Understanding the Chinese Language

A comprehensive linguistic introduction

Chris Shei

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Routledge
Taylor & Francis Group
LONDON AND NEW YORK

First published 2014
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

and by Routledge
711 Third Avenue, New York, NY 10017

Routledge is an imprint of the Taylor & Francis Group, an informa business

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloging in Publication Data
Shei, Chris, 1956–
Understanding the Chinese language / Chris Shei.
pages cm
1. Chinese language–Textbooks for foreign speakers–English.
2. Chinese language–Grammar. 3. Chinese language–Syntax.
4. Chinese language–Study and teaching–English speakers. I. Title.
PL1129.E5S54 2014
495.182′421–dc23

2014000294

ISBN: 978-0-415-63486-1 (hbk)
ISBN: 978-0-415-63488-5 (pbk)
ISBN: 978-1-315-76722-2 (ebk)

Typeset in Berthold Akzidenz Grotesk
by Graphicraft Limited, Hong Kong

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Foreword

This book aims to introduce the Chinese language in an understandable way. It uses simple English and abundant examples to explain Chinese phonology, vocabulary, grammar and discourse. Linguistic theories are kept in the background, guiding the development of knowledge about the language and familiarity with the use of the language.

The book is written with the following readers in mind:

- university/college level students using the book as a Mandarin course/reference book
- undergraduate or postgraduate students taking a course in Chinese linguistics
- anyone interested in learning Mandarin and knowing how it works in society
- researchers in arts and humanities requiring a working knowledge of Chinese
- Chinese or English-speaking researchers looking for fresh ideas in Chinese linguistics or Chinese media and political studies.

This book takes a discourse functional approach and draws on the web for hundreds of examples to illustrate the contemporary usage of the Chinese language. Spoken language samples are transcribed from unscripted talks from current TV reality shows; written data are selected from online news reports and messages posted on social networks.

For convenience, the term 'Chinese' or 'Chinese language' used in this book refers exclusively to Mandarin – that is, Putonghua (普通话) in China, Guoyu (國語) in Taiwan, or the more general Hanyu (汉语) worldwide – bearing in mind that there are at least seven major dialect groups in Chinese, each of which is worthy of a book-length introduction.

The book offers an accessible overview of the Chinese language and its functions in society (notably, in the TV media and the web). Chapters 1–3 introduce the fundamental linguistic components, including Chinese sounds, lexical units, functional items, and sentences. Chapter 4 discusses how Chinese is used to perform speech acts; that is, to give commands, offer promises, assert opinions, express feelings, and so on. Chapter 5 offers a comprehensive survey

of sentence-final particles (SFPs) which play an important role in Chinese discourse. Finally, an up-to-date introduction to Chinese neologisms since the end of the twentieth century is offered in Chapter 6.

The key concepts in Chinese linguistics are introduced in relatively understandable ways, often using corresponding parts in English for comparison and contrast. The large number of authentic examples help establish the credibility of the theory, increase learning interest, and are valuable data for content studies in their own right.

List of abbreviations

Linguistic terms

*	(ungrammatical) or (unacceptable)
AD	*de5* as adjective marker
AM	aspect marker
Aux	auxiliary
CFP	constituent final particle
Cla	classifier
Com	complement (of verb)
Conj	conjunction
Dem	demonstrative
ED	*de5* as emphatic marker
Hon	honorific item
IP	independent particle
Mea	measure word
Neg	negation word
Num	number word
OB	object marker *ba3*
OD	ordinal morpheme *di4*
PB	passive marker *bei4*
PD	*de5* as possessive marker
PF	pause filler
PoS	part of speech
Pos	possessive case
Pro	pronoun
PM	plural marker
QM	question marker
QN	quantity word
SFP	sentence final particle

Media programs

aqllk	Ai Qing Lian Lian Kan	爱情连连看
aywdm	Ai Yao Wo De Ma	哎哟我的妈
fcwr	Fei Cheng Wu Rao	非诚勿扰
ggbbm	Guo Guang Bang Bang Mang	国光帮帮忙
jwsdj	Jin Wan Shei Dang Jia	今晚谁当家
kxll	Kang Xi Lai Le	康熙来了
mrthk	Ming Ren Tai Hui Kao	名人太会考
SSxyzy	SS Xiao Yan Zhi Ye	SS小燕之夜
wmyhb	Wo Men Yue Hui Ba	我们约会吧
WOWhmj	WOW Hou Ma Ji	WOW侯麻吉
ylbfb	Yu Le Bai Fen Bai	娱乐百分百
zsydt	Zhuan Shen Yu Dao TA	转身遇到TA

Introduction

This chapter briefly introduces Chinese phonetics, morphology and syntax. There is also a discussion of the relationship between China and Taiwan as background knowledge for understanding the linguistic differences between the two Chinese communities referred to in this book.

0.1 CHINESE PHONETICS

The phonemic inventory (i.e. all the vowels and consonants used in a language) of Chinese is not dramatically different from that of English. While English makes use of 24 consonants and approximately 12 vowels, Chinese uses 25 consonants and 10 vowels. Chinese and English roughly share 14 consonants and 7 vowels, so there are only 11 Chinese consonants and 3 Chinese vowels, at most, that are unfamiliar to English speakers. Figure 0.1 shows the consonant sets and vowel sets, encoded in IPA (International Phonetic Association) symbols, used by Mandarin and English respectively and their intersections.

As Figure 0.1 shows, there are 14 consonants which Chinese and English share. The three voiceless aspirated stops [p^h] [t^h] [k^h] are enclosed by a dotted rectangle to show their special status in this intersection. That is, although they are used to distinguish meanings in Chinese (i.e. saying [p^h] means something different from saying [p]), they do not have such functions in English. In other words, although [p^h] [t^h] [k^h] are independent sounds (or phonemes) in Chinese, they are not treated as such in English, but are phonetic variants of [p] [t] [k] respectively – sounds that are pronounced in different ways under different conditions which do not result in a difference in meaning. That is why we say there are 13 + 11 = 24 consonants in English, rather than 13 + 14 = 27 if interpreting the consonant intersection in Figure 0.1 incorrectly. However, these three sounds are indeed separate phonemes in Chinese, which means there are 11 + 14 = 25 consonants in Chinese, including the three semivowels [j], [w] and [ɥ]. Among the 25, there are 11 Chinese consonants which are not normally used in English and which may cause difficulties for English speakers learning Mandarin.

Figure 0.1 also shows the intersection of vowels between Chinese and English, which is a set consisting of seven members. There are only three Chinese vowels, [y], [ɨ] and [ɤ], which are not found in English, among which only the first two may be difficult for English speakers to pronounce.

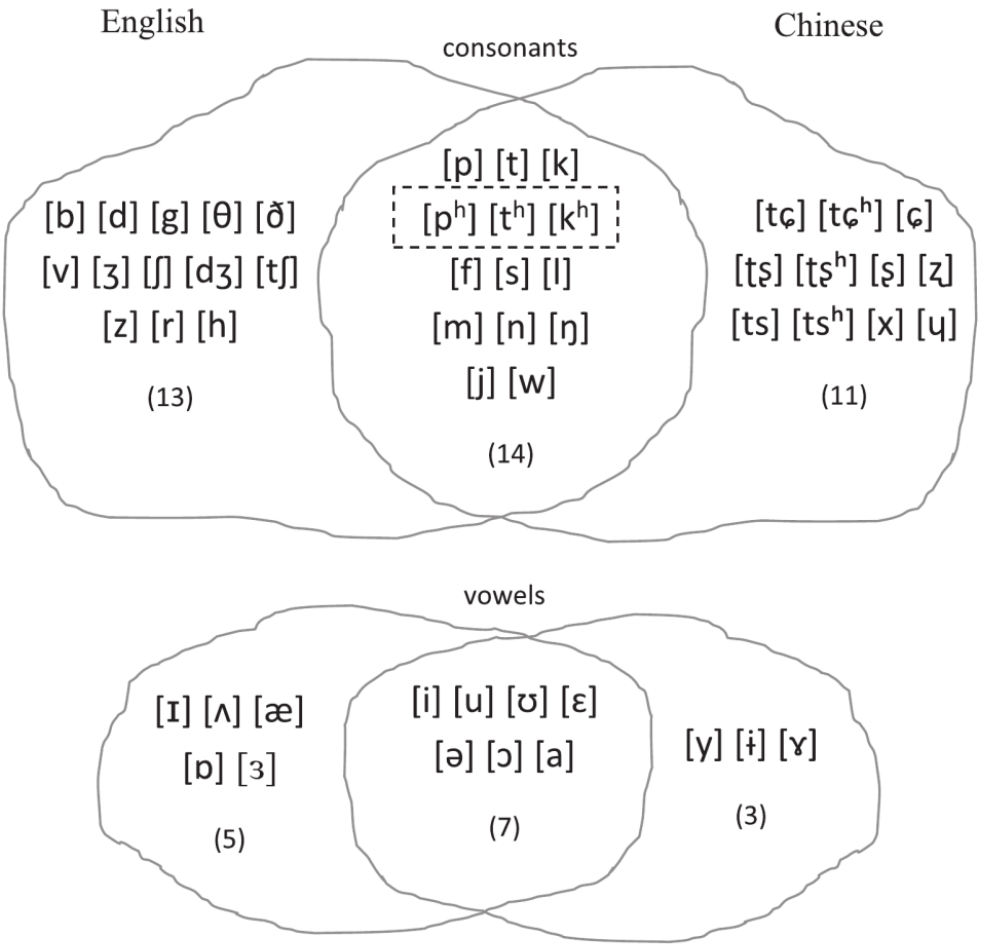

Figure 0.1 Intersections between Chinese and English consonants and vowels

All of the Chinese 25 consonants and 10 vowels will be explained in Chapter 1, which also discusses how sounds combine to form Chinese syllables and how tones are added to syllables to represent meaning.

'Syllable' is an important concept in the Chinese language. In English, a syllable is an intermediate structure between sound and word. For example, the word *ordinary* consists of four syllables – [ɔ.dɪ.nə.ri] – none of which makes sense when standing alone. Syllables in English normally become meaningful when they combine together to form words (with the exception of monosyllabic words such as *bed*, *cat* and so on). In Chinese, however, each syllable can stand alone and mean something. For example 电脑 'computer' consists of two characters, 电 [tjɛn] 'electric' and 脑 [nɑʊ] 'brain'; each character is exactly one syllable long and has its own meaning. Therefore, each syllable in Chinese is a

'brick of meaning'. They either carry out their semantic function individually or combine with other syllables to form larger meaningful units.

Phonetic transcription is another important factor to consider when learning the Chinese language. In the case of English, there is usually a certain degree of resemblance between the alphabet-based orthographical form of a word (e.g. *singer*) and the standard phonetic transcription of the spoken form, i.e. [sɪŋə]. In Chinese, however, there is no connection between the logographic system and the phonetic symbols normally used to transcribe Western languages. Although IPA has developed a set of symbols which aim to describe all human languages including Chinese, many symbols for the Chinese sounds are difficult to learn and inconvenient to type (i.e. most of the 11 Chinese consonants in Figure 0.1 which do not exist in English). This is where the Pinyin system comes in.

Pinyin is a Romanized system which represents Chinese sounds in a convenient way. Pinyin is also used to type Chinese characters as it is compatible with the English-based computer keyboard. Heselwood (2013) calls Pinyin a 'pseudo-transcription'. It is not a 'real' phonetic transcription system, nor is it a 'real' orthographic system, but it does carry out both functions in a partial sense. Pinyin is currently the most popular tool for encoding Mandarin sounds for language learners, who can use Pinyin to learn the Chinese sounds, to read Chinese text and later to key in the Chinese characters which they learn. Table 0.1 shows the relationships between the IPA and Pinyin symbols for the Chinese consonants and vowels.

Table 0.1 shows a good one-to-one correspondence between the Chinese Pinyin and the IPA symbols in the consonants section. This means a sound will not be ambiguously encoded by more than one symbol or vice versa. For example, the letter(s) *f*, *ph*, and *gh* can all stand for the sound [f] in English; whereas the alphabet combination *th* can stand for either the [θ] or the [ð] sound. For the Chinese Pinyin, this kind of ambiguity does not exist at the consonant level. In

Table 0.1 Chinese consonants and vowels in both IPA and Pinyin systems

Consonants										
IPA	p	p^h	t	t^h	k	k^h	m	n	ŋ	f
Pinyin	b	p	d	t	g	k	m	n	ng	f
IPA	ts	ts^h	s	ʐ	tʂ	$tʂ^h$	ʂ	tɕ	$tɕ^h$	ɕ
Pinyin	z	c	s	r	zh	ch	sh	j	q	x
IPA	l	x	w	ɥ	j					
Pinyin	l	h	w	yu	y					
Vowels										
IPA	a	ɛ	ə	ɤ	i	ɨ	ɔ	u	ʊ	y
Pinyin	a	e	e	e	i	i	o	u	o	yu

the vowels section, however, ambiguities do exist, which center around the use of the letter *e*. As can be seen from Table 0.1, the alphabet *e* is used to represent any of the three sounds: [ɛ], [ə], or [ɤ], presumably due to a shortage of common vowel alphabets.

In this book, as is the normal practice, Pinyin symbols are used to represent the Chinese sounds for convenience in typing. As will become clear, Pinyin not only indicates how the Chinese lexical items should be read, it also directly 'represents' the lexical item in an orthographic sense. That is, a lexical item represented in Pinyin can be directly connected to its meaning.

0.2 CHINESE MORPHOLOGY

The discussion of English morphology often starts with the concepts of morphemes, compound words, inflection and derivation, and so on.

- Morphemes: the smallest meaningful unit in a language. For example, the word *encouragements* is decomposable into four morphemes: *en-*, *courage*, *ment* and *-s*, each of which has a meaning (e.g. *courage*) or function (e.g. plural marker). Morphemes can be further classified into:
    - Free morphemes: a morpheme that can function on its own, such as *song* and *table*.
    - Bound morphemes: a morpheme that must be attached to another morpheme/word when used, e.g. *-ment*, *-ed*, *anti-* and so on. There are two kinds of bound morphemes:
        - Inflectional morphemes: a bound morpheme assigned to a word to signify a certain grammatical property, e.g. *-ed*, *-ing*.
        - Derivational morphemes: a bound morpheme added to a word to create a new form of the word, e.g. *-er*, *-ful*.
- Compound words: a word which is a combination of two or more words, such as *strawberry*, *football*, *blackboard* and so on.

In Chinese, the above notions either are inapplicable or have to be modified in some way in order to remain functional. Firstly, the idea of a morpheme is conceptualized differently in Chinese. In English, a morpheme is defined solely by the meaning disregarding the number of syllables it contains. A morpheme could be as long as *crocodile* (3 syllables) or as short as *dog* (1 syllable). In Chinese, however, any of the 400 or so usable syllables can mean something, after being assigned a tone and used in an appropriate context. A morpheme in Chinese can thus be defined not only by the meaning (i.e. the smallest meaningful unit in the language) but also in phonetic terms (i.e. each morpheme in Chinese is exactly one syllable in length).

Secondly, all morphemes are more or less of equal status in Chinese since almost all usable syllables are used as free morphemes. That is, they can stand

alone to mean something, given appropriate circumstances. For example, *zhu1* (or [ʈʂu] in 1st tone) means 'pig' and *rou4* (or [ʐoʊ] in 4th tone) means 'meat'. There is only a very small number of syllables in Chinese which behave like bound morphemes. This is different from English, where there is a fixed set of inflectional morphemes like *-ed* and *-ing* and a large number of derivational morphemes like *re-*, *un-*, *co-*, *-er*, *-ish*, *-ness* and so on, which are used to create many new forms of existing words.

In Chinese, a morpheme (or a syllable) also corresponds to a character, e.g. *zhu1* 'pig' is written as 猪 and *rou4* 'meat' as 肉. Although both are free morphemes, they are not normally called 'words'. The concept of 'word' is notoriously difficult to define in Chinese. More than half of the lexical units thought to be 'words' in Chinese consist of two morphemes. For example, 'the meat of pig' in English is represented by a single word, *pork*. In Chinese, 'pork' is simply the combination of two morphemes, *zhu1* 'pig' and *rou4* 'meat', written as 猪肉. The same is true for beef (*niu2rou4* 'cow meat' 牛肉), lamb (*yang2rou4* 'sheep meat' 羊肉) and so on. The dilemma is that although we can call monosyllabic units like *zhu1*, *niu2*, *rou4*, etc. 'morphemes', they are also 'words' in their own right – just like free morphemes such as *garden*, *church*, *school* and so on in English. Thus, although the concept of 'morpheme' is relatively clear in Chinese, the concept of 'word' is not.

For English, there are distinct levels on the morpheme → word → compound word continuum. However, in Chinese, the boundaries between these categories are not so clear. If *zhu1* and *rou4* are treated as morphemes and not words, then *zhu1rou4* is a word. But if *zhu1* and *rou4* are both words, then *zhu1rou4* must be a compound. In practice, most practitioners treat lexical units like *zhu1rou4* 'pork' and *dian4nao3* 'computer' as words. The term 'compound word' has very little relevance in Chinese, then, since many words already look quite 'compound-like', having been assembled together from two or more stand-alone morphemes.

There is a good-sized literature in Chinese linguistics on the internal structure of disyllabic 'words', concentrating on the relationships between the two morphemes. For example, within the word 猪肉, the first morpheme describes the second morpheme (i.e. the meat is from the pig). The relationship between the two is said to be an 'endocentric' one (the first morpheme modifies the second). There are other kinds of word-internal structures manifesting different relationships between the participating morphemes, as indicated below:

- Endocentric: The first element modifies the second.

  白天 *bai2tian1* 'white-day (day time)'
  飞机 *fei1ji1* 'fly-machine (airplane)'
  勇气 *yong3qi4* 'brave-air (courageous)'
  新闻 *xin1wen2* 'new-hear (news)'

- Coordinative: The two elements are equal or closely related in meaning.

  身体 *shen1ti3* 'body-body (body)'
  贫穷 *pin2qiong2* 'deficient-destitute (poor)'
  照顾 *zhao4gu4* 'shine-look (take care of)'
  死亡 *si3wang2* 'die-die (die)'

- Subject-predicate: The second element is the predicate (verb or adjective) of the first.

  地震 *di4zhen4* 'ground-shake (earthquake)'
  脸红 *lian3hong2* 'face-red (blush)'
  油炸 *you2zha4* 'oil-explode (deep fry)'
  心酸 *xin1suan1* 'heart-sour (grief-stricken)'

- Verb-object: The first element is a verb and the second is its object.

  下雨 *xia4yu3* 'send down-rain (raining)'
  吃饭 *chi1fan4* 'eat-rice (have meal)'
  打球 *da3qiu2* 'hit-ball (play ball)'
  失业 *shi1ye4* 'lose-career (unemployed)'

- Verb-complement: The first is a verb and the second is its complement (the resultant state of an action).

  说明 *shuo1ming2* 'say-bright (explain)'
  推翻 *tui1fan1* 'push-turn over (overthrow)'
  解开 *jie3kai1* 'solve-open (untie)'
  昏倒 *hun1dao3* 'faint-inverse (pass out)'

- Noun-classifier: The first element is the noun and the second is the classifier (a monosyllabic item used to categorize a noun).

  车辆 *che1liang4* 'car-classifier for land vehicles (vehicle)'
  房间 *fang2jian1* 'room-classifier for rooms and buildings (room)'
  花朵 *hua1duo3* 'flower-classifier for flowers and clouds (flower)'
  水桶 *shui3tong3* 'water-classifier for large quantity of liquid (bucket)'

An inflection-like bound morpheme in Chinese is *men5* 们 'plural marker', which attaches itself to a certain type of noun to make it plural. For example, *hai2zi5* 孩子 'child' becomes *hai2zi5men5* 孩子们 'children'. Morphemes like this are extremely rare in Chinese. Their application to existing words or morphemes is also fairly restricted. For example, *猪们 'pig-plural' is not a good expression in Chinese, as 们 is normally only added to certain categories of human nouns. The noun alone (e.g. 猪) can be interpreted as either singular or plural depending on context. Plural marking for common nouns is not mandatory in Chinese.

There are more derivation-like morphemes in Chinese than inflection-like ones, but their application is also very limited and certainly not as productive as

the English derivational morphemes such as *con-*, *dis-*, *-ive*, *-tion*, *-ment* and so on. Like English, these morphemes can occur at the beginning or at the end of a lexical unit. A suffix-like morpheme (which is a free morpheme itself, not a bound one) in Chinese is 痛 *tong4* 'ache' which, like its counterpart in English, *-ache*, can be added to a body part to mean a discomfort in that region. Thus, we have 头痛 'headache', 牙痛 'toothache', 胃痛 'stomach ache', 心痛 'heartache', 肚子痛 'tummy ache', 喉咙痛 'sore throat', 偏头痛 'slanting-headache (migraine)' and so on.

A prefix-like Chinese morpheme is 电 *dian4* 'electricity'. Examples are 电视 'electric-see (television)', 电话 'electric-words (telephone)', 电影 'electric-image (cinema)', 电灯 'electric-lamp (electric light)', 电冰箱 'electric-ice box (refrigerator)' and so on.

There are more derivation-like morphemes like 痛 and 电 in Chinese, with different degrees of productivity. Again, the combinations of these morphemes (bearing in mind they may also be called 'words' in Chinese) with other morphemes or words can be conceptualized as word-formation rules in Chinese. Yet they can also be said to follow phrase-structure rules in Chinese. The distinctions between morphemes, words, and phrases are far from clear in Chinese.

0.3 CHINESE ORTHOGRAPHY

Each Chinese character corresponds exactly to a Chinese syllable with a tone and a meaning. Only a small portion of Chinese characters are really pictographs; that is, the character resembles the concept it expresses in appearance. For example, the shape of 山 'hill' does resemble a mountain with three peaks. The character 羊 'sheep' originated from an oracle bone script which resembled the front of a sheep. Other character formation rules traditionally recognized include the following:

- Ideograph:
    - Simple ideograph: Simple strokes are used iconically to represent abstract ideas. For example, 上 'up' (an icon on a horizontal line), 下 'down' (an icon beneath a horizontal line), and 中 'middle' (a vertical line running through the center of a square).
    - Compound ideograph: The combination of pictograph(s) and ideograph(s) to represent more complicated concepts. For example, 休 'rest' (a person 亻 leaning against a tree 木).
- Phonetic loan: This is a 'borrowing' process where a character is said to be used to represent a homophone (same sound, different meaning) which as yet has no orthographic representation. For example, the verb meaning 'spend' had a spoken form, *hua1*, but initially was without a written form, so the character of its homophone, 花 *hua1* meaning 'flower', was used to represent it.

Table 0.2 Different vs. identical Chinese characters across the two systems

Sound/meaning	*Traditional Chinese*	*Simplified Chinese*
guo2 'nation'	國	国
xue2 'learn'	學	学
zhong1 'middle'	中	中
sheng1 'pupil'	生	生

- Phono-semantic compound: This is the combination of a phonetic loan and a meaning component. For example, the word 娶 *qu3* 'marry a woman' was created by adding a meaning component, 女 'woman', to a homophone, 取 *qu3* 'retrieve'.

There are currently two systems of Chinese characters used in various Chinese communities around the globe. The Traditional Chinese (正體字) is used mainly in Taiwan and in Cantonese-speaking communities such as Hong Kong and Macau. These are standardized character forms dating back to the Han dynasty. The Simplified Chinese (简体字) was developed by the People's Republic of China in 1954 and is now the official form used in China and by most overseas Chinese language teaching programs. Many native speakers in China also read Traditional characters and Taiwanese speakers also write some Simplified characters, although there may be few who read both kinds of characters equally fluently (each conditioned by their educational upbringing). Traditional and Simplified Chinese characters are not always different. Table 0.2 shows two characters which differ and two characters which remain the same across the two platforms.

For practical reasons and following reviewer feedback, this book has been printed in Simplified Chinese characters instead of Traditional Chinese characters.

0.4 CHINESE SYNTAX

Chinese and English are said to follow the same basic word order of SVO (Subject → Verb → Object) which differs from a language like Japanese where the SOV (Subject → Object → Verb) word order applies. Many of the phrase structure rules of English are equally applicable to Chinese; for example:

- S → NP VP

A sentence can consist of a noun phrase and a verb phrase.

- NP → Art Adj N

A noun phrase can consist of an article, an adjective, and a noun.

- VP → V NP

A verb phrase can consist of a verb and a noun phrase.

However, there are departures from English in certain aspects of Chinese grammar. For example, a prepositional phrase (PP), consisting of a preposition (Prep) and a noun phrase (NP), normally comes *after* a verb or a noun in English. In Chinese, however, the Prep can be to the left or the right of the NP within the PP. The PP itself usually comes *before* the noun and before or after the verb it modifies. Thus:

English	*Chinese*
• PP → Prep NP in the area on the table	• PP → Prep NP or PP → NP Prep 在这地区 'at-this-area' 桌上 'table-up'
• NP → Art N PP the fiddler on the roof	• NP → PP *de5* N 屋顶上的提琴手 'roof-on-*de5*-fiddler'
• VP → V PP playing in the pub	• VP → PP V 在酒吧内演奏 'inside-pub-play music'

There are other differences between Chinese and English syntax in respect of word order. For example, an adverb describing a verb usually comes after the verb in English (e.g. He leaves *tomorrow*). In Chinese, the default position for 'tomorrow' would be between the subject and the verb (i.e. 他明天走 'he-tomorrow-walk (He leaves tomorrow)').

Just like Chinese words, a Chinese sentence is also difficult to define. Many Chinese sentences are either without subjects or without verbs, or have multiple verb phrases which are not well coordinated. In addition, the special Topic-Comment structure adds an extra dimension to the complexity of Chinese syntax. A Chinese sentence can start with two noun phrases, one representing the topic and the other the subject of the sentence.

0.5 CHINESE DISCOURSE

The problem of delineating Chinese sentences carries on to the reading of Chinese paragraphs. In reading an English paragraph, the unit of processing is

normally a sentence (or a well-defined phrase if the sentence is relatively long). Both sentential grammar and punctuation marks are very helpful in defining English sentences. In Chinese, the punctuation marks do not help separate sentences as they do in English and the sentence seems to 'run on' forever. It is difficult for novice readers to know when to stop, 'wrap up' a structure and 'sum up the meaning' read so far. Take the following news text, for example (the translation is intentionally made 'structurally literal' so as to keep as many traits of the Chinese syntax as possible):

四川省泸州市一商场发生一起爆燃事故，商场负一楼和一楼起火，附近的多家店铺和一家宾馆也被殃及，事故现场玻璃碎片散落一地。截止到27日凌晨6时，事故造成4人死亡，35人被送往医院留院观察治疗。

Sichuan Province Luzhou City a shopping mall occurred a deflagration accident, the mall first floor basement and ground floor caught fire, nearby many shops and a hotel were also involved, the accident scene shards of glass scattered on the ground. As at 6:00 on the 27th, the accident killed four people, 35 people were taken to hospital for observation and treatment.

There are six identifiable sentences in the above example, based on the conventional method of sentence analysis. However, there are only two Chinese period marks in the text. As will be explained in Chapter 3, Chinese-style periods (。) are used more for 'conceptual' rather than structural marking. Nor are the Chinese commas (，) used to mark sentences – although most of them do in this particular instance. The fourth comma, however, delineates a time phrase rather than a sentence. In Chapter 3, we analyze Chinese sentences in ways that will help readers understand not only the structure of the sentence itself but also how Chinese sentences are extended to become paragraphs.

On the spoken side of the language, we focus on a category of morphemes called sentence-final particles (SFPs) in Chinese, which are treated as discourse markers (DMs) in this book. Discourse markers are those 'small words' which play an important role in oral communication. In English, words like *oh*, *so*, *well*, *anyway*, *I mean*, *you know*, etc. help make sure conversation moves on in a smooth and efficient way. In Chinese, the same functions are carried out by a battery of linguistic devices called sentence-final particles. For example, the English expression *Well, that's it!* is often used to conclude something, with the discourse marker *well* showing the speaker's mood of relief, reluctance, disappointment, and so on. In the example below, the function of *well* is transferred to the SFP 了 *le5* in the Chinese translation.

Well, that's it. Our show is over.
就 这样 了。 我们 的 表演 到 此 为 止。
jiu4 zhe4yang4 le5 wo3men5 de5 biao3yan3 dao4 ci3 wei2 zhi3
'just' 'like so' SFP 'our' PD 'performance' 'reach' 'this' 'act as' 'stop'
'This is it then. Our show stops here.'

Note that, in the proper Chinese translation above, the discourse marker *well* is replaced by a sentence-final particle 了, which expresses the same sense of conclusion and the accompanying emotions. In Chinese, there are at least a dozen SFPs serving discourse marker functions, and these are discussed extensively in Chapter 5.

0.6 MANDARIN IN TAIWAN

Although Simplified Chinese and Pinyin seem to have become the mainstream encoding systems for Chinese orthography and phonology respectively, they are not the only option (just as communism is not the only possible political system for Chinese countries). The Traditional Chinese and the Zhuyin phonetic transcription system used in Taiwan deserve more of the world's attention.

The current government of Taiwan represents the political party (i.e. the Nationalist Party, or KMT) which led the revolution in 1911 that overthrew the Qing Dynasty. The Republic of China (中華民國) began in 1912, which was the first year in the country's independent calendar. This is still the official calendar system in Taiwan. Thus, Taiwanese year 103, or 中華民國103年 'year 103 of the ROC', is converted to year 2014 (= 103 + 1911) of the Western calendar.

The KMT (or 國民黨), after being defeated by Chinese Communist Party (CCP) in 1949 and relocating to Taiwan, initially ruled by single-party authoritarianism, just like the current CCP in China. However, with a series of successful democratic movements from the grassroots, a strong opposition party, the Democratic Progressive Party (民主进步党), was established in 1986, and the first direct Presidential election took place in 1996. From then on, Taiwan has become a fully democratic country with multi-party electoral competition, a parliament (called the Legislative Yuan), ideology-free education, unimpeded information flow, and the right to free speech and protests. Everything is regulated by law instead of being controlled by a long-standing party. The law is made by members of parliament who are directly elected by the people.

Communications between the two sides of the Taiwan Strait have become increasingly frequent in recent years due to the recent open policy of China and the need of Taiwanese people to develop businesses on the mainland. There was a period of some 40 years, however, in which interactions between Taiwan

and China were few because of the continuing state of war after 1949 (with both sides wanting to regain lost territories). The Chinese languages evolved independently in both regions during this period, which resulted in some noticeable differences, especially in terms of the pronunciation of Mandarin and their vocabulary. However, the differences are mostly negligible and generally do not affect communication.

In Taiwan, Mandarin was made the official language after the KMT set up the government in 1949. The phonetic system used in Taiwan to teach Mandarin, called Zhuyin fuhao (注音符号) or simply Zhuyin, dated back to 1913 when the KMT was still in power in China. Zhuyin looks different from the Pinyin system released by the government of China in 1958. Table 0.3 contrasts the symbols used in both systems.

Initially, the Zhuyin system may seem difficult and an extra burden to learn. However, once the symbols are learned, and the correct phonetic associations made, the subsequent learning of Mandarin syllables, words and phrases using Zhuyin can be easier than with Pinyin (Flynn 2010).

Table 0.3 The Zhuyin and Pinyin symbols for consonants and vowels used in Mandarin

Consonants														
Zhuyin	ㄅ	ㄆ	ㄇ	ㄈ	ㄉ	ㄊ	ㄋ	ㄌ	ㄍ	ㄎ	ㄏ	ㄐ	ㄑ	ㄒ
Pinyin	b	p	m	f	d	t	n	l	g	k	h	j	q	x
Zhuyin	ㄓ	ㄔ	ㄕ	ㄖ	ㄗ	ㄘ	ㄙ	ㄧ	ㄨ	ㄩ				
Pinyin	zh	ch	sh	r	z	c	s	y	w	yu				
Vowels														
Zhuyin	ㄚ	ㄛ	ㄜ	ㄝ	ㄞ	ㄟ	ㄠ	ㄡ	ㄢ	ㄣ	ㄤ	ㄥ	ㄦ	
Pinyin	a	o	e	e	ai	ei	au	ou	an	en	ang	eng	er	

Note: The semivowels ㄧ, ㄨ and ㄩ are used both as consonants and as vowels

CHAPTER 1

Chinese sounds

In this chapter, we explore the range of sounds used in spoken Mandarin, how these sounds combine to form syllables, and how the tones are added onto the syllables to form meaningful spoken units. We first distinguish between consonants and vowels, explain some of their characteristics, and then analyze how a Chinese syllable is made using different combinations of consonants and vowels. In the second part, we introduce Chinese tones which are a necessary component in turning syllables into the basic unit of meaning in Chinese.

1.1 INTRODUCTION

Like English (and all other human languages), Chinese uses both consonants (C) and vowels (V) to construct meaningful units. In addition, when combining consonants and a vowel to form a syllable, Chinese uses a simpler method than English; that is, while English permits consonant clusters of up to three consonants each within a syllable, Chinese only allows one consonant per possible slot (i.e. before or after the vowel).

Three levels of linguistic structures are contrasted between English and Chinese in Figure 1.1: the word level, the syllabic level, and the sound level. In particular, the differences in structural complexity of syllables between English and Chinese are highlighted. The word *Christopher* comprises three syllables which differ from one another dramatically in terms of vowel-consonant configurations, as shown on the left side of Figure 1.1. The first syllable of *Christopher* consists of two consonant clusters surrounding a vowel – altogether five different sounds. The second syllable is a single vowel and the third syllable is made up of a consonant and a vowel. In contrast, when *Christopher* is transliterated into Chinese, the sounds adjust to the Chinese phonotactic system and the overall picture becomes more 'orderly', as the right half of Figure 1.1 shows. For example, Chinese phonotactics do not allow a syllable initial consonant cluster (excluding a consonant-semivowel combination), so a vowel has to be inserted between the beginning two consonants. Thus, the initial CCV configuration of *Christopher* is broken into two syllables in the Chinese translation, becoming *ke* and *li* (CV-CV structure). Secondly, the /s/ sound in Chinese cannot exist alone and must be supported by a following vowel. This is where *si* comes in

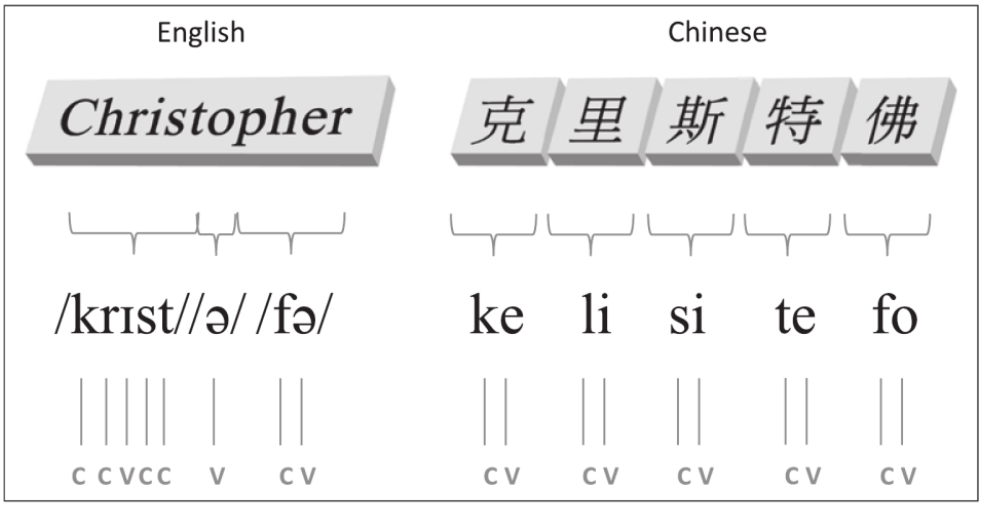

Figure 1.1 A rough comparison of English and Chinese syllabic structures

as the third syllable in the Chinese version. The rest of the word (i.e. *-topher*) generates a good CV-CV correspondence between the two languages so the syllabic structure remains unchanged.

Thus, any syllable comprising a CCV structure must be turned into a disyllabic CV-CV structure to conform to the Chinese phonotactic restriction, and a VC structure must be changed to V-CV, unless the ending consonant is a nasal. That is, the only final consonants allowed in Mandarin are two of the three nasal stops – the *n* (alveolar) or the *ng* (velar) sound.

1.2 CHINESE SOUNDS

We now turn to the Chinese phonemic inventory; that is, the list of consonants and vowels used in Chinese pronunciation. Again, there are abundant similarities between English and Chinese. We will use the Chinese Pinyin system to represent Chinese sounds. English sounds, where applicable, are represented by their IPA symbols.

There are 22 Chinese consonants altogether (in this discussion we will exclude the three semivowels), the same as English (if its two semivowels are also excluded). Chinese consonants are allocated in Table 1.1 to slots according to the manner and place of articulation. IPA phonetic symbols are provided in brackets where there are equivalent English consonants.

The *places of articulation* for the sounds in Table 1.1 are marked approximately in Figure 1.2, with straight lines connecting parts of the tongue to the roof of the oral cavity where the constrictions occur. For example, the bilabial sounds (*b*, *p* and *m*) are made by the upper and lower lips coming together. The labial-dental sound *f* is made by gently placing the upper teeth on the lower lip and letting the air flow through the narrow passage continuously. The dental

Table 1.1 Chinese consonants shown with English equivalents (where available)

Manner of articulation \ Place of articulation		*Bilabial*		*Labio-dental*	*Dental*	*Alveolar*		*Post-alveolar (Retroflex)*		*Alveo-palatal*	*Velar*
		–vd	*+vd*	*–vd*	*–vd*	*–vd*	*+vd*	*–vd*	*+vd*	*–vd*	*–vd*
Plosive	–asp	b [p]				d [t]					g [k]
	+asp	p [p^h]				t [t^h]					k [k^h]
Affricate	–asp				z			zh		j	
	+asp				c			ch		q	
Fricative				f [f]	s [s]			sh	r	x	h
Lateral							l [l]				
Nasal			m [m]				n [n]				ng [ŋ]

sounds (*z*, *c* and *s*) are made by bringing together the tip of the tongue and the back of the upper teeth.

There are five ways of making the consonants in Table 1.1, referred to as the *manner of articulation*. The plosives, also called 'stops', are made by building up air pressure (air drawn from the lungs) in the tightly shut mouth and releasing it by suddenly opening up the closure and releasing all the air. The closure may be made by the two lips (*b*, *p*, *m*), by the front of the tongue sealing the mouth at the alveolar ridge (*d*, *t*), or by the back of the tongue attaching to the velum (*g*, *k*).

The fricatives are made by allowing the air to flow freely from the lungs, up through a narrow passage in the oral cavity, to the outside. Again, the narrow passage may be formed in many places. In Chinese, the *s* fricative is made by bringing the tip of the tongue toward the back of the upper teeth, which is different from the English [s] whose constriction point is a little way back into the mouth, at the alveolar ridge. The *h* sound, on the other hand, is made through the narrow passage formed by the back of the tongue and the velum. The Chinese *h* is also different from the English [h] (e.g. *home*), which is generally characterized as a glottal fricative.

The affricates have both properties of plosives and fricatives as they involve both an initial closure and some trailing air flow through a narrow passage. There are six affricate sounds in Mandarin Chinese. The *z* and *c* share the same place of articulation with *s* – at the back of the front teeth. Both the *zh* and *ch* sounds are made by using the tongue (curled up like the bowl of a spoon) to enclose the oral cavity at the post-alveolar region. The mounted air is then released all of a sudden with a trickling hiss. The *j* and *q* sounds are similar to the [dʒ] (*giant*) and [tʃ] (*cheese*) sounds respectively in English. If you modify the two English sounds by 'flattening out' your lips (from the original rounded shape), the resultant sounds are very much like *j* and *q*.

Both the lateral sound (*l*) and the nasal sounds (*m*, *n*, *ng*) used in Chinese are basically the same as those in English.

According to Table 1.1, 12 of the 22 Chinese consonants are also used in English. The other 10 consonants (four fricatives and six affricates) will be unfamiliar to someone who speaks only English. Also, of the 22 Chinese consonants in Table 1.1, *ng* is only used in syllable-ending position. As in English, the sound *ng* is not used to begin a syllable. Conversely, all the other 21 consonants in Table 1.1 are only used in syllable-beginning position in Chinese – except for *n*, which can be used either to begin or to end a syllable.

Most Chinese consonants are voiceless; the voiced ones are the three nasals *m*, *n* and *ng*, the lateral *l*, and a retroflex *r*. The retroflex pair, *r* and *sh*, are the only pair of sounds in Chinese that offers a voiced-voiceless contrast. In English, by contrast, many pairs of sounds exist where one sound differs from the other only in voicing, such as [p]-[b], [k]-[g], [f]-[v], and so on. In Chinese, the plosive sounds are instead contrasted by the 'aspiration' feature, which is not used to distinguish phonemes in English. Voicing refers to the vibrating

movement of the vocal cords when making the sound. Aspiration refers to the extra puff of air coming out of the mouth when articulating a sound, usually when uttering plosives or affricates, whose initial closure of the oral cavity enables aspiration.

In English, aspiration is a feature that distinguishes between allophones (variants of the same phoneme that are pronounced differently due to a different phonetic environment). For example, the same /p/ sound is pronounced with aspiration [p^h] at word-initial position, such as *poet*, but it is pronounced unaspirated [p] in a word like *sport*. Although the two sounds are pronounced differently, they are both recognized by native speakers of English as the same phoneme /p/ at the conceptual level. One can articulate the /p/ in *sport* as [p^h] and the word is still recognized as *sport* even though the pronunciation may be thought of as irregular. In Chinese, however, aspiration has a different status – it is used to distinguish meanings. For example, *ba* [pa] said in the fourth tone can mean 'father' (爸), but *pa* [p^ha] in the same tone can mean 'afraid' (怕) instead. Such a pair like [pa] and [p^ha] are called a 'minimal pair' in phonology – they differ only in one sound at the same position and their meanings are different. In this case, it is the aspiration feature that creates the semantic difference.

According to Table 1.1, there are 12 Chinese consonants which have (close) English equivalents and therefore can be pronounced relatively easily by an English speaker:

Chinese	b	p	m	f	d	t	n	l	g	k	h	ng
English	s*p*eak	*p*eak	*m*e	*f*or	s*t*eak	*t*oo	*n*o	*l*ow	s*k*y	*k*ey	*h*ot	si*ng*

On the other hand, there are also 10 Chinese consonants that differ from similar English sounds to different degrees. Some sounds only require minor adjustments, such as making the rounded lips unrounded. Some are more difficult to assimilate, such as the four retroflex sounds.

Chinese	j	q	x	z	c	s	zh	ch	sh	r
English	*j*eep	*ch*eap	*sh*eet	card*s*	*ts*unami	*s*un	*j*am	*ch*ain	*sh*ower	*r*aw

The approximate places of articulation of the 21 syllable-initial Chinese consonants are marked on Figure 1.2.

Of the 10 consonants that have no close equivalents in English, the *x* sound is similar to the English *s* in that they are both fricatives and both make high-pitched, intensive hissing sounds (called 'sibilants'), except that the constriction point for *x* (alveo-palatal) is further back than [s] (alveolar). Both *j* and *q* are affricates, which start like a plosive but release continuously like a fricative. The *j* sound can be made by 'unrounding' the [dʒ] sound of *J* in *Jack*; that is, it is much like the *j* sound in *jeep*. Likewise, to make the *q* sound in Pinyin, 'unround' your lips when saying the [tʃ] sound of the *ch* in *church*. Again, it is easier to

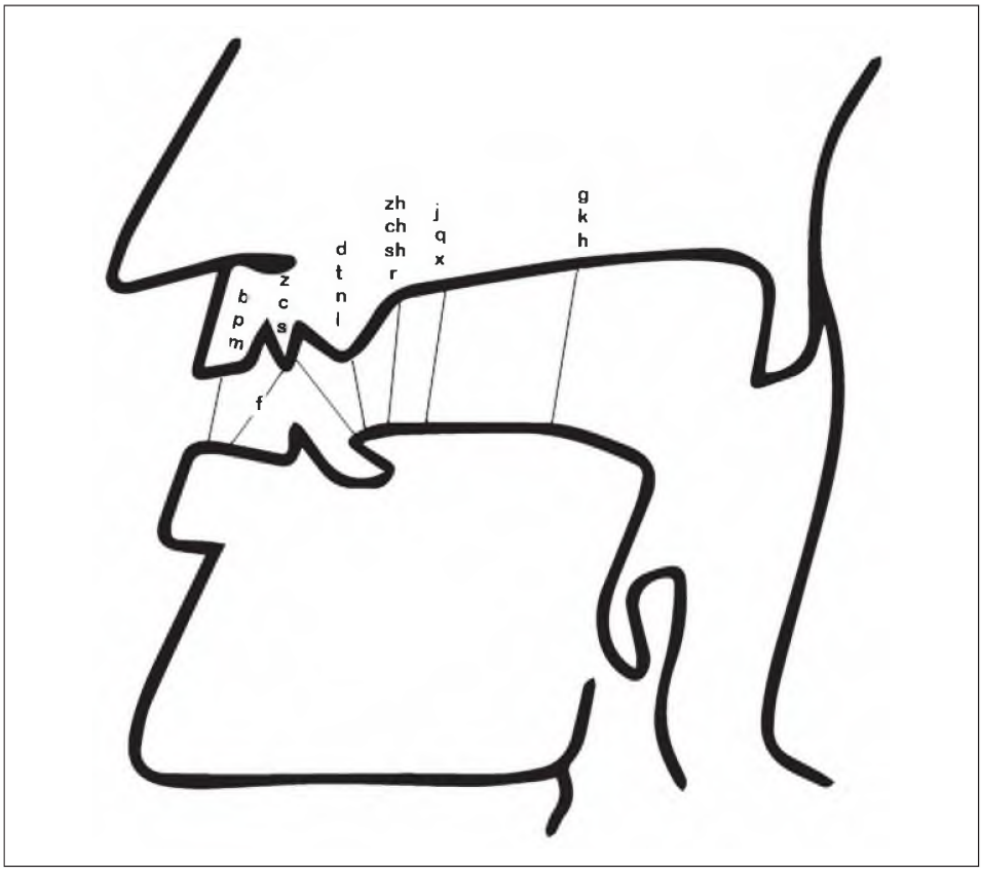

Figure 1.2 The 21 syllable-initial Chinese consonants (in Pinyin)

get the *q* sound when the *ch* sound is followed by a high front vowel as in *cheap*, which is less conducive to rounded lips.

Both *z* and *c* are also affricates. Both are made by bringing the tip of the tongue to the back of the teeth to form a closure and then releasing the air in an 'explosive' manner followed by a trailing hiss. The *z* sound is like the *ds* sound at the end of a word like *cards*. The *c* sound is similar except that it is aspirated. The *ts* at the beginning of *tsunami* sounds like the Chinese *c*. The Chinese *s* sound is again similar to the [s] sound in English except that *s*, like *z* and *c*, is made by the tongue approaching the teeth rather than the alveolar ridge.

The four Chinese retroflex sounds, *zh*, *ch*, *sh* and *r*, are probably the most difficult to assimilate for most learners (indeed, some of them are difficult even for many Chinese native speakers to master). These sounds are made by curling up the tongue toward the post-alveolar area. The tip of the tongue does not 'curl back' to any large degree as the word *retroflex* suggests. Instead, there is a general rise of all edges of the tongue when the tip of the tongue touches (in the cases of *zh* and *ch*) or approaches (in the cases of *sh* and *r*)

Table 1.2 Chinese vowels in Pinyin shown with English vowels (where applicable)

	Front		*Center*	*Back*	
	–rd	*+rd*	*–rd*	*–rd*	*+rd*
Close	i [i]	ü	ɨ	u (part of diphthong) [ʊ]	u (standing alone) [u]
Mid	e (part of diphthong) [ɛ]		e (before nasals) [ə]	e (standing alone)	o [ɔ]
Open	a [a]				

the post-alveolar area. The configuration of the oral cavity remains the same for all four sounds. They differ in *zh* and *ch* being affricates (release of air after initial blockage) and *sh* and *r* being fricatives (continual release of air through a narrow passage). The two sounds *zh* and *ch* differ in the former being unaspirated and the latter aspirated. The *sh*, on the other hand, is voiceless and the *r* is voiced.

In terms of vowels, there are 10 single vowels in Chinese, most of which have close English equivalents and cause few problems. Table 1.2 lists the 10 single vowels in Mandarin Chinese. Where available, their English counterparts appear in brackets in IPA symbols.

Vowels are classified by the tongue position being relatively 'front' or 'back', high (close) or low (open). They are also called rounded (+rd) or unrounded (–rd), based on the shape of the lips when uttering the vowels. Finely classified, there are 10 single vowels in Mandarin Chinese, seven of which have close English equivalents, as Table 1.2 shows. Two of the unshared vowels, *ü* and *ɨ*, due to the relative inconvenience in typing, are normally represented as *u* (or *v*) and *i* respectively in Pinyin, causing ambiguity as both *u* and *i* also represent other sounds. The third unshared vowel, [ɤ], is written in Pinyin as *e* (the standing alone *e* in Table 1.2) and is discussed in the next paragraph. The seven vowels used by Mandarin that have close English equivalents are shown below with English words containing the relevant vowel:

Chinese	a [ɑ]	i [i]	e [ɛ]	e [ə]	u [ʊ]	u [u]	o [ɔ]
English	f*a*r	s*ee*	v*e*ry	*a*bout	kno*w*	t*oo*	*a*ll

As Table 1.2 shows, the use of *e* is ambiguous in three ways in Pinyin. The first usage of *e* is equal to IPA symbol [ɛ]. When following a semivowel (e.g. *ye*), this

kind of *e* sounds like the *e* in *cherry*. The same is true when *e* combines with other vowels to form a diphthong, such as *ei* and *üe*. This sound is sometimes expressed as *ê* in Pinyin, to distinguish it from the other forms of *e*. Second, when *e* is followed by a nasal sound such as *en* or *eng*, it is pronounced as [ə], like the *a* in *acute*. Third, when *e* stands as the sole vowel in a syllable, it is equivalent to IPA symbol [ɤ] and is pronounced like the *ir* in the English *sir*. Example Chinese syllables are *de*, *te*, *ne*, *zhe*, *che*, *she*, and so on. Some sounds in this category will 'look like' an English word – *me*, *he* and *she* – but when used in Pinyin, they only represent the sounds (which are pronounced differently from their English lookalikes) and may be associated with a number of different meanings depending on the tone.

Despite the high degree of similarity, two Chinese vowels are quite different from regular English vowels – the [y] sound and the [ɨ] sound in IPA symbols. The [y] sound is translated to *ü* as a relatively familiar alphabetic letter but the [ɨ] is still represented as *ɨ* due to a lack of familiar corresponding letters.

Chinese	ü (written as *v* or *u* in Pinyin)	ɨ (written as *i* in Pinyin and only appearing after *z*, *c*, *s* and *zh*, *ch*, *sh*, *r*)
English	m*ü*esli (German pronunciation)	zzz*i*... (the vowel part of this buzzing sound)

Since the [ɨ] sound is written as *i* in Pinyin, the *i* symbol then comes to represent two sounds. It is pronounced as the *ee* in *see* in most cases (without the 'long' vowel ingredient), but it becomes a central (instead of front) high vowel when following the three dental sibilants (*z*, *c*, *s*) or the four retroflex (*zh*, *ch*, *sh*, *r*) sounds. The IPA symbol for this sound is ɨ (the letter *i* with a horizontal bar). This central vowel is not found in English and can be assimilated by making a *zzzi* buzzing sound (keeping only the 'vowel' part).

Another sound that does not exist in English is *ü*, a rounded front vowel, which is found not only in Chinese, but also in German and other languages. A way to make this sound is to start to say the *y* sound in *yellow*, while at the same time making your lips round (like the lips' shape in saying *u*), so *ü* is somewhat like 'the combination of [i] and [u]'. Because *ü* is not found on common English keyboards, in practice the Chinese input method normally accepts the *v* letter as *ü*. That is, if we want to type the Chinese character equal to *nü3* ('female'), we strike *nv3* on the keyboard and we will get the desirable character 女. It is also not uncommon to use *nv* (as in this book) or even *nu* in place of *nü* as surface Pinyin representations. However, since *nu* itself is a legitimate representation of other meanings, context is crucial for determining whether *nu* really means *nu* or, rather, *nü* on a given occasion.

There is, in fact, an additional vowel in Mandarin which is like the vowel version of the retroflex consonants. This is represented in Pinyin as *er*. Since it

is an isolated vowel and only forms a syllable by itself (that is, it does not combine with consonants or other vowels to form a syllable), it is excluded from further discussions.

Apart from the 22 consonants and the 10 vowels described above, there are three semivowels (or glides) in Chinese, whose IPA symbols are [w] (voiced labialized velar approximant), [j] (palatal approximant) and [ɥ] (voiced labialized palatal approximant) respectively. The English counterparts for both *w* and *y* exist, e.g. the [w] sound in *wasp* and the [j] sound in *York*. But there is no English counterpart for *yu* [ɥ], just as there is no *ü* in English. IPA symbols like [j], [w], [ɥ] are adopted by Duanmu (2007) for dedicated discussions on Chinese phonology. In this book, however, like other consonants and vowels, we continue to use the Pinyin symbols – in this case, *w*, *y* and *yu* respectively – to represent these three sounds, taking advantage of Pinyin's connectivity between sounds and meaning.

1.3 CHINESE SYLLABLES

When analyzing Chinese syllables, it is customary to present models more complicated than the CV (consonant-vowel) structure seen in Figure 1.1. Normally, a Chinese syllable is said to comprise an Initial and a Final. The Initial can be one of the 21 consonants shown in Figure 1.2. It can also be absent in the case of a syllable consisting only of the Final. The Final itself consists of three parts: the Medial, the Nucleus and the Ending. The Medial, when present, is one of the three semivowels *w*, *y* or *yu*. The Nucleus is the only indispensable element in the syllable, which can be any one of the nine vowels given in Table 1.2 (i.e. excluding the 'part of diphthong' [ʊ] which only appears in the ending position). Finally, the Ending can be *i*, *o*, *u* or one of the two nasals *n* or *ng*. Figure 1.3 shows the Chinese syllable structure with all the possible sounds in each component and an overall example syllable.

Note that in Figure 1.3, the example syllable *qiao* makes use of a medial *y* [j], which is written as *i* instead of *y* (it will be written as *y* in a syllable-initial position such as *yan*). In the same vein, for a syllable like *kuan*, the *u* stands for the semivowel medial [w], which will be written as *w* in a syllable like *wang*. To take another example, the syllable *yuan* is analyzable into a Medial (*yu*) + Nucleus (*a*) + Ending (*n*) with *yu* standing for the semivowel *yu* [ɥ].

Another graphical illustration of the Chinese syllabic structure is given in Figure 1.4 to show more example syllables and how they are generated from each component.

Another way of analyzing the Chinese syllabic structure is using the Zhuyin convention adopted in Taiwan. The Zhuyin system introduces a different set of symbols, each standing for an Initial, a Medial or a Nucleus + Ending combination. Figure 1.5 shows how some example syllables are derived in the Zhuyin-based model.

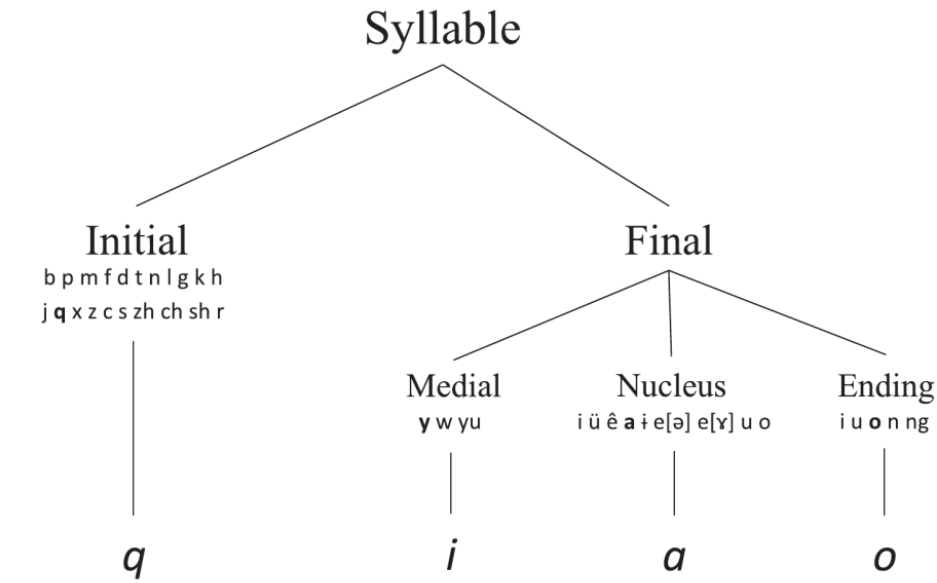

Figure 1.3 Chinese syllable structure with all possible sounds in each level/group

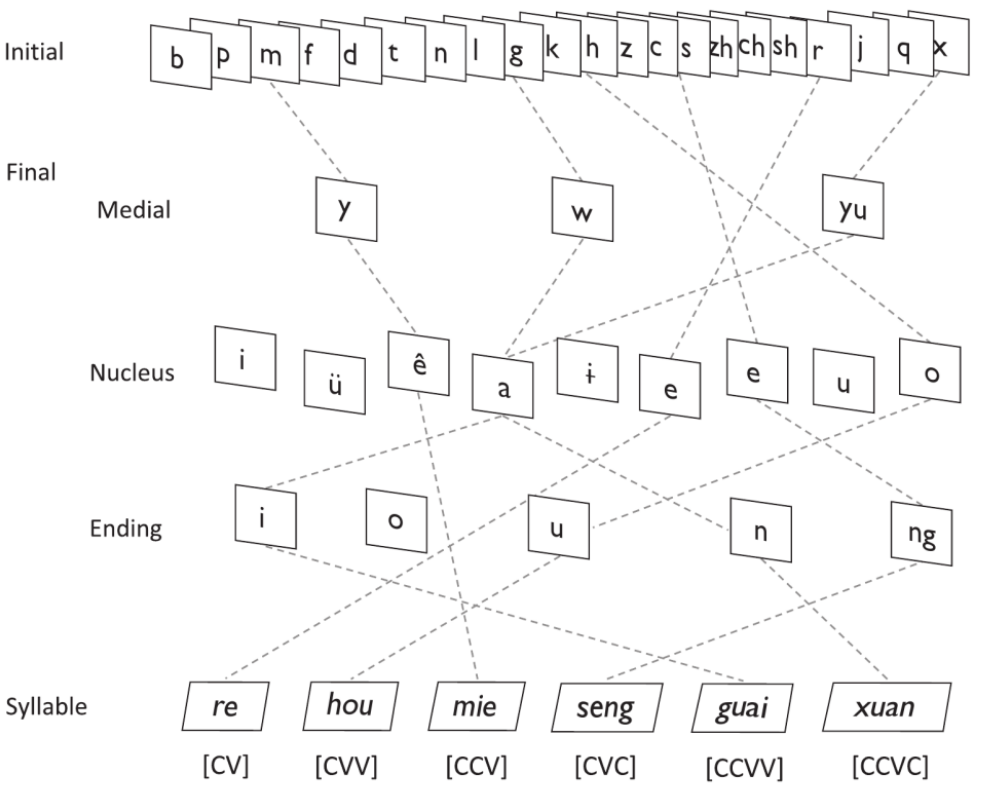

Figure 1.4 Chinese syllable structure with possible CV combinations

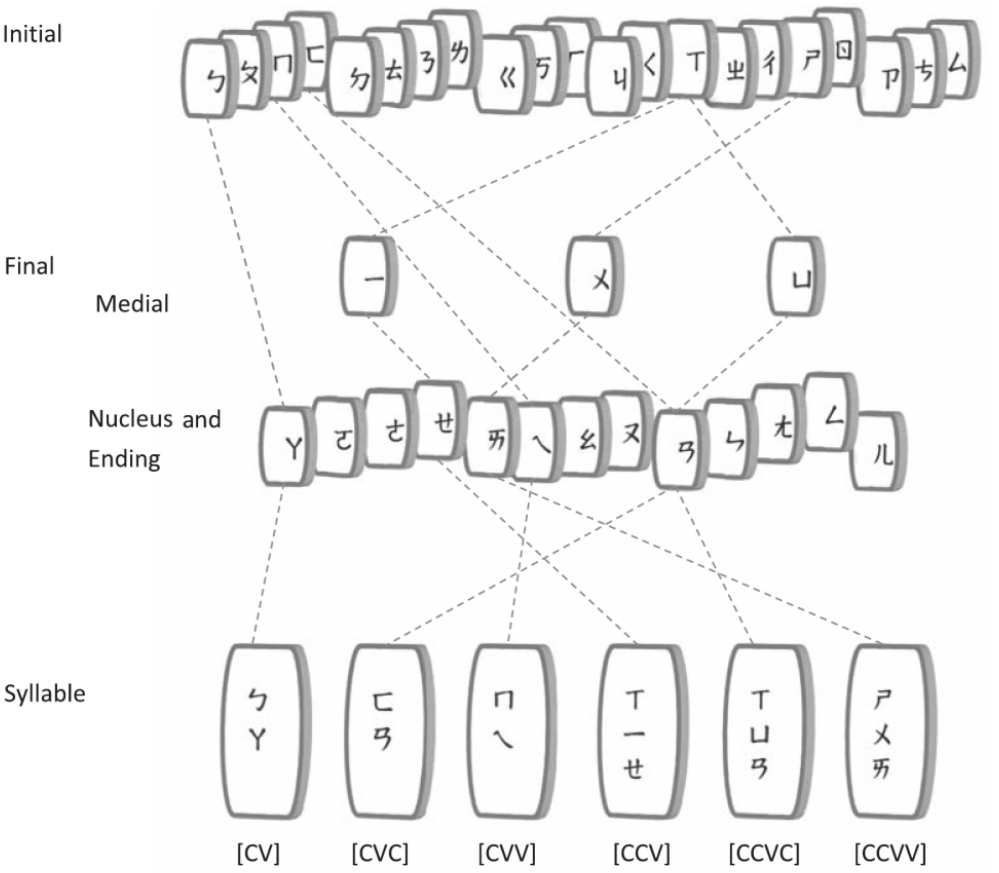

Figure 1.5 Chinese syllable structure based on the Zhuyin system

As can be seen from Figure 1.5, the Zhuyin system clearly and unambiguously represents the three semivowels with distinct symbols ㄧ (*y* in Pinyin), ㄨ (*w* in Pinyin) and ㄩ (*yu* in Pinyin). The Nucleus and the Ending portions are combined in the Zhuyin model so that some symbols in this category consist of only a vowel sound, while others each represent a diphthong or a combination of a vowel and an ending nasal. The symbols are very distinct and provide a good way for generating and remembering the Chinese syllables.

1.4 CHINESE TONES

For each syllable in Mandarin Chinese it is possible to distinguish four varieties based on tonal differences. More accurately, the difference lies in the pitch contour of each variety. For example, I recorded myself speaking *ma1*, *ma2*, *ma3* and *ma4* (with the numbers representing the first to the fourth tone respectively). The result is shown in Figure 1.6. While the time factor in Figure 1.6 (i.e. the horizontal bar) merits some attention, the pitch track (the vertical parameter) is the more important distinguishing factor.

Table 1.3 Different tones of the syllable *ba* and some examples for each tone variety

Different tones of the same syllable	*Different meanings for the same syllable-tone combination*	*Character corresponding to the meaning*
ba1	'eight'	八
	'to get close to', 'to long for'	巴
	'scar'	疤
ba2	'to pull out'	拔
	'cymbal'	钹
	'to travel'	跋
ba3	'handle', 'to hold', Object Marker	把
	'target'	靶
ba4	'father'	爸
	'a local chief', 'to dominate'	霸
	'dam'	坝
	'to cease'	罢

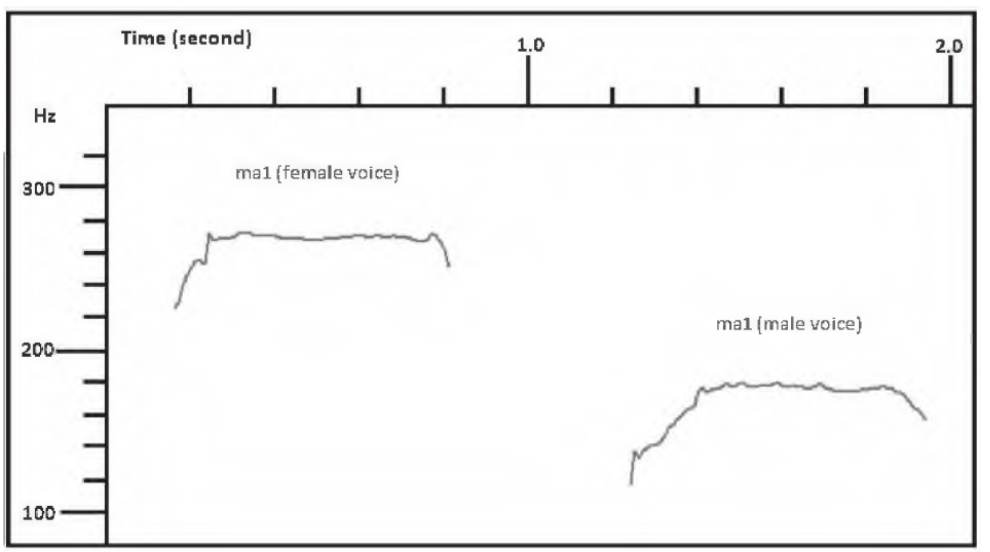

Figure 1.9 A male and a female saying the same syllable with the same tone

appear at very different frequency ranges (i.e. female between 220–270 Hz, male at a lower 120–180 Hz range).

Chinese tones are not as difficult to master as some would believe. Tonal contours are also witnessed in non-tonal languages such as English. The difference is that a non-tonal language does not use tonal variations to distinguish

meaning. For example, in English, there are different ways of saying *no*, as in *No?*, *No!!*, or *No, I'm not*. Actually, Mandarin has the smallest number of tones in comparison to other Chinese dialects. Cantonese, for example, is said to utilize as many as nine tones (see Sun 2006 for a summarizing table of tones versus dialects and Lin 2001 for a detailed analysis of tonal differences between the dialects).

Another point to note about Chinese tones is the tonal change of syllables in certain contexts; this is also called 'tone sandhi'. We have already seen an example of tone sandhi in Figure 1.8, where the second instance of *ma1* in *ma1ma1* is reduced to the fifth (or neutral) tone in most contexts (i.e. we say *ma1ma5* instead of *ma1ma1*). In fact, this is a very common tone reduction process that weakens the tone of the second syllable for many disyllabic items. For example, the normal pronunciation of 西瓜 'watermelon' is *xi1gua1* but, on many occasions, it is changed to *xi1gua5*, especially when it is at the end of a sentence. This applies mostly to Mainland Chinese speakers and not to the Taiwanese ones.

Another frequently encountered tone sandhi is changing the first third tone to second tone when two third tone syllables form a lexical unit or a phrase of some sort. For example, when we combine *lao3* ('old') and *ma3* ('horse') to form 老马 'old horse', we say *lao2ma3* [23] instead of *lao3ma3* [33]. The latter seems more difficult to produce (and comprehend) if you insist on not changing the tone!

When there are three consecutive syllables all marked with the third tone, the process of sandhi is more complicated. Which syllable needs to change tone depends on the grouping of morphemes. For example, in the case of 女总统 *nv3zong3tong3* [333] 'female president', since *zong3tong3* [33] 'president' is a lexical item, it is also a sandhi unit and changes to *zong2tong3* [23], so the entire unit becomes *nv3zong2tong3* [323] when uttered. When no such internal grouping occurs within a trisyllabic unit, such as the syntactic combination 省点纸 'save some paper', the pronunciation changes from *sheng3dian3zhi3* [333] to *sheng2dian2zhi3* [223]. That is, the two third tones prior to the final third tone are changed to the second tone.

If a disyllabic unit has already undergone a sandhi process, i.e. it has changed from [33] tone to [23], but it is followed by another syllable in the third tone, then a further sandhi process is applied. For example, the phrase 总统好 [*zong3-tong3*] *hao3* '[president] good' ('How are you, president?'), is pronounced as *zong2tong2hao3* [223] rather than *zong2tong3hao3* [233]. That is, the end product is like a trisyllabic item without internal grouping, such as 省点纸 [223] mentioned above.

If a quadrisyllabic unit consists entirely of third tone syllables, the pronunciation also depends on how you group the morphemes based on semantic and syntactic properties. Some groupings are easier to say. For example, 总统好惨 is analyzed as [*zong3tong3*][*hao3can3*] '[president] [very miserable]' and is spoken in a rhythmic [23][23] pattern. But in the case of 水果酒好 [[*shui3guo3*]*jiu3*][*hao3*]

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