if said with a high pitch.

2.4.1 Basic Tones

Not all tone languages use pitch in the same simple way as the Nupe example suggests. Pitch at the word or morpheme level is used in a more complex way in Mandarin, as it is in many Asian languages. In Mandarin, it is not just a matter of the height of the pitch varying to yield different level tones, but rather the pitch may go upward or downward to produce different contour tones. Several linguistic analyses have been developed in the past to describe tones. Some are more theoretically accomplished, more precise and insightful, while others are less so. One of the most used but less theoretical descriptions of tones was the Scale of Five Pitch Levels, developed by the late Yuen Ren Chao, the most well-known linguist of Chinese. On this Scale, the four basic Mandarin tones can be represented as here:



What the Scale does is to divide the pitch range of a person engaging in normal speech into five levels, with Level 5 representing the highest pitch, and Level 1 the lowest. Traditionally, tones in Mandarin are each given a number for ease of reference. The First Tone, the only level tone of the language, starts at the highest point on the Scale and continues at that same pitch for a designated period of time. The Second Tone, a rising tone, starts somewhere in the middle of the pitch range and rises upward to the highest point. In the production of the Third Tone, the speaker attempts to

start at the lowest pitch, continues at that low pitch for a little while, and then raises it somewhat before finishing. In producing this tone, the speaker may unintentionally start a little higher than the intended low pitch target due to the physiological constraints which make it hard for the speaker to reach the low target right away. Traditional descriptions which assume the third tone's value to begin with a falling pitch have failed to consider this. The Fourth Tone is falling and covers all the pitch range. It starts at the highest pitch level and drops to the lowest. Based on the measurement on Chao's Scale, the First Tone can be said to have the value of (55), indicating that the tone starts at the pitch level of 5 on the Scale and finishes at the same level. For the same reason, the rest of the four tones can be said to have the value of (35), (113) and (51). The four Mandarin tones as given here are the citation tones. That is, they are tones produced in isolation or in a final position where no other tones follow. In Pinyin, these four tones are represented by diacritics over the vowel, or if there are more than one vowel, over the lowest one. These four diacritics are shown below over the syllable <ba>.

(2.25)

	Pinyin	
1 st Tone	bā	八 'eight'
2 nd Tone	bá	拔 'pull out'
3 rd Tone	bǎ	靶 'target'
4 th Tone	bà	爸 'father'

In connected speech, these basic Mandarin tones often undergo context-induced modifications called tone sandhi. The best-known tone sandhi processes in the language involve the Third Tone (113). This tone, which is also phonetically the longest of the four in citation form (L Feng 1985), becomes a high rising tone similar to the second tone⁵⁴ (35) when appearing before another Third Tone⁵⁵. However, it becomes a low level tone (11), a 'half third' in Chao's terminology, when appearing before other basic tones. In other words, the Third Tone never takes on the citation form if there is another tone following it. The Fourth Tone also undergoes sandhi.

⁵⁴ It is not conclusive at the present time whether the modified Third Tone is completely identical to the Second Tone in value. According to Shen (1990), for instance, the second Third Tone is higher when following an inherently rising tone (i.e., a Second Tone) than a rising tone generated by the Third Tone Sandhi (p. 285), which indicates that the two rising tones are not quite the same.

⁵⁵ Tone sandhi as presented in this section is always true on an isolated two-syllable sequence. However, when the string gets longer and involves more than two syllables, the picture becomes more complex. Such complexity has given rise to sentence phonology, which will be briefly discussed later in this chapter.

This tone, when followed by another tone, is modified into (53) from the citation form of (51)⁵⁶. Similarly, the Second Tone has been found to alter its shape in connected speech. It becomes high level when sandwiched by the First or the Second in front and another tone after it. The only tone that, for a long time, was not found to undergo modification is the First Tone. Is there really a linguistic gap here? Recent studies by H. Lin (1992, 1996, and 1998) have suggested otherwise.

In these studies, we found that the perceived absence of modification on the First Tone is a result of the limitation of the theoretical tools used in the description of tones. Traditional phonological analyses of tones have looked exclusively at the direction along which the pitch moves: upward, downward or just steadily ahead. Theoretically, they ignored treating the timing along which the movement occurs. We suggest an analysis that takes the timing into account. In this analysis, each Mandarin tone is represented by three tonemes, each toneme representing, relatively speaking, one third of the time used to utter the tone in citation. Using the tools developed in the non-linear phonological theory in which tones are represented by a sequence of level tonemes, the four Mandarin tones are represented in citation as HHH, MHH, LLM and HML. The symbols 'H, M, L' represent high level, mid level and low level tonemes respectively. This representation of the four Mandarin tones takes into account the fact that, phonologically speaking, all Mandarin tones (or syllables) have the same relative length⁵⁷. One important fact about tones in Mandarin is that the citation form is about twenty-two percent longer than the same tone in non-final position (L. Feng 1985)⁵⁸. This figure, translated into relative toneme representation, can be construed as the shortening of a non-final tone by the deletion of the last toneme. In this way, the four Mandarin tones should have the shapes of HH, MH, LL, HM, respectively, when not appearing alone or in final position. As we will show below, this treatment can explain the previously mentioned Half-Third Sandhi, Fourth Tone Sandhi and Second Tone Sandhi by making the following stipulation:

(2.26)

In connected speech, within the metrical foot of two syllables, a toneme at the edge of a basic tone is deleted if (a) adjacent to another tone, and (b) not in a final tone.

One advantage of treating the timing dimension in Mandarin tonal analysis is that it yields an explanation as to why the First Tone does not undergo sandhi change. We find that it is not that the First Tone does not change, but that the change is not detectable in traditional theory of

⁵⁶ Traditionally, the Fourth Tone was found to undergo this change only before another Fourth, but this understanding was based on imprecise auditory impression. Shih's (1986) Bell Laboratory report indicated that the Fourth Tone never reaches the low target when followed.

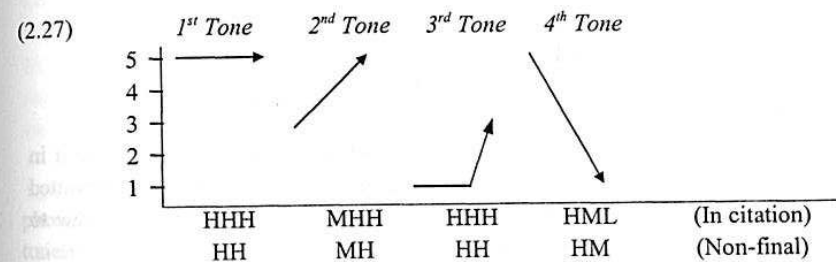
⁵⁷ Acoustically, the Third Tone is the longest, then followed by the Second, the First and the Fourth. However, the difference is insignificant at the rule-governed phonological level.

⁵⁸ Feng's findings are that, in non-final position, the average tone lasts 235 milliseconds while in final position, it lasts 301 milliseconds (p. 177).

tonal representation. The First Tone, just like the other tones, is modified in its length when another tone follows: Just as the Fourth Tone loses the last toneme to change from HML to HM (i.e. from 51 to 53), the First Tone changes from HHH to HH. But because the traditional tonal theories do not encode length, this tonal change in the First Tone is not treatable and the fact that the First Tone undergoes the same change as the Fourth Tone (and the Second and Third) is concealed.

Another advantage is that now we can pinpoint the reason why a Third Tone has to change when another Third Tone follows. The reason that emerges from our theory is dissimilation, a very common process found in the world's languages. When a Third Tone is followed by another Third, by (2.26), it loses its last toneme. As a result, there appears a series of more than two low tonemes (i.e. LL LLM), a sequence that is perhaps physiologically hard to produce. Adjustment thus has to ensue, and the result is that the tail of the first tone is raised.

The following summarizes our theory of Mandarin basic tone with reference to Chao's Scale:



In other words, all the four basic tones have sandhi processes which can be captured, first of all, in the following rules (which are essentially the same rule—deletion of a final toneme). Note that the symbol 'X' stands for any toneme, H, M, or L.

(2.28)

	In Citation		In Normal Speech	
a. 1 st Tone Sandhi:	T	T	T	T
	/ \	/ \	→	/\ / \
	HHH	XXX		HH XXX
b. 2 nd Tone Sandhi:	T	T	T	T
	/ \	/ \	→	/\ / \
	MHH	XXX		MH XXX
c. 3 rd Tone Sandhi:	T	T	T	T
	/ \	/ \	→	/\ / \
	LLM	XXX		LL XXX
d. 4 th Tone Sandhi:	T	T	T	T
	/ \	/ \	→	/\ / \
	HML	XXX		HM XXX

In fast speech, the Second Tone goes further by losing the left toneme when it is, at the same time, preceded by another tone⁵⁹ (Y. R. Chao 1968).

(2.29)

	<i>In Normal Speech</i>			<i>In Fast Speech</i>		
b'. 2 nd Tone Sandhi:	T	T	T	T	T	T
(continued)	/ \	/\	/ \	→ / \		/ \
	XXX	MH	XXX	XXX	H	XXX

The Third Tone, if followed by another Third, now gives rise to a problem—the output contains a string of more than two low tonemes. A repair mechanism is therefore activated whereby an edge toneme is raised (See Footnote 54) to break the monotony:

(2.30) c'. 3rd Tone Sandhi:

	T	T	→	T	T	→	T	T
	/ \	/ \		/\	/ \		/\	/ \
	LLM	LLM		LL	LLM		LM	LLM

2.4.2 Neutral Tone

That Mandarin does not favor a sequence of low tones is also found to be significant in the case of the neutral tone. But before we get to the low tone issue, let us become acquainted with the Mandarin neutral tone. This is unfortunately not an easy and straightforward task due to the fact that there is still a great deal of controversy concerning what exactly the neutral tone is. In this section, we will attempt to present briefly the crucial issues and work out a coherent description of the neutral tone.

That the neutral tone is short and weak is well recognized. It is somehow derived from the four basic tones; it is called the neutral tone because, in unstressed positions, any of the four basic tones can lose their inherent tone and be 'neutralized' into this short and weak tone. This tone neutralization process has been active for quite a long time: Many lexical items in the language—mostly function words which almost never appear in stressed positions—have become fossilized Neutral tones, their tonal origin hard to trace from a synchronic perspective. Among words with neutral tones whose tonal origin is traceable, some neutral tones are compulsory while others are optional due to a number of factors unclear at the present time (See Lin 2001 for an explanation).

Phonetically, the neutral tone has been found to have not just one value but a number of values depending on which basic tone it follows. By auditory impression, its phonetic values have

⁵⁹ Chao only detected the high level Second Tone when the preceding tone is a First or a Second tone. However, there is reason to believe that the same is true when the preceding tone is a Third or a Fourth. On the one hand, the fact that the medial tone is the shortest is well-documented (e.g., Chao 1968, Yan and Lin 1988, and Shen 1990b), and on the other, the characteristic of a level tone may have been concealed by transition from the lower offset of the preceding Third or Fourth tone.

been found to be the following (S. Q. Qi 1956, T. Lin 1962, Y. R. Chao 1968 and Z. J. Wu 1985):

(2.31) *Basic Tone+Neutral Tone*

(55)(3)

(35)(3)

(11)(4)

(51)(1)

After the First, Second and Third Tone, it is relatively high, that is, (3) or (4) on Chao's scale, and after the Fourth it is low or (1) on it. Furthermore, the neutral tone has been found to be contoured in experimental studies using phonetic/acoustic instruments (Dreher and Lee 1966):

(2.32) *Basic Tone+Neutral Tone*

(55)(41)

(35)(31)

(11)(23)

(51)(21)

It falls after the First, Second and Fourth tones but rises after the Third. If these are its phonetic values, what is the phonological—the phonemic or underlying—value of the neutral tone? One of the best known positions is that the neutral tone does not have an underlying value, but derives its surface tone from the preceding tone. This position fails to capture the native speaker's intuition that the neutral tone is generally low after the First, Second and the Fourth, but high after the Third. The well-known linguist Chin Chuan Cheng (1973) once remarked:

'The refined acoustic details [about the neutral tone] perhaps do not necessarily represent the native speaker's knowledge. The speaker's aim perhaps is to produce the neutral tone low after the first, second, and fourth tones and higher after the third tone.' (p. 56)

A closer look at the measurements acquired in Dreher and Lee's study suggests the same dichotomy, in that the neutral tone goes low (and falls) after the First, Second and Fourth Tones, but high (and rises) after the Third. All these considerations point to a classic case of what is called complementary distribution, in which one of the variants is the underlying form—the basic form. It would not take long for any linguist to determine that the low tone after the First, Second and Fourth is the underlying one since the environment in which it occurs is more complicated and less predictable.

Interestingly, our theory that the neutral tone is fundamentally a low tone solves yet another problem. If we take the position of the traditional belief that the neutral tone is toneless on its own but derives its tonal shape from the basic tone before it, a problem arises when more

than one neutral tone appears after the basic tone. Although phonetically we know the values of the neutral tone after the four basic tones, the question is what value should we assign to the neutral tone that does not follow a full tone but another neutral tone? Such neutral tones are found in Mandarin phrases such as these:⁶⁰

- (2.33) a. tuī shang qu le de rén 推上去了的人
 push up go PERF DE(a) person 'person pushed up'
 b. tái shang qu le de rén 抬上去了的人
 carry up go PERF DE(a) person 'person carried up'
 c. zǒu shang qu le de rén 走上去了的人
 walk up go PERF DE(a) person 'person who has ascended'
 d. sòng shang qu le de rén 送上去了的人
 send up go PERF DE(a) person 'person sent up'

All four phrases begin with a monosyllabic word, one that carries the First (a), the Second (b), the Third (c) and the Fourth Tone (d) respectively. All of the four syllables between the first word and the last (*rén* 人 'person') are in the neutral tone. Phonetically, except for the first neutral tone, all the other three are strictly low tones. The question here is where these three neutral tones get their low tonal values now that they are not adjacent to a basic tone? What we have argued so far boils down to the following conclusion: that the Mandarin Neutral tone is fundamentally a low tone. In the notation of current theoretical phonology, the low neutral tone can be represented as follows:

(2.34) The Underlying Representation of the Mandarin Neutral Tone

T
|
L

Now that we have pinpointed the basic value of the Neutral tone, we can look at the neutral tone after the Third Tone to see what causes the low neutral tone to become high after the Third Tone. Let us juxtapose the two tones:

- (2.35) 3rd Tone Neutral Tone
 | |
 LL L

Here we find the same low tone sequence as found in the case of the Third Tone Sandhi.

⁶⁰ Refer to the chapters on morphology and syntax for an explanation of the grammatical markers PERF and DE(a).

We learned earlier that Mandarin avoids sequences of low tonemes, and that the low tone sequence created by juxtaposing two Third Tones triggers some repair process that raises the tail of the preceding Third Tone. If the language does not like sequences of low tonemes when the Third Tone is concerned, there is no reason to expect it to allow the low tone sequence shown above in (2.35). The only difference between the Third Tone Sandhi in (2.30) and the case here lies in that the repair affects the first syllable in that case, but the second in this one. The difference in the repair, however, should not be difficult to understand, since in both cases, it is the prosodically weaker (and therefore less stable) tone that undergoes the change.

In brief, we believe that the Mandarin neutral tone, which is induced by the lack of stress, is essentially a short low tone. It dissimilates after the Third Tone by rising in pitch. Interestingly, we can now account for the varied surface values of the neutral tone in a consistent manner. They are all the result of tone spreading, which can be elucidated by a line linking the preceding toneme and the neutral tone, as shown below:

- (2.36) a. 1st Tone Neutral Tone 1st Tone Neutral Tone
 | | → | |
 H L H L
 b. 2nd Tone Neutral Tone 2nd Tone Neutral Tone
 | | → | |
 H L H L
 c. 3rd Tone Neutral Tone 3rd Tone Neutral Tone
 | | → | |
 L M L M
 d. 4th Tone Neutral Tone 4th Tone Neutral Tone
 | | → | |
 M L M L

After spreading, the resultant neutral tone after the First, Second and the Four Tones becomes HL, HL, and ML—falling tones, respectively, but an LM, a rising tone, after the Third. These correspond to the results of the instrumental study by Dreher and Lee (1966) mentioned earlier.

Chapter 3. Morphology

Up to this point, we have been looking at the sounds, syllables and tone in Mandarin without considering the meaningful function of these units. In this chapter, we will look at the smallest unit that has a meaning and how meaningful units are combined to build words. It should be noted that Mandarin is different from the other six major Chinese dialects primarily in the areas of phonetics and phonology. When it comes to morphology—words and word structures, the difference among them is drastically reduced. Thus, what is said about Mandarin morphology in this chapter is largely applicable to other Chinese dialects as well. Since from here on, we are not dealing specifically with individual sounds and their component features, we will use Pinyin for the presentation of Mandarin data—unless otherwise noted.

3.1 The Morpheme

In linguistic terms, the smallest meaningful unit in language is called a morpheme. A word may contain one or more morphemes. For instance, the English word *book* has one morpheme, but *books* two, one meaning 'book', and the other 'plural'. What is a Mandarin morpheme like? What are its general characteristics?

3.1.1 Monosyllabicity

One most remarkable characteristic about Mandarin is that virtually all native Mandarin morphemes (i.e., morphemes that are not borrowed from a foreign language) are of the form *huā* 花 'flower', *xué* 学 'study', *hóng* 红 'red' or *néng* 能 'can', namely, containing just one syllable. The uniqueness of this characteristic is better understood when we look at languages such as English where polysyllabic morphemes (e.g., Philadelphia,⁶¹ Victoria, coffee, etc.) abound. Normally, not only is a native Mandarin morpheme no larger than a syllable, but it is also no smaller than a syllable either. Except for one case: the diminutive retroflex *-r*, subsyllabic morphemes like the plural suffix *-s* in English do not exist in Mandarin. Due to this limitation on its morpheme size, Mandarin or Chinese in general has been called a monosyllabic language⁶².

Although Mandarin does not really have subsyllabic morphemes, it does have a sizable number of morphemes larger than one syllable. The majority of these morphemes, however, are transliterations of foreign words. An example of such a foreign word is *jiānádà* 加拿大 for 'Canada'. The Mandarin version is a single morpheme with three syllables, (which, incidentally, is the case in the English original as well). With the ever-growing contact between China and the

⁶¹ It should be noted that although the word was originally formed by more than one Greek morpheme, it consists of one morpheme in today's English.

⁶² There is a general misconception that Chinese is monosyllabic at the word level. Although Chinese words were mostly monosyllabic at one time in history, one only has to check a Chinese word dictionary (*cídiǎn* 词典) to realize that the majority of Chinese words today consist of more than one syllable.

rest of the world, and with the recent development in technology in the West, loan words, especially ones from English, have greatly increased in Mandarin. Polysyllabic morphemes have, as a result, greatly expanded in number.⁶³

However, not all borrowed polysyllabic morphemes have entered the Chinese vocabulary during recent times. A few disyllabic morphemes such as *pútao* 葡萄 'grape' and *bōli* 玻璃 'glass' are loans from a much earlier time. Some, like the two just given, were borrowed so early that most native speakers today are not aware of their foreign origin. Besides foreign words, there are a number of native Mandarin morphemes with two syllables (see F.G. Liu 1997 for details of such words). These are mostly morphemes of onomatopoeia,⁶⁴

(3.1)	a.	gūlū	咕噜	'rumble'
	b.	gābā	嘎巴	'crack'
	c.	jīgū	叽咕	'mutter'
	d.	jīzhā	叽喳	'chirp'
	e.	pūtōng	扑通	'splash'

morphemes whose syllables alliterate,

(3.2)	a.	cāngcù	仓促	'hurried'
	b.	cēncī	参差	'uneven'
	c.	chóuchú	踌躇	'hesitate'
	d.	fǎngfú	仿佛	'as if'
	e.	fēnfu	吩咐	'instruct'
	f.	huǎnghū	惶惚	'in a trance'
	g.	kǎnkě	坎坷	'bumpy'
	h.	línglì	伶俐	'clever'
	i.	qīqiāo	蹊跷	'odd; fishy'
	j.	qiūqiān	秋千	'swing'
	k.	tángtū	唐突	'brusque'
	l.	tǎntè	忐忑	'perturbed'
	m.	táotài	淘汰	'die out'
	n.	yóuyù	犹豫	'hesitate'
	o.	zhīzhū	蜘蛛	'spider'

or morphemes whose syllables rhyme:

⁶³ See Section 3.6 for more examples of such loan words.

⁶⁴ The tone in the second syllable of the following words can alternatively be the neutral tone.

(3.3) a.	cóngróng	从容	'calm'
b.	gālá	旮旯	'nook'
c.	gǎnlǎn	橄榄	'Chinese olive'
d.	húlu	葫芦	'bottle gourd'
e.	lāodao	唠叨	'nagging'
f.	lǎba	喇叭	'trumpet'
g.	làngdang	浪荡	'dissolute'
h.	luōsuo	罗嗦	'long-winded'
i.	luòtuo	骆驼	'camel'
j.	mílí	迷离	blurred
k.	páihuái	徘徊	hesitate
l.	qīngting	蜻蜓	dragonfly
m.	zhāngláng	蟑螂	cockroach

A few disyllabic morphemes do not belong to any of the above categories.

(3.4) a.	biānfú	蝙蝠	'bat'
b.	húdié	蝴蝶	'butterfly'
c.	kēdōu	蝌蚪	'tadpole'
d.	lājī	垃圾	'garbage' ⁶⁵
e.	mǎyǐ	蚂蚁	'ant'
f.	xīshuài	蟋蟀	'cricket'
g.	yīngwū	鹦鹉	'parrot'
h.	yuānyang	鸳鸯	'Mandarin duck'

3.1.2 Free and Bound

Linguistics classifies morphemes into two types: free morphemes and bound morphemes. The distinction between these two is not clear-cut. Definitions of them vary among scholars. In this book, we define the bound morpheme as synonymous with the term 'affix' (suffixes, prefix or infix). Namely, it is a morpheme that can never stand alone; neither can it serve as a stem or root to which another affix can be attached to form another word. A free morpheme, on the other hand, is one that can at least perform one such function. Examples of free morphemes in English are found in such words as *earthquake* and *blackboard*, each with two free morphemes. The first morpheme in the following words is free while the second is not: *cleverly*, *houses*, and *worked*. The order is reversed in the following words: *reform*, *debug*, and *dislike*. Mandarin morphemes, in addition to being mostly monosyllabic, have the characteristic of being mostly free; there are proportionally very few morphemes that cannot serve as a stem. We will give a more detailed

⁶⁵ In Taiwan Mandarin, the word *lājī* 垃圾 is pronounced *lèsè*, in which case, it belongs to the rhyming group given in (3.3).

account of the bound morphemes in Mandarin later in this chapter.

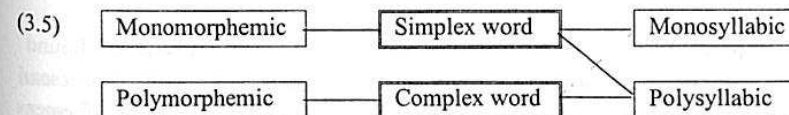
3.2 The Word

Another meaningful unit in morphology is the word. Whereas a morpheme is atomic—cannot be further analyzed into more meaningful units, a word may contain one or more morphemes. Furthermore, morphemes are the smallest building blocks of words, but words are the smallest building blocks of phrases and sentences. However, the concept of 'word' is not precisely definable. For instance, what makes 'blackboard' a word but not 'black bench'? When it comes to Mandarin, the concept becomes even more tangled. Given that most Mandarin morphemes are free, one question that often comes up is: do the free morphemes in a given case form a word or a phrase or even a sentence? Adding to the problem is the fact that ordinary, especially uneducated, Chinese do not seem to have a clear grasp of the concept of 'word'. What they have instead seems to be the unit of the syllable. It is not surprising at all to hear a Chinese parse a Chinese sentence into its component syllables rather than words. In answering the question 'how many component parts are there in *wǒ xuéxí zhōngwén* 我学习中文 'I study Chinese', an ordinary Chinese may give the wrong answer of 'five' rather than the correct answer of 'three'. The sentence, as one can see, has five syllables.⁶⁶

While it is not an easy task to define the concept of word, the difficulty has never kept linguists and non-linguists alike from taking 'word' as a working unit with which to make morphological generalizations. At this unit level, one thing we are certain about is that most Mandarin words are made up of two syllables. Since a Mandarin morpheme normally contains one syllable, it follows that most Mandarin words contain two morphemes. According to one statistical analysis (*Frequency Dictionary of Modern Chinese* by Wang *et al.* (1996)), among the 31,159 words surveyed, 22,941 or 74% are disyllabic words, and only 12% are monosyllabic words. The other 14% are words of more than two syllables. In short, just as Mandarin is monosyllabic at the morpheme level, the language is characteristically disyllabic at the word level.

3.3 Word Structure⁶⁷

The relationship between word and morpheme is that a word can contain one or more morphemes. A word with one morpheme is a simplex word whereas one with two or more a complex word. The following diagram shows the relationships among the syllable, morpheme and word in Mandarin.



⁶⁶ In writing, each syllable corresponds to a *zì* 字 'character.'

⁶⁷ Where necessary, the morpheme boundary in this chapter is marked by a hyphen '-'.

For example, the sentence *tā xǐhuān chī pútao* 他喜欢吃葡萄 'He/she likes to eat grapes' has four words but five morphemes. Among them, *tā* 'he/she/it' and *chī* 'eat' are simplex words that are monomorphemic and monosyllabic. *Pútao* 'grape' is another simplex word, but it contains two syllables. The word *xǐhuān* 'to like', on the other hand, is a complex word containing two monosyllabic morphemes: *xǐ* 'to like' and *huān* 'to be happy.' As previously mentioned, all Mandarin morphemes are no smaller than a syllable. A complex word is therefore always more than one syllable. There is, however, one exception which involves words with the diminutive suffix *-r* (see the last chapter and the next section for details). As this suffix does not add another syllable to the word or morpheme it attaches to, the resultant word can be morphologically complex but with just one syllable. This is expressed by the dotted line in the above diagram (3.5).

When a word is complex, there emerge the questions of what the component morphemes are, free or bound, and in what fashion they are combined. If a complex word contains only free morphemes, it is often a compound, whereas if it contains a bound morpheme, it is a word built by the morphological process of affixation. Compounding and affixation are two of the most common word-formation processes in language. Other less common ones include reduplication and abbreviation. Let us see how these processes work in Mandarin.

3.3.1 Affixation

Affixation is a process whereby a new word is built by adding a suffix or prefix to a root which is either a free morpheme or a word in itself. The English adverb *slowly* is built by suffixation through which a bound morpheme *-ly* is attached to the root, the adjective *slow*. Although affixation is primarily a matter of suffixation and prefixation, some languages also have infixes. However, we will not deal with infixes, as their existence is very marginal. There are only two notable cases: the morphemes *bu* 不 (as in *suānbuliúdiū* 酸不溜丢 'very sour') and *li* 里 (as in *húlíhútū* 糊里糊涂 'very confused'). Another case that seems to bear some resemblance to infixation concerns the two morphemes (see (3.20)) *bù* 不 'not' and *de* 得 'can (i.e., possible).' Take a verb-complement compound such as *dǎpò* 打破 (morphemes: beat-broken) 'break' for an example. Either *bu* or *de* can be placed between its two morphemes to yield *dǎbupò* 'cannot be broken,' and *dǎdepò* 'can be broken,' respectively. However, it is not clear whether the output after the insertion of *de* or *bu* is still a word. If it is not, the insertion is not morphological infixation, but falls within the area of syntactic concatenation. Because of this uncertainty and because it is a very marginal case of insertion, we will adhere to the claim that Mandarin does not have infixation.

We mentioned previously that Mandarin does not have a great number of bound morphemes, which means that Mandarin also lacks many affixes or affixation processes. Historically speaking, Mandarin affixes or bound morphemes are derived from free morphemes through certain grammaticalization processes. As the stages of their evolution vary, some may exhibit more characteristics of an affix than others. Because of this, confusion may occur as to what the definition of an affix is. In fact, there is a large gray area in the middle of a continuum the extremities of which are 'true affixes' on the one hand and morphemes that have just begun to acquire some kind of a grammatical meaning on the other. The existence of this gray area means

that before we proceed further, we need to define the term 'true affix.' In addition to never being able to stand alone or serve as a stem in morphology, true affixes in Mandarin are morphemes that have completely lost their original meanings. One such affix in Mandarin is *-zi* 子. This suffix used to mean 'child' or 'offspring' as a free morpheme in, say, old Chinese, but is now meaningless in words such as *zhuōzi* 桌子 'table.' True affixes in Mandarin normally serve either a grammatical function (e.g., building a noun) or a prosodic one aiming at building a word of two syllables (refer to Section 3.3.5 for details). If they are suffixes, they are invariably in the neutral tone. In the following, we will review a few true affixes most commonly used in Mandarin, beginning with suffixes.

3.3.1.1 Suffixes

The most productive suffix is perhaps the so-called diminutive *-r* 儿, mentioned a few times previously. When attached to a root, this suffix adds to it a sense of smallness, intimacy, familiarity, colloquialism and/or casualness. One unique feature about this suffix is that once it is attached to the syllable, the quality of the nucleus vowel in the syllable changes as well, and the exact outcome of the change varies with the original vowel. Phonetically, it may be hard to vertically separate the root from this suffix; the two may be 'fused' in some fashion. In phonological terms, this may mean that the suffix, rather than being a complete segment in form, can be construed as having merely the form of a feature ([retroflex]) that is linked to the vocalic part of the syllable. Examples of words with the suffix *-r* are:

(3.6)			Morphemes	
a.	wán-r	玩儿	to play-r	'to play'
b.	huā-r	花儿	flower-r	'flower'
c.	(xiǎo) hái-r	孩儿	child-r	'kid'
d.	shùyè-r	树叶儿	leaf-r	'leaf'
e.	qìshuǐ-r	汽水儿	soda pop-r	'soda pop'
f.	yú-r	鱼儿	fish-r	'fish'
g.	(xiǎo) gǒu-r	(小)狗儿	dog-r	'puppy'
h.	pǎo-r	跑儿	to run-r	'to run'
i.	hòu-r	后儿	back-r	'back'
j.	zhūtí-r	猪蹄儿	pig feet-r	'pig feet'

Grammatically, *-r* may serve the function of converting a verb (a-c) or an adjective (d-e) into a noun (See examples below). The *-r* suffix is often optional, which is the case in the examples in (3.6), but sometimes, especially in Beijing Mandarin, it is compulsory, as it is in the examples given below:

(3.7)

		<i>Morphemes</i>		
a.	kòu-r	扣儿	to button-r	'button'
b.	huà-r	画儿	to paint-r	'painting'
c.	gài-r	盖儿	to cover-r	'cover'
d.	kòng-r	空儿	empty-r	'space'
e.	liàng-r	亮儿	bright-r	'light'

While *-r* is the most productive, the most commonly-seen suffix in Mandarin is perhaps the nominal suffix *-zi*. G. S. Gao (1990) made a survey in a dictionary of 3994 words and found 502 or about thirteen percent of the disyllabic words in it have this suffix. Similar to the English suffix *-ly* which, in most cases, converts the stem into an adverb, *-zi* serves the grammatical function of transforming the root it attaches to into a noun. As the following examples show, the stem itself may be a noun (a), a verb (b) or an adjective (c). And like any true suffix in the language, it is always in the neutral tone. The following is a list of words with this suffix:

(3.8)

		<i>Morphemes</i>			
a.	i.	bí-zi	鼻子	nose-zi	'nose'
	ii.	zhuō-zi	桌子	table-zi	'table'
	iii.	yàn-zi	燕子	swallow-zi	'swallow'
	iv.	tí-zi	蹄子	(animal) foot-zi	'(animal) feet'
	v.	shàn-zi	扇子	fan-zi	'fan'
	vi.	bèi-zi	被子	quilt-zi	'quilt'
b.	i.	lǎo-zi	老子	old-zi	'father'
	ii.	xiǎo-zi	小子	small-zi	'bloke; chap'
	iii.	pàng-zi	胖子	fat-zi	'fat person'
	iv.	lóngzi	聋子	deaf-zi	'deaf person'
	v.	shǎzi	傻子	stupid-zi	'stupid person'
c.	i.	piàn-zi	骗子	to cheat-zi	'swindler'
	ii.	jiāzi	夹子	to clamp-zi	'clamp'
	iii.	shūzi	梳子	to comb-zi	'comb'

This suffix should not be confused with the free morpheme *zǐ* 子 'seed' in words such as *yúzi* 鱼子 'roe (literally, fish seed)' and *liánzi* 莲子 'lotus seed.' Although the former is historically derived from the latter, they are now two different morphemes. One clue of the difference is that as a suffix, the syllable is always in the neutral tone, but as a free morpheme, it never is.

Another important suffix is the plural *-men* 们. Although it means the same as the English plural *-s*, this suffix is not at all as productive as its English counterpart. The only place it

is used consistently is with pronouns. When added to a singular pronoun *wǒ* 我 'I', *nǐ* 你 'you', or *tā* 他 'he/she/it', it converts the latter into *wǒ-men* 'we', *nǐ-men* 'you (plural)' or *tā-men* 'they', respectively. When it comes to nouns, this suffix has a limited usage; it is normally only attached to nouns which refer to people; thus, many other nouns, though countable, cannot take this suffix. Even with nouns referring to people, *-men* is not allowed if the noun already has a number or quantifier modifying it. For instance, *xuéshēngmen* 学生们 'students' is fine, but **sāngè xuéshēngmen* 三个学生们 'three students' and **hěnduō xuéshēngmen* 很多学生们 'many students' are not. The correct forms are, respectively, *sāngè xuéshēng* and *hěnduō xuéshēng*—without *-men*. Moreover, plurality in nouns often does not have to be shown overtly by linguistic means. Without the presence of the plural *-men*, a noun may still be plural. For instance, in the sentence *háizi lái le* 孩子来了 'the child/children has/have arrived', the subject *háizi* can be interpreted as 'child' or as 'children', its exact interpretation derived from the context in which the sentence is uttered.

There are a few other true suffixes that are less common. For example, *-tou* 头 appears in the examples given below. This suffix can also serve as a nominalizer by transforming a verb or an adjective into a noun, as shown in (b) below:

(3.9)

		<i>Morphemes</i>			
a.	i.	shítou	石头	stone-tou	'stone'
	ii.	fūtou	斧头	axe-tou	'axe'
	iii.	mùtou	木头	wood-tou	'wood'
	iv.	yātou	丫头	little girl;	'little girl;
				girl servant	girl servant'
b.	i.	kǔtou	苦头	bitter-tou	'suffering'
	ii.	tiántou	甜头	sweet-tou	'happiness'
	iii.	pàntou	盼头	to long for-tou	'good prospects'
	iv.	xiǎngtou	想头	to think-tou	'hope'
	v.	pīntou	姘头	to have illicit relationship	'paramour'
				with-tou	

The morpheme *-ba* 巴 is yet another nominal suffix without much of a meaning as in *zuǐba* 嘴巴 'mouth', *wěiba* 尾巴 'tail', *gānba* 干巴 'dried up', *yǎba* 哑巴 'mute', and *jiēba* 结巴 'stutter'. While genuine suffixes like those mentioned above are not large in number, there are a host of morphemes which seem to be on their way to becoming *bona fide* suffixes. These morphemes still bear some characteristics of a free morpheme: they may still carry their own tone and/or retain their own meaning to a greater or lesser extent.

One such example is the agent suffix *-zhě* 者, which is attached to a verb or an adjective to denote the person(s) or thing(s) that is the logical subject of the verb or adjective. It serves a similar function as the English *-er/-or* in such words as *writer*, *worker* and *actor*, but is not nearly as productive as the latter; it can only be combined with a limited set of verbs and

adjectives. In colloquial speech, its original third tone is obscured, although it can still be clearly identified. However, we can explain the identification as the result of the third tone and the neutral tone sharing the same low tone forms in an unstressed position.⁶⁸ The merger of the two forms makes it almost impossible to decide if the tone of *-zhe* is a third or a neutral one. Examples of this suffix are *xuézhe* 学者 'scholar', *zuòzhe* 作者 'author', *cānjiāzhe* 参加者 'participant', *qiángzhe* 强者 'strong person', *ruòzhe* 弱者 'weak person', *qiánzhe* 前者 'the former', and *hòuzhe* 后者 'the latter'. If *-zhe* has almost reached the end of the grammaticalization process to become a true suffix, there are morphemes which are behind it on this path. Two good examples of such morphemes are *huà* 化 'transform' and *xué* 学 'study.' The former which serves similar functions as the English suffix *-ize* as in *modernize* yields a verb when combined with a stem. Examples are given below:

(3.10)

Morphemes

a.	lǜhuà	绿化	green-ize	'to forest'
b.	yánghuà	洋化	foreign-ize	'Westernize'
c.	tóng huà	同化	same-ize	'assimilate'
d.	měihuà	美化	beautiful-ize	'beautify'
e.	chǒuhuà	丑化	ugly-ize	'defame'
f.	jiǎnhuà	简化	simple-ize	'simplify'
g.	lǎohuà	老化	old-ize	'to age'
h.	shēnhuà	深化	deep-ize	'deepen'
i.	gōngyèhuà	工业化	industry-ize	'industrialize'
j.	xiàndàihuà	现代化	modern-ize	'modernize'
k.	xìjùhuà	戏剧化	drama-ize	'dramatize'

Another similar example is *-xué*. There may be a slight difference between *-huà* and *-xué* in terms of the degree of grammaticalization. The morpheme *huà* seems less free; one does not find it often in the initial position of a compound in which it means 'transform'. The suffix *xué*, on the other hand, still appears in the initial position of many compounds. To name a few: *xuéxiào* 学校 'school', *xuéshēng* 学生 'student', *xuéwen* 学问 'scholarship' and *xuéli* 学历 'diploma'. Meanwhile, *xué* has appeared in so many words denoting an area of scholarly study that it has now become fairly productive as a morpheme in words of academic disciplines, and has begun to show characteristics of a suffix. The following are examples in which it appears as such a quasi-suffix:

⁶⁸ See the sections on the third tone and the neutral tone in the last chapter for further details.

(3.11)

Morphemes

a.	wénxué	文学	literature-study	'literature'
b.	shùxué	数学	number-study	'math'
c.	lixué	力学	force-study	'mechanics'
d.	zhéxué	哲学	philosophy-study	'philosophy'
e.	kēxué	科学	science-study	'science'
f.	yǔyánxué	语言学	language-study	'linguistics'
g.	qìxiàngxué	气象学	weather-study	'meteorology'
h.	shēngwùxué	生物学	biology-study	'biology'
i.	shèhuìxué	社会学	society-study	'sociology'

3.3.1.2 Prefixes

If Mandarin has a small number of true suffixes, it has even fewer true prefixes. In fact, there is only one prefix that is, in a sense, productive: the ordinal-number prefix *dì-* 第. This prefix is added to a cardinal number to derive an ordinal one, similar to the suffix *-th* in English. For instance, the numbers *yī* — 'one', *shíyī* 十一 'eleven' and *jiǔshíjiǔ* 九十九 'ninety-nine', when prefixed with *dì-* become *dì-yī* 'first', *dì-shíyī* 'eleventh' and *dì-jiǔshíjiǔ* 'ninety-ninth', respectively. Another prefix that works with numbers is *chū-* 初 which is used mostly with the numbers 1 to 15 to denote the first fifteen days of a month, particularly the first month of the Chinese lunar year (e.g., *chūyī* 'the first day of the month'). A prefix that is more or less common is *lǎo-* 老 which either has a vague sense of seniority, familiarity, affection or colloquialism, or serves as a meaningless word-formative prefix similar to *-zi*. This affix is synchronically a different morpheme from the free morpheme *lǎo* which means 'old' (e.g., *lǎorén* 老人 'old man,' and *lǎo péngyǒu* 老朋友 'old friend'). Examples of words with *lǎo-* are given below. Note that unlike genuine suffixes, prefixes in Mandarin keep their inherent tones.⁶⁹

(3.12)

Morphemes

a.	lǎohǔ	老虎	old-tiger	'tiger'
b.	lǎoshǔ	老鼠	old-mouse	'mouse'
c.	lǎobǎn	老板	old-board	'boss'
d.	lǎoshī	老师	old-teacher	'teacher'
e.	lǎobǎixìng	老百姓	old-hundred-surname	'common people'
f.	lǎocū	老粗	old-careless	'uneducated person'
g.	lǎoye	老爷	old-grandpa	'maternal grandpa'
h.	lǎopo	老婆	old-older female	'wife'
i.	lǎowài	老外	old-foreign	'foreigner'

⁶⁹ See the last section of this chapter for relationship between stress and neutral tone.

Other much less used prefixes are *ā-* 阿, which is another word-formative morpheme without much meaning. Sometimes giving a sense of affection and familiarity, *ā-* appears in *āyí* 阿姨 'auntie', *āfēi* 阿飞 'Teddy boy', or before single-syllable personal or family names: *āfā* 阿发 'Fa (name)', *ābǎo* 阿宝 'Bao (name)' and single-syllable vocative expressions: *āgē* 阿哥 'older brother'. However, because its use before names and vocative expressions is a common practice in many Southern dialects (such as Cantonese), this prefix sounds foreign in Mandarin.

Compared with compounding, which we will explore in the next section, affixation is a much less used process in word formation in Mandarin. This paucity of affixation is, in a sense, responsible for Mandarin's lack of such morphological processes as verb conjugation and noun declension which are common in European languages. A Chinese verb *zǒu* 走 'walk', for instance, remains *zǒu* in all types of sentences and phrases regardless of their tense, aspect, mood, etc.

Historically, the fact that Chinese lacks conjugation and declension earned the language very low esteem among pre-modern language specialists in the West. These scholars considered Chinese a primitive language and some even went so far as to blame the lack of development in science and technology on the so-called primitiveness of the language (Ramsey 1987). Others questioned the ability of the Chinese people to reason in a hypothetical way simply because the language does not have a morphological way of making counterfactual expressions. *Rúguǒ wǒ qù* 如果我去 '(word for word) if I go' can mean both the factual 'if I go' or the counterfactual 'if I had gone'. If the Chinese cannot express the counterfactual such as 'if I had gone', so too must they be incapable of hypothetical thinking. Of course, one important factor that this scholar misses is that the morphological process of verb conjugation is only one of the many capacities of a human language.⁷⁰ What is expressed by one grammatical device in one language doesn't necessarily have to be expressed the same way in another.

3.3.2 Compounding

If one has to name only one morphological process in Mandarin, it will be, without any question, compounding. Indeed, it would not be an exaggeration to say that Mandarin is a language of compounded words. Just as the great majority of the words in Mandarin are of two syllables, virtually all Mandarin compounds, with a relatively small number of exceptions, are disyllabic. Compounds sometimes mean the composite whole of the parts in them (3.13)a. Often their meanings are at least related to the meanings of the parts (3.13)b. However, occasionally, the meanings of the parts have nothing to do with the meaning of the whole (3.13)c):

⁷⁰ See Steven Pinker (1995) for a discussion of this.

(3.13)

		<i>Morphemes</i>			
a.	i.	mǎimài	买卖	buy-sell	'trade'
	ii.	shuōmíng	说明	talk-clear	'clarify'
b.	i.	shǐzhōng	始终	beginning-end	'always'
	ii.	hǎodǎi	好歹	good-bad	'in any case'
c.	i.	dōngxī	东西	east-west	'thing'
	ii.	mǎhū	马虎	horse-tiger	'careless'

By the very nature of compounding—conjoining free morphemes, these two-syllable compounds invariably constitute two morphemes. These two morphemes may, in turn, be related in a number of manners which will be the topic of exploration in the following sections.

3.3.2.1 Coordinative Compounds

Morphemes of a Mandarin compound may be coordinate. When they are, usually they are also of the same parts of speech (as shown below); namely, two nouns (a), two verbs (b), two adjectives(c), and in rare cases, two adverbs (d).

(3.14)

		<i>Morphemes</i>			
a.	i.	péngyǒu	朋友	friend-friend	'friend'
	ii.	shēngyīn	声音	sound-sound	'sound'
	iii.	yáchǐ	牙齿	teeth-teeth	'teeth'
	iv.	gǔròu	骨肉	bone-flesh	'blood relative'
b.	i.	bàogào	报告	report-report	'report'
	ii.	jiěfàng	解放	untie-loosen	'liberate'
	iii.	xiūxi	休息	to rest-to rest	'rest'
	iv.	jiējiàn	接见	receive-see	'receive'
c.	i.	guǎngdà	广大	wide-big	'vast; extensive'
	ii.	fēngfù	丰富	plenty-rich	'rich'
	iii.	qíguài	奇怪	odd-strange	'strange'
	iv.	měilì	美丽	beautiful-pretty	'beautiful'
d.	i.	gāngcái	刚才	just now-just now	'just now'
	ii.	zǎowǎn	早晚	early-late	'sooner or later'

The following coordinate compounds show that the meanings of the two morphemes may be the same (a), similar or related (b), or opposite or contrastive (c):

(3.15)

		<i>Morphemes</i>		
a.	i.	péngyǒu 朋友	friend-friend	'friend'
		xìjù 戏剧	opera-opera	'opera'
	ii.	bàogào 报告	report-report	'report'
	shēngchǎn 生产	produce-produce	'produce'	
	iii.	meili 美丽	beautiful-pretty	'beautiful'
		qíguai 奇怪	odd-strange	'strange'
b.	i.	rénmín 人民	human-people	'people'
		shùmù 树木	tree-wood	'tree'
		yīyào 医药	medicine-drug	'medicine'
	ii.	àihù 爱护	love-protect	'treasure'
		zhàndòu 战斗	fight-struggle	'fight'
	iii.	guǎngdà 广大	wide-big	'vast'
		fēngfù 丰富	plenty-rich	'rich'
c.	i.	máodùn 矛盾	lance-shield	'contradiction'
		fùmǔ 父母	father-mother	'parents'
		shǐzhōng 始终	beginning-end	'always'
	ii.	kāiguān 开关	turn on-turn off	'switch'
		hūxī 呼吸	exhale-inhale	'breath'
		chūrù 出入	go out-go in	'difference'
	iii.	shēnqiǎn 深浅	deep-shallow	'depth'
		hǎohuài 好坏	good-bad	'quality'

3.3.2.2 Endocentric Compounds

The two morphemes in a compound may have a modifier-modifiee (head) grammatical relation, in which case, the modifier always precedes the modified, as shown in the following:

(3.16)

		<i>Morphemes</i>		
a.	i.	huǒchē 火车	fire-vehicle	'train'
	ii.	diànnǎo 电脑	electrical-brain	'computer'
	iii.	dàrén 大人	big-person	'adult'
	iv.	rèxīn 热心	hot-heart	'warm-hearted(ness)'
	v.	lúnchuán 轮船	wheel-boat	'ship'
b.	i.	bǐzhí 笔直	pen-straight	'perfectly straight'
	ii.	fěnhóng 粉红	powder-red	'pink'
	iii.	bīnglěng 冰冷	ice-cold	'ice-cold'
c.	i.	qiánjìn 前进	front-march	'march forward'
	ii.	wēixiào 微笑	slight-laugh	'smile'
	iii.	fùyìn 复印	repeat-print	'photo-copy'

The (a) cases in the above contain a head which is a noun, its modifier being an adjective or noun. These compounds are mostly nouns. The modifier in the (b) cases is invariably a noun, its head being all adjectives. The resultant compounds are adjectives just as the heads. The words in (c) are verbal compounds—the results are verbs. They contain an adverb which modifies the head verb.

3.3.2.3 Verb-Object Compounds

The two morphemes in a compound may have a verb-object relation, and, as in a sentence with a normal word order, the verb always precedes the object.

(3.17)

		<i>Morphemes</i>			
a.	i.	fàngxīn 放心	put-heart	'feel at ease'	
	ii.	lǐshì 理事	manage-affairs	'member of a council'	
	iii.	shīwàng 失望	lose-hope	'disappointed'	
	iv.	bàomíng 报名	report-name	'register'	
	v.	shāngxīn 伤心	hurt-heart	'sorrow'	
b.	i.	chīfàn 吃饭	eat-meal	'dine'	
	ii.	gémìng 革命	remove-life	'revolution'	
	iv.	shuìjiào 睡觉	sleep(v.)-sleep(n.)	'to sleep'	
	v.	diūliǎn 丢脸	lose-face	'lose face'	

In the above examples, the (b) cases can have other words between the two component morphemes whereas those in (a) cannot (see Z. W. Lu 1957 and T. Q. Xu 1997 for more details of such compounds). One can say, for instance,

(3.18)	a.	chī le yītùn fàn	吃了一吨饭
		eat-PERF ⁷¹ -one-CLS-meal	'ate a meal'
	b.	gé le yīchǎng mìng	革了一场命
		remove-PERF-one-CLS-life	'made a revolution'
	c.	shuì yīhuìr jiào	睡一会儿觉
		sleep(v.)-a moment-sleep(n.)	'sleep for a moment'
	d.	diū le liǎn	丢了脸
		lose-PERF-face	'lost face'

In (3.18), the line below the sample sentence in Pinyin gives a word for word translation. The translation of the whole verb phrase is found on the right-hand-side column. When the two

⁷¹ For a clear definition of the grammatical marker /e/, please refer to the next two chapters.

morphemes (which are underlined> are separated as they are here, they, of course, are no longer compounds, but separate words.

3.3.2.4 Verb-Complement Compound

The two morphemes in a compound can be of a verb-complement relation, with the complement following the verb, just as it would be in a normal sentence.

(3.19)	<i>Morphemes</i>			
a.	dǎpò	打破	beat-broken	'break'
b.	gǎishàn	改善	change-good	'improve'
c.	jiēlù	揭露	tear off-expose	'expose'
d.	shuōmíng	说明	say-clear	'clarify'
e.	tiàogāo	跳高	jump-high	'high jump'
f.	tuīfān	推翻	push-upside down	'overturn'
g.	líkāi	离开	separate-open	'leave'
h.	zhuājǐn	抓紧	grasp-tight	'firmly grasp'

These compounds are mostly verbs, although occasionally they are nouns (b). Some of these compounds (c) can have the negative morpheme *bù* 不 or its opposite *de* 得 'can (possible)' between the two component morphemes, as illustrated below: (See Section 3.3.1 for further information on these two morphemes.)

(3.20)			
a.	tuīdefān	推得翻	'can overturn'
	tuībūfān	推不翻	'cannot overturn'
b.	lídekāi	离得开	'can leave'
	líbūkāi	离不开	'cannot leave'
c.	zhuādejǐn	抓得紧	'can firmly grasp'
	zhuābujǐn	抓不紧	'cannot firmly grasp'

3.3.2.5 Subject-Predicate Compounds

A compound can contain a 'subject' followed by a 'predicate,' in which case, it resembles a sentence in structure, as shown below. The 'subject' in the examples in (a) is followed by a 'predicate verb', but that in (b) is followed by a 'predicate adjective':

(3.21)	<i>Morphemes</i>			
a.	i.	dìzhèn	地震	earth-quake 'earthquake'
	ii.	tóuténg	头疼	head-ache 'headache'
	iii.	ěrmíng	耳鸣	ear-ring 'tinnitus'
b.	i.	kǒuhóng	口红	lip-red 'lipstick'
	ii.	niánqīng	年轻	year-light 'young'
	iii.	zuǐcháng	嘴长	mouth-long 'big-mouthed'

Mandarin adjectives, as will be explained in more detail in the next chapter, are a type of verb. Syntactically, they can serve as a predicate without being preceded by a linking verb.

3.3.2.6 Noun-Classifier Compounds

Finally, the two morphemes in a compound⁷² can be in a noun-classifier (CLS)⁷³ sequence. Compounds of this type are relatively small in number. The following are some examples:

(3.22)	<i>Morphemes</i>			
a.	fángjiān	房间	room-CLS	'room'
b.	zhǐzhāng	纸张	paper-CLS	'paper'
c.	bùpǐ	布匹	fabric-CLS	'fabric'
d.	chēliàng	车辆	vehicle-CLS	'vehicle'
e.	chuánzhī	船只	boat-CLS	'boat'
f.	xìnjiàn	信件	letter-CLS	'mail'

3.3.2.7 Multisyllabic Compounds

Not all compounds are made up of two syllables; a small percentage contains three or more syllables. Some of the three-syllable compounds contain two morphemes, as is the case in (3.23d), in which the first two syllables form one morpheme. More often, however, three-syllable compounds contain three morphemes. When they do, they have a more complicated internal structure than two-syllable compounds. Now examine the following few examples of three-syllable compounds:

⁷² This type of compound falls into a more general group in which the second element complements the first. Other members of this group include words such as *xióngmāo* 熊猫 'panda' with a morpheme structure of 'bear-cat' (N. R. Qian 1995). However the 'bear-cat' type of word is rare.

⁷³ See next chapter for a description of Mandarin classifiers.

(3.23)

		<i>Morphemes</i>	
a.	diànbīngxiāng 电冰箱	electric-ice-box	'refrigerator'
b.	zìxíngchē 自行车	self-run-vehicle	'bicycle'
c.	kuàicāndiàn 快餐店	fast-food-restaurant	'fast food restaurant'
d.	pàopàotáng 泡泡糖	bubble sugar	'gum'
e.	gāogēnxié 高跟鞋	high-heel-shoe	'high-heeled shoes'

The first example above has three morphemes 'electric,' 'ice,' and 'box,' yet the last two obviously form a constituent which as a whole is modified by the first. Using square brackets, the internal structure of this compound can be represented as [diàn-[bīng-xiāng]]. On the other hand, the three morphemes in the example in (c) are obviously arranged in the following manner: [[kuài-cān]-diàn], in which the first two morphemes form an immediate constituent before it modifies the last one.

3.3.2.8 Newer Compounds

So far, we have seen compounds with various kinds of internal structures. The ease with which two morphemes can be juxtaposed perhaps explains, at least partially, why the language consists predominantly of compounded words. In fact, not only are existing words predominantly compounds, new words and expressions seem to be entering Mandarin mostly in the shape of compounds. The following are a few examples of words relating to computer technology that have fairly recently—during the last two decades or so—been created based on their English equivalents. All seem to have gained currency.

(3.24)

		<i>Morphemes</i>	
a.	biān-chéng 编程	compile-order	'programming'
b.	fú-jī 服机	service-machine	'server'
c.	guāng-biāo 光标	light-indicator	'cursor'
d.	guāng-pán 光盘	light-disc	'CD-ROM'
e.	méi-tǐ 媒体	media-body	'media'
f.	nèi-cún 内存	inside-save	'memory'
g.	ruǎn-jiàn 软件	soft-piece	'software'
h.	shǔ-biāo 鼠标	mouse-indicator	'mouse cursor'
i.	wǎng-yè 网页	web-page	'web page'
j.	wēi-jī 微机	micro-machine	'personal computer'
k.	wén-běn 文本	text-notebook	'file'
l.	xiàzài 下载	down-load	'download'
m.	xūnì 虚拟	false-simulate	'virtual'
n.	jiāohù 交互	interact-mutual	'interactive'
o.	zhuōmiàn 桌面	table-surface	'desktop'

In sum, compounds are by far the most common words in Mandarin; two free morphemes may combine in almost all sorts of possible phrasal structures to yield compounds. Such freedom in constructing compounds blurs the borderline between Mandarin words, phrases and even sentences. Indeed, there exists a very interesting interface between Mandarin morphology and syntax that will be addressed in the next chapter.

3.3.3 Reduplication

There is a group of Mandarin words which, at a first glance, looks quite different from compounds or words of affixation. Some of these are made up of two identical syllables and morphemes: for example, *rénrén* 人人 'everyone', *zǒuzou* 走走 'take a walk', *dàdà* (de) 大大的/地 'quite big', *gēge* 哥哥 'older brother', and *gānggāng* 刚刚 'just now'. These words are said to be formed through the morphological process of reduplication. Taking a free morpheme or a word as the base, reduplication operates to double it in size. The resultant word may acquire some additional meaning. Take *rén* 人 for example. Alone, it is a word meaning 'person', but when reduplicated, it becomes another word meaning 'every person' or 'everyone'. Thus, this kind of noun reduplication serves the same purpose as attaching the word 'every' to the front of a countable noun in English.

3.3.3.1 Noun and Classifier Reduplication

Mandarin reduplication operating on words of different parts of speech may serve different functions. We have seen that with the noun, it may have a repetitive meaning. Not all nouns can be reduplicated in Mandarin. In fact, noun reduplication is not synchronically a productive process.⁷⁴ Other than *rénrén*, it is found in a limited number of expressions:⁷⁵ *tiāntiān* 天天 'every day', *jiājiā* 家家 'every family', *hùhù* 户户 'every household', *rìrì* 日日 'every day', *yèyè* 夜夜 'every night', *niánnián* 年年 'every year', *yuèyuè* 月月 'every month', *shìshì* 事事 'every matter', *chùchù* 处处 'every place', etc. Some of these reduplicated expressions are often compounded to form a four-syllable word: *rìrìyèyè* 日日夜夜 'day and night' and *niánniányuèyuè* 年年月月 'year after year and month after month', *jiājiāhùhù* 家家户户 'every household', *shìshìchùchù* 事事处处 'every case and every place', and *tiáotiáokuàngkuàng* 条条框框 'rules and regulations' (See Section 3.3.3.3 for details).

Compared with nouns, more monosyllabic classifiers (CLS) can be reduplicated. Examples are give below:

⁷⁴ We have excluded here nouns that are kinship terms which will be addressed separately in a short while.

⁷⁵ The number of reduplicated words varies from dialect to dialect. Xi'an Mandarin, for instance, seems to have many more reduplicated nouns than Beijing Mandarin. Furthermore, what can be reduplicated in one dialect may not be in another.

(3.25)	<i>Reduplicated</i>		<i>Noun Phrase with CLS</i>	
a.	jiànjiàn	'every piece'	yìjiàn shìqing	'a matter'
b.	lìlì	'every grain'	yílì mǐ	'a grain of rice'
c.	kēkē	'every tree'	yìkē shù	'a tree'
d.	gègè	'every one'	yìgè rén	'a person'
e.	tiáotiáo	'every (fish/pants)'	yìtiáo yú	'a fish'
f.	zhāngzhāng	'every (picture/table)'	yìzhāng huà	'a picture'
g.	jiàjià	'every plane'	yíjià fēijī	'a plane'

Yet, just as there are a limited number of nouns that can be reduplicated, not all classifiers have reduplicated forms. For instance, one never says *wèiwèi* even though *wèi* 位 performs similar function as *gè* 个 when used between a number and, say, the noun *péngyǒu* 'friend': *Yìgè péngyǒu* means the same as *yíwèi péngyǒu*, but the classifier *gè* in the former is freely reduplicated while *wèi* in the latter is not. Regular noun reduplication can be seen as a special case of classifier reduplication, since some of them share the classifier quality of being preceded directly by a number. Let us test some of these nouns in (3.25) with the number *yī*⁷⁶ — 'one' before it:

(3.26)	<i>No CLS</i>		<i>With CLS</i>	
a.	yì tiān	一天	* yìgè tiān	'one day'
b.	yí hù	一户	* yìgè hù	'one household'
c.	yì nán	一年	* yìgè nán	'one man'
d.	? yì nǚ	一女	* yìgè nǚ	'one woman'
e.	yí rì	一日	* yìgè rì	'one day'
f.	yí yè	一夜	* yìgè yè	'one night'
g.	yì nián	一年	? yìgè nián	'one year'
h.	yí jiā	一家	yìgè jiā	'one family'
i.	? yì rén	一人	yìgè rén	'one person'
j.	* yí yuè	一月	yìgè yuè	'one month'

In the above examples, except for the last case which involves *yuè*, none of these nouns has to have a classifier between it and a preceding number. In some cases, the use of a classifier is even forbidden. (See (a)-(f) in (3.26)).

⁷⁶ The tone on the number *yī* 'one' has two sandhi forms—variations that appear in certain contexts. Before the fourth tone, it rises, assuming the shape of the second tone (i.e., *yí*), but before the other three basic tones, it falls just like the fourth tone (i.e., *yì*).

Regular noun reduplication as described previously is not the same as reduplication in a special group of nouns: the kinship terms such as *mā* 妈 in *māma* 'mother.' The reduplication in kinship terms is different for at least two reasons. One, it does not add any meaning—it does not have a repetitive meaning: the reduplicated form means the same as the base. Two, the second syllable carries the neutral tone. However, kinship-term reduplication does bear one important similarity to the regular noun reduplication. It is not productive; only certain kinship terms can be in reduplicated forms, examples of which are given below:⁷⁷

(3.27)	<i>Reduplicated</i>		
a.	gēge	哥哥	'older brother'
b.	jiějie	姐姐	'older sister'
c.	dìdì	弟弟	'younger brother'
d.	mèimei	妹妹	'younger sister'
e.	yéye	爷爷	'paternal grandpa'
f.	nǎinai	奶奶	'paternal grandma'
g.	shūshu	叔叔	'uncle (younger brother of father)'
h.	jiùjiu	舅舅	'uncle (brother of mother)'
i.	sǎosao	嫂嫂	'sister-in-law (wife of older brother)'
j.	shēnshen	婶婶	'aunt (wife of younger brother of father)'
k.	lǎolao	姥姥	'maternal grandma'
l.	bàba	爸爸	'father'
m.	māma	妈妈	'mother'
n.	bóbo	伯伯	'uncle (older brother of father)'
o.	gūgu	姑姑	'aunt (sister of father)'
p.	pópo	婆婆	'mother-in-law (husband's mother)'
q.	gōnggong	公公	'father-in-law (husband's father)'

Some kinship terms can only be in the reduplicated forms; their base forms are meaningless. For example, *lǎo* in *lǎolao* 姥姥 'maternal grandma' is meaningless alone⁷⁸. Another example is *nǎi* in *nǎinai* 奶奶 'paternal grandma.' On its own, the single-syllable form may mean 'milk' or 'breast' but not 'grandma' or anything related to it. Thus, as a base for *nǎinai*, the form is meaningless. Other kinship terms are more often used in reduplicated forms than base forms (e.g., *yéye* 爷爷 'paternal grandpa'.)

A third group of nouns that are often reduplicated are the proper nouns of personal names which are used vocatively. It is a very common practice for parents to address their children by a name in reduplicated form. Often, this reduplicated name is built out of the last syllable of the

⁷⁷ Notice that not all two-syllable kinship terms are in reduplicated forms (e.g., *dàbāi* 大伯 'uncle (older brother of father)' which is a compound).

⁷⁸ That is, it does not have the meaning of 'maternal grandma' at all.

child's personal name. If the child's name is *zhāng liàng* 张亮⁷⁹, parents may call the child *liàngliàng*, usually with the second tone neutralized.

Finally, there are reduplicated nouns which do not fall into any of the above categories but share the characteristics of kinship terms: they have a neutral tone on the second syllable and mean the same as their base. Examples are *bǎobao* 宝宝 'little treasure (referring to a child),⁸⁰ *wáwa* 娃娃 'little child', *xíngxing* 猩猩, 'gorilla', and *xīngxīng* 星星, 'star.' Like regular noun reduplication, it is not synchronically a productive morphological process.

3.3.3.2 Verb and Adjective Reduplication

In contrast to noun reduplication, verb reduplication is a very productive process: all verbs can normally double in size to yield a reduplicated form. As with the vocative names and kinship terms, the second syllable in verb reduplication is unstressed and carries the neutral tone. Verb reduplication has an attenuative meaning (see the next chapter for details). The difference in meaning between the base and its reduplicated form can be seen from the examples below:

(3.28)	Base			Reduplicated		
a.	<i>zǒu</i>	走	'walk'	<i>zǒuzou</i>		'take a walk'
b.	<i>xiǎng</i>	想	'think'	<i>xiǎngxiang</i>		'give a thought'
c.	<i>pāi</i>	排	'pat'	<i>pāipai</i>		'give a pat'
d.	<i>tīng</i>	听	'listen'	<i>tīngting</i>		'listen a bit'
e.	<i>kàn</i>	看	'look'	<i>kànkān</i>		'have a look'
f.	<i>chuī</i>	吹	'blow'	<i>chuīchui</i>		'give (it) a blow'
g.	<i>féng</i>	缝	'sew'	<i>féngfeng</i>		'sew a bit'
h.	<i>chǎo</i>	炒	'stir-fry'	<i>chǎochao</i>		'stir-fry a bit'
i.	<i>qiāo</i>	敲	'knock'	<i>qiāoqiao</i>		'give a knock'
j.	<i>shì</i>	试	'try'	<i>shìshì</i>		'give (it) a try'

Another very productive type of reduplication is adjective reduplication. When reduplicated, an adjective gains intensive meaning; the reduplicated form gives a more vivid description than does the base. As with verbs, most single-syllable⁸¹ adjectives can be reduplicated. Yet, different from verbs, the second syllable in adjective reduplication bears its inherent tone. The following are a few examples:

⁷⁹ Unlike many European languages, in Chinese, the family name precedes the personal name.

⁸⁰ *Bǎobao* 宝宝 can be used as a vocative or name for a baby as well, in which case it is a different word from the one cited here.

⁸¹ Both two-syllable verbs and adjectives can also be reduplicated, a topic that will be addressed in Section 3.3.3.3.

(3.29)	Base			Reduplicated		
a.	<i>hóng</i>	红	'red'	<i>hónghóng</i> (de)		'quite red'
b.	<i>dà</i>	大	'big'	<i>dàdà</i> (de)		'quite big'
c.	<i>pàng</i>	胖	'fat'	<i>pàngpàng</i> (de)		'quite fat'
d.	<i>tián</i>	甜	'sweet'	<i>tiántián</i> (de)		'quite sweet'
e.	<i>xiǎo</i>	小	small	<i>xiǎoxiǎo</i> (de)		quite small

In some cases, especially when the adjectives are used adverbially, the second syllable bears a high level tone. The morpheme *hǎo* 好 'good', for example, has two reduplicated forms, *hǎohǎo* (de)⁸² 好好的/地 and *hǎohāo* (de), both acceptable, although the latter may be heard more in the area of Beijing.

So far, we have examined reduplication on single-syllable bases—monomorphemic nouns, verbs, and adjectives. Other than these, reduplication is rarely heard in any other parts of speech. One may occasionally encounter reduplicated adverbs: for example, *gānggāng* 刚刚 'just now,' *tōngtōng* 通通 'completely' and *jǐnjǐn* 仅仅 'merely', but they are too few in number to have any significance in Mandarin word formation.

3.3.3.3 Two Syllable Reduplication

Up to now, we may have left the reader with the impression that only single-syllable morphemes get reduplicated in Mandarin. The truth is, rather, that two-syllable verbs and adjectives can be reduplicated as well. As can be expected, as the size of the base word increases, so does the complexity of the reduplication. The monosyllabic nature of the language means that only one morpheme is involved in monosyllabic reduplication.⁸³ Yet a two-syllable base may bear one or two morphemes. What's more, with one syllable, say, X, the only possibility is XX, but with two, say, XY, there are the possibilities of XXYY and XYXY. Both of these logical possibilities exist in Mandarin. In verb reduplication with an attenuative meaning, for instance, the two-syllable base is normally bimorphemic, and it doubles in the fashion of XYXY:

(3.30)	Base			Reduplicated		
a.	<i>dǎsǎo</i>	打扫	'to clean'	<i>dǎsǎo-dǎsǎo</i>		
b.	<i>pànduàn</i>	判断	'to judge'	<i>pànduàn-pànduàn</i>		
c.	<i>hùnong</i>	糊弄	'to deceive'	<i>hùnong-hùnong</i>		
d.	<i>shúxi</i>	熟悉	'to familiarize'	<i>shúxi-shúxi</i>		
e.	<i>liànxí</i>	练习	'to practice'	<i>liànxí-liànxí</i>		

⁸² While some adjectives do not have to use *de* to modify nouns, reduplicative adjectives use it obligatorily when modifying nouns and verbs. See the next chapter for details.

⁸³ With just one marginal exception *-r*. See the previous chapter for details.

On the other hand, in adjective reduplication with an intensive meaning, the base adjective is reduplicated syllable by syllable: XY→XXYY:

(3.31)	<i>Base</i>			<i>Reduplicated</i>
a.	<i>gānjìng</i>	干净	'clean'	<i>gān-gān-jìng-jìng</i>
b.	<i>lǎoshi</i>	老实	'honest'	<i>lǎo-lǎo-shi-shi</i>
c.	<i>tiánmì</i>	甜蜜	'sweet'	<i>tián-tián-mì-mì</i>
d.	<i>hémù</i>	和睦	'harmonious'	<i>hé-hé-mù -mù</i>
e.	<i>gāoxìng</i>	高兴	'happy'	<i>gāo-gāo-xìng-xìng</i>

Some words which can serve both as a verb and an adjective then have two reduplicated forms: XXYY and XYXY, depending on which part of speech it has in a sentence. The word *gāoxìng* 高兴 in the above, for example, can be a verb and an adjective, and when it is a verb, it doubles as a complete unit, as shown in (a) below, but when it is an adjective, it doubles syllable by syllable, as indicated in (b).

(3.32)	a.	<i>ràng tā gāoxìnggāoxìng.</i> let he/she be-happy-a-bit	让他高兴高兴。 Let him be happy once.
	b.	<i>tā gāogāoxìngxìng de huí le jiā.</i> he/she happy return PERF home.	他高高兴兴地回家了。 He/she returned happily.

A question one may ask here is: if the disyllabic adjective is made up of only one morpheme as in *luōsuo* 罗嗦 'long-winded,' does it still reduplicate syllable by syllable? The reason for this question is that if it is, the single morpheme is, in a sense, broken in half. This is exactly what happens. *Luōsuo*, when reduplicated, becomes *luōluosuosuō*.⁸⁴

So far we have presented disyllabic adjective reduplication as if in all cases, it yields the form XXYY. In fact, there is a small group of two-syllable adjectives which reduplicate like verbs. Members of this group can be easily identified by their internal morphemic structure. They are all compounds which contain a noun or a verb followed by an adjective. Examples and their reduplicative forms are given below:

⁸⁴ The tone pattern has changed from that of the base, a topic which goes beyond the scope of the present discussion, and therefore will not be pursued here.

(3.33)	<i>Base</i>		<i>Morphemes</i>	<i>Reduplicated</i>
	a.	<i>bǐzhí</i>	笔直 pen-straight	<i>bǐzhíbǐzhí</i>
	b.	<i>xuěbái</i>	雪白 snow-white	<i>xuěbáixuěbái</i>
	c.	<i>bīngliáng</i>	冰凉 ice-cold	<i>bīngliángbīngliáng</i>
	d.	<i>qīhēi</i>	漆黑 paint-dark	<i>qīhēiqīhēi</i>
	e.	<i>bìlǜ</i>	碧绿 jade-green	<i>bìlǜbìlǜ</i>
	f.	<i>gǔnyuán</i>	滚圆 roll-round	<i>gǔnyuángǔnyuán</i>

Finally, there exist in Mandarin a few two-syllable nouns that can be reduplicated: *nánnánnǚnǚ* 'every man and woman' from *nánnǚ* 男女 'men and women', *lǎolǎoshàoshào* 'every old and young' from *lǎoshào* 老少 'old and young,' and *fāngmiàn* 'side,' *fāngfāngmiànmiàn* 'all sides.' These reduplicated forms turn a form of XY into XXYY. Note that the bases here are *nánnǚ* and *lǎoshào*, and not *nán*, *nǚ*, *lǎo*, or *shào* individually. This is because none of *nánnán*, *nǚnǚ*, *lǎolǎo*, or *shàoshào* can stand alone. If they could, the derived four-syllable word would have been compounded rather than reduplicated. They would be the same as the word *pópomāma* 婆婆妈妈 'womanish', which is compounded from the reduplicated forms of *pópo* 'mother-in-law (husband's mother)' and *māma* 'mother', as *pómā* is meaningless⁸⁵ on its own. Another example of such a compound is *tiáotiáokuàngkuàng* 条条框框 'rules and regulations', which is formed by conjoining two reduplicated words *tiáotiáo* 'rules' and *kuàngkuàng* 'frames', but is not from the meaningless *tiáokuàng*. The following cases are unclear as to whether they are reduplications or compounds. *Rìrìyèyè* 日日夜夜 'day and night' and *niánniányuèyuè* 年年月月 'year after year and month after month' can be regarded either as reduplication on two syllable words *rìyè* 'day and night' and *niányuè* 'time', or as compounds from reduplicated words *rìrì* 'every day', *yèyè* 'every night', *niánnián* 'every year', and *yuèyuè* 'every month'.

3.3.3.4 Simplex or Complex?

We know from the previous discussion that a Mandarin word is either a simplex or a complex. With regard to reduplication, we may ask to which of the two categories a reduplicated word belongs. If a reduplicated word is complex, we may ask further if it is compounded or affixed. While we will devote the next section to the latter question, let us deal with the complexity of reduplication first. There are three logical possibilities. 1) All reduplicated words are simplex; 2) all are complex; 3) some are simplex and others are complex.

The first answer can be quickly eliminated since there is copious evidence that there are reduplicated words with more than one morpheme in them. Take regular noun reduplication for an example (See also Section 3.3.3.1). The word *nián* 'year' has a morpheme meaning 'every'

⁸⁵ The form *pómā* 婆婆 can be a word in some northern Mandarin dialects. For instance, in Wendeng of Yantai District, Shandong Province, it means 'mother-in-law (husband's mother)'.

added to it when it is reduplicated: *niánnián* 'every year.' Even though the reduplicate cannot be vertically segmented into two morphemes, the repetition of the base morpheme encodes the meaning of 'every.' The two morphemes can be non-linearly represented as such: (The symbol σ represents a syllable.)

- (3.34) nián 'year'
 / \
 [σ σ] 'every'

The diagram shows that the meaning 'year' is contained in the base *nián*, whereas the meaning 'every' is encoded in the two-syllable template. Similarly, there are verbs and adjectives which, after reduplication, acquire some additional meaning that can be construed as a morpheme. The two morphemes in each case can be represented as follows:⁸⁶

- (3.35) zǒu 'walk' dà 'big'
 / \ / \
 [σ σ] 'take a (walk)' [σ σ] 'very'

If reduplicated words are not all simplex, can we maintain that they are all complex? Our answer is again 'no.' Observe the following:

- (3.36) nǎi ??? lǎo ???
 / \ / \
 [σ σ] 'paternal grandma' [σ σ] 'maternal grandma'

The words *nǎinai* 'paternal grandma' and *lǎolao* 'maternal grandama' are only meaningful at the reduplicated level. At the base level, *nǎi* may mean 'milk' or 'breast' but not 'paternal grandma,' and *lǎo* may mean 'old' but has nothing to do with 'maternal grandma.' In other words, the base forms in these reduplicated words are meaningless, and consequently do not constitute morphemes. It seems that reduplicated words like these are best regarded as simplex words since it is not the case that morphemes are strung together to form new words.

Incidentally, the above type of reduplicated words should, as far as the complex-simplex dichotomy is concerned, be differentiated from reduplicated words such as *gēge* 哥哥 'older brother,' *jiějie* 姐姐 'older sister,' *didi* 弟弟 'younger brother,' *měimei* 妹妹 'younger sister,' etc. The morphemic structure of these words can be represented as the following:

⁸⁶ Theoretically speaking, the template for the verbs should also come with a tonal stipulation which requires the second syllable to be in the neutral tone. However, due to the complexity of the issues involved, we will not deal with this question here.

- (3.37) jiě older sister
 / \
 [σ σ] ???

The crucial difference here is that the base forms of these morphemes are meaningful since they can appear in other words with the same meaning (e.g., *dàgē* 大哥 'big older brother,' *dàjiě* 大姐 'big older sister,' *xiǎodì* 小弟 'little younger brother,' *xiǎomèi* 小妹 'little younger sister,' etc.). What may be confusing here is the fact that the reduplication does not add any meaning to that of the base form. This fact, however, should not be a sufficient reason to rule these words out of the complex set, because it is also true that certain affixation and compounding processes do not produce extra meaning. For example, as previously mentioned, the suffixation of *-zi* does not add any meaning to the morphemes such as *zhuō* 桌 'table,' *tī* 梯 'ladder,' *qún* 裙 'skirt,' *zhuōzi*, *tīzi*, *qúnzi* mean the same as their respective base morphemes. These words nonetheless are still complex words. The reduplication as shown in (3.37) can be regarded as a word-formative morpheme performing a similar, albeit grammatical, function as the suffix *-zi*: it transforms a meaningful morpheme into a well-formed word. In this regard, the representation in (3.37) can be modified as follows—with the functional meaning of the reduplication specified:

- (3.38) jiě older sister
 / \
 [σ σ] (forming a word)

3.3.3.5 Affixation or Compounding?

If many reduplicated words are complex words, there emerges a question whether Mandarin reduplication is a special case of affixation or compounding. The question arises since there has been a consensus among linguists in general that reduplication is not really a separate word formation process, but a special type of affixation process. Originating from Marantz's 1982 paper, *Re: Reduplication*,⁸⁷ this approach to reduplication maintains that normal affixation provides the complete affix, while in reduplication, what is attached is a skeletal tier that contains merely information on whether the phonemes in the affix are vowels or consonants. After such a skeletal affix is attached, the Cs and Vs then acquire their other featural information from the base. The following examples from the Philippine language Ilokano illustrate the theory⁸⁸:

⁸⁷ The development of the theory was made possible after the advent of the autosegmental phonology (Goldsmith 1976) which allows features to stand alone on separate tiers that are linked together in a three dimensional manner, rather than being all bundled together within the same feature matrix. See the beginning of the last chapter for a few more details.

⁸⁸ What is presented here is far less complex than reduplication in this language, but is sufficient for the purpose of illustrating the theory in question.

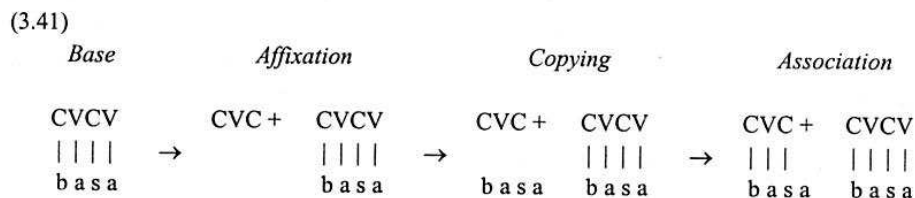
(3.39) *Progressive*

- a. ag-bas-basa 'read'
b. ag-tak-takter 'standing'

In this language, the progressive of the verb is marked by reduplication of the base. In the reduplication-as-affixation theory, what happens here is a prefixation process, and the prefix is a mere CVC skeletal tier:

(3.40) *CVC + basa*
CVC + takter

Then Cs and Vs acquire their other features by copying them from the base segment by segment from left to right. The whole operation is illustrated below:



It seems that the theory of reduplication-as-affixation process does work for cases like this one from Ilokano. However, when it comes to Mandarin reduplication, it becomes difficult to say if reduplication is universally an affixation process. There are at least two reasons for this doubt. First, Mandarin reduplication in all cases involves total reduplication—the base is duplicated in its entirety. It is thus impossible to decide which part, the first or the second, is the affix. Decision between the two would be totally arbitrary. Second, it is hard to rule out that Mandarin reduplication is not done by compounding. We learned previously that by far the most influential word formation process in Mandarin is compounding. Affixation, by contrast, is quite rare. Therefore, in this language, it would seem more reasonable and natural to have compounding reduplication rather than affixational reduplication. Notice that the fact that the second syllable in many reduplicated words carries the neutral tone should not constitute an argument for the reduplication-as-affixation theory; it should not sufficiently prove that the second syllable in them is a suffix. This is because many two-syllable compounds also have the second tone neutralized.

3.3.4 Abbreviations

Mandarin has a unique way of composing new words. It resembles how acronyms are coined in English. But differing from English acronyms, which are often the combinations of the first letters (or rather, the individual sounds they represent) of the words in a phrase, these Mandarin words are composed of selected syllables of the words in an expression. Here follow some examples in which the italicized syllables are the ones which show up in the 'acronyms.'

(3.42) *Originals*
→ *'Acronyms'*

- | | | | |
|---|-----------------------------------------------------------------------------|---------------------------|----------------------------------------|
| a | <u>běijīng</u> <u>dàxué</u>
→ <u>běidà</u> | 北京大学
→ 北大 | 'Beijing University' |
| b | <u>běijīng</u> <u>shīfàn</u> <u>dàxué</u>
→ <u>běishīdà</u> | 北京师范大学
→ 北师大 | 'Beijing Normal University' |
| c | <u>chūjí</u> <u>zhōngxué</u>
→ <u>chūzhōng</u> | 初级中学
→ 初中 | 'junior high school' |
| d | <u>wàishì</u> <u>bàngōngshì</u>
→ <u>wàibàn</u> | 外事办公室
→ 外办 | 'foreign affairs office' |
| e | <u>zhōngguó</u> <u>gòngchǎndǎng</u>
→ <u>zhōnggòng</u> | 中国共产党
→ 中共 | 'Communist Party of China' |
| f | <u>jiālìfúniyà</u> <u>zhōu</u>
→ <u>jiāzhōu</u> | 加利福尼亚州
→ 加州 | 'State of California' |
| g | <u>yàzhōu</u>
<u>fēizhōu</u>
<u>lādīngměizhōu</u>
→ <u>yàfēilā</u> | 亚洲
非洲
拉丁美洲
→ 亚非拉 | 'Asian, African and
Latin America' |
| h | <u>kēxué</u> <u>jìshù</u>
→ <u>kējì</u> | 科学技术
→ 科技 | 'science and technology' |
| i | <u>jiāotōng</u> <u>diànxùn</u>
→ <u>jiāodiàn</u> | 交通电讯
→ 交电 | 'transportation and
electronics' |
| j | <u>shèhuì</u> <u>kēxué</u> <u>yuàn</u>
→ <u>shèkēyuàn</u> | 社会科学院
→ 社科院 | 'Social Science
Academy (of China)' |
| k | <u>zhōngyāng</u> <u>yánjiū</u> <u>yuàn</u>
→ <u>zhōngyányuàn</u> | 中央研究院
→ 中研院 | 'Academia Sinica
(Taipei)' |

The 'acronyms' normally take the first syllable of each word in the phrase and put them together creating a new word. In some cases, where the use of the first syllables might cause confusion and ambiguity, other syllables are used.

(3.43) *Originals*
→ *'Acronyms'*

- | | | | |
|----|----------------------------------------------------|--------------|-------------------------------|
| a. | <u>wàijiāo</u> <u>bùzhǎng</u>
→ <u>wàizhǎng</u> | 外交部长
→ 外长 | 'Minister of Foreign Affairs' |
| b. | <u>xiānggǎng</u> <u>àomén</u>
→ <u>gǎngào</u> | 香港澳门
→ 港澳 | 'Hong Kong and Macao' |

In (3.43), the morpheme *bù* 'ministry' modifies the morpheme *zhǎng* 'head, director' in the

second word, but using *bù* in the acronym would yield a non-word **wàibù* which being a homophone to the word meaning 'outside' would create ambiguity. Another rule that seems to govern such abbreviation is that a two-syllable abbreviation is preferred over one with more syllables, as the following cases indicate:

- (3.44) *Originals*
→ '*Acronyms*'
- | | | | |
|----|---------------------------------------------------------------------|------------------------|-----------------------------------------------------|
| a. | <i>rénmín dàibiǎo dàhui</i>
→ <i>réndà</i> | 人民代表大会
→ 人大 | 'People's Assembly' |
| b. | <i>zhōngguó rénmin zhèngzhì xiéshāng huìyì</i>
→ <i>zhèngxié</i> | 中国人民
政治协商会议
→ 政协 | 'People's Political Consultation Assembly of China' |

Another type of 'acronyms' is that in which a common element is omitted. Examples of this type are given below.

- (3.45) *Originals*
→ '*Acronyms*'
- | | | | |
|----|--------------------------------------------------|---------------|------------------------------------------------------|
| a. | <i>fángchǎn dìchǎn</i>
→ <i>fángdìchǎn</i> | 房地产
→ 房地产 | 'real estate'
'(literally) house & land property' |
| b. | <i>zhōngxué xiǎoxué</i>
→ <i>zhōngxiǎoxué</i> | 中学小学
→ 中小学 | 'primary and secondary school' |

In addition to the 'acronyms', abbreviations can be created by taking a common element from the words in an expression such as the second morpheme and adding a referential number to its front as the first morpheme. The following are examples of such abbreviations.

- (3.46) *Originals*
→ '*Acronyms*'
- | | | | |
|----|-----------------------------------------------------------------------------|---------------------------|----------------------------------------------------------------------|
| a. | <i>shàngyìyuàn</i>
<i>xiàyìyuàn</i>
→ <i>liǎngyuàn</i> | 上议院
下议院
→ 两院 | 'Upper House'
'Lower House'
'two houses' |
| b. | <i>zhòngyìyuàn</i>
<i>cānyìyuàn</i>
→ <i>liǎngyuàn</i> | 众议院
参议院
→ 两院 | 'House of Commons'
'Senate'
'two houses' |
| c. | <i>xuéxíhǎo</i>
<i>gōngzuòhǎo</i>
<i>shēntǐhǎo</i>
→ <i>sānhǎo</i> | 学习好
工作好
身体好
→ 三好 | 'study well'
'work well'
'keep good health'
'three virtues' |

- | | | | |
|----|-----------------------------------------------------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| d. | <i>péi hējiǔ</i>
<i>péi tiàowǔ</i>
<i>péi shuìjiào</i>
→ <i>sānpéi</i> ⁸⁹ | 陪喝酒
陪跳舞
陪睡觉
→ 三陪 | 'accompany in dancing'
'accompany in drinking'
'accompany in sleeping'
'a bar girl who provides all the three 'services' of drinking, dancing, and sleeping company to her customers' |
|----|-----------------------------------------------------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The abbreviations presented so far have somehow gained currency among Mandarin speakers. They have done so either through government endorsement and promotion or through popular acceptance and usage. They cannot be created and used at will. One cannot even use analogies to create what seem to be obvious abbreviations. For instance, although we have *běidà* for *běijīng dàxué* 'Beijing University' (3.42)a), it is unusual to use *qīngdà* for *qīnghuá dàxué* 清华大学 'Qinghua University' in mainland China. The normal abbreviation for the latter is simply *qīnghuá*, in spite of the fact that the two universities are both located in the capital of Beijing, and are often named together. Incidentally, a university with the same name⁹⁰ in Taiwan can be abbreviated to *qīngdà*. One explanation for the rejection of *qīngdà* in mainland China is that the abbreviation can potentially cause confusion between *qīnghuá dàxué* and such universities as *qīnghǎi dàxué* 青海大学 'Qinghai University,' which is in the capital of the Qinghai Province, and *qīngdǎo dàxué* 青岛大学 'Qingdao University,' which is situated in the coast city of Qingdao, Shandong Province. *Qīnghuá dàxué* in Taiwan, by contrast, does not have such 'competitions,' and thus similar confusion does not arise within its territory if *qīngdà* is used. Another explanation is that *běijīng* names a well-known geographic place while *qīnghuá* does not. Therefore, *qīnghuá dàxué* 清华大学 'Qinghua University' along with other well-known Chinese universities such as *nánkāi dàxué* 'Nankai University' and *fúdàn dàxué* 'Fudan University' are not usually abbreviated to *qīngdà*, *nándà* or *fūdà* respectively.⁹¹

Words that are accepted in one region but not another also show that abbreviations cannot be coined at will. Again, let us see Taiwan Mandarin. The word *gōnggòngqìchē* 公共汽车 'bus' is abbreviated to *gōngchē* 公车, and the phrase *shūcài hé shuǐguǒ* 蔬菜和水果 'vegetables and fruits' to the word *shūguǒ* 蔬果. These abbreviations are not at all accepted in Northern Mandarin where *shūguǒ* does not exist and *gōngchē* means *gōngjiāde chē* 公家的车 'public vehicle' rather than *gōnggòngqìchē* 'bus'.

⁸⁹ This is a very new term that has been in popular existence for a decade or so.

⁹⁰ It originated in Beijing before moving to Taiwan with the Nationalist government in the late 1940s.

⁹¹ Note that the rejection of *nándà* could also be caused by the existence of *náijīng dàxué* 'Naijing University,' which can be abbreviated to *nándà*.

3.3.5 Disyllabicity

In Section 3.3 so far, we have presented all the major word-formation processes in Mandarin. One insight we have gained concerning these processes is that the Mandarin word has a strong preference for a phonological form of two syllables. Indeed, word formation in Mandarin seems to interact with phonology producing forms that fit into a two-syllable template. Evidence for this claim is quite compelling. Almost all types of word-formation processes in Mandarin put together morphemes for no other purpose but to create a two-syllable form. Let us first have a look at affixation. The word-formative suffix *-zi* in (3.8), for example, has no meaning whatsoever: it does not add any meaning to the root. *Zhuō* means 'table' just as much as *zhuōzi* does. The same is true with the prefix *lǎo-* in *lǎohǔ* 'tiger.' The single-syllable *hǔ* means exactly the same as *lǎohǔ*. Other affixes that are likewise used include the prefix *ā-* as in *āfā* 'Fa (name)', *ābǎo* 'Bao (name)', and *āgē* 'older brother', suffixes *-ba* as in *zuǐba* 'mouth', *wěiba* 'tail' and *yǎba* 'mute', and *-tou* as in *shítou* 'stone', *fūtou* 'axe', *mùtou* 'wood'. In all cases, the addition of the affix serves no other purpose than to enlarge the base into two syllables.

Adding what we may call a 'dummy affix' is only one of the many ways of disyllabifying words in Mandarin. Another way is compounding. Besides compounds in which the morphemes are put together more or less for a semantic reason, or at least such was the case at the time when the compounds were first coined, there are template-driven creations that contain two morphemes of identical or similar meaning. Mandarin is full of compounds like these. A few examples (See also(3.14)) are given below:

(3.47)	Morphemes			
a.	péngyǒu	朋友	friend-friend	'friend'
b.	bàogào	报告	report-report	'report'
c.	shēngyīn	声音	sound-sound	'sound'
d.	yáchǐ	牙齿	teeth-teeth	'teeth'
e.	xìjù	戏剧	opera-opera	'opera'
f.	shēngchǎn	生产	produce-produce	'produce'
g.	zhàndòu	战斗	fight-struggle	'fight'
h.	bāngzhù	帮助	help-help	'help'
i.	fēngfù	丰富	plenty-rich	'rich'
j.	qíguài	奇怪	odd-strange	'strange'
k.	měilì	美丽	beautiful-pretty	'beautiful'
l.	gāngcái	刚才	just now-just now	'just now'

When two morphemes of (near) identical meaning are concatenated, the only purpose for their concatenation must be of a non-semantic nature. In our case, the reason is clearly to reach a two-syllable target.

That words are formed for the purpose of fitting into a two-syllable template seems to be even more strongly corroborated by Mandarin reduplication. As discussed in Section 3.3.3.4, not only can reduplication double a one-syllable morpheme in size to yield a word meaning exactly

the same as its base morpheme, but the same type of reduplication may also work on a *meaningless* single syllable to yield a well-formed two-syllable word (e.g., *nǎi*→*nǎinai* 'fraternal grandma' and *lǎo*→*lǎolao* 'maternal grandma'). The sole purpose of the morphological process in question is indisputably to disyllabify the words.

In abbreviations, it seems two-syllable forms are used whenever possible. For example, the abbreviated form for *rémín dàibiǎo dàhui* 'General Assembly of the People's Representatives' is not the seemingly more logical *rédàidà*, in which all first syllables in the three words are used, but *réndà* in which only the first syllables of the first and the third words are used. The result, as one can clearly see, is a two-syllable word.

That Mandarin has a preference for two-syllable units is shown not just in words, but in other aspects as well. It is compellingly exemplified in vocative forms. In addressing someone under normal circumstances, a single syllable is never used, but always two. If a man's name contains two syllables, say Wang Ming, the acceptable address for him is 1) Wang Ming as a whole, 2) a reduplicated Mingming—perhaps used by his parents if he is young, 3) a form that has another single syllable attached to the front of the surname or personal name: Lao Wang 'Old Wang', Xiao Wang 'Little Wang', or A Ming 'Ming'. Following are some examples of names of more than two syllables.

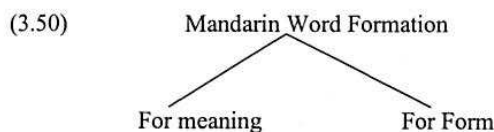
(3.48)	Acceptable	Unacceptable
2-syllable name: Wang Ming 王明	Wang Ming	*Wang
	Mingming	*Ming
	A Ming	
	Lao Wang	
	Xiao Wang	
2-syllable name: Wang Hongming 王红明	Hongming	*Wang
	Mingming	*Ming
	A Ming	*Hong
	A Hong	
	Lao Wang	
four syllable name: Huangfu Hongming 皇甫红明	Xiao Wang	
	Huangfu	*Huang
	Hongming	*Fu
	A Ming	*Ming
	A Hong	*Hong

What the above shows is that no matter how many syllables are there in a person's name, the acceptable form that is used to address the person is invariably a disyllabic form. Incidentally, a two-syllable preference seems to exist in sentences as well. For instance, to utter the expression 'the apple is red', one always has to add a monosyllable *hěn* 很 'very' before the morpheme *hóng* 红 'red', and the resultant sentence becomes *píngguo hěn hóng* 苹果很红 'literally: the apple is very red'. The morpheme *hěn* and the adjective *hóng* form a two-syllable immediate constituent

of an adjectival phrase so that the adjective does not appear sort of 'unsupported' in its monosyllabic form. Another example comes from answers, shown below, to the question *nǐ duō dà?* 你多大 'How old are you?'

- (3.49) a. shíbā. 十八。 c. bā suì. 八岁。
 eighteen eight year
 'Eighteen.' 'Eight year old.'
- b. *bā. 八。
 eight
 ?

If the answer is a two-syllable word, the word can be used alone (a); if it is a one-syllable word, the word cannot stand alone (b), but has to be supported by another word *sui* 'year' (c). To better understand the disyllabic tendency of Mandarin words, it is helpful to go back briefly in history, which brings us to the next topic in Mandarin morphology, homophones. In brief, word formation in Mandarin, in addition to serving the purpose of conjoining morphemes to yield another word with a different meaning, also works, in a great many cases, simply to conform to a phonological requirement of two syllables. The two purposes do not have to be mutually exclusive; both can be served at the same time. That the vast majority of Chinese words are of two syllables should lend support to this claim. The dual purpose of the Mandarin word-formation process can be represented as follows:



3.4 Homophones

Anyone who is reasonably familiar with Mandarin will know that the language has a remarkable number of homophones. What is less known is that they are the result of a long period of historical simplification of Mandarin syllables.⁹² Middle Chinese of the seventh century had six syllable final consonants {-p, -t, -k, -m, -n, -ŋ} which were reduced to three {-m, -n, -ŋ} in Early Mandarin of the fourteenth century, and then to two {-n, -ŋ} still later. Besides the reduction in syllable-final consonants, Mandarin has experienced a loss of syllable initials. These syllable simplification processes in turn led to the emergence of a great number of single-syllable homophones in the language. An example of such homophones is given earlier in (1.6), which showed seven words with the same pronunciation, tone included. One survey (B. Y. Yin 1984)

⁹² See Section 1.2.1 for more information on syllable simplification and homophones in Mandarin.

finds that among the 1300 syllable types of Mandarin, only 297, or about a quarter of them, are syllables with just one meaning attached. The rest are all associated with more than one meaning. Since today's words in Mandarin are mostly of two syllables, homophones are mostly at the morpheme rather than the word level. In fact, the Mandarin disyllabification process was quite likely influenced by a need to reduce ambiguity raised by a huge number of homophones. Middle Chinese still had words predominantly of a single syllable. To avoid or amend the homophone-induced ambiguity at the word level, one logical measure would be to enlarge the word in size. That seems to have been exactly what has happened. (See (1.7) for an illustration). By the disyllabification process of compounding, monosyllabic homophones become two syllables in size, their original meanings intact. It is clear that the resultant two-syllable words are no longer homophones of one another in spite of their sharing a common form (e.g., *jiàng* in (1.7)). It should be pointed out that disyllabification has not wiped out the monosyllabic homophones; it has merely moved them from the level of the word to the level of the morpheme.⁹³

3.4.1 Lucky and Taboo Expressions

Morphemic homophones have been the basis of many interesting language usages, games and cultural activities. Many so-called lucky words and taboo expressions came into being as a result of being homophones to certain other words in the language. One of the most well-known taboo expression involves the number four *sì* 四. This word acquired a negative connotation because it is a near homophone of the word *sǐ* 死 'death'. Another famous taboo word is *shū* 书 'book'. Books are not supposed to be read in certain businesses or in gambling places because the word *shū* 'book' has acquired the symbolic meaning of losing since it has the same pronunciation as *shū* 输 'to lose'.

Conversely, many lucky words are derived through being homophones of words with a good or positive meaning. A lucky word which is often seen during Chinese New Year's celebrations is *yú* 鱼 'fish'; many New Year posters have pictures of fish in them. The auspicious connotation is derived from the word's being homophonous with another *yú* which means 'surplus.' A tradition in some parts in Northern China is to serve dates and peanuts or to use them as decorations at weddings. The word *zǎo* 枣 'date' is a homophone to *zǎo* 早 'early' while the word peanut *huāshēng* 花生 has two syllables in it: *huā* which is a homophone of *huā* 'variety' and *shēng* which is a homophone of *shēng* 'propagate'. The idea is that the newlyweds will have both male and female children (*huāzhe shēng* 花着生) and will have them early (*zǎo shēng* 早生).

It should be noted that in Mandarin, lucky or taboo expressions do not have to be completely homophones with their originals. These expressions can sometimes simply rhyme with their originals. The number *bā* 八 'eight' is a lucky one because it rhymes with *fā* 发 which means 'get rich and prosperous'. In certain cases, even total rhyming is unnecessary; the only

⁹³ This does not mean, however, that there are no longer homophones at the two-syllable word level. However, the number of homophones at this level is no longer 'abnormal' compared with that in other languages.

requirement is for the vowels to be somehow 'in harmony'. The word *jú* 桔 'orange' (the fruit), for instance, is a lucky one simply because its vowel shares the same vowel features of [+high] and [-back] as found in the vowel in *jí* 吉 'auspicious'. In fact, it would be a mistake to expect all lucky and taboo expressions completely to match their originals in form. For one thing, these expressions may have existed for a long time during which the sound may have changed so that what used to match no longer does today. Furthermore, these expressions may have entered Mandarin from one of the several other Chinese dialects. Given that what are homophones in one dialect may not be so in another, they may match their analogues in their original dialect, but not in Mandarin.⁹⁴

3.5 Word Stress

In this section, we will examine a phonological aspect at the word level: word stress. It should be mentioned here that our inquiry into word stress is limited to words of two syllables, one of which may be afforded some kind of prominence over the other. The non-prominent syllable may manifest itself as being completely unstressed or just as lacking full prominence.

Although not everyone knows that Mandarin has stress patterns on syllables in addition to tone, linguists of Chinese all recognize the existence of word stress in the language. Exactly what the stress pattern is, however, has been a much-debated issue. Given that the vast majority of Mandarin words are composed of two syllables, the question of word stress mostly centers around which of the two syllables bears stress. There are thus two possibilities: 1) left stress: the first of the two syllables is stressed, and 2) right stress: the second syllable is. There are also two possibilities as to how left and right stress exist in the language: either both are present, in which case some words bear left stress, and others bear right stress. Or, there is just one type of stress: right or left. The traditional view is the former, namely, one of a mixed stress. In this view, a two-syllable word may have either left or right stress. In particular, when a two-syllable word has a neutral tone, it has left stress,⁹⁵ whereas when it has no neutral tone, it has right stress. This tradition is traced back to Y. R. Chao (1968), in which he says, 'a two-syllable compound ... will have a slightly greater stress on the second syllable unless it is in the neutral tone (p. 29).' Such a position obviously contains a paradox. A fact concerning the neutral tone is that it is derived through a lack of stress. Given this, Chao's remark amounts to saying that there is stress where one does not find an unstressed syllable.

In fact, regarding all words without the neutral tone as being right heavy leads to several problems. For one, the set of neutral-toned words is not a stable one. Historically, there has been an increase in the number of neutral-toned words in colloquial speech in Mandarin (W. M. Li 1981, and C. Y. Chen 1994 and 1998).⁹⁶ For another, we know that neutral tone is induced by

⁹⁴ And by the same token, different dialects may have different lucky and taboo expressions.

⁹⁵ This is because all the neutral tones fall on the second syllable and never the first.

⁹⁶ The reader should be reminded that the Standard Mandarin discussed here does not include the Taiwan Mandarin or the Mandarin spoken as a second dialect in the Southern areas of China. Mandarin spoken in those areas may have distinctively different stress tendencies.

being in an unstressed position for an extended period of time. If non-neutral-toned words were always right heavy, how can any of them become neutral-toned words in the first place? Another problem with the traditional position is that Mandarin does not have any words that have a neutral tone on the first syllable, not even when the first syllable is a prefix. In contrast with prefixes, all Mandarin true suffixes⁹⁷ are in the neutral tone. If normal Mandarin words lack stress on the first syllable, why hasn't the neutral tone emerged on any of the first syllables? Or, why have all the neutral tones been found on second syllables? The primary phonetic cue that the traditional theory of word stress relies on is syllable duration. It seems that the second syllable is slightly longer in duration than the first. However, this is only true when the two syllables are uttered in isolation. In connected speech, the longer duration of the second syllable has not been found; rather, the first syllable has been heard slightly longer (Wang and Wang 1993).

One thing we have to bear in mind is that Mandarin word stress may vary with geographic location. What we have been arguing for is a stress pattern in the Standard Mandarin of the north, particularly that of Beijing Mandarin. Out of this geographic area, the pattern may change. For instance, Taiwan Mandarin is not obviously left heavy, which perhaps explains why Taiwan Mandarin does not have as many neutral-toned words. It seems that Taiwan Mandarin has been influenced by the local dialect of Taiwanese, a version of the Min dialect, which has been found to be a right heavy Chinese dialect (Yue-Hashimoto 1987). Native Mandarin speakers, after living in southern provinces such as Guangdong for a few years, tend to lose their neutral tone on the neutral-toned words. Words such as *fùqin* 父亲 'father' and *xīguā* 西瓜 'watermelon', each with a neutral tone on the second syllable in Beijing Mandarin, may become, respectively, *fùqīn* and *xīguā* in which the neutral tone disappears and in its place is heard the original tone of the syllable (H. Lin 1994 and 2001).

3.5.1 Meaningful Stress

We have argued for the left prominence in a two-syllable Mandarin word. Empirically, such prominence may or may not produce neutral tone on the second syllable. The determining factors include whether the word concerned is in the colloquial vocabulary. Another factor is whether the word contrasts with another that bears a neutral tone. Now observe (3.51) below and compare examples in (i)s with those in (ii)s. The former are identical to the latter except that the former do not have neutral tones on the second syllable while the latter cases do. There exist a sizable number of contrastive pairs such as these in the language. Among the pairs, the (i) type is not likely to lose stress completely on the second syllable and becomes a neutral-toned word since that would create merging of the two forms in (i) and (ii), and thereby create ambiguity. Incidentally, word stress can serve the function of differentiating words from phrases as well. For instance, the sequence *rè hú* 热壶 with both syllables stressed is a phrase which means 'hot kettle' whereas the same sequence *rèhu* 热乎 with no stress on the second syllable is a word meaning 'warm.'

⁹⁷ Refer to Section 3.3.1 for a description of the Mandarin suffixes.

(3.51)	a.	i.	shízài	实在	'indeed'
		ii.	shízai	实在	'honest'
	b.	i.	shēngqì	生气	'get angry'
		ii.	shēngqì	生气	'vitality'
	c.	i.	liánzǐ	莲子	'lotus seed'
		ii.	liánzi	帘子	'screen'
	d.	i.	duìtóu	对头	'correct'
		ii.	duìtóu	对头	'rival; enemy'
	e.	i.	dàyì	大意	'gist'
		ii.	dàyì	大意	'careless'
	f.	i.	dìdào	地道	'underground tunnel'
		ii.	dìdao	地道	'genuine'
	g.	i.	dōngxī	东西	'east and west'
		ii.	dōngxī	东西	'thing'
	h.	i.	shìfēi	是非	'good and bad'
		ii.	shìfēi	是非	'dispute'
	i.	i.	biānpái	编排	'lay out'
		ii.	biānpai	编派	'fabricate'
	j.	i.	xiongdi	兄弟	'brothers'
ii.		xiongdi	兄弟	'younger brother'	
k.	i.	sūnzǐ	孙子	'(name of a historical military strategist)'	
	ii.	sūnzi	孙子	'fraternal grandson'	

3.6 Transliteration of Foreign Words

Historically speaking, the Chinese language has not borrowed extensively from foreign languages—unlike English or Japanese. Other than names of people and places, there had been, until fairly recently, only a handful of loan words, most of which were of two syllables. Examples are given below:

(3.52)	a.	ānpéi	安培	'ampere'
	b.	hǔpò	琥珀	'amber'
	c.	jiālún	加仑	'gallon'
	d.	kǎobèi	拷贝	'copy'
	e.	lǔbù	卢布	'ruble'
	f.	luójì	逻辑	'logic'
	g.	módeŋg	摩登	'modern'
	h.	mótuó	摩托	'motorcycle'
	i.	níngméng	柠檬	'lemon'
	j.	shāfā	沙发	'sofa'
	k.	tǎnkè	坦克	'tank'

l.	xuějiā	雪茄	'cigar'
m.	yōumò	幽默	'humor'

The following are examples of older loan words of three syllables (a), four syllables (b), and five syllables (c).

(3.53)	a.	i.	qiǎokèlì	巧克力	'chocolate'
		ii.	báilándì	白兰地	'brandy'
		iii.	fǎxī	法西斯	'fascism'
		iv.	méngtàiqí	蒙太奇	'montage'
		v.	fánshìlín	凡士林	'Vaseline'
	b.	i.	wéiduōliyà	维多利亚	'Victoria'
		ii.	àolínpǐkè	奥林匹克	'Olympic'
		iii.	āsīpǐlín	阿司匹林	'Aspirin'
	c.	iv.	xiēsīdǐlǐ	歇斯底里	'hysterical'
		i.	bù'ěrshíwéikè	布尔什维克	'Bolshevik'
		ii.	jiālìfūníyà	加利福尼亚	'California'

The restrained borrowing from foreign languages seems to have changed in the past two decades, during which there has been an influx of foreign words. With the rapid development of science and technology and China's recent opening up to the world, new words have been entering the language at an unprecedented rate. Almost all of the words given in (3.54), (3.55), (3.56), and (3.57) in the next section are recent borrowings.

3.6.1 Sound Route

Generally speaking, a foreign word may enter Mandarin via three major routes: sound, meaning, or a combination of the two. Within the sound route, we may further distinguish between a pure sound route and a sound route with suggestive meaning. Through the pure sound route, a word is mapped by a 'sound-alike' syllable or syllables in Mandarin, and the result of the mapping carries no obvious additional, 'suggestive' meaning. In addition to those given in (3.52) above, other such examples that have entered Mandarin more recently are illustrated below:

(3.54)	a.	dísīkē	迪斯科	'disco'
	b.	huá'ěrzi	华尔兹	'waltz'
	c.	kǎlā'ōukài	卡拉OK	'karaoke'
	d.	màidāngláo	麦当劳	'MacDonald's (Restaurant)'
	e.	yīmèi	伊媚	'e-mail'

The last loan word *yīmèi* 'email' has entered Mandarin so recently that its chance of staying in Mandarin vocabulary is yet unclear. Besides pure sound transliteration, syllables are often carefully chosen and sequences of them carefully arranged so that the results are homophonous with expressions that provide further meaning. The best example is perhaps the

transliteration for the word 'Coca Cola.' Made up of four syllables resembling the four original syllables, the Mandarin word *kěkǒukělè* is more than just a sound transliteration. The string consisting of the first two syllables is a homophone to the word 'delicious' whereas the one consisting of the second two syllables is a homophone to the word 'enjoyable.' Therefore, the transliteration, in addition to meaning 'Coca Cola' carries the suggestive meaning of 'delicious and enjoyable.' Another interesting example is 'mini-skirt.' The transliteration for 'mini-' is *mínǐ*, literally, 'charm-you.' Some perceived qualities of the miniskirt are thus indicated in the Mandarin transliteration. The following gives more examples of such borrowed words:

(3.55)		Components	Gloss
			of Components
a.	kěngdéjī 肯德基	'Kentucky Fried Chicken'	kěngdé jī (pure sound) chicken ⁹⁸
b.	bǎishìkělè 百事可乐	'Pepsi Cola'	bǎishì kělè thousand matters enjoyable
c.	hēikè 黑客	'hacker'	hēi kè black guest
d.	wěigē 伟哥	Viagra ⁹⁹	wěi gē great big brother

3.6.2 Meaning Route

Compared with the sound-route borrowings, many more foreign words enter Mandarin through semantic translation. In these cases, no attempts are made at sound matching, but native Mandarin morphemes are chosen and strung together to provide the meanings of the foreign words. Many stock market terms are translated this way. To quote a few examples:

(3.56)		Morphemes	
a.	xióngshì 熊市	bear-market	'bear market'
b.	niúshì 牛市	bull-market	'bull market'
c.	píngcāng 平仓	level-warehouse	'short squeeze'
d.	bǔcāng 补仓	mend-warehouse	'short covering'
e.	duōtóu 多头	multiple-head	'over-bought'

⁹⁸ The Chinese character for this syllable is not the one for 'chicken,' and in characters the word gives the appearance of a pure sound transliteration. However, it is clear that the *jī* is suggestive of *jī* 鸡 'chicken' here.

⁹⁹ This is among the most recent borrowings from English. Its destiny in Mandarin is still unclear. In any event, it is not even clear if the product itself will continue to exist since it has only gotten into the market recently. Only history will tell if it is a lasting product and if the loan word that is associated with it is going to stay.

f.	kōngtóu	空头	empty-head	'over-sold'
g.	lìduō	利多	profit-much	'bull'
h.	lìkōng	利空	profit-empty	'bear'
i.	fǎntán	反弹	reverse-spring	'rebound'
j.	fǎnzhuǎn	反转	reverse-turn	'rollback'
k.	tūpò	突破	charge-broken	'break out; surmount'
l.	jiāogē	交割		'delivery'

The following are more such examples, but they are from information technology:

(3.57)		Morphemes		
a.	diànnǎo	电脑	electrical-brain	'computer'
b.	ruǎnjiàn/ yìngjiàn	软件/ 硬件	soft-piece/ hard-piece	'software/' 'hardware'
c.	méitǐ	媒体	medium-body	'media'
d.	wǎngluò	网络	net-net	'network'
e.	wǎngyè	网页	net-page	'web page'
f.	zàixiàn	在线	be at-line	'online'
g.	wēiruǎn	微软	micro-soft	'Microsoft'
h.	bèifèn	备份	double-piece	'backup'
i.	quēshěng	缺省	miss-save	'default'
j.	shàngwǎng	上网	go onto-net	'go online'
k.	jìsuànjī	计算机	compute-machine	'computer'
l.	jìsuànqì	计算器	compute-ware	'calculator'
m.	hùliánwǎng	互联网	interconnection-net	'World Wide Web'
n.	qūdòngqì	驱动器	drive-ware	'driver'
o.	qiānniánchóng	千年虫	thousand-year-bug	'millennium bug'

The patterns through which foreign words are borrowed into Mandarin are far more complex than what we have illustrated so far. Among meaning translations, one can distinguish between 1) the faithful and 2) the inventive. The examples given above fall more or less into the former category. An example of the latter category is *niúzǎifú* 牛仔服 which is the translation for 'jeans,' but literally means 'cowboy uniform.'

3.6.3 Sound and Meaning Combined

Often, loan words may not arrive directly through a phonetic or semantic route exclusively but via a combination of various channels. The example of 'mini-skirt' we gave previously has the first part 'mini-' translated through a sound route plus suggestive meaning, but the second part through a semantic route. The morpheme 'skirt' is mapped onto the native Mandarin morpheme for 'skirt,' *qún*. The following contain more examples of words of such combination:

(3.58)

		<i>Morphemes</i>			
a.	i.	jiǔbā	酒吧	alcohol-bar	'bar'
	ii.	dǎdī	打的	take-taxi	'take a taxi'
	iii.	bèngdī	蹦迪	jump-disco	'disco dancing (slang)'
	iv.	dàbā/ zhōngbā/ xiǎobā	大巴/ 中巴/ 小巴	big-bus/ middle-bus/ small-bus	'big -sized bus' 'medium-sized bus' 'small-sized bus'
b.	i.	bānǚ	吧女	bar-woman	'bar girl'
	ii.	píjiǔ	啤酒	beer-alcohol	'beer'
	iii.	sāngnáyù	桑拿浴	sauna-bath	'sauna'
	iv.	àizìbìng	爱滋病	AIDS-disease	'AIDS'
	v.	lādīngwǔ	拉丁舞	Latin-dance	'Latin dance'
	vi.	bālěiwǔ	芭蕾舞	ballet-dance	'ballet'
	vii.	yīntèwǎng	因特网	inter(net)-net	'internet'
	viii.	mínǚqún	迷你裙	charm-you-skirt	'miniskirt'
	ix.	bēibījī	BB机	beeper-machine	'beeper'
	x.	tīxùshān	T恤衫	T-shirt-shirt	'T-shirt'
	xi.	hànǎobāo	汉堡包	hamburger-wrap	'hamburger'

In the (a) examples in the above, the first part is a semantic translation whereas the second a phonetic one. The reverse is true for the examples in (b). The cases in (a.ii-iv) need further explanation. The phonetic part in these, *dī* and *bā* are short for *díshì* 'taxi' (a.ii), *dísīkē* 'disco' (a.iii), and *bāshì* 'bus' (a.iv), respectively. The full versions are themselves pure phonetic translations of the original English words. When conjoined with another single-syllable morpheme to form a word, they are all reduced to their initial syllables. The results are disyllabic words (evidence again for the preference for two-syllable words in the language (cf. Section 3.3.5) which include a semantic part (a local morpheme) and a truncated phonetic part.

3.6.4 From Cantonese

During the past two decades or so, although many foreign words, mostly of English origin, have entered Mandarin directly, it is not uncommon to see borrowings coming indirectly via another dialect. In fact, both *díshì* 'taxi' and *bāshì* 'bus' mentioned earlier are borrowed from Cantonese (*tíkʃi* and *pasi*, respectively¹⁰⁰) which, earlier, borrowed them from English. One interesting observation regarding these two loan words is that rather than borrowing them in their entirety, the Mandarin speakers chose to use only part of them in combination with a native

¹⁰⁰ The Cantonese transcriptions in this book are from the second edition of the 'Hanyu Fanyin Zihui (Dictionary of Dialectal Pronunciations of Chinese Characters)' (1989).

Mandarin morpheme. The forms *díshì* and *bāshì*, although maybe seen on signs and posters on the Beijing streets, are not used in spoken language. Another example of a daily Mandarin word part of which is borrowed by way of Cantonese is *tīxùshān* 'T-shirt' (3.58). In this word, *tīxù* comes from Cantonese *tɨʃət* which was borrowed earlier from English by a sound route while the second part *shān* is a native Mandarin word which means 'shirt.'

Another interesting loan word of such origin is an earlier borrowing via Cantonese: *jiànqiáo* 剑桥 'Cambridge'. The word is transliterated by a combination of sound and meaning routes, *jiàn* being phonetic and *qiáo* semantic. One interesting question concerns the resemblance of *jiàn* with *Cam* in 'Cambridge': how the former comes to represent phonetically the latter. While the phonetic correspondence between a loan word and its origin is not always faithful, this particular mismatch stems from the fact that the Mandarin syllable *jiàn* is *kim* in Cantonese meaning 'sword.' ('Cambridge' in Cantonese is *kim'iu*.) In fact, in all the above mentioned examples of loan words from Cantonese, the original Cantonese transliterations bear, not surprisingly, a much better phonetic resemblance to their English origins.

Sometimes, two loan morphemes may be juxtaposed to form a compound to encode a new borrowing. For instance, the word *zhāpí* 扎啤 'draft beer (literally, beer that comes in a jar)' is coined by attaching a new translation for 'jar'—*zhā* to an earlier borrowing *pí* 'beer' (as in *píjiǔ* shown in (3.58)).¹ Finally, it should be noted that in writing, loan words are almost always written in characters. However, in recent decades, English letters have simply been adopted for some new loans. For instance, the English letters 'O' and 'K' are used in *kālā'ōukài* 'karaoke': 卡拉OK; the English letter 'B' in *bībījī* 'beeper': BB机 (3.58) and the English letter 'T' in *tīxùshān* 'T-shirt' (3.58): T恤衫 (or sometimes, 体恤衫). There are also words such as CD and GRE (Graduate Record Examinations) that are most often simply written in their English letters.

Chapter 4. Parts of Speech

As mentioned earlier, words are the smallest building blocks of sentences. Analogous with words in English, Mandarin words can be classified into various parts of speech, but unlike English, where there are morphological markings to help identify parts of speech, Mandarin has few such devices. For instance, the English suffix *'-ly'*, in most cases, gives the clue that the word in which it is found is an adverb, while the suffix *'-ize,'* in all cases, identifies a verb. In the majority of cases in Mandarin, however, a word remains unchanged in form no matter how or where it is used. Now consider the following English sentences:

- (4.1) a. The existence of parts of speech is universal.
 b. Do parts of speech exist in Chinese?
 c. The existing parts of speech are not the same as those used in ancient times.

We know that the three underlined words *existence*, *exist*, and *existing* are different words that serve different grammatical functions. Based purely on their morphological markings, we know that in (a), we have a noun, in (b) a verb, and in (c) a gerund used adjectivally. Now consider their Mandarin counterparts:¹⁰¹

- (4.2) a. cílèi de cúnzài shì pǔbiàn de.
 词类的存在是普遍的。
 parts of speech DE(a) exist be universal DE
 b. Hànyǔ zhōng cúnzài cílèi ma?
 汉语中存在词类吗?
 Chinese inside exist parts of speech MA
 c. xiànzài cúnzài de cílèi hé gǔshíhòu de bùtóng.
 现在存在的词类与古时候的不同。
 now exist DE(a) parts of speech with ancient-time DE(a) not-the-same

The three English words given previously have just one equivalent in Mandarin, *cúnzài* 存在, which is used as a noun (a), a verb (b) and an adjective (c). If we look at the word *cúnzài* out of context, how can we decide what parts of speech it belongs to? Given its different usage in the above three sentences, does the form constitute one word or three? Ever since the introduction of Western linguistics into China in the early part of the twentieth century, Chinese

¹⁰¹ In this chapter, the Mandarin words in the illustrations are given in Pinyin, Chinese characters, and English translation, and where necessary, Mandarin phrases and sentences are provided with English word-for-word glosses as well. In these glosses, the English words are strung together with a hyphen, if they correspond to a single Mandarin word. The English translations are placed within single quotes '...'. (Source: *Journal of Chinese Linguistics* (1989).

linguists have been grappling with these thorny issues. There is one thing they are agreed upon, and that is there are parts of speech in the language, in spite of the near absence of the tell-tale morphology. The major issue linguists have been concerned with asks the question, 'What can be done to determine parts of speech, or, what criteria or theoretical framework can be established for their identification in the absence of morphological information?'

Several theories have been advanced ranging from relying on the content meaning of the words, to their grammatical meanings, and to their syntactic properties. Earlier, many Chinese linguists believed that the only information that can be used to determine parts of speech comes from the meanings of individual words. For instance, we know *tàiyang* 太阳 'the sun' is a noun since it is the name of the object, but *chī* 吃 'eat' is a verb since it denotes the action of consuming food (L. Wang 1957). Linguists began to realize that meaning, at best, is an unreliable measure for the purpose. The following examples support this claim:

- | | | | | |
|-------|--------------|------------------|-------------|--------------|
| (4.3) | (A) | | (B) | |
| a. | gàir 盖儿 | 'cover (n.)' | gài 盖 | 'cover (v.)' |
| b. | hóngsè 红色 | 'red color (n.)' | hóng 红 | 'red (adj.)' |
| c. | shuìmián 睡眠 | 'sleep (n.)' | shuìjiào 睡觉 | 'sleep (v.)' |
| d. | zhànzhēng 战争 | 'war' | dǎzhàng 打仗 | 'fight (v.)' |
| e. | yígài 一概 | 'unanimously' | yízhì 一致 | 'unanimous' |

There are eight pairs of words above. Words of each pair share the same meaning. However, the words in Column (A) are nouns except the last one, an adverb, while the ones in Column (B) are either a verb or an adjective. In Mandarin, there are numerous pairs of words such as these. These pairs of words clearly show that word meaning alone is not enough to test for word membership in a particular part of speech.

Today, most Chinese linguists believe that the most reliable test for parts of speech in Mandarin comes from the syntactic qualities and functions of each word. For instance, *cúnzài* 'exist' mentioned earlier is judged to be a verb—an existential verb—because like all other verbs in Mandarin (except *yǒu* 有 'have'),¹⁰² it can be negated by the morpheme *bù* 不 'not'. This quality of negation separates *cúnzài* from nouns all of which cannot be negated by *bù* (e.g., **bù àiqíng* 不爱情).¹⁰³ Although many adjectives can be negated by *bù*, *cúnzài* is differentiated from adjectives by its grammatical quality of not being able to be modified by *hěn* 很 'very' as most adjectives can (e.g., **hěn cúnzài*). Functionally, *cúnzài* is separated from nouns because it can serve as a predicate of a sentence, but not as a subject or object. Nouns, on the other hand, do just

¹⁰² There are a few other exceptions such as *yíng* 赢 'win', *bìng* 病 'become ill', and *sǐ* 死 'death', and resultative compounded verbs such as *dǎpò* 打破 'break' and *kànjiàn* 看见 'see', which are also not normally negated by *bù* 不 'not', but may be negated by *méi* 没 'not'.

¹⁰³ Normally, the morpheme *bù* 'not' has the fourth tone (51); however, it goes through a dissimilatory sandhi process whereby it changes into a second tone if followed by another fourth tone.

the opposite.

While grammatical tests such as those mentioned above are generally sufficient, other types of information may also be useful to provide secondary support for the identification. The most used secondary support is meaning. Meaning can be content meaning or grammatical meaning. An example of content meaning is 'verbs denote actions', as opposed to 'verbs can serve as predicates of sentences,' which constitutes syntactic information. In fact, larger grouping of words into such categories as nouns and verbs is done with the help of the meaning information. By the meaning criteria of nouns being names and verbs denoting actions, a fair number of words can be safely classified.

In short, grammarians working on Mandarin have come to rely mostly on grammatical information and only secondarily on meaning information in their efforts to sort out words. In what follows, a review of Mandarin parts of speech will reflect such an approach. Generally speaking, Mandarin words can be divided into two major classes: content words and function words. The content words can be further divided into nouns, verbs, adjectives, numbers, classifiers, pronouns and adverbs, while the function words are prepositions, conjunctions, auxiliaries, and interjections. Unlike the content words most of which can stand alone and form an open class to which new words can be added, the function words form closed sets and cannot be used alone without the 'support' of content words.

4.1 Nouns

Nouns often can be separated from the rest of the words by their meanings. For instance, the word *gǒu* 'dog', by its meaning, is clearly a noun and not a verb or an adverb. However, the identification of Mandarin nouns is not always so straightforward. Often it has to be tested with grammatical or formal tools. One of them is the presence of certain affixes. For instance, we know a word is a noun if it has an affix such as *-zi*¹⁰⁴ as in *jiǎnzi* 剪子 'scissors,' *-tou* as in *fūtou* 斧头 'axe', and *lǎo-* as in *lǎopo* 老婆 'wife.' However, as mentioned above, morphology and meaning can only serve as a secondary function to the identification of parts of speech and the major tests have to come from the syntactic qualities of each part of speech. Before considering these qualities of nouns, examine the following examples of nouns.

4.1.1 Types of Nouns

Nouns name many different kinds of entities, such as people, animals, professions, qualities, and abstract concepts. Based on meaning, Mandarin nouns can be divided into several groups: common versus proper, collective, abstract, time, location, direction, and countable versus uncountable. A noun may belong to one or more of these groups, unless the groups are in contrast (e.g., countable and uncountable). The following are examples of each group:

(4.4) a. common nouns	xuéshēng	学生	'student'
	shuǐ	水	'water'
b. proper nouns	zhōngguó	中国	'China'
	kèlǐndùn	克林顿	'Clinton'
c. abstract nouns	héping	和平	'peace'
	dàodé	道德	'morals'
d. collective nouns	rénlèi	人类	'mankind'
	chēliàng	车辆	'vehicle'
e. time nouns	nián	年	'year'
	xīngqīyī	星期一	'Monday'
f. place nouns	chúfáng	厨房	'kitchen'
	tàipíngyáng	太平洋	'Pacific Ocean'
g. locality nouns	shàng/xià	上/下	'up/down'
	qiánmiàn	前面	'in front'
h. countable nouns	xuéshēng	学生	'student'
	píqiú	皮球	'ball'
i. uncountable nouns	àiqíng	爱情	'love'
	shāzi	沙子	'sand'

4.1.2 Syntactic Properties

As mentioned previously, no Mandarin nouns can be negated by the morpheme *bù* 'not,' neither can they normally be modified by an adverb. All examples are ill-formed because in each case, a noun is preceded by an adverb.

(4.5) a.	* hěn tàiyáng	很太阳	???
	very sun		
b.	* dōu shū	都书	???
	all book		
c.	* gāng kùzi	刚裤子	???
	justnow pants		
d.	* hái àiqíng	还爱情	???
	still love		

Certain time nouns can serve as predicates, in which case they can be modified by certain adverbs. For instance, the time noun *xīngqīyī* 星期一 'Monday' serves as the predicate in the sentence *jīntiān xīngqīyī* 今天星期一 'today is Monday'. In this case, it can be modified by an

¹⁰⁴ See previous chapter for a description of affixes.

adverb such as *cái* 才 '(denoting the meaning of earlier than expected)¹⁰⁵: *jīntiān cái xīngqīyī* 'today is only Monday.'

Nouns can be modified by number-CLS phrases, adjectives, verbs, pronouns, adjectival (or attributive) phrases (or clauses), and other nouns.¹⁰⁶ The following provide an example of each type of combination. The first line in each case is the example in Pinyin and characters, the second line gives the word-for-word translation, and the third line is the translation of the first. This format will be used to illustrate phrases and sentences throughout the remaining sections on syntax unless otherwise noted.

(4.6) a.	sāntiáo gǒu three-CLS dog	三条狗	'three dogs'
b.	hóng kùzi red pants	红裤子	'red pants'
c.	gōngzuò shíjiān work (v.) time	工作时间	'working time'
d.	nǐ māma you mother	你妈妈	'your mother'
e.	tā kàn de diànyǐng he ¹⁰⁷ see DE movie	他看的电影	'the movie that he has seen'
f.	diànshì jiémù television program	电视节目	'television program'

Finally, nouns that refer to people can take the plural morpheme *-men* 们 as a suffix. However, this suffix is not used if the noun is modified by other quantifiers within the noun phrase (henceforth NP) or sentence, for example, *háizi* 孩子 'child' and *háizimen* 'children'. Compare the examples in (i) with those in (ii):¹⁰⁸

¹⁰⁵ Incidentally, the adverb *cái*, when modifying a verb, denotes 'later than expected.' For instance, *jīntiān cái kāishǐ* 今天才开始 'It is not until today that (it) started.' (Note: *kāishǐ* means 'start.')

¹⁰⁶ See the sections on NPs and attributives for further accounts of noun modifiers.

¹⁰⁷ For editorial convenience, only 'he' will be used in this chapter to gloss *tā* 'he/she/it,' the third person singular morpheme in Mandarin, unless the complete gloss is absolutely necessary.

¹⁰⁸ The star '*' is conventionally used in syntactic studies to mean 'unacceptable' to a native speaker.

(4.7) a.	i.	liǎnggè háizi two-CLS child	两个孩子	'two children'
	ii.*	liǎnggè háizimen two-CLS child-men	两个孩子们	???
b.	i.	hěnn duō háizi very many child	很多孩子	'many children'
	ii.*	hěnn duō háizimen very many child-men	很多孩子们	???
c.	i.	tā de háizi hěnn duō. he DE(a) child very many	他的孩子很多	'He has many children.'
	ii.*	tā de háizimen hěnn duō. he DE(a) child-men very many	他的孩子们很多	???

The noun *háizi* 'child' alone legitimately takes the suffix *-men*. In the grammatically correct (i) cases, this noun does not take the suffix, but is modified by a quantifier either within the NP (a and b) or the sentence (c). In the second examples (ii), however, it takes both a quantifier AND the suffix *-men*, and is thus ungrammatical. Functionally, nouns serve primarily as a subject or object, although sometimes they also serve as an attributive. Sometimes nouns may act as a predicate, and together with a number-CLS phrase, a noun may also serve as an adverbial. Details of nouns serving these grammatical functions can be found later in the section on NPs.

4.2 Verbs

4.2.1 Types of Verbs

Mandarin verbs are very complex. The classification of verbs relies mostly on their syntactic properties. There are action versus stative verbs, transitive versus intransitive verbs, auxiliary verbs, linking verbs, direction verbs, reduplicated verbs and verbs that are followed by a verbal phrase. Here are examples of these types of verbs:

(4.8) a.	action verbs	zǒu	走	'walk'
		xiào	笑	'laugh'
		biànlùn	辩论	'debate'
		bāngzhù	帮助	'help'
b.	stative	ài	爱	'love'
		xīwàng	希望	'hope'
		è	饿	'be hungry'
		kùn	困	'be sleepy'

c. transitive verbs	chī	吃	'eat'
	kàn	看	'watch'
	xuéxí	学习	'study'
	qìngzhù	庆祝	'celebrate'
d. intransitive verbs	pǎo	跑	'run'
	kū	哭	'cry'
	qùshì	去世	'pass away'
	chūlai	出来	'come out'
e. take a verbal object	kāishǐ (gōngzuò)	开始(工作)	'begin to (work)'
	jìxù (xuéxí)	继续(学习)	'continue to (study)'
	jiāyǐ(xiūgǎi)	加以(修改)	'to (revise)'
	zhǔzhāng(tíngzhǐ)	主张(停止)	'to insist on (stopping)'
f. auxiliary verbs	nénggòu	能够	'can (ability)'
	kěyǐ	可以	'may (permission)'
	dě	得	'have to'
	yīnggāi	应该	'should'
g. directional verbs ¹⁰⁹	lái/qù	来/去	'to come/go'
	jìn/chū	进/出	'to enter/exit'
	shàngqu	上去	'to go up'
	huílai	回来	'to come back'
h. linking verbs	shì	是	'to be'
	jiào (zhāngsān)	叫(张三)	'to be called'
	chéngwéi	成为	'to become'
	děngyu	等于	'to be equal to'

4.2.2 Syntactic Properties

Verbs have several special syntactic properties. First, all verbs can be negated by the negative morpheme *bù* 'not,' except the verb *yǒu* 'have,' which can only be negated by *méi* 没 'not,' to form *méiyǒu* 没有 'have not.' In addition to *bù* 'not,' many verbs can also be negated by *méi* 'not.' Second, verbs can be arranged to yield an A-not-A question form. One type of question formation which yields a 'yes-or-no' question involves the repetition of the main verb of the sentence and the insertion of the morpheme *bù* 'not' between the two identical parts (A-not-A):

¹⁰⁹ See Section 5.3.6 for more examples of directional verbs and their usage.

- (4.9) a. tā chī píngguǒ. 他吃苹果。 'He eats apples'.
he eat apple
- b. tā chībùchī píngguǒ? 他吃不吃苹果? 'Does he eat apples?'
he eat-not-eat apple

Third, verbs can usually be reduplicated (see the last chapter for details of verb reduplication). Fourth, verbs can stand alone as answers to questions. Fifth, most verbs can take aspect particles such as *zhe* 着, *le* 了, and *guo* 过 (their meanings and functions will be explained later). Sixth, verbs can normally be modified by adverbs. The main grammatical function of verbs is predicating. Some verbs can also serve as a complement. While the above mentioned qualities are shared by most verbs, syntactic properties may vary with verb types. Below, these selected verb types will be considered individually.

4.2.2.1 Action and Stative

Action verbs account for the majority of the verbs in Mandarin. All the previously mentioned verb qualities are true for action verbs except for those action verbs which cannot be modified by degree adverbs such as *hěn* 'very.' The following expressions are all ungrammatical:

- (4.10) a. * hěn zǒu 很走 ???
very walk
- c. * zuì xiào 最笑 ???
most laugh
- c. * tài biànlùn 太辩论 ???
too argue
- d. * gèng bāngzhù 更帮助 ???
more help(v.)

Contrary to action verbs, stative verbs can normally be modified by degree adverbs. Compare the above table with the following:

- (4.11) a. hěn ài 很爱 'love very much'
very love
- c. zuì è 最饿 'be most hungry'
most hungry
- b. tài xīwàng 太希望 'hope very much'
too hope
- d. gèng kùn 更困 'be more sleepy'
more sleepy

Also, unlike action verbs which can be the main verb of an imperative sentence, stative verbs

cannot. For instance, one can say, *zǒu!* 走! 'Walk!' but cannot say *ài!* 爱! 'Love!' where the word is used as a verb.

4.2.2.2 Transitive and Intransitive Verbs

By linguistic definition, transitive verbs are those that can take objects, while intransitive verbs do not. In Mandarin the case is somewhat different. There are nouns after intransitive verbs that are considered the non-patient¹¹⁰ objects of these verbs. Here are some examples:

- | | | | |
|-----------|------|----------------------------------------------|--------------------------------------|
| (4.12) a. | i. | qù zhōngguó
go China | 去中国
'go to China' |
| | ii. | xǐ lín yù
wash shower | 洗淋浴
'take a shower' |
| | iii. | shàng xuéxiào
go school | 上学校
'go to school' |
| | iv. | chuī diànshàn
blow electric-fan | 吹电扇
'be blown by an electric fan' |
| b. | i. | chūxiàn yìkē xīng
appear one-CLS star | 出现一颗星
'a star appears' |
| | ii. | xiàlai yí gè rén
down-come one-CLS person | 下来一个人
'a person comes down' |
| | iii. | huài le yí gè jīdàn
rot PERF one-CLS egg | 坏了一个鸡蛋
'an egg became rotten' |

4.2.2.3 Auxiliary Verbs

Although verbs normally constitute an open class to which new verbs can be added, the set of auxiliary verbs is closed. This is one of the reasons that there has been controversy around their being treated as verbs (Li and Thompson 1981). As space does not allow a presentation of the arguments here, we will simply follow the tradition of treating them as verbs. Interested readers should refer to McCawley (1992) for cogent arguments for their verbhood. Relatively small in number, auxiliary verbs express primarily the meaning of willingness or possibility. The following are some examples:

- | | | | |
|-----------|---------|----|-----------------|
| (4.13) a. | nénggòu | 能够 | 'can (ability)' |
| b. | kěn | 肯 | 'be willing' |
| c. | yuǎnyì | 愿意 | 'be willing' |
| d. | děi | 得 | 'have to' |

¹¹⁰ They are not the objects upon which the action of the verb is directed.

- | | | | |
|----|----------|----|--------------------|
| e. | kěyǐ | 可以 | 'may (permission)' |
| f. | yīnggāi | 应该 | 'should' |
| g. | yīngdāng | 应当 | 'should' |
| h. | gǎn | 敢 | 'dare to' |

Other properties that set auxiliary verbs apart from other verbs include the following: they cannot be reduplicated, for instance, one cannot say **nénggòunénggòu* 能够能够, **děiděi* 得得; they cannot be followed by aspect particles such as *zhe*, *le*, and *guo* (e.g., **nénggòuguo*); and their objects cannot be nouns or pronouns, but are usually verbs, verb phrases or clauses.

4.3 Adjectives

4.3.1 Types of Adjectives

Based on meaning, Mandarin adjectives are classified into several groups, the most common of which include shape (a), color (b), quality (c), and state (d):

- | | | | |
|-----------|-----------|-----|------------------|
| (4.14) a. | dà | 大 | 'big' |
| | yuán | 圆 | 'round' |
| | bǐzhí | 笔直 | 'very straight' |
| b. | hóng | 红 | 'red' |
| | bìlǜ | 碧绿 | 'green as jade' |
| | huánghūhū | 黄乎乎 | 'kind of yellow' |
| c. | ruǎn | 软 | 'soft' |
| | tián | 甜 | 'sweet' |
| | yǒnggǎn | 勇敢 | 'brave' |
| d. | jìng | 静 | 'quiet' |
| | kuài | 快 | 'fast' |
| | qīngsōng | 轻松 | 'relaxing' |

As previously discussed, morphological forms do not normally identify Mandarin parts of speech. However, there are some exceptions, for instance, the words in (a) in (4.15) below are clearly adjectives by the fact that they each contain a reduplicative suffix. Not only are these adjectives recognizable among other words, but they can also be singled out from the rest of the adjectives. This latter distinction is important, since as a group, these suffixed adjectives share some unique syntactic qualities. Two other types of adjectives are also syntactically unique and can be identified from others by their forms. Now examine (b) and (c) in (4.15). Morphologically, the (b) type of adjectives are all disyllabic compounds in which the first morpheme, often a noun, modifies the second which is an adjective. The (c) type contains four syllables, but only one is the main element, which is an adjective. The rest do not have much meaning other than acting like a four-syllable building affix of an onomatopoeic nature. To make

up for the four syllables, the first syllable of the main adjective may sometimes be repeated, as the first two examples in (c) show. The result often intensifies the meaning of the adjectival component or cause it to sound more vivid:

(4.15) a.	pàngūhū	胖乎乎	'plump'
	tiánzīzī	甜滋滋	'pleasantly sweet'
	hóngtōngtōng	红彤彤	'bright red'
	lèhēhē	乐呵呵	'jubilant'
b.	bìlǜ	碧绿	'green as jade'
	gǔnyuán	滚圆	'round as a ball'
	bǐzhí	笔直	'very straight'
	xuěbái	雪白	'snow white'
c.	húlihútū	糊里糊涂	'very muddled'
	gǔligǔguài	古里古怪	'very strange'
	hēibuliūqiū	黑不溜秋	'swarthy'
	bènlèbāji	笨了叭唧	'kind of stupid'
	hēigulōngdōng	黑咕隆咚	'pitch dark'

4.3.2 Syntactic Properties

In the previous section, some major classes of adjectives have been listed, and here it may be asked what their syntactic properties are. As a whole group, adjectives in Mandarin have a unique characteristic: they are, in many ways, just like stative verbs and because of this, have been regarded as a special type of verb (Y. R. Chao 1968). Like verbs, they all can serve as the predicate, and when they do, they do not need to be preceded by a linking verb, unlike English adjectives. Like stative verbs, they can normally be modified by degree adverbs, be reduplicated, (although the structure of reduplication is different—see the last chapter for details on adjective reduplication), and stand alone as answers to questions. The major difference between adjectives and most verbs is that adjectives cannot take objects.

Although adjectives can normally be modified by degree adverbs, there are three exceptions. The three special types mentioned earlier—the Suffixed type, the Noun/Verb-as-Modifier type, and the Four-Syllable-Building type—cannot be modified by adverbs. Within these adjectives, the non-adjective part already binds the adjective with some kind of scope or degree so that the use of a degree adverb would either be redundant or contradictory. For instance, the following strings, each of which contains the adverb *hěn* 'very' and an adjective from the table in (4.15) are ill-formed:

(4.16) a.	* hěn hóngtōngtōng	很红彤彤	?
b.	* hěn gǔnyuán	很滚圆	?
c.	* hěn húlihútū	很糊里糊涂	?

When serving as attributives, adjectives sometimes do not require the adjectival auxiliary particle

de to immediately follow it, for example, the *de* in *dà de píngguǒ* 'big apple' does not have to be present for the expression to be grammatical. Yet the use of this particle is compulsory with these three special types of adjectives. Among the three, the ones with the reduplicative suffix and the four-syllable type are also different from the rest of the adjectives in that they cannot be reduplicated, as reduplication never occurs on a base of more than two syllables (H. Lin 1990).

4.4 Numbers

4.4.1 Types of Numbers

There are several types of numbers in Mandarin: cardinal, ordinal and approximate. Cardinal can be further divided into whole, fraction, decimal and multiple. Examples of these numbers are:

4.4.1.1 Whole Numbers

First, look at the numbers zero to ten:

(4.17)	líng	yī	ér	sān	sì	wǔ	liù	qī	bā	jiǔ	shí
	零	一	二	三	四	五	六	七	八	九	十
	'zero'	'one'	'two'	'three'	'four'	'five'	'six'	'seven'	'eight'	'nine'	'ten'

Between ten and one hundred, all the numbers are combinations of the numbers given above (i.e., one to ten). For instance, 'eleven' is *shíyī* 十一, literally, 'ten-one'; 'sixty' is *liùshí* 六十, literally, 'six-ten'; and 'sixty-nine' is *liùshíjiǔ* 六十九, literally, 'six-ten-nine.' Some further number units are:

(4.18)	yì	wàn	qiān	bǎi
	亿	万	千	百
	'100 million'	'ten thousand'	'thousand'	'hundred'

A number such as 1,234,567 is read as *yì-bǎi-èr-shí-sān-wàn-sì-qiān-wǔ-bǎi-liù-shí-qī*¹¹¹ 一百二十三万四千五百六十七. One difference between Mandarin and English (or European) number systems is that Mandarin has a four-digit recursive system while English has a three-digit one. After three digits, English begins a new round using a combination of 'ten,' or 'hundred' with 'thousand' (e.g., ten thousand, one hundred thousand, etc.), but Mandarin begins a new round after four digits at the unit of *wàn* 万 'ten thousand' (i.e., *shíwàn*, *bǎiwàn*, and *qiānwàn*). At the seventh digit, English uses a new unit 'million,' but Mandarin does not use a new unit until it reaches the ninth unit, *yì* 亿 'hundred million.' This difference means that if the Mandarin system were used for writing numbers, rather than writing the numbers ten thousand and one hundred million as 10,000 and 100,000,000 respectively, they would be written as 1,0000 *yíwàn* and

¹¹¹ Hyphens are used here for easy reading of the syllable/word segmentation.

1,000,0000 *yíyì*, respectively.

4.4.1.2 Fractions, Decimals, Multiples and Ordinal Numbers

Fraction is expressed by X *fēnzhī* 分之 Y, where Y is the numerator while X the denominator. Thus $\frac{1}{2}$ is *èrfēnzhīyī* 二分之一. Decimal numbers are quite simple and straightforward. They are expressed the same way as in English: '1.2' is expressed as *yīdiǎn'èr* 一点二 where *diǎn*¹² means 'point, dot.' Multiple is expressed by adding the morpheme *bèi* 倍 'multiple' to an ordinal number: *sān bèi* 'three times,' *èrfēnzhīyī bèi* ' $\frac{1}{2}$ time,' *yīdiǎn'èr bèi* '1.2 times,' etc. Ordinal numbers are formed with a prefix *dì*- 第 and a whole number: *dìyī* 'first,' *dì'èrshí* '20th,' etc. Another prefix which is used to count the first ten to fifteen days of the month in an ordinal way is *chū*- 初, for instance, the fifth day of the month is *chūwǔ*.

4.4.1.3 Approximate Numbers

Examples of approximate numbers are:

(4.19) a.	<i>jǐ</i>	几	'several'
b.	<i>xǔduō</i>	许多	'many'
c.	<i>duōshù</i>	多数	'most'
d.	<i>yǐshàng</i>	以上	'above (a number)'
e.	<i>yǐxià</i>	以下	'below (a number)'
f.	<i>shàngxià</i>	上下	'approximate (literally up or down)'
g.	<i>zuǒyòu</i>	左右	'approximate (literally left or right)'
h.	<i>duō</i>	多	'more than'

4.4.2 Syntactic Properties

One syntactic property of numbers is that they cannot be reduplicated. In addition, the most important syntactic role numbers play is to quantify nouns. When they do that, a classifier¹¹³ is required to follow right after—unlike numbers in English where they can immediately precede the noun. For instance, the English NP 'one person' is structurally 'one-CLS person': *yíge rén* 一个人 in Mandarin. The following section discusses Mandarin classifiers.

4.5 Classifiers

Classifiers are a relatively recent development in the Chinese language. Numbers that used to modify nouns directly now require an intervening classifier. Their usage over the years has become a grammatical one, and therefore, they have largely lost their content meanings. Except for the generic classifier *ge* 个, all classifiers are restricted to being used in combination with certain nouns rather than others.

¹¹² In Beijing Mandarin, *diǎn* often carries the *-r* suffix.

¹¹³ We will deal more with classifiers in the next section.

4.5.1 Types of Classifiers

Functionally and structurally, classifiers can be roughly divided into two classes: those that precede and modifier nouns and those that follow and complement verbs in a number-CLS phrase. Among the two, nominal classifiers can be further divided into singular (a), collective (b) and approximate (c) classifiers. A special type of nominal classifier are measure words (d) which differ from other classifiers in that their meanings are clearly definable:

(4.20)	Classifier	Usage Examples
a.	<i>gè</i>	<i>yíge jīdàn</i> 一个鸡蛋 'an egg'
	<i>tiáo</i>	<i>liǎngtiáo lóng</i> 两条龙 'two dragons'
	<i>wèi</i>	<i>sānwèi lǎoshī</i> 三位老师 'three teachers'
	<i>zhāng</i>	<i>sìzhāng zhuōzi</i> 四张桌子 'four tables'
b.	<i>shuāng</i>	<i>wǔshuāng kuàizi</i> 五双筷子 'five pairs of chopsticks'
	<i>fù</i>	<i>liùfù yǎnjìng</i> 六副眼镜 'six pairs of glasses'
	<i>qún</i>	<i>yìqún yāzi</i> 一群鸭子 'a flock of ducks'
	<i>bāng</i>	<i>yìbāng rén</i> 一帮人 'a bunch of people'
c.	<i>diǎn</i>	<i>yídiǎn shuǐguǒ</i> 一点水果 'a few apples'
	<i>xiē</i>	<i>yìxiē shuǐguǒ</i> 一些水果 'some apples'
d.	<i>jīn</i>	<i>qījīn xiāngjiāo</i> 七斤香蕉 'seven <i>jīn</i> ¹¹⁴ of bananas'
	<i>mǔ</i>	<i>bānmǔ dì</i> 八亩地 'eight <i>mǔ</i> ¹¹⁵ of land'
	<i>shēng</i>	<i>jiǔshēng yóu</i> 九升油 'nine liters of oil'
	<i>mǐ</i>	<i>shímiǐ bù</i> 十米布 'ten meters of fabric'

The following examples contain classifiers that complement verbs in a number-CLS phrase:

(4.21)	Classifier	Usage Examples
	<i>xià</i>	<i>kàn yíxià</i> 看一下 'have a look'
	<i>cì</i>	<i>shì yíci</i> 试一次 'give it a try'
	<i>tàng</i>	<i>pǎo sāntàng</i> 跑三趟 'pay three visits'
	<i>zhèng</i>	<i>guò yízhèn</i> 过一阵 'in a short while'

Functions normally performed by classifiers may sometimes be performed by nouns and verbs. For instance, in (a) below, nouns are used as classifiers, and in (b) verbs are:

¹¹⁴ One *jīn* is equal to half a kilogram.

¹¹⁵ One *mǔ* is equal to 0.1647 acre.

- (4.22) a. yìwū rén one-house person 一屋人 'a room full of people'
liǎngbēi shuǐ two-cup water 两杯水 'two cups of water'
- b. sānfēng xìn three-seal(v) letter 三封信 'three letters'
sìkǔn chái four-bind(v) firewood 四捆柴 'four bundles of firewood'

4.5.2 Syntactic Properties

The previous table may give the impression that the approximate classifiers, like the rest, can be combined with whole numbers other than *yī* 'one.' This is, however, not true, as approximate classifiers only follow the number *yī* 'one.' In addition, the verbal classifiers work mostly with the number *yī* as well. When they do, the resulting number-CLS phrase can act as the complement of the verb, and its addition to the verb has the same function as the reduplication of the verb (see the last chapter for more information on reduplication). A phrase such as *kàn yíxià* 看一下 'have a look' means the same as *kànkān* where the verb is reduplicated. In fact, the reduplicated verb can be expanded into *kànyíkan*—with the number *yī* 'one' inserted in between—but still means the same. After the expansion, the result resembles the phrase *kàn yíxià* in which a verb is followed by a verbal classifier phrase. Finally, as discussed in the last chapter, monosyllabic classifiers can be reduplicated and when they are, they acquire the additional meaning of 'every' (e.g., *gègè* 个个 'every person/thing, etc., and *tiáotiáo* 条条 'every dog/fish/pants'¹¹⁶, etc.).

4.6 Pronouns

A pronoun is a substitute for and coreferential with another expression, its antecedent, which can be a word, a phrase, a sentence or a group of sentences.

4.6.1 Types of Pronouns

Pronouns are of various types, just as their antecedents vary in meaning and grammatical function. Generally speaking, Mandarin pronouns can be divided into three classes based on their grammatical meanings: personal, demonstrative, and interrogative. The following are examples of personal pronouns. The examples in (g) and (h) are different from (a) and (d) respectively in that the former pair normally refers to both the speaker(s) and the listener(s) whereas the latter pair refers to the speaker(s) only:

- (4.23) a. wǒ 我 'I'
b. nǐ 你 'you (sg.)'
c. tā 他/她/它 'he/she/it'
d. wǒmen 我们 'we'
e. nǐmen 你们 'you (pl.)'

¹¹⁶ Pants in Mandarin are considered singular.

- f. tāmen 他们 'they'
g. zán 咱 'I (inclusive)'
h. zánmen 咱们 'we (inclusive)'
i. nín 您 'you (sg. & pl.; polite form)'
j. rénjia 人家 'someone; that person; I'
k. dàjiā 大家 'everyone'
l. zìjǐ 自己 'self'

The following is a list of Mandarin demonstrative pronouns:

- (4.24) a. zhè 这 'this'
nà 那 'that'
- b. zhèr/zhèlǐ 这儿/这里 'here'
nàr/nàlǐ 那儿/那里 'there'
- c. zhèhuǐr 这会儿 'this moment; now'
nèhuǐr 那会儿 'that moment; then'
- d. zhèyàng 这样 'this way'
nàyàng 那样 'that way'
zhèmeyàng 这么样 'this way'
nàmeyàng 那么样 'that way'
- e. zhèmexiē 这么些 'this much/many'
nàdexiē 那么些 'that much/many'

Each of the examples in (b) contains two forms. The former is typically used in the Beijing area, while the latter covers a wide geographic area. In all cases above, there is either *zhè* 这 'this' or *nà* 那 'that,' which can be alternatively pronounced as *zhèi*¹¹⁷ and *nèi* respectively (e.g., *zhèiyàng* 'this way' and *nèiyàng* 'that way'). Furthermore, the third example in (d) can also be said as *zènmeyàng*; both mean exactly the same as the first example in (d).

Now consider the interrogative pronouns:

- (4.25) a. shuí 谁 'who'
shénme 什么 'what'
- b. nǎr/nǎlǐ 哪儿/那里 'where'
- c. nǎhuǐr 哪会儿 'when'

¹¹⁷ This syllable, being a contextual derivative, is not considered a basic syllable and therefore is not listed in the table of Mandarin syllables given in Chapter 1.

d.	zěnyàng	怎样	'how'
	zěnmě	怎么	'how'
	zěnmeyàng	怎么样	'how'
e.	jǐ	几	'how many'
	duō	多	'how much/many'
	duōshǎo	多少	'how much/many'

As shown above, the interrogative pronouns may refer to person (a), place (b), time (c), manner (d) and quantity (e). The pronoun *shuí* 谁 'who' can be pronounced alternatively as *shéi*, a syllable which does not otherwise occur in Mandarin. The pronoun in (c) *nǎhuǐr* 'when' is not the most common expression for 'when,' that being the phrase *shénme shíhou* 什么时候 which is composed of the pronoun *shénme* 'what' in (a) and the noun *shíhou* 'time.'

4.6.2 Syntactic Properties

Pronouns are content words, but unlike other content words such as nouns and verbs, pronouns are a closed set. New additions are not expected in the foreseeable future. Further, unlike most other content words, Mandarin pronouns can never be reduplicated. And unlike other content words, Mandarin pronouns cannot normally be modified. One cannot say, for instance, **lǎo wǒ* 老我 'old I,' **shǎ nǐ* 傻你 'silly you,' or **hóngde zhè* 红的这 'red this.' However, Mandarin personal pronouns and the interrogative pronouns denoting people (i.e., *shuí* 'who') can modify nouns usually with the auxiliary particle *de* 'DE(a)' (e.g., *tāde gǒu* 他的狗 'his dog' or *shuíde gǒu* 'whose dog'). When they combine with *de* 'DE(a)', they resemble the possessive case of the English pronouns:¹¹⁸ (Note especially Column B)

(4.26)	(A)		(B)		
a.	wǒ	'I'	wǒde	我的	'my'
b.	nǐ	'you (sg.)'	nǐde	你的	'your'
c.	tā	'he/she/it'	tāde	他/她/它的	'his/her/its'
d.	wǒmen	'we'	wǒmende	我们的	'our'
e.	nǐmen	'you (pl.)'	nǐmende	你们的	'your'
f.	tāmen	'they'	tāmende	他们的	'their'
g.	shuí	'who'	shuíde	谁的	'whose'

Other remarkable features about Mandarin personal pronouns concern its third-person pronouns, the first-person inclusive pronouns, and the absence of case marking. The language has a single form *tā* for all the three singular third-person pronouns 'he', 'she,' and 'it.' This

¹¹⁸ Further classification of the modifiers before NPs can be found in Wu (1994; 1996).

characteristic results in much difficulty for many native Mandarin speakers learning to use the three English pronouns. The inclusive pronouns *zán* 'I' and *zánmen* 'we,' on the other hand, are strange to a native English speaker. Although the normal *wǒ* 'I' and *wǒmen* 'we' can be inclusive in certain contexts, *zán* and *zánmen* explicitly include both the speaker(s) and the listener(s). Unlike a language such as English, in which pronouns may vary in forms whether they serve as subjects or objects, Mandarin pronouns remain unchanged in form in all functions (i.e., *wǒ* 'I; me'). In other words, there is no case marking in Mandarin.

4.7 Adverbs

4.7.1 Types of Adverbs

Adverbs are function words as opposed to content words discussed so far in this chapter. As function words, adverbs do not normally stand alone, but have to appear with the verbs or adjectives they modify. Adverbs modify verbs and adjectives in terms of their degree (a), approximation (b), time (c), frequency (d), mood (e), modality (f) and estimation (g):

(4.27) a.	hěn	很	'very'
	zuì	最	'most'
	fēicháng	非常	'quite'
	yóuqí	尤其	'especially'
b.	dōu	都	'all; both'
	quán	全	'all'
	jǐnjǐn	仅仅	'only'
	tōngtōng	通通	'completely'
	yígài	一概	'totally'
c.	cái	才	'just now; only'
	jiù	就	'right away'
	céngjīng	曾经	'once'
	gānggāng	刚刚	'just now'
	yǐjīng	已经	'already'
d.	zài	再	'again'
	hái	还	'also'
	chángcháng	常常	'often'
	jiànjiàn	渐渐	'gradually'
e.	jiǎnzhí	简直	'almost'
	jiūjīng	究竟	'after all'
	xìngkuī	幸亏	'luckily'
	fǎnzhèng	反正	'anyway'

f.	hùxiāng	互相	'mutually'
	qīnzì	亲自	'in person'
	jìnlì	尽力	'do one's best'
	rēngrán	仍然	'still'
g.	yěxǔ	也许	'perhaps'
	dàyuē	大约	'approximately'
	dàgài	大概	'approximately'

4.7.2 Syntactic Properties

As a whole, adverbs form a closed set. They are normally used to modify verbs and adjectives but not nouns or number-classifier units, unless the latter are used as predicates. For instance, in *jīntiān cái xīngqīyī* 今天才星期一 'today is only Monday,' the adverb of time *cái* 'only' modifies the noun *xīngqīyī* 'Monday' which is the predicate. As modifiers, adverbs are unlike adjectives in that they are not normally modified by other expressions, and are not normally reduplicated except for a few rare idiosyncratic cases such as *gānggāng* 刚刚 'just now,' *jīnjīn* 仅仅 'only,' and *tōngtōng* 通通 'completely.' Mandarin adverbs are sometimes easily confused with adjectives, especially if only meaning is used for the identification. For instance, the words *yízhì* —致 and *yígài* —概 both share the meaning of 'one and all,' but the former is an adjective while the latter an adverb. There are three major differences between the two: First, adjectives modify nouns while very few adverbs do, and when they do, the nouns have to be predicates. Among the two words quoted, the former can be identified as an adjective because it can be used to modify a noun such as *juéyì* 决议 'decision:' *yízhì de juéyì* 'unanimous decision,' but not **yígài de juéyì*. Second, adjectives can form A-not-A interrogative structure while adverbs cannot. For instance, *yízhì* can be turned into *yízhì-bu-yízhì* 'is it uniform?' but *yígài* cannot be turned into **yígài-bu-yígài*. Third, adjectives can stand alone to answer questions while adverbs normally cannot—one exception being *yěxǔ* 也许 'perhaps'.

4.8 Prepositions

4.8.1 Types of Prepositions

Mandarin prepositions as a closed set are fairly limited in number. However, most are frequently used words. Based on meaning, they can be divided into several groups: direction (a), time (b), reason (c), basis (d), concerning (e), passiveness (f), comparison (g) and so forth:

(4.28) a.	cháo	朝	'toward'
	xiàng	向	'toward'
	wǎng	往	'toward'
	yánzhe	沿着	'along'

b.	zài	在	'at; on'
	cóng	从	'from'
	yú	于	'from; at'
	zì(cóng)	自(从)	'from'
c.	wèi	为	'for'
	yóuyú	由于	'because'
	yīnwéi	因为	'because'
	wèile	为了	'for'
d.	àn(zhào)	按(照)	'according to'
	zhào	照	'according to'
	(gēn)jù	(根)据	'based on'
	yǐ	以	'based on'
e.	duì	对	'to (someone)'
	zhìyú	至于	'as to'
	guānyú	关于	'about'
f.	bèi	被	'by' ¹¹⁹
	ràng	让	'by'
g.	bǐ	比	'compare;than'
	chú(le)	除(了)	'except for'

4.8.2 Syntactic Properties

One unique syntactic property of Mandarin prepositions is that they cannot stand alone, but have to combine with a prepositional object—typically a noun, a pronoun or a nominal phrase—to form prepositional phrases (henceforth PPs) before they can be used as a major constituent in a sentence.¹²⁰ Just as some bound morphemes that are historically derived from free morphemes via certain grammaticalization processes, most Mandarin prepositions were originally verbs that have since been grammaticalized to become prepositions. Because of this historical link, sometimes prepositions may be confused with verbs. It is thus important to identify the major properties that are not shared by both. First, prepositions, as already indicated, cannot stand alone as a predicate, while verbs can. For instance, although the two words share a similar meaning of spatial direction, *qù* 去 'go' is a verb in *tāmen qù zhōngguó* 他们去中国 'they go to China,' whereas *wǎng* 往 'to' isn't since **tāmen wǎng zhōngguó* is syntactically unacceptable. Second, verbs can be reduplicated while prepositions cannot. Third, verbs can take aspect auxiliary particles such as *zhe*, *le*, and *guo*, while prepositions cannot (compare the grammatical *qù le zhōngguó* 'have gone to China' with the ungrammatical **wǎng le zhōngguó*). Fourth,

¹¹⁹ See the section on prepositions for details.

¹²⁰ Exceptions include *bèi* in (4.28).

verbs can form a A-not-A question while prepositions cannot (compare the grammatical *nǐ qùbúqù zhōngguó* 'are you going to China?' with the ungrammatical **nǐ wǎngbuwǎng zhōngguó*).

Furthermore, just as in morphology some morphemes have become affixes more completely than others, in the grammaticalization of verbs, some verbs have become function words more completely than others. Evidence for such uneven pace in development comes from the existence of the so-called coverbs—words that can be both a preposition and a verb. McCawley (1992), for example, clearly identified a group of coverbs as being more like prepositions than others. Examples of coverbs are *zài* 在 'at; to be at,' *gěi* 给 'give; to,' and *bǐ* 比 'compare; than.' Observe the following examples, where the words are verbs in (i)s but prepositions in (ii)s.

- (4.29) a. i. *tāmen zài xuéxiào.* 他们在学校。
they be-at school
'They are at school.'
- ii. *tāmen zài xuéxiào xuéxí.* 他们在学校学习。
they at school study
'They study at school.'
- b. i. *wǒ gěi tā yìběn shū.* 我给他一本书。
I give he one-CLS book
'I give him a book.'
- ii. *wǒ gěi tā mǎi le yìběn shū.* 我给他买了一本书。
I give he buy PERF one-CLS book
'I bought a book for him.'
- c. i. *wǒ liǎ bǐ gāodī.* 我俩比高低。
I two compare high-low
'We two compare height (or who is superior).'
- ii. *wǒ bǐ tā gāo.* 我比他高。
I than he tall
'I am taller than him.'

4.9 Conjunctions

4.9.1 Types of Conjunctions

Conjunctions conjoin words, phrases or sentences. Some function alone; others work together. The following are examples of stand-alone conjunctions:

- (4.30) a. *hé* 和 'and'
b. *yǔ* 与 'and; with'
c. *gēn* 跟 'and; with'
d. *tóng* 同 'and; with'
e. *yǐjí* 以及 'and'
f. *huòzhě* 或者 'or'
g. *yǐzhì* 以致 'consequently'
h. *cóng'ér* 从而 'thus; thereby'
i. *yúshì* 于是 'hence; consequently'

Not all conjunctions conjoin all types of parts of speech. Some conjoin primarily nouns, some verbs; and some other parts of speech. For instance, *gēn* 跟 and *yǔ* 与 (both meaning 'and,' although the former is more colloquial than the latter (S. X. Lü 1996)) normally conjoin nouns, while *ér* 而 'but, and' and *érqiě* 而且 'and' conjoin verbs. Many conjunctions work in pairs, which can be called complex conjunctions. Examples are given below: (See also the section on complex sentences in this chapter.)

- (4.31)
- | | <i>1st Part</i> | <i>2nd Part</i> | | |
|----|----------------------------|----------------------------|------------|--------------------------------|
| a. | <i>jì ...</i> | <i>yòu ...</i> | 既...又... | 'both ... and ...' |
| b. | <i>búdàn ...</i> | <i>érqiě ...</i> | 不但...而且... | 'not only ... but also ...' |
| c. | <i>nìngkě ...</i> | <i>yěbù ...</i> | 宁可...也不... | 'would rather ... and not ...' |
| d. | <i>yúqí (A)</i> | <i>bùrú (B)</i> | 与其...不如... | 'better (B) than (A)' |
| e. | <i>yīnwéi ...</i> | <i>suǒyǐ ...</i> | 因为...所以... | 'because ... therefore ...' |
| f. | <i>zhǐyǒu ...</i> | <i>cái ...</i> | 只有...才... | 'only if ... then ...' |
| g. | <i>rúguǒ ...</i> | <i>jiù ...</i> | 如果...就... | 'if ... then ...' |
| h. | <i>suīrán ...</i> | <i>dànshì ...</i> | 虽然...但是... | 'although ... but' |
| i. | <i>jìshǐ ...</i> | <i>yě ...</i> | 即使...也... | 'even though ... still ...' |
| j. | <i>wúlùn ...</i> | <i>dōu ...</i> | 无论...都... | 'no matter what ...still ...' |

4.9.2 Syntactic Properties

Mandarin conjunctions are function words and as such, share all the common properties of function words, including being a closed set and having grammatical rather than content meaning. They cannot be reduplicated, cannot be uttered alone. In some ways, conjunctions resemble adverbs, but unlike them, conjunctions do not modify other than conjoin. In addition, the position of conjunctions may vary as they can appear before or after the subject, whereas adverbs normally can only appear after the subject and before the verb (or adjective) they modify. There are words that function both as a conjunction and an adverb—which may be called conjunctive adverbs. For instance, *cái* 才 and *jiù* 就 are both adverbs on their own (see (c) in (4.27)), but they can conjoin clauses together with another conjunction (see (f) and (g) in (4.31)).

However, when they serve as conjunctions, they still keep the property of adverbs by only appearing after the subject. As adverbs, they cannot be omitted unlike conjunctions which can be omitted sometimes. The following illustrate these possibilities and constrictions, taking *jiù* as an example.

- (4.32) a. tāmen míngtiān jiù qù. 他们明天就去。
they tomorrow right-away go
'They will go as early as tomorrow.'
- b. zhǐyào nǐ qù, tāmen jiù qù. 只要你去, 他们就去。
if you go they then go
'If you go, they will then go.'
- c. nǐ zhǐyào qù, tāmen jiù qù. 你只要去, 他们就去。
if you go they then go
'If you go, they will then go.'
- d. * zhǐyào nǐ qù, jiù tāmen qù. 只要你去, 就他们去。
if you go then they go
???
- e. nǐ qù, tāmen jiù qù. 你去, 他们就去。
you go they then go
'If you go, they will then go.'
- f. * zhǐyào nǐ qù, tāmen qù. 只要你去, 他们去。
if you go they go
???

In (a), *jiù* is used as an adverb only, but in (b) it is used as a conjunction along with *zhǐyào* 只要. The sentence in (c) contrasts with the one in (b) in that in the former, the conjunction *zhǐyào* appears after the subject while in the latter before the subject. Either way, the sentence is grammatical and remains the same in meaning. The sentence in (d) shows that the same freedom of position is not found with the adverb/conjunction *jiù*, for there, its position before the subject renders the sentence ungrammatical. In (e), the pure conjunction *zhǐyào* is omitted, but the sentence is still grammatical and its meaning intact. By contrast, the conjunction/adverb *jiù*'s omission in (f) renders the sentence ungrammatical—the conjunction *zhǐyào* cannot appear on its own, but has to be supported by *jiù*.

Some Mandarin conjunctions may also be confused with prepositions. Here again, we see words that can serve as both. Alone, one cannot say if they are prepositions or conjunctions. Their identity in parts of speech has to be judged from the context. Take the word *hé* for an example:

- (4.33) a. wǒ hé tāmen qù. 我和他们去。 'They and I go.'
I and they go
- b. wǒ hé tāmen shuō. 我和他们说。 'I will speak with them.'
I with they speak

In (a), *hé* is a conjunction linking two pronouns *wǒ* 'I' and *tāmen* 'they,' both of which serve as the subject of the sentence. Its coordinate linking function is attested to by switching the two pronouns while keeping the meaning intact. On the other hand, *hé* is a preposition in (b) where if the two pronouns change places, the meaning of the sentence would be very different; that is, the subject would be changed from 'I' to 'they' and the prepositional object the other way round.

4.10 Auxiliary Particles

4.10.1 Types of Auxiliary Particles

Mandarin auxiliary particles are perhaps among the hardest to define. They refer to a group of monosyllabic morphemes which are enclitic to some kind of a phrase or sentence. Bound and almost all in neutral tone, they resemble true suffixes, yet unlike true suffixes, which are bound within morphology, Mandarin particles operate at the phrase or sentence level. Three types of particles can be identified based on their grammatical function: aspectual (a), structural (b) and sentential (c):

(4.34)		<i>Main identification</i>		
a.	zhe	着	PROG	'progressive aspect'
	le	了	PERF	'perfective aspect'
	guo	过	EXP	'experiential aspect'
b.	de	的	DE(a)	'attributive particle'
	de	地	DE(ad)	'adverbial particle'
	de	得	DE(comp)	'complement particle'
c.	a	啊	A	'exclamation particle'
	ba	吧	BA	'suggestion particle'
	ma	吗	MA	'simple interrogative'
	le	了	LE	'new situation particle'
	ne	呢	NE	'(various functions)'

4.10.2 Syntactic Properties

The three types of Mandarin particles have distinctive syntactical properties. The aspectual particles are attached to verbs or adjectives and designate primarily the relation of the verb or adjective to the passage of time in terms of duration, completion, or experience. The

structural particles are attached to a modifying phrase or clause to designate the subordinate relation of the phrase or clause to the word or phrase it modifies. The sentential particles, attached to the end of a sentence, perform a wide variety of functions indicating mood; forming an interrogative; expressing estimation or doubt; or introducing a new situation. Examples of sentences with the aspectual particles of *zhe* (a), *le* (b) and *guo* (c) follow. Further discussion of these particles is found later in the section on Aspects.

- (4.35) a. tāmen chī zhe fàn ne. 他们吃着饭呢。
they eat PROG food NE
'They are eating.'
- b. tāmen chī le fàn le. 他们吃了饭了。
they eat PERF food LE.
'They have eaten.'
- c. tāmen chī guo hàn**ǎo**bāo. 他们吃过汉堡包。
they eat EXP hamburger
'They have eaten hamburgers (before).'

Structural particles are found in the following sentences. Those in (a) illustrate attributive particles, those in (b) adverbial particles, and those in (c) complement particles.

- (4.36) a. tā xǐhuān zhōngguó de diànyǐng 他喜欢中国的电影。
he like China DE(a) movie
'He likes Chinese movies.'
- zhèxiē shì qù zhōngguó de rén. 这些是去中国的人。
these be go China DE(a) people
'These are people who go to China.'
- b. tāmen gāoxìng de huí jiā le. 他们高兴地回家了。
they happy DE(ad) return home LE.
'They happily returned home.'
- tāmen kuàilè de tiào zhe wǔ. 他们快乐地跳着舞。
they happy DE(ad) to-dance PROG dance.
'They are dancing happily.'
- c. tā wán de hěn lèi. 他玩得很累。
he play DE(comp) very tired
'He is very tired from playing.'
- tāmen xiào de dùzi téng. 他们笑得肚子疼。
they laugh DE(comp) stomach ache
'They have got a stomachache from laughing.'

Finally, the following sentences contain some major sentential particles in Mandarin:

- (4.37) a. i. chángchéng duō měi a. 长城多美啊!
long-wall how beautiful A
'How beautiful the Great Wall is!'
- ii. shíjiān guò de zhēn kuài a. 时间过得真快啊!
time pass DE(comp) really quick A
'How fast time goes!'
- b. i. chángchéng měi ma? 长城美吗?
great-wall beautiful MA
'Is the Great Wall beautiful?'
- ii. shíjiān guò de kuài ma? 时间过得快吗?
time pass DE(comp) quick MA
'Does the time pass fast?'
- c. i. wǒmen zǒu ba. 我们走吧。
we go BA
'Let's go, (shall we)?'
- ii. nǐ dàgài hěn máng ba? 你大概很忙吧?
you perhaps very busy BA
'You must be very busy, (aren't you)?'

Chapter 5. Syntax

For any language, even a 'concise' overview of its syntax is never easy to describe. Anyone attempting a description of Mandarin syntax faces even more daunting challenges than usual. The biggest problem is the choice of a theoretical perspective from which a description can be approached. Currently there exists a large number of syntactic frameworks, which, as far as Mandarin syntax is concerned, can be grouped into two major camps, the Chinese and the Western. The Chinese camp centers in the People's Republic of China, where the main concern has been with the Chinese language with no or little interest in languages of the rest of the world. The goal of this school is to find an optimal grammar for Chinese and to establish a grammatical framework within which Chinese grammar can be best explored. The following paragraph illustrates such an orientation:

'Since the publication of *Mǎshì Wéntōng* 马氏文通,¹²¹ much effort in the grammatical studies of Chinese has not only been put into seeking and describing its grammatical facts and revealing and explaining its grammatical rules, but also into a continuous search for methods and theory that are suitable for its research. (Y. Li 1997:16)¹²²

This camp tends to be suspicious of applying Western syntactic theories to Chinese grammar, in spite of the fact that its origin can be traced back to the structuralism of the early twentieth centuries in the West (C. L. Chen 1996). The suspicion is not without good reasons. To begin with, Chinese almost completely lacks grammatical devices such as verb inflection and noun declension,¹²³ which are used in most Western languages to encode a great variety of grammatical meanings. Grammatical theories produced in the West have almost always started out with inflectional languages, and their applicability to the Chinese language is yet to be fully tested. It is perhaps not totally irrational to assume that if Chomsky, the father of Generative Grammar, the most influential syntactic framework of the twentieth century, had been a native Chinese speaker, the outlook of modern grammatical studies in the west would have been quite different. The theoretical orientation of the Chinese camp is more relaxed, and indeed, there has been, until fairly recently, a trend in China against the practice of theorizing. Although the argument is that theorizing is largely dangerous and could lead to losing sight of the language itself, this position appears to stem more from political sentiment rather than scientific caution. In contrast to the nonchalant attitude toward theory, this school's requirement for data citation is

¹²¹ This is the first grammar book of Chinese. First published in the late nineteenth century, it was reprinted in 1983 by the Commercial Press of China.

¹²² The original text is in Chinese.

¹²³ See X. L. Dai (1993) for some exceptional cases.

very rigid.¹²⁴ Language examples have to be real in the sense that they have appeared in published materials, preferably in works of famous and well-respected authors. Since the later 1970's, after the 'Great Proletariat Cultural Revolution' (1966-1976), scholarly research on Chinese grammar has flourished in China. Although at the same time, Western grammatical theories began to seep onto the Chinese scene, some fundamental traditions have remained unchanged. For instance, the grammarians are still completely focused on Chinese grammar (see S. X. Lü 1982, J. M. Lu 1993, F. Y. Xing 1996, T. Q. Xu 1991, B. Zhang *et al.* 1989, D. X. Zhu 1982b and 1985 among many others).

In the West, syntacticians of the Chinese language tend to be theory-driven and typically place their work in a more global context. The ultimate goal is to unravel the mystery of human language, and as such they aim not just to understand the Chinese language, but also to contribute, with this understanding, to the general theory, or 'linguistic universals,' of human language. Most of these syntacticians of Chinese work within the various offshoots of Generative Grammar (see Cole *et al* 1999, Y. J. He 1996, J. Huang 1982, A. Li 1990, Li and Thompson 1981, H. H. Pan 1997, J. Tang 1990). Empirical data in this school no longer mean those from printed materials, but what a native speaker accepts as grammatical. The past two decades have witnessed a rapid development in syntactic theorizing in this school. The theories produced have become finer and more insightful, and many previously thorny syntactic issues have been resolved.

The different orientation of the two camps has produced different results. Because the focus is exclusively on Chinese, the Chinese camp has produced grammars that are more tailored to the Chinese language, with terms, categories and structural relations that may not be found in theories of the West. They tend to be more complete, consistent and coherent. However, because of the narrower focus, these grammars lack explanatory power. They have yet to gain from the results of grammatical theories that take into account human language as a whole. By comparison, the highly-theoretical camp in the West with its various sub-camps (e.g., Government Binding, Head-Driven Phrase Structure Grammar, Lexical-Functional Grammar and so forth) has not produced a Chinese grammar that is relatively complete and generally accepted, in spite of the fact that a large number of published articles have appeared addressing various aspects of Chinese grammar.

The significance of this is that our current understanding of Chinese grammar is piecemeal and limited. It is perhaps not unreasonable to compare this situation to that in the classic story of the Four Blind Men and An Elephant. We know a fair amount about various pieces seen from diverse perspectives, but we have yet to see the complete picture, the whole elephant, the true nature of Chinese grammar. Because of such limitations and the limitations of space, the present discussion of Mandarin syntax will be relatively sketchy and will follow a more or less traditional and less theoretical path. Where appropriate, new findings from recent Mandarin syntactic studies will be incorporated. There are six subsections in this chapter. In the

¹²⁴ The attitude originates from the structuralism and behaviorism which reigned supreme in linguistic and psychological studies in the West through the early part of the twentieth century.

first section, some more important typological characteristics of Mandarin syntax are discussed. The remaining sections address specific aspects of Mandarin syntax.

5.1 General Characteristics

Typologically speaking, Mandarin syntax has a number of salient features. In contrast to languages such as English, it stands out as a language without a great number of affixational morphological processes.¹²⁵ What this means in syntax is that there are few overt syntactic expressions of tenses, subject-verb agreement, case, gender or number markings as in inflectional languages. For example, the verb *qù* 去 'to go' remains *qù* if the action happened yesterday, happens today or will happen tomorrow. It remains *qù* in form when the subject is of the third person and singular, or the first person and plural. Another good example is the variations of the English linking verb 'be'—am, is, are, was and were—which has just one Mandarin equivalent, *shì* 是. Besides verbs, a Mandarin noun or pronoun does not undergo any change whether it is used as a subject or object, for instance, *wǒ* 我 'I' stays *wǒ* in form whether it is a subject 'I' or an object 'me.' The lack of affixational morphology also means that counterfactual or subjunctive-mood sentences are not expressed with explicit grammatical devices. English expressions such as 'Can you?' and 'Could you?' correspond to the same form in Mandarin, and 'if I am you' would be just as acceptable in Chinese grammar as 'if I were you.'

If Mandarin does not provide meanings for tense and politeness grammatically, how then are these meanings expressed? The answer is that they may be expressed lexically or by word order, or they may not be expressed linguistically at all but simply be derived from common knowledge or context. For instance, there is no ambiguity if one says 'if I am you', since common knowledge dictates that 'I am not you'. Lexically, *qù* 'to go' can be modified by a time noun *zuótiān* 昨天 'yesterday' to specify that the action took place yesterday. Word order is one of the most powerful devices used in Mandarin. For instance, purely by word order, the following *shùnkǒuliū* 顺口溜 'Chinese doggerel' (H. Lin, in press) suggests that the citizens of the provinces mentioned differ as to how spicy hot they can take their food. Look especially at the last three syllables.¹²⁶ The order suggested here is that the Hunaners take the hottest food; Hubei'ers come next, followed by Sichuaners.¹²⁷ The very subtle differences in meaning are expressed by a mere rearrangement of the last three words, *bù* 不 'not,' *pà* 怕 'be afraid' and *là* 辣 'spicy hot.' This example illustrates that an utterly important syntactic device in Mandarin is word order.

¹²⁵ Refer to Chapter 3 for further information on Chinese morphology.

¹²⁶ What is provided below is the *shùnkǒuliū* 顺口溜 in Pinyin and characters, its word-for-word gloss and its translation.

¹²⁷ Unfortunately, the subtle differences are not well shown in the English translations, especially with regard to the meanings of the first two clauses, which are indistinguishable in English.

- (5.1) sìchuān rén bú pà là;
húběi rén là bú pà;
húnán rén pà bú là.

四川人不怕辣;
湖北人辣不怕;
湖南人怕不辣。

Sichuan person not fear spicy-hot
Hubei person spicy-hot not fear
Hunan person fear not spicy-hot.

'Sichuaners do not fear [their food] being spicy hot;
[Their food] being spicy hot is no fearful matter to Hubeiners;
Hunaners fear that [their food] is not spicy hot.'

If word order is meaningful, there must be elaborate rules that govern word order in Mandarin. This is, of course, exactly the case. First it may be said that Mandarin today, just like English, is basically an SVO language, in which the subject (S) precedes the verb (V), which in turn precedes the object (O) (Sun and Givon 1985). However, this basic word order can change in certain constructions, such as the *bǎ* 把 construction (see X. Q. Wu 1996 refer to Section 5.2.4.3), and it can interact with pragmatics and discourse (M. L. Hu 1991 and 1992). Another important word order rule in Mandarin is that the modifier precedes the head—the element being modified.¹²⁸ For instance, the English noun phrase *the person who is wearing a hat*, in which the modifying attributive clause appears after its antecedent is translated into Mandarin as follows:

- (5.2) dài màozi de nàgè rén
戴帽子的那个人
wear hat DE(a)¹²⁹ that person

in which all words in the determiner *nàgè* and the attributive clause *dài màozi de* go before the head *rén* 人 'person'. In addition, modifiers for verbs normally precede verbs. For instance, the modifier *mànmàn de* 慢慢地 'slowly' is placed before the verb *zǒu* 走 'walk' it modifies in *mànmàn de zǒu* 'walk slowly'. Such positioning of the modifiers has led to Mandarin being classified as a 'head-final' language. According to Y. R. Chao (1968) and Li and Thompson (1975), Mandarin word order can mark definiteness and indefiniteness. The former tends to occupy a preverbal position and the latter a post-verbal one. Word order is also responsible for

¹²⁸ More specifically, the head is defined as 'the lexical category around which the phrasal category is built and that is invariably present in the phrase' (Hildebrand 1987:448).

¹²⁹ This is an auxiliary particle among whose functions it is to mark the end of the relative clause. Refer to the section on particles in this chapter for further explanation.

another feature of Mandarin which differentiates it from English. When naming temporal or special entities, the order is from the global to the specific. For instance, the English expression '5 o'clock PM, Monday, the 1st of October, 2000' is rendered in Mandarin as '2000 nián 10 yuè 1 rì xīngqīyī xiàwǔ wǔdiǎn, 2000年十月一日星期一下午五点', namely: '2000 year 10th month 1st day Monday afternoon 5 o'clock'. The same concept applies in naming place parameters, for example, addresses. In English the word order goes from the most specific, usually a house or apartment number, to the most general, the name of the country in which the residence is found. Mandarin is exactly the opposite. It starts with the name of the country, the province, the city and eventually to the number of the apartment or building.

Typologically, Mandarin has also been classified as a 'topic prominent' language (see Li and Thompson 1981 for details), as opposed to a 'subject prominent' language such as English. Typically a Mandarin sentence can be segmented into two parts a 'topic' and a 'comment'. Appearing at the beginning of a sentence, the topic is 'what a sentence is about...[It] sets a spatial, temporal or individual framework within which the main predication holds' (Li and Thompson 1981:86). The topic can be the subject of the sentence, but does not have to be. In fact, a sentence can have both a topic and a subject, and a topic can be the object, or something entirely different. In addition, the topic is either definite, the quality normally marked by the use of *the* in English, or the focal point of the sentence. Examine the following sentences:

- (5.3) a. wǒ kàn guò nàběn shū.
我看过那本书。
I look EXP that-CLS book
'I have read that book.'
- b. nàběn shū wǒ kàn guò.
那本书我看过。
that-CLS book I look EXP
'I have read that book.'
- c. wǒ nàběn shū kàn guò.
我那本书看过。
I that-CLS book look EXP
'I have read that book.'

The sentence in (a) is a regular SVO sentence where the topic is the subject and the rest of the sentence the comment. In (b), however, the topic is not the subject of the sentence, but logically speaking, the object of the sentence. Being raised to the topic position, the logical object becomes the sentence's focal point. The subject of the verb is the pronoun *wǒ* 'I', yet along with the following words, it forms the comment of the sentence. The sentence in (c) also has the logical object raised to the preverbal position, but short of being raised to the initial position, it is not the topic and therefore not the focal point of the sentence. Now examine a topic from a different source:

- (5.4) tā hé wǒ guānxì hěn hǎo.
他和我关系很好。
he and me relationship very good
'He and I have a good relationship.'

In this sentence, the subject is *guānxì* 关系 'relation', while the topic is the noun phrase *tā hé wǒ* 他和我 'he and I', which, logically, speaking, is not any part of the following clause, the comment of the sentence. Finally, a quite striking quality of Mandarin which has been largely ignored in Western linguistics is the language's great reliance on context—pragmatics and discourse—rather than merely syntactic structures to derive meaning. Consider the following two sentences. Pay attention to their English translations:

- (5.5) a. rúguǒ tā qù, wǒ yě qù.
如果他去, 我也去。
if he go I also go
i. 'If he goes, I will also.'
ii. 'If he had gone, I would have also.'
- b. yú chī le.
鱼吃了。
fish eat PERF
i. 'The fish has eaten.'
ii. 'The fish has been eaten.'

Each sentence in the above has two English equivalents. In (a), the English translations express the difference between factual and counterfactual conditions by using verb inflection. However, as stated earlier, Mandarin lacks such verb inflection and does not express the counterfactual overtly. In (b), the difference between active and passive voices is explicitly encoded in the English translations, yet it is not marked structurally at all in Mandarin. How then do the Chinese speaker decide on the right meaning in such sentences, since it is clear that syntactically it is not possible? In view of language typology, Chinese is a language that is among the most economical and least redundant in the use of overt grammatical devices (F. Y. Xing 1997). Yet, there is no more ambiguity in Chinese than there is in any other language. The explanation lies in the fact that language is almost never used without a context, which provides a great deal of information for the precise interpretation of a linguistic utterance. It just happens that Chinese takes greater advantage of such information than languages that have more linguistic redundancy.

It has been mentioned previously that syntactic studies in China have focused almost exclusively on Chinese, and that the application of Western linguistic theories to Chinese has experienced resistance. Recently in China, that resistance has led to a great number of studies exploring the optimal theoretical approaches to understanding Chinese sentences. Invariably these studies criticize the preoccupation of Western linguistics on the structural or formal aspect of the

Chinese syntax and argue that to understand fully Mandarin syntax, more understanding of super-syntactic structures such as meaning, pragmatics and discourse is necessary (M. L. Hu 1992, Mou 1994, R. Xie 1994, C. K. Yang 1995 and L. Zhang 1997). A number of new theories have been advanced, the most influential ones have been Three Plain Theory (Y. S. Hu 1981 and 1994, Y. S. Hu *et al.* 1985 and 1992, and B. Zhang *et al.* 1989) and Two Triangle Theory (F. Y. Xing 1986, 1992 and 1996).¹³⁰

The Three Plain Theory contends that to understand Chinese sentences, it is necessary to approach them at once from three perspectives—formal, semantic and pragmatic. The formal perspective is what in Western linguistics is referred to as syntax; the semantic perspective explores the meaning of the formal structures; the pragmatic perspective generalizes the pragmatic values and information carried by the formal structures (Mou 1994). The Two Triangle Theory is similar to the Three Plain Theory in that one of the two triangles, the small one, as it is called, corresponds roughly to the three plains mentioned above, covering *yǔbiǎo* 语表 'sentence surface', *yǔlǐ* 语里 'sentence interior' and *yǔzhí* 语值 'sentence value'. *Yǔbiǎo* refers to overt syntactic devices; *yǔlǐ* refers to internal meaning and relations carried by the overt devices out of context; *yǔzhí* refers to pragmatic values that the formal devices exhibit in certain contexts. On the other hand, the big triangle is formed by Mandarin as the Standard Chinese, other Chinese dialects and the history of the Chinese language. All six realms of the two 'triangles' are necessary for the understanding of Mandarin sentences, according to advocates of this theory. The current scene of the studies of Chinese sentences in China is very encouraging and holds much promise for ground-breaking results. However, at the moment, these theories are sketchy and tentative and need to be further substantiated and validated.

5.2 Phrases

Sentence phrases are called *cízǔ* 词组 'word group' or *duǎnyǔ* 短语 'phrase' in Chinese. In the People's Republic of China, phrases have been classified primarily according to their internal structures. If its components are strung together in a parallel fashion, for instance, the phrase is a coordinate phrase (*liánhé cízǔ* 联合词组). On the other hand, a phrase in which one component is subordinate to another may fall into the group of endocentric phrases (*piānzhèng cízǔ* 偏正词组). In contrast, in the Generative Grammar of the West, syntactic phrases are primarily classified into syntactic categories, such as verb phrase (VP), noun phrase (NP), adjectival phrase (AP) and prepositional phrase (PP). In other words, the latter classification is concerned with what the phrase is and how it functions as a whole regardless of its internal structure. The difference between the two approaches can result in different grammars. For instance, an AP in Generative Grammar can be a coordinate phrase if it contains a string of parallel, conjoined words (e.g., *suānde hé tiánde* 酸的和甜的 'sweet and sour'), but it can also be an endocentric phrase when one component modifies another (e.g., *hěn tián* 很甜 'very sweet'). Conversely, a coordinate phrase in Mandarin grammar may be a VP, an NP, or an AP. The following illustrates the difference:

(5.6)	<i>Coordinate</i>	<i>Endocentric</i>
VP	chànggē tiàowǔ 唱歌跳舞 sing dance 'sing and dance'	kuàilè de chànggē 快乐地唱歌 happy DE(ad) sing 'happily sing'
NP	zhōngguó hé jiānádà 中国和加拿大 China and Canada 'China and Canada'	měilì de zhōngguó 美丽的中国 beautiful DE(a) China 'beautiful China'
AP	gānjìng piàoliàng 干净漂亮 clean beautiful 'clean and beautiful'	hěn gānjìng 很干净 very clean 'very clean'

The difference in the two approaches also means different treatment of words versus phrases. In the Chinese tradition, phrases and words are treated as two separate categories; an endocentric or a coordinate phrase must contain at least two words; a word does not constitute a phrase. In the Western tradition, however, individual words such as nouns, verbs, adjectives are but special cases of NPs, VPs and APs. In *he works*, the word *works* alone constitutes a VP.

The attention to the internal structure of phrases in Mandarin is not without reasons. Unlike many Western languages in which phrase structures are considerably different from sentence structures, the two bear a great deal of resemblance in Mandarin. According to the late well-known Chinese syntactician De Xi Zhu (1982a, 1982b and 1985), the principles in the construction of sentences in Mandarin are about the same as those in the construction of Mandarin phrases. Sentences are but stand-alone phrases and sentence structures are well described if the internal structures of phrases are clearly worked out.¹³¹ In fact, the description of phrases has been found to play a kind of pivotal role because not only do phrases resemble sentences in structure, but they also share many structural similarities with word structures. In the remainder of this section, the major types of Mandarin phrases are examined using a combined framework of both the Western and Chinese traditions.

5.2.1 Noun Phrases

Like nouns, Mandarin NPs name people, animals, professions, qualities and abstract concepts. Functionally, they serve mainly as the subject, the object (including the prepositional object) and the attributive. Structurally, there are at least two types of NPs: coordinate and endocentric. While coordinate NPs are relatively simple in their internal structure, the endocentric can be very complex.

¹³⁰ In Chinese, they are *sāngè píngmiàn* 三个平面 and *liǎngè sānjiǎo* 两个三角, respectively.

¹³¹ See X. L. Dai (1993) for a different view.

5.2.1.1 Coordinate NP

Nouns in language can normally be conjoined to form NPs. Typical examples of coordinate NPs in English are *apples and pears* and *today or yesterday*. Structurally, the nouns in a coordinate NP weigh the same and are usually freely exchangeable in position, unless the semantics requires them to be in certain temporal, spatial, logical or other orders. Mandarin nouns can be conjoined in a number of different manners and unlike in English, they can be conjoined in many cases without the use of conjunctions. For instance, the English phrase *father and mother* can be either *bàba māma* without a conjunction or *bàba hé māma* (5.7) with a conjunction.¹³²

- (5.7) a. *bàba māma*
 爸爸妈妈
 bàba hé māma
 爸爸和妈妈
 'father and mother'
- b. *gēge jiějie dìdi mèimei*
 哥哥姐姐弟弟妹妹
 gēge, jiějie, dìdi, mèimei
 哥哥、姐姐、弟弟、妹妹
 gēge, jiějie, dìdi hé mèimei
 哥哥、姐姐、弟弟和妹妹
 'older brother, older sister, younger brother and younger sister'

Needless to say, coordinate NPs can be composed of other NPs. The following is an example of a coordinate NP containing two endocentric NPs.

- (5.8) *hǎo rén yǔ huài rén*
 好人与坏人
 good person and bad person
 'good people and bad people'

As mentioned above, words in NPs are often connected by conjunctions. Some of the most commonly used NP conjunctions are.¹³³

- (5.9) a. *hé* *bàba hé māma*
 和 爸爸和妈妈
 'and' 'father and mother'
- b. *yǔ* *měinǚ yǔ yěshòu*
 与 美女与野兽
 'and' 'beauty and beast'
- c. *tóng* *lǎoshī tóng xuéshēng*
 同 老师同学生
 'and' 'teacher and student'
- d. *huòzhě* *bàba huòzhě māma*
 或者 爸爸或者妈妈
 'or' 'father or mother'
- e. *háishì* *měinǚ háishì yěshòu*
 还是 美女还是野兽
 'or' 'beauty or beast'

It should be noted that Mandarin coordinate NPs do not uniformly have to contain nouns. Sometimes a coordinate NP can be formed with a combination of nouns and pronouns. For instance, the coordinate NP *wǒ hé māma* 'mother and I' is formed with a pronoun *wǒ* 'I' and a noun *māma* 'mother.' Very rarely, and perhaps only in written Chinese, a noun and a verb can be conjoined to form a coordinate NP. For instance, one work by the famous Chinese writer Lu Xun is entitled *wénxué yǔ chū hàn* 文学与出汗 'literature and perspire.'

5.2.1.2 Endocentric NP

In a coordinate NP, the component parts are either nouns or NPs.¹³⁴ In a simple endocentric NP, there are normally two parts with one modifying the other—the head. In the English language, an NP head is almost always a nominal element—a noun, for instance. In Mandarin, however, the head can be a verb (a) or an adjective (b):

- (5.10) a. *tāde fēnxi* b. *tāde wěidà*
 他的分析 他的伟大
 he DE(a) analyze he DE(a) great
 'his analysis' 'his greatness'

The modifying part, or the attributive, can be of various types, including a noun or an

¹³² In written forms, when nouns are conjoined to form an NP, they are normally separated by a comma in English, but in Mandarin, they are either directly conjoined or are separated by the Mandarin-specific pause mark '、'.

¹³³ See the section on conjunctions in the last chapter.

¹³⁴ This, however, is not always true. The fact that a verb or a VP can serve as a subject of a Mandarin sentence makes it possible for it to form a coordinative NP with another noun, especially in literary forms (e.g., *wénxué yǔ chūhàn* 文学与出汗 'literally, 'literature and perspire.' See the next section on VPs for more discussion.

NP,¹³⁵ an adjective or an AP, a verb or a VP, a number/demonstrative pronoun-and-classifier sequence, a pronoun, a clause, an onomatopoeic expression, or a combination of these categories:¹³⁶

- (5.11) a. fēnxi de jiéguǒ
分析的结果
analyze DE(a) result
'the result of the analysis'
- b. dōngdōng de qiāomén shēng
冬冬的敲门声
knock knock DE(a) knock-door sound
'the knock on the door'
- c. hǎo rén
好人
good person
'good person'
- d. wǒ kànjiàn de nàgè rén
我看见的那个人
I see DE(a) that-CLS person
'that person I saw'
- e. wǒ kànjiàn de chuān xuēzi de nàgè rén
我看见的那个穿靴子的人
I see DE(a) wear boot DE(a) that-CLS person
'the person I saw who wore boots'

Note that a verbal element or an onomatopoeic expression can serve as an attributive on its own in Mandarin, as shown in (a) and (b) in the above, whereas they normally cannot in English. Furthermore, no matter what it is composed of, the attributive always goes before the head unlike in English in which it can be either before or after the head (see the English translations).

An endocentric NP is often marked by the presence of the auxiliary particle *de* 的 'DE(a),' although the use of this particle is not always compulsory. When not compulsory, using *de* places an emphasis on the attributive. For instance, the cases in (B) below emphasize that it is a new pair of shoes rather than an old pair (a), and that the raincoat is made of plastic rather than other materials (b). Their counterparts in (A) without *de* do not carry this emphatic meaning.

- | | | |
|--------|----------------------------------------------------------------|--------------------------------------------------------------------------|
| (5.12) | (A) | (B) |
| a. | xīnxié
新鞋
new-shoe
'new shoes' | xīn de xié
新的鞋
new DE(a) shoe
'new shoes' |
| b. | sùliào yǔyī
塑料雨衣
plastic rain-coat
'plastic raincoat' | sùliào de yǔyī
塑料的雨衣
plastic DE(a) rain-coat
'plastic raincoat' |

The use of *de* can sometimes avoid confusion between the coordinate and endocentric NPs, as shown in (a) below, and distinguish between a compounded word and a phrase, as is shown in (b) below. In these cases, its use is compulsory. Compare Columns (A) and (B):

- | | | |
|--------|-----------------------------------------------------------|--------------------------------------------------------------------|
| (5.13) | (A) | (B) |
| a. | bàba māma
爸爸妈妈
father mother
'father and mother' | bàba de māma
爸爸的妈妈
father DE(a) mother
'mother of father' |
| b. | huángguā
黄瓜
yellow-melon
'cucumber' | huáng de guā
黄的瓜
yellow DE(a) melon
'yellow melon' |

Other contexts where *de* is compulsory include when the attributive is a verb, a pronoun, a phrase or a clause, and when the head is a verb or an adjective. In rare occasions where the attributive is a pronoun, the use of *de* may be optional (e.g., *wǒ jiějie* versus *wǒde jiějie*, both meaning the same, 'my sister'), although it is not always the case (e.g., *wǒde shū* 'my book' is acceptable, but not *wǒ shū*). As mentioned previously, the attributive of an endocentric NP can contain a combination of various types of components which follow a rule-governed order. Generally speaking, they are arranged in the following order, from 1 to 5:

¹³⁵ See M. Wu (1994 and 1996) for detailed discussions of NPs as attributives.

¹³⁶ See later in this section for the ordering of these elements.

- (5.14)
1. possessive noun or pronoun
 2. demonstrative pronoun-number-CLS¹³⁷ phrase, or demonstrative pronoun-CLS /number-CLS phrase
 3. verb, VP or clause
 4. adjective or AP
 5. noun or NP

Based on this order, the endocentric NP 'the teacher's three thick grammar books, which he wrote himself,' is rendered in Mandarin as follows. The numbers 1-5 corresponds to those in (5.14).

(5.15)

(1)	(2)	(3)	(4)	(5)	
lǎoshī de	nà sān běn	tā zìjǐ xiě de	hòuhòu de	yǔfǎ	shū
teacher DE(a)	that three CLS	he self write DE(a)	thick DE(a)	grammar	book
老师的	那 三 本	他 自 己 写 的	厚 厚 的	语 法	书

In this example, (a) is a possessive noun, which ranks first in the order given in (5.14); (b) is a demonstrative pronoun-number-CLS phrase, that ranks second; (c) is an attributive clause, that ranks the third; (d) is an adjective that ranks, the fourth; (e) is a noun that comes last. It should be noted that what is presented here is a simplified general order; in reality, the ordering is much more complicated. Other orderings are syntactically possible although they may have semantic consequences.¹³⁸

5.2.2 Verb Phrases

In view of the constituent structure, at least four types of VPs exist: coordinate, endocentric, verb-object (VO) and verb-complement (VC). We will now look at the coordinate types.

5.2.2.1 Coordinate VP

Just as a coordinate NP normally contains two or more conjoined nouns, a coordinate VP contains such verbs. Also, as in coordinate NPs, conjunctions are often not used, particularly when the constituents frequently occur together (e.g., *diàochá yánjiū* 调查研究 'investigate and study'). One difference between the coordinate NPs and VPs lies in that they do not share the same set of conjunctions. For instance, the noun conjunctions *gēn* 跟 and *yǔ* 与 (both meaning 'and,' although the former is more colloquial than the latter (S. X. Lü 1996)), normally conjoin

¹³⁷ CLS here means both classifiers and measure words. See the section on classifiers for details.

¹³⁸ Refer to M. Wu (1994 and 1996) for details.

nouns, while *ér* 而 'but, and' and *érqiè* 而且 'and' combine verbs (as well as adjectives). But examine the following:

- (5.16)
- a. tāmen tiāntiān kàn diànshì, wán diànniǎo.
他们天天看电视、玩电脑。
they everyday watch TV play computer
'They watch TV and play on computer everyday.'
 - b. * tāmen tiāntiān kàn diànshì yǔ wán diànniǎo.
他们天天看电视与玩电脑。
they everyday watch TV and play computer
???
 - c. kàn diànshì yǔ wán diànniǎo shì tāmen de lèqù.
看电视与玩电脑是他们的乐趣。
watch TV and play computer be they DE(a) hobby.
'Watching TV and playing on computer are their hobbies.'

These are contexts where a coordinate VP can be formed by a noun conjunction, as shown in (c). Such context is normally a nominal one (e.g., a subject position), that is, when the same VP is used as a predicate of the sentence. Note also that in (a), where no conjunction is used between the VPs, the sentence is accepted, but it is not in (b) where the noun conjunction *yǔ* 'and' is added between the VPs. In (c), where the conjoined VP is used as a subject (rather than a predicate) of the sentence, the nominal conjunction is allowed. In addition to conjunctions, coordinate VPs can also be formed by conjunctive adverbs,¹³⁹ such as *yòu ... yòu* 又...又 'both...and,' as shown below. Needless to say, coordinate NPs cannot be conjoined by adverbs.

- (5.17) tāmen yòu kàn diànshì yòu wán diànniǎo.
他们又看电视又玩电脑。
they both watch TV and play computer
'They watch TV and play on computer.'

5.2.2.2 Endocentric VP

Like their NP counterparts, endocentric VPs are composed of two parts: the modifying or the adverbial component, and the head or the lexical category around which the VP is built. The head is typically a verb, while the adverbial component can be (1) an adjective, (2) an adverb, (3) a noun denoting place or time, (4) a number-CLS phrase, (5) onomatopoeia, (6) a verb, (7) a phrase or (8) a combination of any of these above-mentioned components. To a native English speaker, this set of possible adverbials may seem rather large. Adjectives, for instance, are rarely,

¹³⁹ See the section on conjunctions in the last chapter.

if ever, used adverbially in English.¹⁴⁰ In Mandarin, however, adjectives play a very important role in modifying verbs and VPs. The following are examples of adjectives used adverbially. Compare the (i)s where the adjective is used as attributives with the (ii)s where the same adjective is used adverbially:

- (5.18) a. i. xiángxì de jiěshì
详细地解释
minute DE(ad) explain
'explain in detail'
- ii. xiángxì de guīzé
详细的规则
minute DE(a) regulation
'detailed regulation'
- b. i. rèliè de huānyíng
热烈地欢迎
warm DE(ad) welcome
'welcome warmly'
- ii. rèliè de zhǎngshēng
热烈的掌声
warm DE(a) applause
'warm applause'

Another type of adverbial unusual to the English speakers is the verb. For instance, the verbs *guānxīn* 关心 'care,' *jìxù* 继续 'continue,' and *zhùyì* 注意 'pay attention' appear as adverbials in the following context:

- (5.19) a. guānxīn de xúnwèn
关心地询问
care DE(ad) inquire
'inquire with concern'
- b. jìxù de fāzhǎn
继续地发展
continue DE(ad) develop
'continue to develop'
- c. zhùyì de tīng
注意地听
pay-attention DE(ad) listen
'listen attentively'

¹⁴⁰ Occasionally, adjectives are used adverbially, particularly in colloquial English (e.g., *It is real good.*), although prescriptive grammars consider such use improper.

Various phrases can also serve as adverbials, for instance, the adverbial in (a) in the following is an endocentric VP, the one in (b) a VO VP, the one in (c) a PP and the one in (d) an endocentric NP:

- (5.20) a. fēicháng guānxīn de xúnwèn
非常关心地询问
very care DE(ad) inquire
'inquire with great concern'
- b. búgù yíqiè de zhuīgǎn
不顾一切地追赶
no-care everything DE(ad) chase
'chase without any care'
- c. wǎng zhōngguó fēi
往中国飞
to China fly
'fly to China'
- d. háizi qì de shuō
孩子气地说
child air DE(ad) speak
'speak like a child'

Examples of other types of adverbials are (a), the adverbial as onomatopoeia, (b), as a time noun, and (c) as a reduplicated number-CLS phrase:

- (5.21) a. dōngdōng de qiāo
冬冬地敲
knock-knock DE(ad) knock
'knock with a knocking sound'
- b. shí'èr diǎn chīfàn
十二点吃饭
12 o'clock eat-food
'eat at 12 o'clock'
- c. yīsháo yīsháo de chī
一勺一勺地吃
one-spoon one-spoon DE(ad) eat
'eat one spoonful at a time'

When the modifying part is made up of more than one type of adverbials, there is a general rule for the order of them, although the rule is much less rigid than the rule governing the order of attributives in an endocentric NP (5.14). Often the rule can be superseded by semantic and pragmatic considerations. The ordering rule for adverbials is:

- (5.22) 1. time adverbial (noun, NP or PP)
 2. place adverbial (noun, NP or PP)
 3. adverbial of scope, mood, frequency, etc. (adverb)
 4. modal adverbial (adjective, AP, verb, VP)
 5. adverbial of direction, target, etc. (PP)
 6. adverbial of condition, manner etc. (adjective, verb, adverb, onomatopoeia, number-CLS phrase, etc.)

An illustration in which the order is followed is:

(5.23)

(1)	(2)	(3)	(4)	(5)	(6)	
zuótiān	zài xuéxiào	yòu	rènzhēn de	gěi xuéshēng	yīyī	jiěshì
yesterday	at school	again	careful DE(ad)	to student	one-one	explain
昨天	在学校	又	认真地	给学生	一一	解释

The above is an endocentric VP meaning 'explained one after another once again yesterday carefully to the students.' In it, (a) is a time noun occupying the top position in the order, (b) is a PP occupying the second place, (c) is a frequency adverb in the third position, (d) is an adjective in the fourth position, (e) is a PP of the target found in the fifth position, and (f) an adverb of manner that comes last in the ranking scheme.

Similar to the *de* 'DE(a)' in endocentric NPs, an auxiliary particle *de* 地 'DE(ad)' signals the modifying-modified relationship of the two parts in an endocentric VP. And like the former, *de* 'DE(ad)' is not always compulsory, and when not compulsory, its use places emphasis on the adverbial. For instance, the (B) in (a) below emphasizes that it is in a detailed manner that the explanation is done, and in (b) it emphasizes that the welcoming action is done in a warm rather than any other manner. (B)'s counterparts in (A) without *de* 'DE(ad)' do not carry this emphatic meaning.

- (5.24)
- | | (A) | (B) |
|----|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| a. | <u>xiángxì</u> jiěshì
详细解释
detailed explain
'explain in detail' | <u>xiángxì de</u> jiěshì
详细地解释
detailed DE(ad) explain
'explain in detail' |
| b. | <u>rèliè</u> huānyíng
热烈欢迎
warm welcome
'warmly welcome' | <u>rèliè de</u> huānyíng
热烈地欢迎
warm DE(ad) welcome
'warmly welcome' |

In fact, not only are there times when the auxiliary particle *de* 'DE(ad)' is not used, but as *de* 'DE(a)' in NPs, it can be prohibited in certain contexts. See the following:

- (5.25)
- | | (A) | (B) |
|----|-----------------------------------------------------------------------|-----------------------------------------------------------------|
| a. | * wǎnshàng <u>de</u> chī
晚上的吃
evening DE(ad) eat
??? | wǎnshàng chī
晚上吃
evening eat
'eat in the evening' |
| b. | * zài xuéxiào <u>de</u> xiě
在学校的写
at school DE(ad) write
??? | zài xuéxiào xiě
在学校写
at school write
'write at school' |
| c. | * yòu <u>de</u> chī
又的吃
again DE(ad) eat
??? | yòu chī
又吃
again eat
'eat again' |
| d. | * màn <u>de</u> chī
慢的吃
slow DE(ad) eat
??? | màn chī
慢吃
slow eat
'eat slowly' |
| e. | * zhème <u>de</u> zǒu
这么的走
this-way DE(ad) walk
??? | zhème zǒu
这么走
this-way walk
'walk this way' |

The above examples in (B) without the use of *de* 'DE(ad)' are all grammatical, but their counterparts in (A) in which the particle is used are not. These examples show that *de* 'DE(ad)' is prohibited in these contexts. Specifically, the contexts are when the adverbial is a time noun (a), PP (b), monosyllabic adverb (c), monosyllabic adjective (d), or pronoun (e). Needless to say, there are also contexts where the use of the adverbial *de* is compulsory. These contexts are: (1) the preceding adverbial is a verb or certain disyllabic adjective; (2) it is a reduplicative verb, or reduplicative disyllabic adjective; or (3) it is a certain phrase other than PP and non-reduplicative number-CLS phrase. Now observe the following:

- (5.26)
- | | (A) | (B) |
|----|------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| a. | * guānxīn xúnwèn
关心询问
very care inquire
??? | guānxīn <u>de</u> xúnwèn
关心地询问
very care DE(ad) inquire
'inquire with great concern' |

- | | | |
|----|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| b. | * <u>bèngbèngtiàotiào</u> pǎo
蹦蹦跳跳跑
jumping run
??? | <u>bèngbèngtiàotiào de</u> pǎo
蹦蹦跳跳地跑
jumping DE(ad) run
'run in a bouncing and vivacious manner' |
| c. | * <u>lǎolǎoshíshí</u> shuō
老老实实说
honest speak
??? | <u>lǎolǎoshíshí de</u> shuō
老老实实地说
honest DE(ad) speak
'speak honestly' |
| d. | * <u>yánsù</u> shuō
严肃说
serious speak
??? | <u>yánsù de</u> shuō
严肃地说
serious DE(ad) speak
'speak seriously' |
| e. | * <u>hěn màn</u> pǎo
很慢跑
very slow run
??? | <u>hěn màn de</u> pǎo
很慢地跑
very slow DE(ad) run
'run very slowly' |
| f. | * <u>yǒu zhìxù</u> qiǎnjìn
有秩序前进
have order go forward
??? | <u>yǒu zhìxù de</u> qiǎnjìn
有秩序地前进
have order DE(ad) go forward
'forge forward with order' |

In (a) in the above, the adverbial is a verb, in (b), a reduplicative VP, in (c), a reduplicative adjective, in (d) a disyllabic adjective, in (e), an endocentric AP, and in (f), a VO VP. The cases in (A) all lack the adverbial particle *de*, and are ungrammatical, whereas their counterparts in (B) contain the particle and are grammatical. This contrast indicates that the absence of the adverbial *de* has resulted in the (A) cases being ungrammatical, and that the use of the particle in these cases is obligatory.

5.2.2.3 Verb-Object VP

As its name implies, a Verb-Object VP (VO VP) contains two parts, the verb and its object. In such a Mandarin phrase, the verb is normally a transitive verb. There are at least two types of transitive verbs as far as the requirement of an object is concerned. Examples of the two types of verbs are:

- | | | |
|--------|-------------------|-------------------|
| (5.27) | (A) | (B) |
| a. | ài
爱
'love' | chī
吃
'eat' |

- | | | |
|----|------------------------------------|------------------------|
| b. | xìng
姓
'have the surname of' | shuō
说
'say' |
| c. | chéngwéi
成为
'become' | kàn
看
'look' |
| d. | cǎiqǔ
采取
'take' | xuéxí
学习
'study' |

Column (A) contains transitive verbs that must take an object, whereas Column (B) contain transitive verbs whose objects can be omitted. While all transitive verbs can take objects, there exist intransitive verbs in Mandarin that can also take the so-called non-patient objects. Some examples follow. In each case, the verb is intransitive, yet an object (albeit a non-patient object) is attached to the verb.

- | | | |
|--------|----|-----------------------------------------------------------------------|
| (5.28) | a. | qù zhōngguó
去中国
go China
'go to China' |
| | b. | xià huǒchē
下火车
go-down train
'get off the train' |
| | c. | chūxiàn yīkē xīng
出现一颗星
appear one-CLS star
'a star appears' |
| | d. | sǐ le yītóu niú
死了一头牛
die PERF one-CLS bull
'a bull died' |

Although the objects in the VO VPs are mostly nouns and pronouns, they can also be verbs, as shown in (a) and (b), adjectives (c), and clauses (d):

- | | | |
|--------|----|-----------------------------------------------------|
| (5.29) | a. | xiǎng tīng
想听
want listen
'want to listen' |
|--------|----|-----------------------------------------------------|

- b. xǐhuān kàn
喜欢看
like watch
'like to watch'
- c. ài gānjìng
爱干净
love clean
'love cleanliness'
- d. pà tā xiàohuà wǒ
怕他笑话我
be-afraid he laugh-at me
'be afraid that he laughs at me'

Some transitive verbs take one object, but there are others, such as *gěi* 给 'give' and *gàosù* 告诉 'tell' that take two, a direct object preceded by an indirect one:

- (5.30) a. gěi wǒ xìn xīn
给我信心
give I confidence
'give me confidence'
- b. gàosù nǐ yījiàn shì
告诉你一件事
tell you one-CLS thing
'tell you something'

5.2.2.4 Verb-Complement VP

A Verb-Complement VP (VC VP) typically contains two parts, the verb and its complement. The complement can be an adjective, an adverb, a verb, or a phrase. An auxiliary particle, *de* 得 'DE(comp)', is sometimes used between the verb and the complement. Similar to the other two structural auxiliary particles, *de* 'DE(comp)' is obligatory with some complements, prohibited by others, and optional in still others. Unlike the other two structural auxiliary particles, *de* 'DE(comp)' sometimes clearly has its own meaning 'can.' Consequently, its presence is often governed by a semantic rather than structural requirement. The exact distribution of this particle is a very complex matter, but two clear cases where the complement *de* is prohibited are:

- (5.31) (A) (B)
- a. * hèn de jí le. hèn jí le.
恨得极了 恨极了
hate DE(comp) extremely PERF hate extremely PERF
??? 'hate extremely'
- b. * kàn de sānbiàn kàn sānbiàn
看得三遍 看三遍
watch DE(comp) three-time watch three-time
??? 'watch three times'

In the above table, the cases in (A) are ungrammatical whereas these in (B) are. In the cases of (a), the complement is the adverb *jí* 极 'extremely,' which prohibits the use of the complement *de* 'DE(comp)'. The examples in (b) illustrate that no number-CLS-phrase complement co-occur with *de* 'DE(comp)'. The following are cases where the complement *de* 'DE(comp)' must be present:

- (5.32) (A) (B)
- a. * guānxīn hěn guānxīn de hěn
关心很 关心得很
care very care DE(comp) very
??? 'care very much'
- b. * gàn fēicháng hǎo gàn de fēicháng hǎo
干非常好 干得非常好
do very good do DE(comp) very good
??? 'well done'
- c. bān jìnqù ≠ bān de jìnqù
搬进去 搬得进去
move enter move DE(comp) enter
'move in' 'can move in'
- d. bù bān jìnqù ≠ bān bú jìnqù
不搬进去 搬不进去
not move enter move not-possible enter
'not move in' 'cannot move in'

In contrast to the degree adverb *jí* 'extremely,' which precludes the use of the complement *de*, another degree adverb *hěn* 很 'very' does exactly the opposite. When it is used as a verb complement, it has to follow a complement *de*, or the phrase would be ungrammatical, as

illustrated in (a) in the above. APs are another case requiring the use of a complement *de*, as shown in (b). The examples in (c) demonstrate that the complement *de* sometimes carries its own content meaning 'possible' in addition to its grammatical function of ushering in a complement. When used as such, it indicates that the situation described by the complement is a possible result of the action denoted by the verb. The examples in (c) and (d) show that the complement *de* has an antonym *bù* 不 'not,' which means 'not possible' in a VC construction. Incidentally, both *de* 'DE(comp); possible' and *bù* 'cannot' can act as an infix inserted into certain VC compounds¹⁴¹ (e.g., *kànjiàn* 看见 'see' → *kàndejiàn* 看得见 'can see' or *kànbújiàn* 看不见 'cannot see'), as discussed in the section on affixes in the last chapter.

5.2.2.5 Serial-Verb VP

In Mandarin, there is a very special type of VP that does not fit into any of those described so far. Named here as Serial-Verb VP (SV VP), it consists of at least two verbs or VPs that are placed in sequence without any overt marking to indicate their grammatical relationship. Although in some ways, SV VPs resemble coordinate VPs, they can often be differentiated from each other. First, even though SV VPs contain a series of verbs just like the coordinate VPs, their verbs have to be in a certain order to express a certain meaning. Related to this point is the second observation that the components are of more or less equal importance in a coordinate VP, while the last component in a SV VP often carries the most weight. Finally, coordinate VPs sometimes use conjunctions between the components, but SV VPs never do. The following are examples of such VPs:

- (5.33) a. qù fānguǎn chīfàn
去饭馆吃饭
go restaurant eat
'go to eat in a restaurant'
- b. zǒu guòqù gēn tāmen wòshǒu
走过去跟他们握手
walk over with them shake-hand
'go over to shake hands with them'
- c. zuò fēijī qù zhōngguó
坐飞机去中国
take airplane go China
'go to China by air'

¹⁴¹ There exists controversy in treating these morphemes as infixes here, since strictly speaking, infixes go inside roots and not between morphemes of a single word.

- d. yǒu huì bù néng huí jiā
有会不能回家
have meeting not can go home
'have meeting and therefore cannot go home'

In each of the examples given above, there are two VPs. Sometimes, the actions of the two VPs follow a temporal, spatial and/or logical order. For example, in (a) and (b) in the above, 'go to a restaurant' and 'walk over' temporally precede 'eat' and 'shake hands,' respectively. Often in addition to satisfying temporal, spatial or logical requirements, the order of the VPs may signal that the last VP is the core VP, while the preceding ones serve some kind of an adverbial function by indicating the purpose, manner, reason, time, place, etc. of the core VP. In (c), the first VP indicates the manner in which the action of the second verb is carried out (i.e., by air), and in (d), the first VP provides a reason for the second VP. Not only can all the verbs in such VPs be in the active voice, but they can also be in the passive voice as well. The first VPs in (a)-(c) in the following are in the passive voice, as is the second in (d).

- (5.34) a. bèi tāmen jiào qù dǎ le yí dùn
被他们叫去打了一顿
by them call go beat PERF one-CLS
'be called over and beaten by them'
- b. bèi dírén dài qǔ guān le qǐ lái
被敌人逮去关了起来
by enemy catch go close PERF up
'be captured by the enemy and locked up'
- c. bèi lǎoshī tuījiàn shàng dàxué
被老师推荐上大学
by teacher recommend attend university
'be recommended by teacher to go to college'
- d. fàn le fǎ bèi jǐngchá dǎibǔ le
犯了法被警察逮捕了
break PERF law by police arrest LE
'broke the law and was arrested by police'

5.2.3 Adjective Phrases

Like adjectives, APs function mostly as attributives modifying NPs. There are three types: coordinate, endocentric, and adjective-complement (AC) APs.

5.2.3.1 Coordinate AP

Coordinate APs share the same characteristics of coordinate NPs and VPs in that their basic elements, the adjectives, can often be strung together without having any intervening

conjunctions. However, it seems much more common for APs than for either NPs or VPs not to require a conjunction. Normally, these conjunctionless APs have two two-syllable adjectives that are customarily conjoined. A few examples of such APs follow:

- (5.35) a. měiguān dàfāng
美观大方
beautiful natural-and-good-taste
'beautiful, natural and good-taste'
- b. rèqíng yǒuhǎo
热情友好
warm friendly
'warm and friendly'
- c. qiānxū jǐnshèn
谦虚谨慎
modest careful
'modest and careful'
- d. zhōnghòu lǎoshí
忠厚老实
loyal-and-tolerant honest
'loyal, tolerant and honest'
- e. gānjìng zhěngqí
干净整齐
clean tidy
'clean and tidy'
- f. wēnnuǎn shūshì
温暖舒适
warm comfortable
'warm and comfortable'
- g. guānghuī càn làn
光辉灿烂
brilliant magnificent
'brilliant and magnificent'

APs and VPs share more or less a common set of conjunctions and conjunctive adverbs which include *ér* 而 'but, and,' *érqiě* 而且 'and,' and *yòu ... yòu* 又...又 'both...and,' which were discussed previously when addressing coordinate VPs. In addition, APs also share conjunctions with coordinate NPs. These include *hé* 和 'and,' *yǔ* 与 'and,' *háishì* 还是 'or (interrogative),' and *huòzhě* 或者 'or.'

- (5.36) a. dà ér yuán 大而圆
big and round 'big and round'
- b. yòu dà yòu yuán 又大又圆
both big and round 'both big and round'
- c. dà yǔ xiǎo 大与小
big and small 'big and small?'
- d. dà háishì xiǎo ? 大还是小?
big or small 'big or small?'

In (a) and (b), the conjunctions are verbal ones, while in (c) and (d), they are nominal.

5.2.3.2 Endocentric AP

Endocentric APs are composed of an adverbial element and an adjective, with the former always preceding and modifying the latter, the head of the phrase. Modifying adverbials in APs are less complicated than those in VPs. As the following examples indicate, they are typically adverbs (a), demonstrative pronouns (b), or PPs (c).

- (5.37) a. i. hěn dà 很大
very big 'very big'
- ii. dōu piàoliàng 都漂亮
all beautiful 'all beautiful'
- iii. fēicháng (de) dà 非常(地)大
very (DE(ad)) big 'very big'
- b. i. zhème dà 这么大
this big 'this big'
- ii. nàme piàoliàng 那么漂亮
that beautiful 'that beautiful'
- c. i. bǐ wǒ dà 比我大
than I big 'older than I'
- ii. gēn wǒ yíyàng gāo 跟我一样高
with me same tall 'as tall as I'

Following an adverbial, the structural particle *de* 'DE(ad)' is sometimes used, although its usage is seldom obligatory, and is mostly restricted to certain disyllabic adverbs, such as *fēicháng* 非常 'very,' as indicated by the (b) example above. On the other hand, *de* 'DE(ad)' normally is not used when the adverbials are demonstrative pronouns, PPs, or monosyllabic adverbs.

5.2.3.3 Adjective-Complement AP

Like verbs, adjectives can take a complement. The result is an Adjective-Complement AP (AC AP), and as in the case of the VC VPs, the complement can be an adjective, an adverb, a verb or a phrase. Furthermore, the use of the complement particle *de* 'DE(comp)' in such an AP can be optional, obligatory or prohibited.

Now examine (5.38) below. In (a), the complement is a degree adverb, and this particular degree adverb prohibits the use of the complement *de*. In (b), the complement is a number-CLS phrase, and as a rule, such a phrase is not allowed to use the complement *de*. In both cases, these complements behave just as they do following a verb in a VC VP, preventing the appearance of the relevant auxiliary particle. In (c), the complement is an adjective, in (d), a verb, and in (e) a clause. In all three cases, the use of *de* 'DE(comp)' is obligatory:

(5.38)	(A)	(B)
a.	* měi de jí le. 美得极了 beautiful DE(comp) extremely LE ???	měi jí le. 美极了 beautiful extremely LE 'extremely beautiful'
b.	* màn de yìdiǎn 慢得一点 slow DE(comp) one-bit ???	màn yìdiǎn 慢一点 slow one-bit 'slow down a bit'
c.	* è kuài 饿快 hungry quick ???	è de kuài 饿得快 hungry DE(comp) quick 'become hungry quickly'
d.	* téng mào hàn 疼冒汗 pain ooze sweat ???	téng de mào hàn 疼得冒汗 pain DE(comp) ooze sweat 'so painful that (someone)'s sweating.'
e.	* lěng yá chǐ dǎ chàn 冷牙齿打颤 cold teeth shiver ???	lěng de yá chǐ dǎ chàn 冷得牙齿打颤 cold DE(comp) teeth shiver 'so cold that (someone)'s teeth are shuddering'

5.2.4 Prepositional Phrase

Prepositional phrases normally are made up of a preposition and a prepositional object.

The object is typically a nominal element—a noun, an NP or a pronoun.

5.2.4.1 With Nominal Objects

(5.39)	a.	i.	wǎng zhōngguó 往中国 to China 'to China'
		ii.	gēnjù fǎlǜ 根据法律 according-to law 'according to the law'
	b.	i.	guānyú tāmen 关于他们 about they 'about them'
		ii.	chúle nǐ 除了你 except you 'except you'
	c.	i.	zài zhōngguó fànguǎn (chī) 在中国饭馆(吃) at China restaurant (eat) 'eat at a Chinese restaurant'
		ii.	wèile zìyóu hé mínzhǔ 为了自由和民主 for freedom and democracy 'for freedom and democracy'

The two PPs in (a) both have nouns as the prepositional objects, those in (b) have pronouns, and those in (c) NPs; all are nominal elements. Note that Mandarin prepositional objects can be verbal elements as well. This topic is discussed below.

5.2.4.2 With Verbal Objects

- (5.40) a. i. zìcóng kāixué
自从开学
from start-school
'from the start of the school term'
- ii. wèile yǎngjiā
为了养家
for support-a-family
'in order to support a family'
- b. i. chúle piàoliàng
除了漂亮
except beautiful
'except being beautiful'
- ii. yóuyú jǐnzhāng
由于紧张
because tense
'because of being tense'
- c. i. wèile néng tiánbào dùzi
为了能填饱肚子
for can fill belly
'for keeping (oneself) fed'
- ii. yīnwèi shífēn nuǎnhuo
因为十分暖和
because very warm
'because of being very warm'

These examples illustrate that the prepositional object can be a verb (a), an adjective (b), a VP—in this case, an extended VO VP (c-i), or an AP—in this case, an endocentric one (c-ii).

5.2.4.3 Ba PP

While most prepositions in Mandarin have inherent content meaning, there are a few which only serve a grammatical function. One of them is *bǎ* 把. Simply put, a PP with *bǎ* introduces a logical object of a verb and brings that object immediately before the verb (see X. Q. Wu 1996). Now compare the following two sentences:

- (5.41) a. tāmen chī le fàn.
他们吃了饭。
they eat PERF meal
'They ate.'
- b. tāmen bǎ fàn chī le.
他们把饭吃了。
they BA meal eat PERF
'They ate.'

As indicated by the English translations, the two sentences in the above mean exactly the same thing. The difference lies in their structures: (a) is a normal sentence with a normal word order—the object after the verb; (b) comprises a *bǎ* PP, which transposes the object to the preverbal position. While the *bǎ* structure may or may not be used in rendering the meanings of these examples, there are contexts where its use is imperative and others where it is forbidden. A case where it is obligatory is given below:

- (5.42) a. tāmen bǎ yīfu xǐ de hěn gānjìng.
他们把衣服洗得很干净。
they BA clothes wash DE(comp) very clean
'They washed the clothes very clean.'
- b. * tāmen xǐ yīfu de hěn gānjìng.
*他们洗衣服得很干净。
they wash clothes DE(comp) very clean
???

Here, sentence (b)—as opposed to (a)—is ungrammatical because it includes a verbal complement. Verbal complements require that an object precedes its verb. In the sentences below, however—contrary to those above, a *bǎ* PP is not allowed because the transitive verb would then be clause final. Such 'exposed' transitive verbs are avoided in Mandarin.

- (5.43) a. i. tāmen xǐ yīfu
他们洗衣服。
they wash clothes
'They wash clothes.'
- ii. * tāmen bǎ yīfu xǐ
他们把衣服洗
they BA clothes wash
???

- b. i. tāmen chī fàn.
他们吃饭。
they eat meal
'They eat the meal.'
- ii. * tāmen bǎ fàn chī.
他们把饭吃。
they BA meal eat
???

5.2.4.4 Bei PP

Passive voice in Mandarin is sometimes expressed with a *bèi* 被 PP. Like the English PP headed by *by* in sentences such as *It is eaten by the dog*, the Mandarin *bèi* PP is used to indicate the 'doer' of the action of the verb in a sentence. Just as the *bǎ* PP in Mandarin, *bèi* PP always precedes the verb in question. Now examine the following sentences:

- (5.44) a. tāmen chī le fàn.
他们了吃饭。
they eat PERF meal
'They ate.'
- b. fàn bèi tāmen chī le.
饭被他们吃了。
meal BEI they eat PERF
'The food was eaten by them.'

The (a) sentence in the above is closely related to the (b) sentence in meaning; both share the same agent—the doer, the same patient—the receiver of the action, and the same verb. However, they differ in that (a) is a sentence with active voice while (b) is passive. The passive voice in (b) is overtly indicated by the use of the *bèi* PP. It is interesting to note that the verb in a sentence with *bèi* PP cannot be 'exposed' either, just as it is with a *bǎ* structure:

- (5.45) a. i. tāmen xǐ yīfu
他们洗衣服。
they wash clothes
'They wash clothes.'
- ii. * yīfu bèi tāmen xǐ
衣服被他们洗
clothes BEI they wash
???

- b. i. tāmen chī fàn.
他们吃饭。
they eat meal
'They eat the meal.'
- ii. * fàn bèi tāmen chī.
饭被他们吃。
meal BEI they eat
???

In both (a) and (b) above, the use of the passive voice in the second examples has left the transitive verbs without anything following, and consequently, the sentences in these examples are ruled ungrammatical. The *bèi* PP does, however, differ from *bǎ* (and most, if not all, other Mandarin prepositions) in one respect. Just as in English, so too in Mandarin, speakers may omit mention of the agent, the 'doer', in passive sentences. In such cases, *bèi* is still required but its prepositional object—the 'doer'—is lacking; and *bèi* stands immediately before the verb.

- (5.46) a. fàn bèi chī le.
饭被吃了。
meal BEI eat PERF
'The food was eaten.'
- b. yīfu bèi xǐ wán le.
衣服被洗完了。
clothes BEI wash finish PERF
'The clothes have been washed.'

In both (a) and (b), *bèi* precedes the main verb directly, and is not followed by any prepositional object.

5.3 Functional Components

So far, the building blocks of Mandarin sentences, the words in terms of their parts of speech, and the phrases in terms of how they are structured have been described. In this section, we will look at Mandarin sentences from another perspective; their functional components such as subjects, predicates, objects, attributives, adverbials and complements will be discussed. We will try to determine which building block is used to serve which function, or vice versa.

5.3.1 Subjects

Most Mandarin sentences contain two parts: the subject and the predicate with the subject normally preceding the predicate. In a language like English, the subject is almost always a nominal or nominalized constituent, such as a noun, a pronoun or a gerund. In Mandarin, however, verbal (including adjectival) constituents can serve as subjects as well as nominal

constituents. Examples in which nominal subjects are found are:

- (5.47) a. tāmen chī le fàn.
他们吃了饭。
they eat PERF meal
'They ate the meal.'
- b. zhōngguó zài yàzhōu.
中国在亚洲。
China is-at Asia
'China is in Asia.'
- c. sì shì èr de liǎng bèi.
四是二的两倍。
four is two DE(ad) two double
'Four is twice two.'

In (a), the subject is a pronoun, in (b), a proper noun, and in (c), a number. The following are sentences with verbal subjects:

- (5.48) a. zū yījiān wūzi xūyào èrbǎi yuán.
租一间屋子需要二百元。
rent one-CLS room need 200 dollar
'Rent for one room requires \$200.'
- b. xuéxí gōngzuò dōu zhòngyào.
学习工作都重要。
study work both important
'Studying and working are both important.'
- c. kǎo de hǎo méi yòng.
考得好没用。
take-exam DE(comp) good no use
'It is no use to do well in the exam.'
- d. zǎoshàng qù néng kàndào rìchū.
早上去能看到日出。
morning go can see sunrise
'Going in the morning, (one) can see the sunrise.'
- e. ná huíqù tīng huì yǐngxiǎng biérén.
拿回去听会影响别人。
take back listen will affect others
'Taking it back to listen will affect other people.'

The subjects in the above are, respectively, VO VP (a), coordinate VP (b), VC VP (c),

endocentric VP (d), and SV VP (e).¹⁴² Examples of APs as subjects are given below:

- (5.49) a. gānjìng zhěngjié ràng rén shūfu.
干净整洁让人舒服。
clean tidy make person comfortable
'Being clean and tidy gives people comfort.'
- b. tài gānjìng yě bù hǎo.
太干净也不好。
too clean also not good
'Being too clean is also not good.'
- c. màn yìdiǎn bú yàoǐn.
慢一点不要紧。
slow one-bit not matter
'Being a bit slow does not matter.'

The subject APs in the above are coordinate AP (a), endocentric AP (b), and AC AP (c).¹⁴³

5.3.2 Predicates

Mandarin predicates are usually composed of verbs, VPs, adjectives or APs.

- (5.50) a. dōngtiān lěng de hěn.
冬天冷得很。
winter cold DE(comp) ver
'The winter is very cold.'
- b. tāmen chī le fàn.
他们吃了饭。
they eat PERF meal
'They ate the meal.'

In (a), the predicate is an AP, or to be more specific, an AC AP, whereas in (b) it is a VP, or specifically a VO VP. It should be noted that in Mandarin, adjectives or APs do not have to follow a linking verb to serve as predicates, in contrast to their counterparts in languages such as English in which they can never stand alone as predicates. Just as subjects in Mandarin do not always consist of typical subject materials such as nominal elements, predicates in Mandarin do not always contain verbal elements. Sentences in which the predicates are not—for English speakers—of the most intuitive sort are:

¹⁴² For a description of these VPs, refer to Section 5.2.2.

¹⁴³ For a description of these APs, refer to Section 5.2.3.

- (5.51) a. jīntiān xīngqīyī.
今天星期一。
today Monday
'Today is Monday.'
- b. tiānqì zěnmeyàng?
天气怎么样?
weather how
'How is the weather?'
- c. wǒ shíbā.
我十八。
I eighteen
'I am eighteen.'
- d. zhèkuài shǒubiǎo èrbǎi yuán.
这块手表二百元。
this-CLS watch 200 dollar
'This watch is \$200.'

In none of the above sentences is the predicate the typical material for a predicate. Rather, it is a noun in (a), an interrogative pronoun in (b), a number in (c), and a number-CLS phrase in (d). A linking verb is not used in any of these examples, as would be required in English.

5.3.3 Objects

The lack of case marking (e.g., the difference between *I* and *me*) in Mandarin means that what can be used as subjects can also be used as objects. Typically, the object is a nominal element:

- (5.52) a. wó qù kàn tāmen.
我去看他们。
I go see they
'I go to visit them.'
- b. wǒ qù zhōngguó.
我去中国。
I go China
'I go to China.'
- c. èr jiā èr děngyú sì.
二加二等于四。
two plus two equal four
'Two plus two equals four.'

The objects, which are underlined, are the same words as those in (5.47) where they were used as subjects. All are nominal kinds of words, yet just as in the case of the subjects where non-nominal constituents can be used, objects in Mandarin can be served by verbal elements as well.

- (5.53) a. tāmen xūyào zū yījiān wūzi.
他们需要租一间屋子。
they need rent one-CLS room
'They need to rent a room.'
- b. tāmen xǐhuān xuéxí gōngzuò.
他们喜欢学习工作。
they like work study
'They like to study and work.'
- c. wǒ xīwàng kǎo de hǎo.
我希望考得好。
I wish take-exam DE(comp) good
'I hope to do well in the exam.'
- d. wǒ dǎsuàn zǎoshàng qù.
我打算早上去。
I plan morning go
'I plan to go in the morning.'
- e. wǒ yāoqiú ná huíqù tīng.
我要求拿回去听。
I request take back listen
'I request to take it back to listen to.'

These VPs are the same as those we saw earlier in (5.48); that is, they are a VO VP (a), a coordinate VP (b), a VC VP (c), an endocentric VP (d), and a SV VP (e). In the previous examples, these VPs were used as subjects whereas here they serve as the objects of the sentences. As well, APs can serve as objects:

- (5.54) a. wǒ xǐhuān gānjìng zhěngjié.
我喜欢干净整洁。
I like clean tidy
'I like to be clean and tidy.'
- b. tā bù xūyào tài gānjìng.
他不需要太干净。
he not need too clean
'He does not need to be too clean.'

- c. wǒ shìtú màn yìdiǎn
我试图慢一点。
I try slow one-bit
'I try to slow down a bit.'

The coordinate (a), endocentric (b) and AC (c) APs in the above examples are the same as those we saw earlier in (5.49) where they were used as subjects.

5.3.4 Attributives

Subjects and objects of a sentence often contain attributives—the part that modifies the core component of the subject or object. Attributives in Mandarin always go before the head they modify. As discussed earlier, we learned that APs are typical candidates for attributives. However, more categories than APs can serve as attributives in Mandarin. They include pronouns, PPs, number-CLS phrases, and VPs. Examine the following examples:

- (5.55) a. fēicháng míngliàng de jiàoshì
非常明亮的教室
very bright DE(a) classroom
'very bright classroom'
- b. lǎoshī de shū
老师的书
teacher DE(a) book
'the teacher's book'
- c. wǒ hé lìlì de lǎoshī
我和丽丽的老师
I and Lili DE(a) teacher
'my and Lili's teacher'
- d. sāngè lǎoshī
三个老师
three-CLS teacher
'three teachers'

In (a), the attributive is an endocentric AP, and in (b), it is a noun. The attributive in (c) is a coordinate NP which contains a pronoun and a noun. The attributive in (d) is a number-CLS phrase. All are fairly intuitive types of attributives. What is not as intuitive involves VPs. The following illustrate VP attributives:

- (5.56) a. zū fángzi de qián
租房子的钱
rent house DE(a) money
'money for renting the house'
- b. kǎo de hǎo de xuéshēng
考得好的学生
take-exam DE(comp) good DE(a) student
'students who did well in the exam'
- c. zǎoshàng qù de rén
早上去的人
morning go person
'the people who go in the morning'
- d. xuéxí gōngzuò de shíjiān
学习工作的时间
study work DE(a) time
'study and work time'
- e. ná huíqù tīng de yīnyuè
拿回去听的音乐
take back listen DE(a) music
'the music that is taken (back) to listen to'

The VPs in the above are, respectively, VO VP in (a), VC VP in (b), endocentric VP in (c), coordinate VP in (d) and SV VP in (e).

5.3.5 Adverbials

Adverbials are used to modify verbs, adjectives, adverbs or sentences and normally precede the elements they modify. The most typical candidates for adverbials are adverbs and PPs, although adjectives, nouns, verbs, pronouns and their phrases can also be the candidates. The following contain examples of adverbials formed by various words and phrases:

- (5.57) a. tāmen hěn tīnghuà.
他们很听话。
they very obedient
'They are very obedient.'
- b. tāmen wǎng shānshàng pá.
他们往山上爬。
they toward mountain-top climb
'They climb to the mountain top.'

- c. tāmen shùnli de dàodá běijīng.
他们顺利地到达北京。
they smooth DE(ad) arrive Beijing
'They arrived in Beijing smoothly.'
- d. tāmen nàme jiāo'ào.
他们那么骄傲。
they that conceited
'They are that conceited.'

In (a), the adverbial is an adverb which modifies the verb *tīng* 听 'listen'; in (b), it is a PP modifying the verb *pá* 爬 'to climb'; in (c), it is an adjective modifying the verb *dàodá* 到达 'arrive'; in (d), it is a demonstrative pronoun modifying the adjective *jiāo'ào* 骄傲 'conceited.' Rarely adverbials are formed with verbs, and when they are, the auxiliary particle *de* 'DE(ad)' is always used:

- (5.58) a. wǒ huíbì de shuō.
我回避地说。
I evade DE(ad) say
'I said evadingly.'
- b. tā xuányào de zhàn zài nàlǐ.
他炫耀地站在那里。
he show-off DE(ad) stand at there
'He stands there showing off.'

In the above, *huíbì* 回避 'avoid' and *xuányào* 炫耀 'show off' are both verbs, and used here as adverbials modifying the following verb.

5.3.6 Complements

Complements in Mandarin follow the predicate verbs or adjectives of a sentence to provide additional information regarding the verbs or adjectives. Specifically, the additional information may be about the result, direction, degree, quantity, or possibility of the preceding verb or adjective. The candidates for complements include adjectives, verbs, adverbs, PPs and clauses. The following provide examples of resultative complements:

- (5.59) a. wǒ kàn qīngchū le.
我看清楚了。
I look clear LE
'I have seen (it) clearly.'

- b. tāmen chī bǎo fàn le.
他们吃饱饭了。
they eat full meal LE
'They have had enough to eat.'
- c. tā lěng de yǎchǐ dǎchàn.
他冷得牙齿打颤。
he cold DE(comp) teeth shiver
'He is so cold that his teeth are chattering.'

Resultative complements denote the result of an action or the change of a state. In (a), the predicate verb *kàn* 看 'look' is followed by a complement that constitutes an adjective *qīngchū* 清楚 'clear,' which indicates that the act of looking ends in successfully seeing. Sometimes the complement can be followed by the object of the verb, as in (b) where the presence of the complement signifies that 'they eat to the point of being full.' In (c), the complement takes what we may call a complement (i.e., DE(comp)); structurally it is a clause complete with a subject and a predicate.

Besides indicating results, complements may give information about the direction of the verb or adjective. Unlike resultative complements that can be composed of various types of words or phrases, the directional set usually consists of directional verbs such as *lái* 来 'come' and *qù* 去 'go.' The following table presents simple and compounded directional verbs that can occur as complements.

(5.60)

	<i>lái</i> 来	'come'	<i>qù</i> 去	'go'	
<i>shàng</i> 上	'go up'	<i>shànglái</i>	'come up'	<i>shàng qù</i>	'go up'
<i>xià</i> 下	'go down'	<i>xiàlái</i>	'come down'	<i>xià qù</i>	'go down'
<i>jìn</i> 进	'enter'	<i>jìnlái</i>	'come in'	<i>jìn qù</i>	'go in'
<i>chū</i> 出	'exit'	<i>chūlái</i>	'come out'	<i>chūqù</i>	'go out'
<i>huí</i> 回	'return'	<i>huílái</i>	'come back'	<i>huí qù</i>	'go back'
<i>guò</i> 过	'come over'	<i>guòlái</i>	'come over'	<i>guò qù</i>	'go over'
<i>qǐ</i> 起	'rise'	<i>qǐlái</i>	'rise'		

In this table, there are altogether nine simple directional verbs, seven in the left-most column and two in the first row. They combine to yield thirteen compounded directional verbs. All these verbs can be used as directional complements.

- (5.61) a. tāmen gānggāng pá shàngqù.
他们刚刚爬上去。
they just climb go-up
'They have just climbed up.'

- b. tā ná lái yìběn shū.
他拿来一本书。
he bring come one-CLS book
'He brought a book.'
- c. qìchē kāi guòlái le.
汽车开过来了。
car drive come-over LE
'The car drove over (here).'
- d. tāmen zǒu le jìnqù.
他们走了进去。
they walk PERF go-in
'They walked inside.'

Resultative complements and directional ones are not mutually exclusive. In fact, the directional verbs used in the above may perform a resultative function. For instance, in (a), *shàngqù* 上去 'go up' is achieved through *pá* 爬 'climb,' and in (b), the fact that the book is now here is the result of *ná* 拿 'to take;' without the action of *ná* 拿, the book would not *lái* 'to come.'

Meanings of directional verbs are sometimes extended and become more abstract. Used as complements, they then no longer denote merely change over tangible spatial parameters, but something more abstract:

- (5.62) a. tīngdào xiāoxi, tā kū qǐlái.
听到消息, 他哭了起来。
hear news he cry PERF rise
'Upon hearing the news, he began to cry.'
- b. nàgè niánqīng gēshǒu gānggāng hóng qǐlái.
那个年轻歌手刚刚红起来。
that-CLS young singer just red rise
'That young singer has just become popular.'
- c. tāmen dǎsuàn zhù xiàqù.
他们打算住下去。
they plan live go-down
'They plan to continue to live (there).'
- d. tā gāng sūxǐng guòlái, yòu hūn guòqù le.
他刚苏醒过来, 又昏过去了。
he just wake come-over, again faint go-over LE
'He had just come to, then he fainted again.'

The meaning of the verb *qǐlái* 起来 'rise' which denotes the movement from a lower point to a higher one is extended to mean the start of action in (a), and the change of a state in (b). In

(c), the directional verb *xiàqù* 下去 'go down' is extended to mean 'carrying on' or 'continuation'. In (d), the meaning of *guòlái* 过来 'come over' and *guòqù* 过去 'go over' are extended in the sense that waking up from fainting is deemed as coming back, while fainting itself is considered as going away.

Some resultative and directional complements become complements of possibility/ability if they take the complement *de*. In fact, in a possibility/ability complement, the complement *de* is no longer a mere functional word, but one with a content meaning, 'possible; able', and it has a negative variation *bù* 'not.' Now look at the following sentences:

- (5.63) a. zhègè jùzi wǒ kàn dǒng le.
这个句子我看懂了。
this-CLS sentence I read understand LE
'I understood this sentence.'
- b. zhègè jùzi wǒ kàn de dǒng.
这个句子我看得懂。
this-CLS sentence I read DE(comp) understand
'I can understand this sentence.'
- c. zhègè jùzi wǒ kàn bù dǒng.
这个句子我看不懂。
this-CLS sentence I read not understand
'I cannot understand this sentence.'

The sentence in (a) is one with a resultative complement formed by an adjective *dǒng* 懂 'understand.' When the complement *de* is inserted between the complement and the preceding verb, the complement takes on the meaning of 'ability to understand' (b). The opposite meaning of 'unable to understand' is expressed by substituting *de* with the negative morpheme *bù*.

In addition to results, directions, and ability, complements can indicate degrees of an action or state denoted by an adjective or a verb. These complements are always preceded by the complement *de*, and they can be formed by degree adverbs, adjectives, interrogative pronouns and various phrases. Examples of degree complements are:

- (5.64) a. tāmen chàng de hěn hǎo.
他们唱得很好。
they sing DE(comp) very good
'They sing very well.'
- b. tāmen chàng de hǎo de duō.
他们唱得好得多。
they sing DE(comp) good DE(comp) more
'They sing much better.'

- c. tāmen chàng de zènmeiyàng?
他们唱的怎么样?
they sing DE(comp) how
'How (well) do they sing?'
- d. wèntí jiǎndān de hěn.
这个问题简单得很。
problem simple DE(comp) very
'The problem is very simple.'

The degree complement is an endocentric AP (a), an AC AP (b), an interrogative pronoun (c), or an adverb (d). The predicate is a verb ((a), (b), and (c)), or an adjective (d). When the predicate is a transitive verb that has an object, that verb must either be reduplicated or have the object moved in front of it. For instance, if an object is added to the first sentence in (5.64), it would either look like (a) below where the verb is reduplicated or (b) where the object *gē* 歌 'song' is moved before the verb. In any event, the object and the degree complement cannot both follow the predicate verb.

- (5.65) a. tāmen chàng gē chàng de hěn hǎo.
他们唱歌唱得很好。
they sing song sing DE(comp) very good
'They sing very well.'
- b. tāmen gē chàng de hěn hǎo.
他们歌唱得很好。
they song sing DE(comp) very good
'They sing very well.'

Complements can also denote quantity of duration and frequency:

- (5.66) a. tāmen děng le liǎnggè zhōngtóu.
他们等了两个钟头。
they wait PERF two-CLS hour
'They waited for two hours.'
- b. nàduǒ huā hóng le yíge xīngqī.
那朵花儿红了一个星期。
that-CLS flower red PERF one-CLS week
'That flower was red for a week.'
- c. tāmen qù le yíci zhōngguó.
他们去了一次中国。
they go PERF one-time China
'They have been to China once.'

- d. tā bǎ fàn rè le sānhuái.
他把饭热了三回。
he BA food hot PERF three-time
'He heated up the food three times.'

Quantity complements are normally composed of number-CLS phrases, as in (c) and (d), or of endocentric NP in which the attributive component is a number-CLS phrase, as in (a) and (b).

5.3.7 Functional Usage of Various Words and Phrases

5.3.7.1 Nominals

Both nouns and NPs serve primarily as a subject or an object, although sometimes they also serve as an attributive. In rare cases they can serve as a predicate, or an adverbial.

- (5.67) a. bàba māmā xué yīngyǔ.
爸爸妈妈学英语。
father mother study English
'The parents study English.'
- b. yīngyǔ hé wǔdào jiémù
音乐和舞蹈节目
music and dance program
'music and dance programs'
- c. jīntiān xīngqīyī
今天星期一。
today Monday
'today is Monday.'
- d. tā yíge rén xuéxí.
他一个人学习。
he one-CLS person study
'He studies alone.'

In (a), the NP *bàba māmā* 爸爸妈妈 'father and mother' appears as a subject, whereas the noun *yīngyǔ* 英语 'English' as an object. In (b), the underlined NP is an attributive element of the larger NP, in (c), the underlined noun is a predicate, and in (d), the underlined NP serves as an adverbial. Note the absence of a linking verb between the subject and the NP predicate in (c), which structure is not found in English.

Pronouns are another type of nominal element. Mandarin pronouns can serve as all major syntactic components of a sentence including the subject (a), attributive and predicate (b), object (c), adverbial (d) and complement (e):

- (5.68) a. tā chī píngguǒ.
他吃苹果。
he eat apple
'He eats apple.'
- b. tāde wénzhāng zěnmeyàng?
他的文章怎么样?
he DE article how
'How is his article?'
- c. tā zhīdào duōshǎo?
他知道多少?
he know how much
'How much does he know?'
- d. zhègè jùzi zhème fānyi.
这个句子这么翻译?
this CLS sentence this-way translate
'This sentence (should) be translated this way.'
- e. tā fānyi de zěnmeyàng?
他翻译得怎么样?
he translate DE how
'How (well) did he translate (it)?'

Among these functions, all three types of pronouns—personal, demonstrative, and interrogative—can serve as subjects, objects and attributives, but only some demonstrative and interrogative pronouns can serve as adverbials, and only the interrogative pronoun *zěnmeyàng* 怎么样 'how' can be used as a predicate or a complement.

5.3.7.2 Verbs and VPs

The primary function of verbs or VPs is to serve as predicates of a sentence, although they can also serve other functions, such as subjects, as shown in (a) and (b), and objects, as shown in (c) and (d):

- (5.69) a. zū yìjiān wūzi xūyào èrbǎi yuán.
租一间屋子需要二百元。
rent one-CLS room need 200 dollar
'Rent for one room requires \$200.'
- b. kǎo de hǎo méi yòng.
考的好没用。
take-exam DE(comp) good no use
'It is no use to do well in the exam.'

- c. tāmen xūyào zū yìjiān wūzi.
他们需要租一间屋子。
they need rent one-CLS room
'They need to rent a room.'
- d. wǒ xīwàng kǎo de hǎo.
我希望考得好。
I wish take-exam DE(comp) good
'I hope to do well in the exam.'

5.3.7.3 Adjectives and APs

The major function of an adjective or AP is of course to serve as an attributive, modifying primarily nouns. However, Mandarin adjectives can serve as almost all the different functional components of a sentence. In particular, some can be subjects, objects, predicates, complements, adverbials as well as attributives. The following gives an example each of these functions using the adjective *gānjìng* 干净 'clean' and *zhěngjìe* 整洁 'tidy' as examples.

- (5.70) a. gānjìng ràng rén juéde shūfu.
干净让人觉得舒服。
clean let person feel comfortable
'Being clean makes a person feel comfortable.'
- b. fángzi hěn gānjìng.
房子很干净。
house very clean
'The house is very clean.'
- c. tā xǐhuān gānjìng he zhěngjìe.
他喜欢干净和整洁。
he like clean and tidy
'He likes to be clean and tidy.'
- d. yīfu xǐ gānjìng le.
衣服洗干净了。
clothes wash clean PERF.
'The clothes have been washed clean.'
- e. tā gāngānjìngjìng de shàngxué qù le.
他干干净净地上学去了。
he clean DE go-school go PERF.
'He went to school, clean.'

The adjective *gānjìng* 'clean' or its reduplicated form is used as a subject (a), a predicate (b), an object (c), a verb complement (d) and an adverbial (e). Needless to say, not all adjectives perform all of these functions; rather, many perform only a sub-set of them. For instance, many

monosyllabic adjectives cannot serve as adverbials. Disyllabic adjectives, on the other hand, are mostly in reduplicated forms when serving as adverbials.

5.3.7.4 PPs

A PP serves mostly as an adverbial (a-c), but sometimes it is also a complement (d) or attributive (e) of a Mandarin sentence:

- (5.71) a. diànyǐng cóng shídiǎn kāishǐ.
电影从十点开始。
movie from 10-o'clock start
'The movie starts at 10 o'clock.'
- b. yóuyú shēngbìng, tā méi shàngbān.
由于生病, 他没上班。
because being-sick he didn't go-to-work
'Because he is sick, he did not go to work.'
- c. ànzhào guīdìng, tā wǔdiǎn xiàbān.
按照规定, 我五点下班。
according-to regulation he five-o'clock go-off-work
'According to regulations, he goes off work at five o'clock.'
- d. tāmen shuì zài dìshàng.
他们睡在地上。
they sleep on floor
'They sleep on the floor.'
- e. wǒ jiè le yìběn guānyú zhōngguó de shū.
我借了一本关于中国的书。
I borrow LE one-CLS about China DE book
'I have borrowed some books about China.'

5.3.7.5 Adverbs

The main function of adverbs is to act as adverbials of sentences.

- (5.72) a. píngguǒ hěn hǎochī.
苹果很好吃。
apple very delicious
'Apples are very delicious.'
- b. nǐ liǎ dōu qù.
你俩都去。
you two both go
'You both go.'

- c. tāmen cái lái.
他们才来。
they just-now come
'They have just arrived.'
- d. tāmen chángcháng qù zhōngguó.
他们常常去中国。
they often go China
'They often go to China.'
- e. tāmen jiǎnzhí fēng le.
他们简直疯了。
they almost mad PERF
'They have almost gone mad.'
- f. wǒmen hùxiāng xuéxí.
我们互相学习。
we mutually learn
'We learn from each other.'
- g. xiànzài dàyuē sāndiǎn.
现在大约三点。
now approximately three-o'clock
'It is about three o'clock now.'

In all the sentences, the underlined adverbs serve as an adverbial of some kind. Both the adverbs in (a) and (e) modify an adjective. The former is part of an AP modifying an adjective; the latter modifies a predicate adjective. The adverb in (g) modifies a number-CLS phrase, while those in the rest of the sentences modify a verb. In addition to being adverbials, a small number of adverbs can serve as complements as well:

- (5.73) a. fángzi dà de hěn.
房子大得很。
house big DE very
'The house is very big.'
- b. wǒ mǎi quán le cáiliào.
我买全了材料。
I buy all PERF material
'I have bought all the materials.'
- c. zhège diànyǐng hǎo jí le.
这个电影好极了。
this-CLS movie good extremely LE
'This movie is extremely good.'

In (a), the underlined adverb is the complement of the resultative structure which contains characteristically an adjective followed by the resultative *de*, which in turn is followed by a complement. In (b), the adverb serves as the complement of the verb *mǎi* 买 'buy,' and in (c), the adverb is the complement of the adjective *hǎo* 好 'good.'

5.3.7.6 Numbers

Normally, numbers can perform the functions of a subject, predicate, adverbial, complement or object:

- (5.74) a. sìshí shì shuāngshù.
四十是双数。
forty be double-number
'Forty is an even number.'
- b. tā shíbā.
他十八。
he eighteen
'He is eighteen.'
- c. sān jiā èr dé wǔ.
三加二得五。
three plus two get five
'Three plus two equals five.'
- d. ta chūyī lái.
他初一来。
he first day of the month come
'He comes the first day of the month.'
- e. tā pǎo dìyī.
他跑第一。
he run first
'He is first in the race.'

In (a), the subject is a whole number, so is the predicate in (b) and the object in (c). In (d), an ordinal number serves as the time adverbial modifying the verb and in (e) another ordinal number acts as the complement of the verb.

5.4 Aspects and Negation

In languages such as English, verbs change their forms to denote tense and aspect with or without a time noun or adverb. In contrast, Mandarin tense is not marked by verb-form changes, but is expressed by time words such as *zuótiān* 昨天 'yesterday,' *jīntiān* 今天 'today,' and *gāngcái*

刚才 'just now'. Mandarin aspects are expressed with three auxiliary particles:¹⁴⁴ the progressive particle *zhe* 着, the perfective particle *le* 了, and the experiential particle *guo* 过, and two adverbs: *zhèng(zài)* 正(在) and *jiāng(yào)* 将(要). In this section, these aspect markers and how they denote aspects in Mandarin will be examined.

5.4.1 The Perfective Aspect

In English, the perfective aspect is expressed with the verb complex *have V-ed* as in, *I have arrived*. In Mandarin, it is expressed with the auxiliary particle *le*, that is suffixed to the verb or adjective. Consider the following sentences:

- (5.75) a. wǒ dào le.
我到了。
I arrive PERF
'I have arrived.'
- b. wǒ chī le fàn le.
我吃了饭了。
I eat PERF meal LE
'I have eaten.'
- c. tāmen qù le zhōngguó.
他们去了中国。
they go PERF China
'They have gone to China.'
- d. wǒ lèi le.
我累了。
I tired PERF
'I am tired./I have become tired.'

Complements of duration and frequency have an inherent meaning of completion; that is, the action or the state denoted by the predicate verb or adjectives 'has occurred' within the time frame denoted by the complement. Because of this quality, these complements are often used in conjunction with *le* (a and b), although when they co-occur with a time noun which points to a future time, *le* is not used (c):

¹⁴⁴ Recent studies by Ross (1995) and Z. S. Zhang (1996) have found that the three aspect markers are not always purely aspectual but may mark tense in certain contexts. Space here does not allow a probe into the issues involved. Interested readers are referred to these two authors for details.

- (5.76) a. tā děng le liǎnggè zhōngtóu.
他等了两个钟头。
he wait PERF three-CLS hour
'He waited for 2 hours.'
- b. tā bǎ fàn rè le sānhuǐ.
他把饭热了三回。
he BA food hot PERF three-time
'He heated up the food three times.'
- c. tā míngtiān děng liǎnggè zhōngtóu.
他明天等两个钟头。
he tomorrow wait three-CLS hour
'He will wait for two hours tomorrow.'
- d. tā míngtiān bǎ fàn rè sānhuǐ.
他明天把饭热三回。
he tomorrow BA food hot three-time
'He will heat up the food three times tomorrow.'

If the verb takes a simple resultative complement, the perfective *le* has to follow the complement:

- (5.77) a. wǒ kàn qīngchū le.
我看清楚了。
I look clear PERF
'I have seen (it) clearly.'
- b. tāmen chī bǎo le fàn.
他们吃饱了饭。
they eat full PERF meal
'They have had enough to eat.'

The presence of the durational complement in (a) or the frequency complement in (b) normally also requires the use of *le* (or *guo*). Without *le* (or *guo*), these sentences would normally be grammatical. However, when these complements appear in imperative sentences, *le* is not used:

- (5.78) a. kàn qīngchū!
看清楚!
look clear
'See clearly!'

- b. děng liǎnggè zhōngtóu!
等两个钟头!
wait two-CLS hour
'Wait for two hours!'
- c. bǎ fàn rè sānhuǐ!
把饭热三回!
BA food hot three-time
'Heat the food three times!'

When the verb has an object, it has to follow *le*, that is, the object cannot intervene between the verb and its object. However, *le* can be omitted if it co-occurs with the sentential particle *le*. When it is omitted, the perfective meaning is carried by the sentential particle in addition to its functional meaning at the sentence level.

- (5.79) a. wǒ chī (le) fàn le.
我吃了饭了。
I eat (PERF) meal LE
'I have eaten.'
- b. tāmen qù (le) zhōngguó le.
他们去(了)中国了。
they go (PERF) China LE
'They have gone to China.'

5.4.2 The Experiential Aspect

Mandarin has an aspect marker that does not have a formal counterpart in English. This is the so-called experiential particle *guo*. Suffixed to the predicate verb or adjective, this particle denotes that an action or a state has been experienced.

- (5.80) a. tāmen qù guo zhōngguó.
他们去过中国。
they go EXP China
'They have been to China.'
- b. tāmen chī guo lǐzhī.
他们吃过荔枝。
they eat EXP litchi
'They have had litchi.'

While both the perfective *le* and experiential *guo* can encode an event or state that has happened or existed, *guo* has the additional meaning that the action or state has been experienced. Now compare the following with the above two sentences:

- (5.81) a. tāmen qù le zhōngguó.
他们去了中国。
they go PERF China
'They went/have gone to China.'
- b. tāmen chī le lǐzhī.
他们吃了荔枝。
they eat PERF litchi
'They ate/have eaten litchi.'

The sentence (a) in (5.80) is identical to (a) in (5.81) except for the post-verbal aspectual particle. The former (a) with *guo* stresses the fact that 'they have had the experience of visiting China, whereas the latter (a) with *le* expresses that the act of going to China is completed. The (b) sentences in them are likewise related, that is, the former (b) with *guo* means that 'they have had the experience of eating litchi', whereas the latter (b) with *le* states that the action of eating has been completed. The sentences with *guo* do not normally indicate whether the action has just been completed or was done a while ago. Thus, understandably, *guo* is often used in conjunction with the experiential adverb *céngjīng* 曾经 'once; at one time,' which is not normally used with the perfective *le*. Examine the following grammatical examples:

- (5.82) a. tāmen céngjīng qù guo zhōngguó.
他们曾经去过中国。
they once go EXP China
'They have been to China.'
- b. tāmen céngjīng chī guo lǐzhī.
他们曾经吃过荔枝。
they once eat EXP litchi
'They have had litchi.'

Now compare them with the ungrammatical examples in (5.83):

- (5.83) a. * tāmen céngjīng qù le zhōngguó.
他们曾经去了中国。
they once go PERF China
???
- b. * tāmen céngjīng chī le lǐzhī.
他们曾经吃了荔枝。
they once eat PERF litchi
???

Like the perfective particle *le*, the experiential particle *guo* must precede the object by immediately following the verb (a), but it must follow a simply resultative complement (b):

- (5.84) a. tāmen chī guo lǐzhī.
他们吃过荔枝。
they eat EXP litchi
'They have had litchi.'
- b. wǒ kàn qīngchu guo.
我看清楚过。
I look clear EXP
'I have had the experience of seeing (it) clearly.'

Yet, unlike the perfective particle *le*, which can precede a directional complement, *guo* must follow it.

- (5.85) a. tāmen zǒu le jìnqù.
他们走了进去
they walk PERF enter
'They walked inside.'
- b. tāmen zǒu jìnqù guo.
他们走进去过。
they walk enter EXP
'They have had the experience of going inside.'
- c. * tāmen zǒu guo jìnqù.
他们走过进去
they walk EXP enter
???

5.4.3 The Progressive Aspect

English has a progressive aspect which is expressed by the verb complex *be V-ing* as in *He is eating*. Mandarin also marks this aspect grammatically, and the devices used are a post-verbal particle *zhe* and a pre-verbal adverb *zhèngzài* (or, simply, *zhèng* or *zài*). The particle and the adverb may be used separately or simultaneously, and may be used together with a sentential particle *ne* as well.¹⁴⁵

¹⁴⁵ See Section 4.1.10 for a description of Mandarin particles.

- (5.86) a. tāmen zhèngzài chī fàn.
他们正在吃饭。
they PROG eat meal
'They are eating their meal.'
- b. tāmen chī zhe fàn ne.
他们吃着饭呢。
they eat PROG meal NE
'They are eating their meal.'
- c. tāmen zhèngzài chī zhe fàn ne.
他们正在吃着饭呢。
they PROG eat PROG meal NE
'They are eating their meal.'

In addition to verbs or activities that can last for a designated period of time, the Mandarin progressive markers can work with stative verbs and adjectives as well.

- (5.87) a. tāmen zhèng è zhe dùzi ne.
他们正饿着肚子呢。
they PROG hungry PROG stomach NE
'They are hungry.'
- b. shuǐ rè zhe ne.
水热着呢。
water hot PROG NE
'The water is (currently) hot.'
- c. nà shíhou, tā zhèng ài zhe nàge yīshēng ne.
那时候, 他正爱着那个医生呢。
that time he PROG love PROG that-CLS doctor NE
'At that time, he was in love with that doctor.'
- d. tāmen chuān zhe xīn yīfu.
他们穿着新衣服。
they wear PROG new clothes
'They are wearing new clothes.'

In (a) and (b) above, *zhe* follows an adjective, and in (c), it follows a stative verb.

5.4.4 Negation

Previously, we discussed various components of a Mandarin sentence and demonstrated their structures and usage with a large number of sentence examples. In this section, how these sentences or their predicates are negated will be discussed. There are two basic negative

morphemes in Mandarin: *bù* 不, and *méi* 没. The verb *shì* 是 'to be' is always negated by *bù*, whereas the existential verb *yǒu* 有 'have; there is' is always negated by *méi*. The two basic negative morphemes can also combine with the two verbs to form complex negative forms *búshì* or *méiyǒu*. Each of these four negative forms is used differently from the others. Now look at negation by *bù*.

- (5.88) a. wǒ bù xǐhuān tāmen.
我不喜欢他们。
I not like they
'I don't like them.'
- b. nàge xuésheng bú yònggōng.
那个学生不用功。
that student not hardworking
'That student is not hardworking.'

In (a), *bù* negates a predicative verb while in (b), it negates a predicative adjective. Both predicates denote some kind of current state. In contrast to *bù*, *méi* or *méiyǒu* normally negates a predicate that denotes a past action or experience, and when they do, they are often used alongside the experiential aspect marker, *guo*.

- (5.89) a. wǒ méi(yǒu) xǐhuān guò tāmen.
我没有喜欢过他们。
I not like EXP they
'I have not/never liked them.'
- b. nàge xuésheng méi(yǒu) yònggōng guò.
那个学生没有用功过。
that student not hardworking EXP
'That student has not/never been hardworking.'

In comparison, *méi(yǒu)* cannot be used alongside the perfective particle *le*, because *méi(yǒu)* is the negative form of *le*. Semantically, the situation described by either one can be true, but not both. Thus, the following sentences in which both are found are ungrammatical:

- (5.90) a. * wǒ méi(yǒu) xǐhuān le tāmen.
我没有喜欢了他们。
I not like PEEF they
???

- b. * nàge xuésheng méi(yǒu) yònggōng le.
那个学生没有用功了。
that student not hardworking PERF
???

Compared with the other negative forms which negate primarily predicates, the extended form *búshì* normally negates a sentence:

- (5.91) a. wǒ búshì bù xǐhuān tāmen.
我不是不喜欢他们。
I not not like they
'It is not the case that I don't like them.'
- b. wǒ búshì méi(yǒu) xǐhuān guò tāmen.
我不是没有喜欢过他们。
I not not like EXP they
'It is not the case that I have not/never liked them.'

5.5 Interrogative Sentences

There are four types of interrogative sentences in Mandarin: yes-or-no questions that require either a positive or a negative answer; wh-questions that are signaled by an interrogative pronoun; choice questions that require a selection, and counterfactual questions that express doubt, incredulity, or impossibility.

5.5.1 Yes-or-No Questions

This type of interrogative sentence is similar to the English yes-or-no questions (e.g., *Do you like apples?—Yes, I do./No, I don't.*) in that they require a simple answer, either positive or negative. Such Mandarin questions are formed in two ways, one of which is by adding an interrogative sentential particle *ma* 吗 at the end of a normal sentence:

- (5.92) a. nǐ xǐhuān píngguǒ ma?
你喜欢苹果吗?
you like apple MA
'Do you like apples?'
- b. nǐ è ma?
你饿吗?
you hungry MA
'Are you hungry?'

- c. tāmen qù guo zhōngguó ma?
他们去过中国吗?
they go EXP China ma
'Have they been to China?'
- d. nǐ chī le ma?
你吃了吗?
you eat PERF MA
'Have you eaten?'
- e. tāmen zhèngzài chī zhe fàn ma?
他们正在吃着饭吗?
they PROG eat PROG meal MA
'Are they eating their meal?'

The answers to these questions are often not formed as easily as their English counterparts which is either 'yes' or 'no' with or without a short statement following. The positive answer in Mandarin is often formed by the main verb or adjective of the predicate. For example, the positive answers to the above questions are formed as:

- (5.93) a. (wǒ) xǐhuān. (我) 喜欢。
(I) like
'Yes, I do.'
- b. (wǒ) è. (我) 饿。
(I) hungry
'Yes, I am.'
- c. (tāmen) qù guo. (他们) 去过。
(they) go EXP
'Yes, they have.'
- d. (wǒ) chī le. (我) 吃了。
I eat PERF
'Yes, I have eaten.'
- e. shìde. 是的。
yes
'Yes.'

Negative answers are formed by the same verb or adjective preceded by the negative morpheme *bù* or *méi*. For instance, the negative answers to questions in (a) to (c) in the above are:

- (5.94) a. (wǒ) bù xǐhuān. (我) 不喜欢。
(I) not like
'No, I don't.'
- b. (wǒ) bú è. (我) 不饿。
(I) not hungry
'No, I am not.'
- c. (tāmen) méi qù guo. (他们) 没去过。
(they) not go EXP
'No, they have not.'

Another way of asking the same questions is either to reduplicate the verb and, at the same time, insert a negative morpheme *bù* or *méi* between the two identical verbs, or, in some cases, insert a *shì-bú-shì* 'be-not-be' before the verb. For instance, the same questions in (5.92) can be formed as follows:

- (5.95) a. nǐ xǐhuān-bù-xǐhuān píngguǒ?
你喜欢不喜欢苹果?
you like-not-like apple
'Do you like apples?'
- b. nǐ è-bú-è?
你饿不饿?
you hungry-not-hungry
'Are you hungry?'
- c. tāmen qù-méi-qù guo zhōngguó?
他们去没去过中国?
they go-not-go EXP China
'Have they been to China?'
- d. nǐ chī-méi-chī?
你吃没吃?
you eat-not-eat
'Have you eaten?'
- e. tāmen shì-bú-shì zhèngzài chī zhe fàn?
他们是不是正在吃着饭?
they be-not-be PROG eat PROG meal
'Are they eating their meals?'

Although the same questions can be asked in two different forms, answers to them are the same, as given in (5.93) and (5.94).

5.5.2 Wh-Questions

In this type of question, one always finds an interrogative pronoun (henceforth, a wh-word), such as *shuí* 'who,' *wèishénme* 'why,' *nǎlǐ* 'where,' *shénme* 'what,' and so forth. Examples are given below:

- (5.96) a. shuí xǐhuān píngguǒ?
谁喜欢苹果?
who like apple
'Who likes apple?'
- b. lǎoshī xǐhuān shénme?
老师喜欢什么?
teacher like what
'What does the teacher like?'
- c. píngguǒ zài nǎlǐ?
苹果在那里?
apple be-at where
'Where is the apple?'
- d. lǎoshī xǐhuān shénme píngguǒ?
老师喜欢什么苹果?
teacher like what apple
'What apples does the teacher like?'
- e. lǎoshī shénme shíhou chī píngguǒ?
老师什么时候吃苹果?
teacher what time eat apple
'When does the teacher have an apple?'
- f. píngguǒ de wèidào zěnmeyàng?
苹果的味道怎么样?
apple de(a) taste how
'How does the apple taste?'
- g. lǎoshī wèishénme xǐhuān píngguǒ?
老师为什么喜欢苹果?
teacher why like apple
'Why does the teacher like apples?'

Unlike English, in which the wh-words are almost always at the beginning of a wh-question, Mandarin questions with such morphemes always have them where 'they should be', namely, they remain in their logical positions as their non-interrogative counterparts would be in a regular statement, and there is no so-called movement (or preposing) of the wh-word. Compare the underlined words in (a) to (f) above with those in (a) to (f) below. Note that the statements can be potential answers to the questions.

- (5.97) a. lǎoshī xǐhuān píngguǒ.
老师喜欢苹果。
teacher like apple
'The teacher likes apples.'
- b. lǎoshī xǐhuān píngguǒ.
老师喜欢苹果。
teacher like apple
'The teacher likes apples.'
- c. píngguǒ zài kuāng lǐ.
苹果在筐里。
apple be-at basket inside
'Apples are in the basket.'
- d. lǎoshī xǐhuān hóng píngguǒ.
老师喜欢红苹果。
teacher like red apple
'The teacher likes red apples.'
- e. lǎoshī zǎoshàng chī píngguǒ.
老师早上吃苹果。
teacher morning eat apple
'The teacher has an apple in the morning.'
- f. píngguǒ de wèidào hěn tián.
苹果的味道很甜。
apple de(a) taste very sweet
'The apples are very sweet.'

Structurally, the Mandarin wh-questions resemble English echo questions, such as the second question in the following dialogues:

- (5.98) a. A: Where did you go?
B: I went to the moon.
A: You went where?
- b. A: When did you get up.
B: I got up at midnight.
A: You got up when?

- c. A: How did you open it?
B: I opened it with a knife.
A: You opened it with what?
- d. A: Which one did you give to him?
B: I gave the pink one to him.
C: You gave which one to him?

Unlike English echo questions, the Mandarin wh-questions do not normally carry an incredulous tone.

5.5.3 Choice and Counterfactual Questions

There is a type of Mandarin question which presents two or more choices, connected by the conjunctions (*shì*) ... *háishì*... 是...还是... '...or...' The following are examples. Structurally, the choices can be NPs (a), VPs (b), or S-bars—clauses (c).

- (5.99) a. nǎinai xǐhuān hóngde háishì lǜde?
奶奶喜欢红的还是绿的?
grandma like red or green
'Does grandma like the red one or the green one?'
- b. bàba qù zhōngguó háishì qù xīnjiāpō?
爸爸去中国还是去新加坡?
dad go China or go Singapore
'Does dad go to China or Singapore?'
- c. shì nǐ lái háishì wǒ qù?
是你来还是我去?
you come or I go
'Do you come or do I go?'

The answer to such a question is, as can be expected, one of the choices presented:

- (5.100) a. (nǎinai xǐhuān) hóngde.
(奶奶喜欢) 红的。
(grandma like) red
'(Grandma likes) red.'
- b. (bàba) qù xīnjiāpō?
(爸爸) 去新加坡。
(dad) go Singapore
'(Dad) goes to Singapore.'

- c. wǒ qù.
我去。
I go
'I go.'

Still another type of Mandarin question is called a counterfactual question. These are questions which express the kind of doubt as expressed in *Isn't it true that...?* They are formed by using *búshì* before the predicate and the sentential question particle *ma* at the end of the question.

- (5.101) a. nǐ búshì chī guò fàn le ma?
你不是吃过饭了吗?
you BUSHI eat EXP meal MA
'Haven't you already eaten?'
b. wǒ búshì tíxǐng guò nǐ ma?
我不是提醒过你吗?
I BUSHI remind EXP you MA
'Didn't I remind you?'

Another type of counterfactual question which expresses doubt, incredulity or impossibility is formed by using *nándào* 难道 before the predicate and optionally *ma* or *bùchéng* 不成 at the end of the sentence,:

- (5.102) a. nǐ méi chīfàn, nándào bú è (ma) ?
你没吃饭, 难道不饿?
you not eat, NANDAO not hungry MA
'You haven't eaten. Aren't you hungry?'
b. wǒ zài gōngzuò, nándào nǐ kànbújiàn?
我在工作, 难道你看不见?
I be-at work, NANDAO you can't-see
'I am working. Can't you see?'
c. nǐ bù xiǎo le, nándào yào wǒ wèi nǐ bùchéng?
你不小了, 难道要我喂你不成?
you not young LE NANDAO need me feed you BUCHENG
'You are not young. Do you (actually) need me to feed you?'

5.6 Complex Sentences

A complex sentence in Mandarin is made up of independent clauses. Although its clauses often resemble sentences, it constitutes one sentence. In the first place, it has one overall sentence intonation; second, it has a clear and distinctive pause at the end, and third, its clauses, albeit independent, are closely and logically related. Syntactically, these clauses are related by the

ordering of the clauses or by the use of conjunctions. Unlike English in which complex sentences without the use of conjunctions are quite rare, such sentences are quite common in Mandarin. The following are some examples:

- (5.103) a. jiù de bú qù, xīn de bù lái.
旧的不去, 新的不来。
old DE(a) not go, new DE(a) not come
'The new will not arrive if the old does not go.'
b. tiān hēi le, sùshè de rén shuìjiào le.
天黑了, 宿舍的人睡觉了。
sky dark LE dormitory DE(a) person sleep LE
'It is dark now, and people in the dormitory have fallen asleep.'

Nevertheless, the use of conjunctions in a Mandarin complex sentence is more common. The following are just a few examples:

- (5.104) a. tiān yǐjīng hēi le, tāmen hái méi shàngchuáng.
天已经黑了, 他们还没上床。
sky already dark LE they still not go-to-bed
'It is already dark, but they still have not gone to bed.'
b. suīrán yéye lǎo le, dànshì tā hěn jiànkāng.
虽然爷爷老了, 但是他很健康。
although grandpa old PERF but he very healthy
'Although grandpa is now old, he is very healthy.'

In (a), the conjunction *há* 还 'still' connects the two constituent clauses into a logical sequence. In (b), the complex conjunction *suīrán ... dànshì ...* 虽然...但是... 'although ... still...' connects the conditional clause *yéye lǎo le* 爷爷老了 with the main clause *tā hěn jiànkāng* 他很健康. Generally speaking, Mandarin complex sentences can be divided into two major groups, the coordinate and the endocentric. In a coordinate complex sentence, the clauses share the same status. One is not more prominent than another, does not explain another and does not modify another. In an endocentric complex clause on the other hand, one or more clauses are subordinate to another within the same sentence. Let us first look at coordinate complex sentences.

5.6.1 Coordinate Complex Sentences

There are essentially four types of coordinate complex sentences in Mandarin, compounding, successive, progressive and selective. As in a compounded word, the parts—the clauses—in a Mandarin compounding complex sentence are of equal status. The meaning of these parts can be of a similar orientation or contrastive. The clauses are often connected by coordinate conjunctions.

- (5.105) a. xuéxí hǎo, shēntǐ hǎo, gōngzuò hǎo.
学习好, 身体好, 工作好。
study well body well work well
'Study well; keep healthy, and work well.'
- b. wǒ yìbiān jiǎng, tāmen yìbiān jìlù.
我一边讲, 他们一边记录。
I (simultaneously) talk they simultaneously make notes
'They made notes while I talked.'
- c. búshì nǐ bù hǎo, érsì wǒ méi shuō qīngqu.
不是你不好, 而是我没有讲清楚。
not you not good but I not say clear
'It is not that you are at fault, but that I did not explain clearly.'
- d. shìchǎng shàng, yǒude mài chī de, yǒude mài chuān de.
市场上, 有的卖吃的, 有的卖穿的。
market in some sell eat DE(a) some sell wear DE(a)
'In the market, some sell food; others sell clothing.'

The above are compounding coordinate complex sentences. In (a) and (d), the clauses are strung together without the use of any conjunctions, whereas in (b) and (c), a complex conjunction is used in each. As in the compounding type, successive types of coordinate complex sentences may be introduced with or without the use of conjunctions. However, different from the compounding type, sentence order ensures the temporal, spatial and logical sequence of events in a successive coordinate complex sentence when no conjunctions are used. Typical conjunctions are such as *yī ... jiù ...* —...就... 'as soon as ... then ...'

- (5.106) a. wǒ jiào tā, tā méi tīngjiàn.
我叫他, 他没听见。
I call he he not hear
'I called him, he did not hear me.'
- b. lǎoshī shǒuxiān tíwèn, ránhòu wǒmen huídá.
老师首先提问, 然后我们回答。
teacher first question then we answer
'The teacher asked a question first, then we answered.'
- c. huájì yǎnyuán yí shàngtái,
滑稽演员一上台, 观众便笑了起来。
funny actor as-soon-as go-on stage audience then laugh PERF begin
'As soon as the comedian got onto the stage, the audience began to laugh.'

The progressive type is usually constructed using conjunctions such as *búdàn ... érqìè ...* 不但...而且... 'not only... but also', and *yě 也* 'also'.

- (5.107) a. tā búdàn huì yīngyǔ, érqìè huì déyǔ.
他不但会英语, 而且会德语。
he not-only know English but also know German
'He not only knows English, but also knows German.'
- b. nǐ bú qù, wǒ yě bú qù.
你不去, 我也不去。
you not go I also not go
'If you do not go, I won't go either.'
- c. bùguāng nǐ qù, wǒ yě qù.
不光你去, 我也去。
not-only you go, I also go
'Not only will you go, but I will, too.'

Complex sentences of the selective coordinate type state a few choices of events among which one is to be selected. Examine the following sentences:

- (5.108) a. huòzhe nǐ lái, huòzhe wǒ qù.
或者你来, 或者我去。
or you come or I go
'Either you come, or I go.'
- b. nǐ yàoqù qù, yàoqù bú qù, kuài juédìng.
你要么去, 要么不去, 快决定。
you or go, or not go, quick decide
'You either go or you don't. Make a decision quickly.'

One important quality about Mandarin complex coordinate sentences concerns the so-called verb gapping (refer to J. Huang 1992 and Tsai 1994 for details). In English, if the clauses of a coordinate complex sentence share the same verb, the verb can be omitted in the non-initial clauses. For instance, in *You prefer apples; I (prefer) oranges*, the second verb *prefer* can be omitted. Such verb-gapping process is not allowed in Mandarin. Now examine again the sentences of (b) and (c) in (5.107), repeated here, with the verbs underscored in both the Mandarin sentences and their English translations:

- (5.109) a. nǐ bú qù, wǒ yě bú qù.
你不去, 我也不去。
you not go I also not go
'If you do not go I won't (go) either.'

- b. bùguāng nǐ qù, wǒ yě qù.
 不光你去, 我也去。
 not-only you go I also go
 'Not only will you go, but I will (go), too.'

In both cases, the second verb in the English translation can be omitted, but in Mandarin the sentences would be ungrammatical if it were.

5.6.2 Endocentric Complex Sentences

Clauses in a Mandarin endocentric complex sentence are related in a variety of ways, but one (or more) of them must be subordinate to another which serves as the main clause of the complex sentence. The subordinate clauses are usually adverbial clauses that modify the verb of the main clause in various manners. It may denote its time, condition, reason, consequence, and so forth, and its position is almost always before the main clause—unlike their English counterparts. The clauses in endocentric complex sentences are often connected by subordinate conjunctions, but sometimes they can be connected by adverbs or time nouns. The following complex sentences contain adverbial clauses of time:

- (5.110) a. tiān hēi yǐhòu, tāmen huí jiā le.
 天黑以后, 他们回家了。
 sky dark after, they go home PERF
 'When it got dark, they went home.'
- b. huí jiā yǐqián, tiān yǐjīng hēi le.
 回家前, 天已经黑了。
 return home before sky already dark PERF
 'It had already turned dark before (someone) went home.'

In both sentences above, there is a time noun, *yǐhòu* 以后 'after' in (a) and *yǐqián* 以前 'before' in (b), which connects the two clauses like a conjunction. Note that they appear at the end of the adverbial clauses rather than at the beginning, unlike their English counterparts. Besides a time noun, an adverbial clause of time is often connected to the main clause by an adverb, such as *cái* 才 '(not till) then,' *yě* 'still,' or *jiù* 'already,' found in the main clause:

- (5.111) a. wǒ děng le yí gè xiǎoshí, tā cái lái.
 我等了一个小时, 他才来。
 I wait PERF one-CLS hour he then come
 'I waited for one (long) hour before he came.'

- b. wǒ děng le yí tiān, tā yě méi lái.
 我等了一天, 他也没来。
 I wait PERF one day he also not come
 'I waited for a whole day, but he didn't come.'
- c. wǒ děng le yíhuìr, tā jiù lái le.
 我等了一会儿, 他就来了。
 I wait PERF one moment he already come
 'I waited for only a moment before he came.'

Sometimes, an adverbial clause of time is linked to the main clause without any type of overt connectors:

- (5.112) a. wǒ děng le yí gè xiǎoshí, tā lái le.
 我等了一个小时, 他来了。
 I wait PERF one-CLS hour he come PERF
 'I waited for one hour before he came.'
- b. wǒ děng le yí tiān, tā méi lái.
 我等了一天, 他没来。
 I wait PERF one day he not come
 'I waited for one day, and he didn't come.'

In both sentences, the first clause is subordinate, denoting the time of the verb in the main clause that follows, but in neither clause is an overt conjunctive word found. Now let us see another type of adverbial clause:

- (5.113) a. zhǐyào nǐ qù, tāmen jiù qù.
 只要你去, 他们就去。
 if you go they then go
 'If you go, they will then go.'
- b. zhǐyǒu nǐ qù, tāmen cái qù.
 只有你去, 他们才去。
 only-if you go they then go
 'Only if you go will they go.'
- c. chúfēi nǐ qù, fǒuzé tā bú qù.
 除非你去, 否则他不去。
 unless you go or he not go
 'Unless you go, he won't go.'

The subordinate clause in each sentence above is an adverbial clause of condition. In

Mandarin, such a clause always appears before the main clause. The two clauses in each are connected with a complex conjunction, one part of which is found in the subordinate clause (e.g., *zhǐyào* 只要 'if' in (a)), and the other in the main (e.g., *cái* 'then' in (a)). Now let us see a third type of adverbial clause:

- (5.114) a. yīnwèi xiàyǔ, suǒyǐ wǒmen méi qù.
因为下雨, 所以我们没去。
because it-rains therefore we not go
'Because it rained, we did not go.'
- b. yóuyú tā yònggōng, yīnér jìnbù kuài.
由于他用功, 因而进步快。
because he hard-working therefore progress fast
'Because he is hardworking, he makes quick progress.'

In each sentence here, there is a subordinate clause of reason, which is linked to the succeeding main clause by a conjunction. The conjunction in such sentences normally has two parts, one in the subordinate clause and the other in the main clause. Notice that in the English versions of these sentences, the second part is not used. In the Chinese version, on the other hand, the first part is sometimes omitted. For instance, (b) in the above can omit *yóuyú* 由于 'because' and be alternatively said as:

- (5.115) tā yònggōng, yīnér jìnbù kuài.
他用功, 因而进步快。
he hard-working therefore progress fast
'Because he is hardworking, he makes fast progress.'

Adverbial clauses sometimes denote purpose, as they do in the following sentences:

- (5.116) a. wèile wǒ shàngxué, bàba qù mài cài.
为了我上学, 爸爸去卖菜。
in-order-that I go to school father go sell vegetables
'In order for me to go to school, father went to sell vegetables.'
- b. nǐ yào duō duànliàn, yìbiàn shēngtǐ hǎo.
你要多锻炼, 以便身体好。
you want much exercise so-that body good
'You must exercise a lot, so as to be healthy.'

Both subordinate clauses in the above begin with a conjunction: *wèile* 为了 'for, in order that' in (a) and *yìbiàn* 以便 'in order to/that' in (b). Depending on the conjunctions used, the subordinate clause may be before the main one (a) or after (b).

Adverbial clauses can denote concession as well:

- (5.117) a. jìnguǎn tā bú duì, nǐ yě dě fú cóng.
尽管他不对, 你也得服从。
although he not right you have to obey
'Although he is wrong, you have to obey.'
- b. nǎpà shàng dāo shān, wǒ dōu bú pà.
哪怕上刀山, 我都不怕。
even-if go-up knife mountain I also not afraid
'Even if I have to go through great danger/obstacles, I will not be afraid.'

The conjunction in both sentences has two parts, *jìnguǎn* 尽管 'although' or *nǎpà* 哪怕 'even if' in the subordinate clause, which normally occupies the initial position, and *yě* 'also' or *dōu* 都 'both; all' before the main verb in the main clause.

Finally, look at a special type of endocentric complex sentence:

- (5.118) a. shuí duì, wǒmen jiù fú cóng shuí.
谁对, 我们就服从谁。
who right we then obey who
'We obey anyone that is right.'
- b. nǎ'ér yǒu shuǐ, nǎ'ér jiù yǒu shēngmìng.
哪儿有水, 哪儿就有生命。
where have water where then have life
'Wherever there is water, there is life.'
- c. nǐ shénme shíhou è, wǒ jiù shénme shíhou zuò fàn.
你什么时候饿, 我就什么时候做饭。
you what time hungry I then what time make food
'Whenever you are hungry, I will cook.'
- d. nǐ zěnmē shuō, wǒ jiù zěnmē zuò.
你怎么说, 我就怎么作。
you how say I then how do
'I will follow whatever you say.'
- e. nǐ chī shénme, wǒ jiù shénme.
你吃什么, 我做什么。
you eat what I then make what
'Whatever you eat, I cook.'

- f. wǒ zuò shénme, nǐ chī shénme.
我做什么，你吃什么。
I make what you then eat what
'Whatever I cook, you eat.'

One remarkable feature about these complex sentences is that two identical wh-words are found in each, one in the main clause, and the other in the preceding subordinate. The double appearance of the wh-word serves a similar function as the suffix *-ever* does in the wh-word found in the subordinate clauses in similar English complex sentences. The initial position marks the subordinateness of the clause. Thus meaning of the sentence will change if the two clauses switch position. For example, the sentences in (e) and (f) contain the same two clauses, but the subordinate in (e) is the main clause in (f) purely because it is in the initial position in (e) but in the final position in (f).

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