THE MORPHOLOGY AND SEMANTICS
OF ROMAN LETTER WORDS
IN MANDARIN CHINESE

A Thesis
Presented in Partial Fulfillment of the Requirements for
the Degree Master of Arts in the
Graduate School of the Ohio State University

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The Ohio State University
2006

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ABSTRACT

This study explores the morphology and semantics of lettered words in Mandarin (e.g., \textit{X} ꭕ \textit{X} guāng ‘X-ray’) and compares their structure with the structure of other words in Mandarin. While ‘traditional’ forms of lexical borrowing have been studied extensively in Mandarin, lettered words receive relatively little attention in research on Mandarin morphology and lexical semantics. Our aim is to determine whether lettered words depart from or extend established borrowing and word formation processes in Mandarin.

Our interest in lettered words began with a study of the speech of announcers at the Beijing Broadcasting Institute. By observing Chinese announcers and examining their scripts, we became interested in the following aspects of lettered words, which are addressed in the study: 1. What are the different kinds of lettered words in Mandarin? 2. How are units written in a foreign orthography assimilated into Mandarin without nativization via Chinese morpheme-characters 3. What are the components of lettered words and how are lettered words formed? 4. How do lettered words compare with other Chinese words? 5. How are lettered words pronounced?

Previous studies of new words in Mandarin generally consider lettered words to be foreign words rather than Chinese words. Our study provides an examination of lettered words as types of Chinese words, analyzing them from the perspective of Mandarin grammar. We develop a classification of lettered words that identifies and categorizes
different types of lettered words according to their orthography and according to whether they are borrowed or natively created, and we compare lettered words with ‘traditional’ borrowings and other Mandarin compounds.

We focus on hybrid lettered words (hybrid words) as they have a more complex structure than other lettered words, which are primarily initialisms and acronyms. We suggest that hybrid words extend processes of borrowing and patterns of compound formation in Mandarin to the domain of lettered elements and that they are formed by analogy with other Mandarin compounds. We also discuss the semantics of hybrid words, particularly how the lettered and Chinese components work together to convey meaning. We find that in most hybrid words, the modifier is the lettered component, and the head is the Chinese component. The hybrid word becomes a hyponym of the Chinese head. This structure positions hybrid words in Chinese ‘head families’, reducing their opacity.

Lastly, we investigate the pronunciation of lettered words. Lack of standardization in pronunciation, speakers’ different levels of exposure to lettered words, and their widely differing levels of proficiency in English contribute to variability in pronunciation.

Lettered words represent a radical innovation in lexical borrowing and word formation processes through their direct use of lettered elements in the written form of words. At the same time, hybrid words also extend these processes since they tend to have a structure similar to that of other Chinese compounds. Our investigation of lettered words establishes their place as types of Chinese words in the Mandarin Chinese lexicon.
Dedicated to the memory
of my grandmother

Anyuka
ACKNOWLEDGMENTS

I would like to express my sincere appreciation to Marjorie K.M. Chan, my adviser, for her support and guidance. I am grateful to Dr. Chan for introducing me to the field of linguistics and to Chinese linguistics, in particular. It is thanks to Dr. Chan’s informative courses, varied research interests, and encouragement that I developed a love of linguistics. This thesis would not have been possible without her helpful advice.

I am also grateful to Mary E. Beckman, the other member of my thesis committee, for introducing me to phonetics and laboratory phonology. I have benefited greatly from Dr. Beckman’s knowledge of Asian languages and from her experience in various subfields of linguistics. I very much appreciate her insightful suggestions regarding my thesis.

My gratitude also goes to Galal Walker, my first teacher of Mandarin many years ago. Dr. Walker’s innovative teaching methods inspired my lifelong interest in the Chinese language and culture, and my study of Chinese language pedagogy with Dr. Walker has influenced my approach to understanding the Chinese language and culture as a linguist.

I would like to thank Steven Knicely for giving me many opportunities to teach Chinese language courses, and Debbie Knicely for her administrative support.

Special thanks go to my colleagues and friends, Ok Joo Lee, Junko Davis, Jing Yan, Yulong Zhang, Rui Peng, Li Yu, Hannah Huey Lin, Thomas Chan, and Peace Lee for the camaraderie and stimulating discussions we shared. Finally, I would also like to thank my husband, Stephen Filler, for his support, encouragement, and keen linguistic insights.
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CHAPTER 1

INTRODUCTION

As China plays an increasingly active role in the world community, Mandarin is showing the effects of internationalization through language contact with English. Although ‘traditional’ lexical borrowing in the form of phonetic loans, calques, and other types of borrowing is an established phenomenon in Mandarin, the use of ‘lettered words’ (e.g. \(X\ \text{\text{\textregistered}}\) \(X\) guāng ‘X-ray’) is a recent development in Mandarin-English language contact. Lettered words provide evidence of a more internationally oriented Chinese worldview and challenge established notions of what is native in Mandarin.

While ‘traditional’ forms of borrowing have been studied extensively in Mandarin, lettered words receive relatively little detailed attention in research on Mandarin morphology, and they have yet to be described systematically. This study develops a classification of lettered words in Mandarin and explores relationships between their

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1 Hybrid lettered words as they appear in print in Chinese are underlined. Their romanized form in pinyin romanization is given in italics. For example, ‘X-ray’ is written as \(X\ \text{\text{\textregistered}}\) in Chinese, and its romanized form in Mandarin is \(X\) guāng. The romanized form is provided to facilitate readers’ understanding of the pronunciation of lettered words. Romanization is generally not used in Chinese writing, however, except as a supplementary tool to indicate pronunciation. We also underline some lettered abbreviations so that they stand out more clearly in the text.
morphological structure and the structure of other words in Mandarin. Our aim is to
determine whether lettered words depart from or extend established borrowing and word
formation processes in Mandarin.

This chapter outlines general language contact issues that will be pertinent to the
examination of lettered words in subsequent chapters. Section 1 describes the topic of
research and defines specialized terms, including ‘lettered words’. Section 2 discusses the
influence of English on Mandarin. Section 3 describes the notion claimed by some
scholars that the Chinese are “lenders, not borrowers.” Section 4 discusses Chinese
language authorities’ growing acceptance of the trend toward increased lexical borrowing
from English into Mandarin. Section 5 states the aims of the thesis, and section 6 outlines
its organization.

1.1 Topic of Research and Definitions

This section describes the topic of research in the study and defines specialized terms
that will be used throughout the study.

1.1.1 Topic of Research

‘Lettered words’ are initialisms, acronyms, and ‘hybrid words’ that combine a roman
letter component with a native morpheme in their written form. Lettered words are a new
addition to the Mandarin lexicon which is beginning to attract scholarly attention.
Chinese linguists already acknowledge the existence of these words (e.g., Cheung 1972,
Li 2004, Zhang 2005, and many others), but a classification of lettered words and a
comparison of their structure with native word types in Mandarin and with older, more ‘traditional’ processes of borrowing is still lacking. We address these issues in our study.

1.1.2 Definitions of General Terms

We use the term Mandarin to refer to the variety of Chinese spoken as the national language in the People’s Republic of China (P.R.C.) and Taiwan. Mandarin is just one of several terms used in writing on the Chinese national language, and some confusion exists regarding the nomenclature. The English term Mandarin is frequently used to designate the national language, but it is also used as a term for the large dialect group to which the variety adopted as the national language belongs. Historically, Mandarin referred to guānhuà (官話), the dialect of northern China used by mandarins, or public officials, in the capital city of Beijing (Peking) prior to the twentieth century.

Norman (1988: 136) states that the term guānhuà ‘Mandarin’ fell into disuse in modern times, and he suggests that it is therefore inappropriate to use the term Mandarin in English to designate the Chinese national language. Rather, the term Chinese should be used as the ordinary designation of the modern standard language, and in contexts where that term might be ambiguous, Standard Chinese should be employed.

Linguists writing on the national language of the P.R.C. and Taiwan in English are divided in their use of terms: Mandarin, Mandarin Chinese, Chinese, and Modern Standard Chinese are all used. In this thesis, we will use the term Mandarin to refer to the modern standard language spoken in the P.R.C. and Taiwan and the term Chinese to refer to the Chinese language as a whole, including all its varieties (e.g. Cantonese, Shanghainese, etc.). The term Taiwan Mandarin is used to refer specifically to the
subvariety of Mandarin spoken in Taiwan. *Cantonese* is used to refer to the variety of Chinese spoken in Hong Kong and in Guangdong Province in China.

We use two linguistic terms in the discussion of lettered words: *acronym* and *initialism*. Acronyms are combinations formed by joining the initial letters of words in an expression into a pronounceable word (Booij 2005: 20). The initial letters are joined so that they are pronounced as if the letters spelled an ordinary word written in an alphabetic writing system (as in the English acronyms *snafu*, TOEFL /tɔːfəl/ and SARS /sɑːrz/). The term *initialism* describes combinations of the first letters of words pronounced with the phonetic value of these letters in the alphabet (Finegan 1989: 50). The conventional names of the letters are used in the pronunciation, as in the English words *WTO* /dəbljuːtioʊ/ and *MBA* /ˈembɪə/. The term *alphabetism* is also used to designate such abbreviations (as in Aronoff and Fudeman 2005: 114, Booij 2005: 20).

The use of acronyms and initialisms is an important issue of interest in our study, as we find that Mandarin speakers tend to borrow more initialisms and acronyms from English than other types of words. When using roman letters in coinage, Mandarin speakers also tend to create initialisms rather than acronyms or other types of words (e.g., *HSK* (< *Hànyǔ Shuǐping Kǎoshì* 汉语水平考试 ‘Chinese proficiency test’ for non-native speakers). Mandarin speakers also create hybrid words that include an initialism or label as the lettered component rather than an acronym or other type of word (e.g., the initialism *K* in *K 點* *K shù* ‘study’ [< *kàn shū* 看书, lit ‘read-book’, *K* < *kàn* 看 ‘read’]).

We define a roman letter *label* as the use of individual roman letters in hybrid words to label or order one or more entities. For example, in *A 抄 A kāo* ‘copy of a master
videotape’ lit. ‘A-copy’, the letter A designates the first copy of a master tape. Mandarin speakers’ use of initialisms and labels in lettered words is discussed further in Chapter 2.

1.1.3 Definition of ‘Lettered Words’

The notion of ‘lettered words’ in this study is based on the types of words listed in the 字母词 zìmǔcì ‘letter words’ appendix of the 现代汉语词典 Xiàndài Hànyǔ Cídiǎn ‘Modern Chinese Dictionary’, 现代汉语规范词典 Xiàndài Hànyǔ Guīfàn Cídiǎn ‘Standard Dictionary of Modern Chinese’, and other Mandarin dictionaries. We define ‘lettered words’ as words in Mandarin that consist of one or more roman letter elements in which the roman letters represent either a borrowed lexical unit or a Mandarin unit written in romanized form. Examples include WTO, SARS, ATM 机, ATM jī ‘ATM machine’, K 金 K jīn ‘alloyed gold’, lit. ‘carat-gold’ (K < carat), and HSK (< HÀNYÜ Shūpǐng Kǎoshì) 汉语水平考试 ‘Chinese proficiency test’ for non-native speakers).

Although the roman letter element in lettered borrowings could be adopted from any language that uses roman letters in its writing system, our survey of the lettered word entries in the Xiàndài Hànyǔ Cídiǎn ‘Modern Chinese Dictionary’ shows that most originated in English. As a result, we investigate primarily lettered words whose roman letter elements originated in English and lettered words whose roman letter elements represent romanized Mandarin units.

Although some English borrowings in the P.R.C. were most likely introduced via Hong Kong and Taiwan, territories which established closer contact with English-speaking countries in modern times than the P.R.C., our study does not distinguish
between English borrowings that entered the P.R.C. via Hong Kong or Taiwan from those that were introduced directly from English. Rather, our aim is to identify common types of morphological structure currently observed in lettered words in Mandarin regardless of the route through which they entered the language. For example, Cheung (1972) lists 恤 tisēut ‘t-shirt’ (恤 sēui is a phonetic loan) as a borrowing from English into Cantonese. The word T恤 Txiù ‘t-shirt’, was then probably borrowed into Mandarin, but since t-shirt originated in English, we treat it as a borrowing from English.

Many lettered words are initialisms or acronyms, including borrowed words such as WTO and SARS, whose Mandarin equivalents are 世界贸易组织 shìjiè mào yì zǔzhī ‘World Trade Organization’ and 非典型肺炎 fēidīăn xīng fēiyán ‘severe acute respiratory syndrome’, respectively. Some lettered words are natively coined initialisms representing romanized Mandarin elements (e.g., PSC ‘Mandarin Proficiency Exam’ for native speakers [< Pǔtōnghuà Shuǐpíng Cèshì 普通话水平测试, lit. ‘common language-level-exam’]). Initialisms formed from romanized Mandarin elements are not necessarily spoken, however. They are frequently used in print more often than in the spoken language, and the original Mandarin expression from which they are formed is generally used in speech. For example, PSC may be used in certain contexts in writing, but speakers refer to the exam by its Mandarin name, Pǔtōnghuà Shuǐpíng Cèshì 普通话水平测试, in speech. In contrast, HSK ‘Chinese Proficiency Test’ (for learners of Mandarin), is referred to by the name of the initialism in speech rather than its Chinese morpheme-
character equivalent, perhaps because the exam is administered to non-native speakers of Mandarin, and the initialism may be used frequently in contexts requiring communication with foreign individuals.

Lettered words also include common English terms, such as internet, e-mail, tel, and fax, but these are fewer in number, especially in the P.R.C., and are therefore not investigated in this study.

A third type of lettered word is hybrid words with a roman letter element and a Mandarin element in their written form. Examples include hybrid forms in which the roman letters write borrowed terms, such as ATM机, ATM jī ‘ATM machine’, and neologisms, such as K金 K jīn ‘alloyed gold’, lit. ‘carat-gold’ (K < carat) and K书 K shū ‘study’ (< 快速 shū ‘read-book’, lit. ‘read-book’; K < 看读 kàn ‘read’). Also generally excluded are less common types of lettered words which contain combinations of abbreviations and numbers (e.g., RU 486, A4 纸 A4 zhǐ ‘A4 paper’), in which the numbers are spoken in Mandarin, and combinations of other non-roman orthographies and Chinese words.

For example, Greek letters are used in a small number of specialized lettered words, such as α射线 α shèxiàn ‘alpha ray’ and β粒子 β lìzi ‘beta particle’.) Since Arabic numberals and non-roman orthographies are not strictly English-based, they are excluded from investigation in this study.

Lettered words used in Chinese netspeak are also not investigated, as they represent a special type of slang or jargon originating in the domain of internet communication. Words used in Chinese netspeak include a fourth type of word not found elsewhere, namely, a kind of orthographic pun, such as 3Q ‘thank you’ [3Q < 三 Q sān, lit. ‘three-
Q’]; 腮兔 mi tù ‘me too’, lit. ‘squint-rabbit’). Initialisms are also common (DD ‘younger brother’ [DD < dìdì 弟弟 ‘younger brother’], JJ ‘older sister’ [JJ < jiějiě 姐姐 ‘older sister’]). Li (2004: 120) and Zhang (2005) provide other examples of lettered words coined in netspeak. Although further study of these words is needed, examples were not included in the dictionaries we used as sources. As such, we are not familiar enough with word formation in Chinese netspeak to comment on these lettered words in this study.

1.2 The Influence of English on Modern Mandarin

This section discusses the influence of English on Modern Mandarin. Section 1.2.1 discusses English as the dominant source of lexical borrowing in contemporary Mandarin. Section 1.2.2 outlines Mandarin speakers’ motivations for borrowing from English, particularly their reasons for borrowing lettered words. Section 1.2.3 discusses the opacity of lettered words and their replacement with more transparent equivalents.

1.2.1 English as a Donor Language

The most important development resulting from recent contact between Mandarin and English is that English words are used frequently even in the speech of Mandarin monolinguals rather than only in the speech of Mandarin-English bilinguals. This may be due to the importance of English in China as a “widely accepted utilitarian tool for science, technology, national development, and modernization” (Wang 2004: 47). English has grown increasingly closer to the life of Chinese people since China’s ‘open-door policy’ was adopted in 1978. Sun and Jiang (2000: 105) state that over 80% of recent loan words are derived from English since English is the international language of
science and technology. Li (2004: 117) suggests that words such as okay, pub, CD, and DNA should be considered part of the modern Mandarin lexicon since they are frequently used by native speakers of Mandarin. The increasing use of lettered words among all Chinese speakers is an important manifestation of the growing impact of English words on Mandarin.

1.2.2 Motivations for Borrowing

Kang (1999: 47) describes several motivations for the use of English words in Mandarin. First is the lack of Mandarin equivalents to meet the need for new terms in technical fields. This motivation echoes Weinreich’s (1953: 56) assertion that most borrowing associated with distant contact is based on “the need to designate new things, persons, places and concepts.” English words are borrowed into Mandarin to describe new technologies, products, and concepts that have become part of modern life in China.

Second is the sense of originality, variety, and novelty thought to be embodied in English words. This motivation stems from considerations of prestige rather than need as “China becomes part of the world beyond itself [and begins] to share the world’s languages” (Sun and Jiang 2000: 106). Chinese speakers who are active participants in China’s modernization are keen to be connected with the outside world, and one important measure of their link with the international community is some measure of proficiency in English.

Lastly, Kang (1999: 47) and Liu (2001: 1) argue that the brevity of English initialisms and acronyms makes them popular in Chinese writing. For example, PSC ‘Mandarin Proficiency Exam’, which consists of three roman letters, is shorter than its Chinese
character equivalent, 普通话水平测试, which consists of seven Chinese characters.

Based on such examples, Liu (2001: 1-2) characterizes English abbreviations as “fast, simple, clear, and broad” (快简明广 kuài, jiǎn, míng, guǎng). He states that English words have the following benefits: 1. they are easier to use and shorter than their Mandarin equivalents, 2. they stand out in a “sea of Chinese characters,” and 3. their range of uses is broad.

The view that English abbreviations are shorter than their Chinese character counterparts is not necessarily accurate, however. Mandarin has a native method of forming abbreviations which also produces shortened forms that are used frequently. For example, 北京大学 Běijīng Dàxué ‘Beijing University’, which has four characters, is shortened to 北大 Běi Dà, which has two characters. The reduced forms are more informal than their non-abbreviated counterparts, as with abbreviations in English.

Mandarin speakers’ focus on the clarity and conciseness of initialisms and acronyms represents a new aspect of need-based borrowing not suggested by Weinreich (1953), that is, they fulfill a need for clarity and brevity. Weinreich (1953: 56-61) proposed several factors that contribute to need-based lexical borrowing, including the existence of homonyms in the recipient language and the need to resolve ambiguities; the need for synonyms of affective words that lose their expressive force (e.g., in semantic fields such as ‘tallness’, ‘ugliness’, ‘talking’); and the perception that certain semantic fields are insufficiently differentiated. While these needs do apply to borrowing in Mandarin, they are not sufficient to explain the need to borrow initialisms and acronyms. Liu’s (2001: 1-2) assertion that lettered words are “fast, simple, clear, and broad” adds another factor to
Weinreich’s list, namely, the idea that borrowed words may be perceived as shorter and easier to say or write than their native equivalents. The expectation that lettered words should be brief, simple, and efficient to use is probably a basic consideration influencing their structure.

Writing on lexical borrowing in Taiwan, Hansell (1989: 115) notes that in addition to acculturational borrowing, the need to designate something newly borrowed, borrowing in Taiwan is also motivated by considerations of style. Stylistic borrowing is based on the desire to use a foreign term despite the existence of a native synonym with the goal of enhancing one’s prestige. Hansell (1989: 117) gives examples of terms used by music professionals in Taiwan to illustrate the difference in usage among synonyms.² Since English loanwords used in the music industry in Taiwan also have widely-used Mandarin equivalents, Hansell (1989) argues that music professionals use loanwords for stylistic rather than acculturational reasons to establish their in-group identity. He suggests that the same holds true for Taiwanese college students who use OK [əu.kʌei] rather than 好 hǎo ‘good’ and bye-bye [pai.pai] rather than 再见 zài jiàn ‘goodbye’ (p. 46).

Although stylistic borrowing exists in the P.R.C., as well, it may be more widespread in Taiwan than in the P.R.C. since contact between Taiwan Mandarin and English in contemporary times began earlier than contact between Mandarin in the P.R.C. and English. English has influenced Taiwan Mandarin since the 1950s, the years of the “Pax

² Hansell (1989: 117) provides the following examples of English loanwords and their nativized equivalents: both the pure loanwords and their Mandarin equivalents are used in Taiwan Mandarin: bar/小节 xiǎojié ‘bar’ ("measure"), keyboard/键盘 jiànpán ‘keyboard’, master/母带 múdài ‘master (tape)’, quality/音质 yīnzhì ‘sound quality’, studio/录音室
Americana,” when America’s military, economic, and cultural influence was dominant worldwide (Hansell 1989: 77). Taiwan developed a close relationship with the United States, with the effect that English began to play an important role in Taiwan’s educational system and in its business and popular culture. In contrast, the P.R.C. developed a closer relationship with the United States and other English-speaking countries after implementation of the ‘open-door policy’ in 1978. We suggest that a wider range of loanwords is available for stylistic borrowing in Taiwan than in the P.R.C. due to Taiwan’s earlier exposure to lexical borrowing from English during the latter half of the twentieth century.

Chan and Kwok’s (1982) study of lexical borrowing from English into Cantonese in Hong Kong discusses the intense contact between English and the language of Hong Kong as a motivating force for lexical borrowing. At the time of the study, Hong Kong had experienced exposure to and contact with the English-speaking West for one hundred fifty years, and until 1972, English was the sole official language in Hong Kong (Chan and Kwok 1982: 8, 10). Chan and Kwok (1982: 11) suggest that Hong Kong has an ‘additive’ form of bilingualism in which the first language is maintained and the cultural identity associated with it is strengthened, while a second language is learned for practical reasons.

The relative prevalence of bilingual individuals in Hong Kong indicates that there are many individuals familiar with English terms and that this may facilitate the importation of English loans into the language (Chan and Kwok 1982: 27). A similar situation of

\[
\text{liūnshì} \text{ ‘studio’, } \text{synthesizer/(电子)合成器 (diànzì) héchéngqì ‘(electronic) synthesizer’,}
\]
\[
\text{vocal/歌唱, 音唱 gēchàng, yīnchàng ‘vocal’.
}\]
lexical borrowing stemming from an ‘additive’ form of bilingualism may have developed since the 1950s in Taiwan, where English is the *lingua franca* in international trade and commerce. English is also emphasized as the primary foreign language learned in secondary school. A similar trend has developed in the P.R.C.’s urban centers since the early 1980s. English is an important language of communication in international trade and commerce, and proficiency in English it is recognized as a necessary skill for young, educated individuals.

1.2.3 Opacity of Meaning in Lettered Words

The lack of nativization via Chinese morpheme-characters in lettered words creates opacity in their expression of meaning. Mandarin speakers have difficulty determining the exact meanings of acronyms and initialisms, with the result that many Mandarin speakers use the words without fully understanding their meanings. Kang (1999: 47) states, for example, that most Chinese speakers do not know, in either Chinese or English, what words *CT* and *CAT* abbreviate (*computerized tomography* and *computerized axial tomography*, respectively), and that they generally do not know the exact meanings of these terms. Rather, speakers simply know that *CT* and *CAT* are “effective ways of diagnosing illnesses.” Zhang (2005: 382) describes a similar phenomenon, noting that even peasants use “电 话 *dianhua* ‘IP phone’ for chatting, 超 B *chao* ‘ultrasonic diagnosis B’ for medical diagnosis, and 卡 IC *ka* ‘IC card’ for shopping” but that they

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The term ‘additive’ bilingualism is used in Swain (1978: 243).
do not know the meanings of ‘B’, ‘IP’, and ‘IC’. English speakers face similar problems with acronyms and initials and frequently do not know the technical terms from which the abbreviations are formed. Both languages use acronyms and initialisms as convenient reductions of unfamiliar jargon, but the meanings of the abbreviations are not readily apparent from their written or spoken form.

Since lettered words are generally opaque to Chinese speakers, some lettered words may be replaced by more transparent nativized equivalents over time. This has been a trend with phonetic loans in Mandarin, some of which have been replaced with native creations.4 (Identifying ‘semantic loans’ in Mandarin and contrasting them with ‘native creations’ is problematic for reasons discussed in Chapter 3.) Chen (1999: 105) suggests that preference is given to ‘semantic translation’ and ‘loan translation’ over ‘transliteration’ in the evolution of norms among competing borrowed terms in Mandarin. Wang (2004: 49) gives the following examples of phonetic loans in Mandarin replaced by ‘semantic translations’ (that is, native creations): 引擎 yìngqíng ‘engine’ was replaced by 发动机 fādòngjī ‘engine’ lit. ‘initiate-machine’; 麦克风 màikēfēng ‘microphone’ was replaced by 话筒 huàtǒng ‘microphone’ lit. ‘speech-tube’; and 盘尼西林 pánnǐxīlín ‘penicillin’ was replaced by 青霉素 qīngmèisù ‘penicillin’ lit. ‘green/blue-mold-element’.

Based on Mandarin speakers’ preference for native creations over transliterations, we

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4 ‘Semantic translations’ would be ‘native creations’ in Winford’s (2003) classification of lexical contact phenomena, as they involve the “innovative use of native words to express foreign concepts” (Winford 2003: 45). Native morpheme-characters are combined innovatively in new compounds that express foreign concepts. In contrast, ‘semantic loans’ involve “shifts in the semantics of a native word under influence from a foreign word.” An example is the Mandarin word 私 sī, which means ‘secret’ or ‘illicit’. The
predict that if the opacity of lettered words becomes an obstacle to their use in Mandarin, some lettered words may eventually be replaced by more transparent native creations.

1.3 “The Chinese Are Lenders, Not Borrowers”

The growing influence of English on Mandarin stands in contrast to sentiments such as those of sinologist Fritz Pasierbsky (1989), who asserts that the Chinese are “lenders, not borrowers” (p. 90) and that apart from the influence of Buddhism and Marxism, Chinese civilization has remained remarkably free of foreign influence. Pasierbsky (1989) argues that although China is opening to the world, the pattern of word formation in Mandarin follows a larger cultural pattern of sinicization: “to borrow if necessary, but to ensure that the act of borrowing does not bring with it other aspects of the foreign culture, like the name of the borrowed concept. [The word is made] Chinese in form and content” (p. 102). Norman’s (1988) assessment is similar to that of Pasierbsky. He states that unlike Japanese, Modern Chinese is “very resistant to borrowing foreign terms outright” (p. 20). Similarly, Zuckermann (2003: 303) suggests that Anglicanisms can be calqued or neologized, but that in writing, the sound can not be imported without using indigenous characters. Li (2004: 117) claims that there is a greater willingness on the part of lexicographers and the general public to accept borrowings that can be rendered in Chinese characters and to reject those that are written in a non-character script.

Contrary to Pasierbsky’s (1989) view that the Chinese are “lenders, not borrowers,” China actually has a long history of nativizing foreign terms, and it is frequently difficult

word also gained the meaning ‘private’ through the borrowing of Western notions of ‘privacy’. We provide a classification of borrowing processes in Chapter 2.
to determine whether a polysyllabic word is native or foreign. Tai and Chan (1999: 234) argue that throughout the course of Chinese history, the Chinese have had numerous contacts with non-Han Chinese peoples that have led to the borrowing of foreign words. Periods of disunity in Chinese history led to massive migrations of Han Chinese from north to south and intermarriage of Han and non-Han Chinese, motivating language borrowing and language change. Tai and Chan (1999: 235) posit two major periods for the infusion of foreign terms and concepts into China: late Han to early Tang\(^5\) and after the Opium War (1839-1842). They note that during the first period, in early Han times, many foreign words entered Chinese via contact with Central Asia, while from Han times through early Tang, a large number of Buddhist terms were borrowed into Chinese, and compounds were created based on Buddhist concepts. After the Opium War, the Chinese adopted an extensive amount of new technical vocabulary as a result of the dominance of Western powers and the need to adopt Western science and military, political, and economic systems. Tai and Chan (1999: 235) state further that during this second period, the Chinese lexicon expanded considerably through compounding and affixation inspired by European languages.

Norman (1988: 21) points out that during the early modern period (end of the nineteenth century and the first part of the early twentieth century), many new terms referring to modern science, technology and Western political and economic concepts were actually first coined in Japan and then adopted in China. Although certain compounds already existed in early Chinese texts (e.g., 革命 gémìng, 文化 wénhuà), the

\(^5\) The dates for the Han Dynasty are 206 B.C. – 220 A.D., and those for the Tang Dynasty are 618 A.D. – 907 A.D.
Japanese appropriated them to translate new Western concepts, and the terms were subsequently borrowed back into Chinese. The word 革命 gémìng, for example, was borrowed from Japanese into Chinese with the meaning ‘revolution’, and 文化 wénhuà was borrowed with the meaning ‘civilization, culture’. In this study, we generally consider foreign words adopted into Mandarin since the end of the Opium War to be borrowings and those borrowed prior to that period to be native words.

In explaining how Mandarin borrows from foreign languages, Norman (1988: 20) observes that foreign terms are assimilated through the use of Mandarin morphemes and that modern words are primarily calques or native creations. For example, 铁路 tiélù ‘railroad’ lit. ‘iron-road’ is a calque based on French chemin de fer; ‘television’ became the native creation 电视 diànshì lit. ‘electric-vision’; and ‘laser’ became the native creation 激光 jīguāng lit. ‘intense-light’. Norman also states that Mandarin contains a small number of phonetic loans from English (e.g., 马达 mǎdá ‘motor’ and 磅 bāng ‘pound’). The phonetic loans 卡 kā ‘card’ and 打 dǎ ‘dozen’ would also be examples.

T’sou (2001: 41) argues that loanwords in Chinese are adapted differently based on cultural compatibility, which he defines in terms of accessibility, agreeability, and familiarity. In T’sou’s analysis, culturally compatible items are represented phonetically, while culturally less compatible items are adapted semantically. His examples of culturally compatible items include phonetic loans such as 马达 mǎdá ‘motor’ and 咖啡 kāfēi ‘coffee’, while culturally incompatible items include loan translations such as 热狗
rêgōu ‘hot dog’ lit. ‘hot-dog’ and 鸡尾酒 jīwěi jiǔ ‘cocktail’ lit. ‘cock-tail-liquor’. 6

T'sou's criteria for cultural compatibility are difficult to apply consistently, however, since it is not possible to decide objectively which concepts are culturally “accessible, agreeable, and familiar.” This is especially true in the twenty-first century as language contact between Mandarin and English continues to increase. Sun and Jiang (2000) note that many new concepts and expressions have taken root in the Chinese language as China implements reforms and as Chinese people express their “eagerness to join the trend toward international modernization” (p. 98). As a result, it is difficult to determine which foreign lexical items are not culturally compatible in the current era of increased contact between China and the West.

1.4 Acceptance of the New Trend Toward Using Lettered Words

Zhang (2005: 381) asserts that lexicographers and linguists in China are increasingly willing to acknowledge the influence of English on Mandarin, including the fact that Mandarin is now adopting English words directly or borrowing them with only minimal adaptation. In fact, Zhang (2005: 381) states that while many language authorities in China rejected the trend toward borrowing and use of lettered words in the early 1990s, by the late 1990s, their main concern was how to standardize such loans rather than how to eliminate them from the national language. Moreover, Li (2004: 118) and Zhang (2005: 383) both acknowledge that lettered words are not necessarily borrowed but are often coined natively (e.g., RTV ‘restaurant TV’, STS 教 育 STS jiāoyù ‘science, technology, 

6 Marjorie Chan observes that words for which there is a clear syllable-morpheme by syllable-morpheme correspondence may be more likely to be adapted as loan translations.
and sociology education’ [STS < science, technology, sociology]). The fact that Mandarin speakers use roman letter elements to coin words in Mandarin provides further evidence for Li’s (2004: 117) claim that words written in roman letter orthographies should be considered part of the Mandarin lexicon.

1.5 Aims of the Study

This study develops a classification of lettered words based on entries in three dictionaries and several studies and compares their structure with traditional ‘sinicizing’ processes of borrowing and compounds in Mandarin. The structure of borrowed words nativized as hybrid words (e.g., ATM 超 ATM jī ‘ATM machine’) is also compared with that of hybrid neologisms (GRE 族 GRE zú ‘GRE test-takers’, lit. ‘GRE-group’). We explore the possibility that hybrid lettered words are formed with processes similar to older borrowing processes and compounding processes in Mandarin which rely on productive compounding patterns in Mandarin. We show that hybrid lettered words are created with the same patterns as native and sinicized words by analogy with words that are members of particular ‘head families’ (a term from Krott and Nicoladis 2005), that is, groups of words that share the same head constituent. For example, the pattern [Xₙ] : [X [盘 pán]ₙ] ‘X type of tray, plate, or dish’ is used to create the compound 茶盘 chápán ‘tea tray’, the native creation 键盘 jiàn pán ‘keyboard’ lit. ‘key-tray’, and the hybrid

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compound compiled C pán ‘C drive’ lit. ‘C dish’. C drive is adapted with the pattern by analogy with words in the pán ‘dish’ head family, such that C drive becomes a member of the pán head family.

We also discuss the formation of hybrid lettered neologisms by analogy with other hybrid words. For example, VAD 牛奶 VAD niúnăi ‘milk with vitamins A and D’ lit. ‘VAD-milk’ is formed by analogy with UHT 牛奶 UHT niúnăi ‘ultra high temperature milk’. Natively coined initialisms, such as HSK ‘Chinese Proficiency Exam’, are formed by analogy with English initialisms and processes of abbreviation borrowed from English and other European languages and also by analogy with abbreviatory processes in Mandarin.

This study does not differentiate lettered words that have been accepted in Standard Mandarin from those that have not been accepted since the status of lettered words changes quickly. The 1998 edition of the Xiàndài Hányǔ Cídīān ‘Modern Chinese Dictionary’ lists thirty-nine entries in the lettered word appendix, but the 2002 edition lists one hundred forty-two, an almost four-fold increase in less than five years. Moreover, examination of the dictionary appendices shows that there are discrepancies in the entries even in authoritative dictionaries. For example, although the Xiàndài Hányǔ Cídīān ‘Modern Chinese Dictionary’ does not list CCTV ‘China Central Television’, NGO ‘non-governmental organization’, and certain other initialisms and acronyms as entries, another authoritative dictionary, 现代汉语规范词典 Xiàndài Hányǔ Guīfàn Cídīān ‘Standard Dictionary of Modern Chinese’ does list them. Conversely, the ‘Modern
Chinese Dictionary' lists CGO ‘chief government officer’ and CIMS ‘computer integrated manufacturing system’, but the 'Standard Dictionary' does not list them.

This study also does not differentiate between lettered words in P.R.C. Standard Mandarin (普通话 pǔtōnghuà) and Taiwan Mandarin (国语 guóyǔ). One reason for avoiding such a differentiation is that borrowing occurs between these two varieties of Mandarin. For example, the hybrid neologism AA 制 AA zhi ‘splitting the bill’ lit. AA system’, probably originated in Taiwan but is now also used in the P.R.C. The second reason is that pǔtōnghuà and guóyǔ have both been influenced by English borrowings in Hong Kong Cantonese. Cheung (1972) and Bauer and Benedict (1997) provide lists of English borrowings in Cantonese that include numerous terms used in Taiwan and the P.R.C (e.g., the phonetic loans 巴士 bāshì ‘bus’, 打 dá ‘dozen’, 吨 dūn ‘ton’). Since lexical borrowing from English began earlier in Hong Kong than in the the other two societies due to Hong Kong's status as a British colony from the mid 19th century until 1997, some English borrowings are likely to have entered Taiwan and the P.R.C. via Hong Kong Cantonese.  

Sorting out the history of various borrowings and their path of entry from English into pǔtōnghuà and guóyǔ would require a separate study. Chan and Kwok (1982: 2) assert that Chinese etymology is a “sadly neglected” branch of linguistic study, especially with

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8 The territory of Hong Kong comprises Hong Kong Island, the Kowloon Peninsula, and the New Territories. Hong Kong Island was ceded to Britain by China in 1842; part of Kowloon was ceded in 1860; and the New Territories were leased for ninety-nine years in 1898 (Chan and Kwok 1982: 7).

9 Thanks to Marjorie Chan to pointing out this important piece of historical information. She also notes that Hong Kong Cantonese could have absorbed early English loanwords from Shanghai residents who fled the “Paris of the East” before the establishment of the
respect to loanwords, suggesting that we have little information about when particular loanwords first made their appearance in Chinese or evidence of the phonetic and semantic changes they underwent over time. Due in part to the difficulty of identifying the etymology of lettered words in Mandarin, this study examines currently existing lettered words in Mandarin dictionaries without differentiating them according to their path of entry into Mandarin. Words in several dictionaries and studies are used as a corpus for identifying patterns in the morphological structure of lettered words in Mandarin and for classifying lettered words according to their morphological structure.

We provide pronunciations of lettered words in IPA phonetic symbols at various points in the study and in the appendix. Our pronunciations are based on pronunciations given in Zhang (2005) for several hybrid words, those in Hansell (1989) for certain lettered words used in Taiwan, and also what we believe to be relatively common pronunciations of lettered words based on our experience hearing the pronunciations of Mandarin speakers. The pronunciations given in our phonetic transcriptions show only limited interference from Mandarin. In actual practice, however, speakers may have either much more interference than indicated in our phonetic transcriptions or much less interference. The degree of interference depends on various factors, such as English proficiency, familiarity with particular lettered words, dialect region, style, and communicative context. The pronunciation of hybrid words deserves further attention, particularly since standard pronunciations of lettered elements are not provided in Chinese dictionaries. We discuss the pronunciation of hybrid words in Chapter 3.

P.R.C. in 1949. Many residents of Old Shanghai, from bankers to filmmakers to silent film actors, were Cantonese speakers.
1.6 Organization of the Thesis

This thesis consists of seven chapters. The current chapter described general issues regarding borrowing in Mandarin and language contact between Mandarin and English to set the stage for our examination of lettered words in subsequent chapters. Chapter 2 provides background information regarding the following issues: the use of roman letters in China, the notion of ‘compound’ in morphology, the notions of ‘word’ and ‘compound’ in Mandarin, the role of analogy in coinage, the importance of ‘patterns’ in Mandarin compounding, and general types of borrowing processes. Chapter 3 describes a model of the Mandarin lexicon that includes lettered words. The chapter also discusses the pronunciation of lettered words. Chapter 4 explores older ‘traditional’ processes of borrowing and explains how the structure of borrowed words relates to the structure of Mandarin compounds. Chapter 5 describes borrowing through the use of lettered words. Chapter 6 discusses the coinage of initialisms and hybrid neologisms in Mandarin. Chapter 7 states the conclusions of the study, emphasizing that lettered words represent an innovation in native borrowing and word formation processes at the same time as they extend existing lexical processes.
CHAPTER 2

BACKGROUND

This chapter provides background information relevant for the study of lettered words. Section 1 discusses the use of roman letters in Chinese society to write both English and Mandarin. Section 2 introduces the notion of ‘word’ in Mandarin. Section 3 describes the notion of ‘compound’. Section 4 discusses the pronunciation of lettered words. Section 5 provides a brief description of the native process of forming abbreviations in Mandarin which may influence the formation of lettered words. Section 6 discusses the headedness of compounds and the notion of ‘head families’. Section 7 describes compounding and four-part analogy as they relate to hybrid lettered words. Section 8 focuses on compounding ‘patterns’ and their relevance for analyzing the morphology of hybrid lettered words. Section 9 describes several types of borrowing processes identified in investigations of lexical contact phenomena.

2.1 Use of Roman Letters in Chinese Society

Chinese speakers consider roman letters to be “the script that writes English.”\(^{10}\) In addition, since Hanyu Pinyin 汉语拼音, the ‘Chinese Phonetic Alphabet’, is used to

\(^{10}\) Roman letters are also the script that writes the symbols used in the metric system, the periodic table, and other international systems of scientific notation.
supplement the primary writing system of Chinese characters in the P.R.C., Mandarin
speakers also consider roman letters to be “the script that writes pīnyīn romanization.”

2.1.1 Use of Roman Letters in English

Mandarin speakers gain exposure to English primarily through classroom instruction
rather than through direct contact with speakers of English. Chinese individuals learn
English by studying grammar, reading, listening, and speaking in a classroom setting
rather than by conversing with native speakers (Wang 1999: 45). In college level courses,
non-English majors study English a few times a week in a condensed course called
‘intensive reading’ which emphasizes reading, grammar, and translation, and also
includes some listening and speaking practice (Wang 1999: 46). 12

Wang (1999: 46) suggests that Chinese students and educators generally believe that
Mandarin speakers gain a substantive understanding of English only in ‘intensive
reading’ classes. ‘Speaking and listening’ classes are not thought to provide the same
level of knowledge about the language. The result of this widespread view is that
instructors who teach intensive reading are held in higher esteem than those who teach
speaking and listening, and students take intensive reading courses more seriously than
speaking and listening courses.

11 Other romanization systems, such as Wade-Giles, Gwoyeu Romatzyh, and Yale are
used in Taiwan. Older texts in the United States use the Wade-Giles and Yale systems.
Hàn yǔ Pīnyīn 汉语拼音 ‘Chinese phonetic alphabet’ is called U.N. Mandarin Phonetic
12 Wang (1999: 46) states that “everything the teacher has to teach, be it grammar,
vocabulary, pronunciation or reading aloud; be it listening, speaking reading, writing or
translation, is taught through an ... approved text of no more than two to three pages.”
Based on this preference for ‘reading’ rather than ‘speaking’ classes, we would argue that English is more familiar to Mandarin speakers in terms of its written representation than its sound representation. From a psycholinguistic perspective, it is also possible that English orthography is more salient to Mandarin speakers than the sound of spoken English and that Mandarin speakers have greater proficiency in understanding written English than spoken English.

Mandarin speakers who have had limited exposure to English are also apt to have a better understanding of roman letters than larger written units like words. This is especially likely in light of the fact that nothing comparable to letter-by-letter phonological assembly of an English word’s pronunciation is possible in reading Chinese morpheme-characters, as will be explained in a later section.

We suggest that Mandarin speakers’ relative familiarity with individual letters used in English may be one reason why initialisms and acronyms are the preferred types of loanwords in Mandarin, as both types of words involve combining letters as discrete units. Speakers’ preference for initialisms and acronyms is evidenced by the prevalence of these types of words in the lettered word appendices of Mandarin dictionaries. Of the one hundred forty-two entries in the ‘lettered words’ appendix of the Xiàndài Hànyǔ Cìdiān ‘Modern Chinese Dictionary’, only five\(^{13}\) are not initialisms or acronyms.

2.1.2 Use of Roman Letters in Pinyin Romanization

The romanized alphabetic system known as 汉语拼音 Hànyǔ Pīnyīn, the ‘Chinese Phonetic Alphabet’, was promulgated in China in 1958. Tao and Zuo (1997: 655-6) state
that pǐnyīn ‘phonetic alphabet’ is the “phonetic symbol system for Chinese morphemes,”
while Chinese characters are the “Chinese language written down.” Since pǐnyīn symbols
indicate the pronunciation of Chinese characters rather than their meaning, they were
approved for use in only a limited number of areas, such as transcription of Chinese
personal and place names and annotation of Chinese characters, but they are not used as
an independent writing system equal to Chinese characters (Rohsenow 2001: 125).

Chinese language authorities have continued a policy of monographia since the 1950s,
keeping pǐnyīn in an auxiliary role; however, advocates of digraphia argue that pǐnyīn is
likely to make a substantial contribution to China’s modernization (Rohsenow 2001: 132).
The romanization system has been used since 1982 in an experiment encouraged by the
State Language Commission of the P.R.C. called 注音识字, 提前读写 Zhìyīn Shìzì,
Tiqíán Dúxiē ‘Phonetically Annotated Character Recognition Promotes Earlier Reading
and Writing’, or 注提 zhùtí “Z.T.” The scheme uses pǐnyīn as an initial teaching alphabet
to assist children and illiterates learning to read and write Chinese characters. As of 1996,
over two million learners had been taught to read and write Mandarin using Chinese
characters and pǐnyīn for the first two years of their education (Rohsenow 1996: 34).
Promoters of the experiment claim that students learn to read and write Chinese
characters faster than learners taught by more traditional methods (Rohsenow 2001: 132).

Pǐnyīn is also an important component in reading aloud, a traditional method for
teaching literacy in elementary school. New characters are introduced with pǐnyīn
symbols in elementary school textbooks. Once students are literate in Chinese characters,

13 These five are e-mail, hi-fi, internet, Internet, and Tel.
however, they gradually lose their ability to read and write fluently in *pīnyīn* after several years of disuse (Roehsow 2001: 133). Roehsow (2001: 136) states that although the Chinese government has made considerable progress in promoting the use of Mandarin as the national language since the 1950s, adult individuals who have a working knowledge of *Hànyǔ* *Pīnyīn* in the minority. In fact, based on our experience, non-native learners of Mandarin sometimes have a better grasp of *pīnyīn* romanization than native speakers because many learners rely on it to learn Mandarin, whereas native speakers use it in only a limited set of communicative contexts.

Despite Chinese speakers’ eventual attrition of proficiency in using *pīnyīn* romanization, we expect that many individuals retain their knowledge of individual roman letters and their pronunciation even if they can no longer use the letters to spell Mandarin morphemes that are ordinarily written with Chinese characters. Speakers’ knowledge of individual roman letters may be another reason for the popularity of English initialisms and acronyms as borrowings in Mandarin, and it may explain speakers’ motivation for using roman letters as discrete units in lettered coinages.

### 2.2 The Notion of ‘Word’ in Mandarin

#### 2.2.1 ‘Characters’ and ‘Words’

Chinese is normally described as an ‘isolating’ language in which each word consists of just one morpheme. The language is also characterized as ‘monosyllabic’, meaning that most words are just one syllable in length (Li and Thompson 1981: 13). The Chinese
writing system reflects this characterization of the language. One Chinese character usually represents one word, one morpheme, and one syllable, as shown in (1).

(1) 他 喝 茶
tā hē chá
he drink tea
‘He drinks tea’

There are three characters in (1), each representing one monomorphemic, monosyllabic word. The three words translated by the English words he, drinks, and tea are each written with one character.

Although Mandarin has many monosyllabic, monomorphemic words like those in (1), such words represent only a portion of the words used in the modern language. This leads to confusion in understanding words in Mandarin, as explained by Hsu (2002: 21):

“There is often no one-to-one correspondence between a character and a Mandarin word. Unfortunately, the physical appearance of a character as an isolated unit has caused many people to regard Mandarin words as essentially monosyllabic.”

Although it is true that almost all Chinese characters write monosyllabic forms, words in modern Mandarin tend to be polysyllabic and may be polymorphemic. In fact, Lü (1963) claimed that the modern Mandarin lexicon consists of more disyllabic words than monosyllabic ones.

Hsu (2002: 21) illustrates the polysyllabic structure of words in modern Mandarin with the sentence in (2).

(2) 我 钦 佩 华 盛 顿
wǒ qīn-pèi huá-shèng-dùn
‘I admire Washington’

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14 The only exception is the nonsyllabic 儿, ér suffix.
Each Mandarin word in (2) has the same number of syllables as its English counterpart: 我 wǒ ‘I’ is monosyllabic, 钦佩 qīnpèi ‘admire’ is disyllabic, and 华盛顿 huáshèngdūn ‘Washington’ is trisyllabic. The word 我 wǒ ‘I’ is monomorphemic; 钦佩 qīnpèi ‘admire’ is a bimorphemic compound composed of the morpheme 钦 qīn ‘admire’ and the morpheme 佩 pèi ‘esteem’; and 华盛顿 huáshèngdūn is monomorphemic since the meanings of the individual morpheme-characters do not contribute to the meaning of the whole word.

The primary difference between the English and Mandarin sentences in (2) is that in English, spaces appear between words, but in Mandarin, there are spaces only at sentence boundaries or clauses written with final punctuation marks. Chinese is written and printed with individual characters, each occupying a more or less uniform space. This feature also leads to the common misconception that each Chinese character corresponds to a word, whereas it is often the case that two or more characters correspond to a word.

Another complication in understanding Mandarin words is that even though words in modern Mandarin tend to be polysyllabic and may be polymorphemic, most morpheme-characters also have independent meanings. Hoosain (1992: 115) discusses this characteristic of Chinese morpheme-characters, stating that “the meanings of constituents of multimorphemic Chinese words are more manifest than often is the case with constituents of multimorphemic words in English. … The constituents (of multimorphemic words in Chinese) have a life of their own.” Hoosain explains that in

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15 华盛顿 huáshèngdūn is a phonetic loan composed of 华 huá ‘magnificent’, 盛 shèng ‘flourishing’, and 顿 dūn ‘pause’.
English, groups of syllables within words may be individually meaningless or have meanings that are obscure to average speakers (e.g., helico- in helicopter), while in Chinese, constituent characters in words almost always have meanings on their own that are apparent to average speakers (e.g., in the Mandarin word 直升机 zhīshēngjī ‘helicopter’ lit. ‘vertical-rising-machine’, each morpheme has an individual meaning).

Hoosain (1992) suggests that Chinese texts are a “continuous parade of meaningful individual characters” (p. 115). Hence, in (2), 钦 qīn ‘admire’ and 佩 pèi ‘esteem’ have individual meanings in addition to their composite meaning. The meanings of the morphemes that are ordinarily written by individual characters in 华盛顿 Huāshèngdūn ‘Washington’ are intentionally suppressed in that word since it is a phonetic loan. A critical aspect of literacy in Chinese is the ability to parse strings of characters accurately into words and knowing which combinations of characters represent compounds and which combinations represent phonetic loans.

Li and Thompson (1981: 14) argue that modern Mandarin cannot be characterized as monosyllabic because of the large number of polysyllabic words in the language, suggesting instead that words in Mandarin should be defined in terms of their syntactic and semantic independence rather than their orthography. Polysyllabic forms such as 学校 xuéxiào ‘school’ lit. ‘study-school’ and 图书馆 túsūguǎn ‘library’ lit. ‘picture-book-

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16 According to the definition of helicopter in the American Heritage Dictionary, “Helicopter was borrowed from the French word hélicoptère, a word constructed from Greek heliko- and pteron, “wing.” Heliko-, the combining form of helix ‘spiral’, has given us helico-. … The consonant cluster pt in pteron begins many Greek words but relatively few English words. English speakers unfamiliar with Greek are thus not likely to recognize the word’s elements as helico-pter; many analyze the word into the elements heli-copter, as is shown by the clipped form copter.”
hali’ should be considered single words even though 学校 xuéxiào ‘school’ is written with two characters and 图书馆 tǔshūguǎn ‘library’ is written with three characters.

Li and Thompson (1981: 13) maintain that the notion of ‘word’ should be divorced from Chinese orthography and that it should be defined according to the syntactic and semantic integrity of lexical units. We agree with this view in analyzing lettered words. The orthography of hybrid words, in particular, gives the appearance that the lettered and Chinese components in hybrid words are separate words, but considered in terms of their syntactic and semantic independence, these components actually form one word.

2.2.2 Defining Zì and Cì

The problem of defining ‘word’ in Mandarin centers on at least two basic issues. First is the difference between 字 zì ‘morpheme-syllable-character’ \(^{17}\) and 词 cì ‘word’, which can best be explained with reference to Chao’s (1968) notion of the ‘sociological word’.

Chao defines a sociological word as “that type of unit, intermediate in size between a phoneme and a sentence, which the general, non-linguistic public … is practically concerned with in various ways” (p. 136). Chao argues that in Chinese, the sociological word is the 字 zì, a morpheme-syllable written as one Chinese character, rather than 词 cì, which represents the intuitive notion of ‘word’ familiar to speakers of English.

\(^{17}\) Marjorie Chan points out that this definition is accurate in most cases but that there are also examples of words in which two (or possibly more) characters are the equivalent of one morpheme. Many of these are early loans for which characters were created to orthographically represent the loan (e.g., 蝴蝶 húdié ‘butterfly’, 柠檬 níngmèng ‘lemon’, and 玫瑰 méiguī ‘rose’, in which the individual characters do not have independent meanings).
Packard (2000: 15) emphasizes that 2 zi designates both a morpheme in the spoken language and a Chinese character and that most speakers of Mandarin do not distinguish between these two meanings. To speakers of Mandarin, the zi as a morpheme and zi as a written character are considered to be the same object due to the “tacit assumption that the spoken zi (morpheme) can always be rendered with a written zi (character)” (p. 15). In contrast, a ci can consist of one or more zi and is best defined as the ‘syntactic word’, the smallest unit of syntax. Packard suggests that although speakers understand the notion of ci, it is a technical term used mostly by language specialists rather than average speakers. Rather, it is zi that represent the sociological word for Chinese speakers.

Despite Chinese speakers’ intuitions about zi and ci, linguists have found it difficult to integrate the Chinese notion of zi into general linguistic theory. The problem lies in part in the English translation equivalent of zi, that is, ‘morpheme-character’. This term refers to an orthographic form and lemma, whereas when linguists refer to a ‘morpheme’, they usually mean a phonological form and lemma.19

2.2.3 Mandarin syllables

Most Mandarin syllables are composed of an initial, final, and tone. While the initial and final are segmental parts of the syllable, tone (声调 shēngdiào) is suprasegmental and pertains to the entire syllable. The initial (声母 shēngmǔ) is the consonantal onset to the syllable and consists of one consonant. The final (韵母 yùnmǔ) is the remainder of the

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18 Packard (2000: 13) defines the ‘syntactic word’ as an “independent occupant of a syntactic class slot ... a syntactically free form, commonly designated in the literature [of generative linguistic theory] as X0.”
syllable plus the tone. The final can be broken down into a medial (韵头 yùntóu ‘head’), a main vowel (韵腹 yùnfù ‘abdomen’), and a syllabic ending (韵尾 yùnwěi ‘tail’), which is either a nasal ([n] or [ŋ]) or the offglide of a diphthong ([i] or [u]). Only the main vowel is obligatory; the absence of an overt initial is referred to as a ‘zero initial’. Chen (1999: 34) depicts the composition of Mandarin syllables as shown in Table 2.1:

<table>
<thead>
<tr>
<th>Initial</th>
<th>Medial</th>
<th>Final</th>
<th>Root of final</th>
</tr>
</thead>
<tbody>
<tr>
<td>(C)</td>
<td>韵头</td>
<td>韵腹</td>
<td>韵尾</td>
</tr>
<tr>
<td></td>
<td>(ii)</td>
<td>V</td>
<td>(lj)</td>
</tr>
<tr>
<td></td>
<td>(ui)</td>
<td></td>
<td>(jul)</td>
</tr>
<tr>
<td></td>
<td>(yi)</td>
<td></td>
<td>(n)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(q)</td>
</tr>
</tbody>
</table>

Table 2.1: Segmental structure of the Mandarin syllable

It may be easier to appreciate the structure of Mandarin syllables if we consider the conceptualization of Chinese syllable components from the point of view of Chinese ‘speaking and singing arts’ (shuōchàng yǐshù 说唱艺术), which describe diction in Chinese opera and other arts involving singing and speaking (Wu 2001: 304). The syllable is divided into four parts: 1. ‘head’, 2. ‘abdomen’, 3. ‘tail’, and 4. ‘spirit’. The ‘head’ consists of the initial and medial; the ‘abdomen’ is a simple vowel; the ‘tail’ consists of a nasal consonant or offglide vowel; and the tone is the ‘spirit’ of the syllable.

19 Thanks to Mary Beckman for pinpointing the difficulty in reconciling the notion of zi with the notion of a ‘morpheme’. 34
Wu (2001: 309) interprets this system visually, stating that syllables in the ‘speaking and singing arts’ should be pronounced in a manner resembling the shape of a jujube, or Chinese date (枣核形 záohéxíng). The ‘head’ is to be forceful (字头有力 zìtóu yǒuli), the ‘abdomen’ full and resonant (字腹饱满 zìfù bāomǎn), and the ‘tail’ should bring the syllable to an end clearly and lightly (字尾到位弱收 zìwěi dàowèi ruòshōu) (Wu 2001: 308). The jujube shape represents the relative sonority of consonants and vowels in Mandarin syllables. Consonantal initials are less sonorous than the medial vowel or main vowel. Medial vowels are more sonorous than the initial consonant and less sonorous than the main vowel; the main vowel is most sonorous; and the ending is less sonorous than the main vowel. The aim is to combine articulatory gestures and phoneme durations\(^\text{20}\) to realize the relative sonority of each phoneme effectively, thereby achieving resonance and clarity in articulation.

The traditional and modern characterizations of syllable structure can be combined to show the position of every phoneme in a Mandarin syllable. A schematic representation of these two methods of dividing syllables into their component parts is shown in Table 2.2 (adapted from Wu 2001: 304). An example of each possible combination of components in Mandarin syllables is provided for illustration.

\(^{20}\) The following is a direct quote from Wu (2001: 308): “它[枣核型]涉及吐字时音节各部分的口腔开合及所占时值的长短。”
<table>
<thead>
<tr>
<th>Spirit 字神</th>
<th>Head 字头</th>
<th>Abdomen 字腹</th>
<th>Tail 字尾</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial 声母</strong></td>
<td><strong>Final 韵母</strong></td>
<td><strong>Head 韵头</strong></td>
<td><strong>Abdomen 韵腹</strong></td>
</tr>
<tr>
<td>biàn 变 ‘change’</td>
<td>b [p]</td>
<td>i [i]</td>
<td>a [ɛ]</td>
</tr>
<tr>
<td>bān 班 ‘class’</td>
<td>b [p]</td>
<td></td>
<td>a [a]</td>
</tr>
<tr>
<td>yān 烟 ‘smoke’</td>
<td>i [i]</td>
<td>a [ɛ]</td>
<td>n [n]</td>
</tr>
<tr>
<td>ān 安 ‘peaceful’</td>
<td></td>
<td>a [a]</td>
<td>n [n]</td>
</tr>
<tr>
<td>biāo 表 ‘surface’</td>
<td>b [p]</td>
<td>i [i]</td>
<td>a [a]</td>
</tr>
<tr>
<td>bié 别 ‘leave’</td>
<td>b [p]</td>
<td>i [i]</td>
<td>e [ɛ]</td>
</tr>
<tr>
<td>bà 爸 ‘father’</td>
<td>b [p]</td>
<td></td>
<td>a [a]</td>
</tr>
<tr>
<td>yā 压 ‘press’</td>
<td></td>
<td>i [i]</td>
<td>a [a]</td>
</tr>
<tr>
<td>áo 熬 ‘boil’</td>
<td></td>
<td>a [a]</td>
<td>o [u]</td>
</tr>
<tr>
<td>ā 钢 Actinium</td>
<td></td>
<td></td>
<td>a [a]</td>
</tr>
</tbody>
</table>

**Table 2.2: Mandarin Syllables as Characterized in Chinese Phonology**

Keeping in mind the description of the enunciation of Mandarin syllables in China’s speaking and singing arts, as well as the characterization of syllables in modern Chinese linguistics, can help us to understand the types of substitutions Mandarin speakers make in their pronunciation of lettered elements. This may be especially relevant in words whose syllable structure differs from that of syllables in Mandarin and needs to be adapted to the constraints of Mandarin phonology. We may also be able to determine which substitutions in lettered elements occur most regularly and which ones are less salient for Mandarin speakers.
2.2.4 Sino-alphabet

In his discussion of lexical borrowing in Taiwan, Hansell (1989: 170) introduces the term ‘Sino-alphabet’ to designate the letters of the alphabet that have been assimilated into the Chinese writing system in such a way that no special rules must be learned to use them. Hansell notes that the need for alphabetic borrowing, together with structural impediments to borrowing, led the speech community in Taiwan to develop a compromise that enabled speakers to borrow alphabetically written forms without disrupting the normal operation of the Chinese writing system. In particular, assimilation of the alphabet was accomplished by making the individual graphs phonologically and graphically discrete in the same manner as Chinese zi ‘morpheme-characters’ and by allowing free directionality. Hansell (1989: 175) provides the example of IBM大厦 IBM大厦 ‘IBM Building’ in (3) from a newspaper article on architecture to show the free directionality of Mandarin writing, with arrows representing the direction of the script:

(3) a) text of the article: 

大厦

B

M

b) photo caption: 

大厦

MBI

In a) the text flows from top to bottom and from right to left, while in b), it flows from right to left. The discreteness of the alphabetic graphs maintains the flexible directionality of the Chinese writing system since each letter uses an individual slot or space equal to that of one Chinese zi.

The discreteness of the roman letter graphs is also enhanced through the use of upper case letters. Upper case letters are frequently preferred to lower case letters in lettered words. One reason may be that many lettered words or constituents of hybrid words are
initialisms, labels, or acronyms, which are customarily written with upper case letters. It may also be the case, however, that upper case letters are perceived to be more discrete-looking and zi-like than lower case letters.

Hansell (1989: 174) points out that left to right is the prevalent order of writing in the P.R.C. and that right to left has all but disappeared. Given this development, maintaining the flexible directionality of the Chinese writing system may not be an important factor in the use of roman letters in the P.R.C. Nonetheless, the use of lettered words in the P.R.C. indicates that the Sino-alphabet has been established there in the same manner as it was earlier in Taiwan and that it is being used productively. The discreteness of individual roman letters remains an important aspect of their appeal in both Mandarin speech communities.

2.2.5 Zi and Ci as They Relate to Lettered Words

The difference between zi (morpheme-character) and ci (word) emerges in a new way in lettered words. We are faced with the question of whether roman letter elements in lettered words are zi or ci and whether each roman letter is a morpheme or whether combinations of roman letters are a morpheme. Roman letters are used most commonly in initialisms and acronyms that represent English words or words written in pinyin romanization (e.g., e 家庭 e jiātíng ‘e-family’ [e < electronic]; K 研 K shū ‘study’ [K shū < kàn shū ‘study’ lit. ‘read-book’]; as individual units alone or combined with Chinese morphemes (e.g., PSC ‘Mandarin Proficiency Exam’ [< pǔtōnghuà shuǐpíng cèshì 普通
话水平测试, lit. ‘common language-level-exam’]; 转 U 转 U 转  ‘U-turn’); and as labels combined with Chinese morphemes (e.g., AA 制 AA 制 ‘splitting the bill’, lit. ‘AA-system’).

There are three primary distinctions in these three uses of lettered words. The first distinction refers to the units represented by roman letters in lettered words. They can abbreviate English words or Chinese words written in pīnyīn romanization, or they can write the Sino-alphabet. The second distinction is whether the roman letters are used alone or in combination with other morphemes written in Chinese characters. Roman letters are used alone in initialisms and acronyms, and they are combined with a Chinese component in hybrid words. The third distinction is whether lettered words are borrowed or coined natively. These differences are explored in Chapter 3 to determine how to classify roman letter units with respect to zi and ci.

### 2.3 Defining ‘Compound’

#### 2.3.1 Chao’s View of Compounds

A second problem in defining the notion of ‘word’ in Chinese is the characterization of forms that are composed of more than one Chinese zi ‘morpheme-character’. According to Chao (1968: 359), the term ‘compound’ is used broadly in Chinese linguistics to refer to any word written with two or more Chinese characters, but Chao’s own definition is more restricted. In Chao’s (1968) view, a compound is a combination of “two or more words bound together to form one word” (e.g., 买卖 mǎimài ‘trade’ lit. ‘buy-sell’, in which 买 mǎi ‘buy’ and 卖 mài ‘sell’ are both individual words) (p. 359). However,
rather than requiring the constituents of a compound to be free words as in 买卖 mǎimài ‘trade’, Chao also considers words in which the constituents are bound morphemes other than affixes to be compounds. For example, in Chao’s view, 尺寸 chīchùn ‘size’ lit. ‘foot-inch’ is a compound even though both morphemes are bound.

Chao’s (1968) definition of compounds accords with Booij’s (2005) view of compounds as “combinations of lexemes21 and/or non-affixal roots” (p. 30). In describing Greek and Latin roots used in neo-classical compounds (e.g., -graph and -scope in sonograph and telescope), Booij (2005) states that these non-lexical roots are not affixes but rather ‘combining forms’ that occur only in combination with other morphemes. Similarly to Chao’s example of 尺寸 chīchùn ‘size’, neo-classical roots are bound morphemes that are not affixes. Like Chao, Booij expands the definition of ‘compound’ to include polymorphemic forms that contain non-affixal bound roots.

Chao (1968: 363) argues that most compounds are combinations of morphemes whose meaning is non-compositional, or ‘lexical’ (e.g., 大衣 dàyī lit. ‘big-garment’, which means ‘overcoat’ rather than ‘big garment’). He also states that compounds which are compositional consist of “certain special types of morphemes that are synthesizable” (p. 363) and form transient words, such as 三天 sān-tiān ‘three days’, but that these are fewer in number than non-compositional compounds.

Chao (1968: 365) also suggests that compounds are either ‘endocentric’ or ‘exocentric’. In ‘endocentric’ compounds, the lexical and semantic categories of the

21 Booij (2005: 3) defines a lexeme as a “word in the abstract sense” and distinguishes lexemes from “concrete word[s]” as used in a sentence. The concrete words walk, walks, walked, walking are word forms of the lexeme WALK.
whole can be determined from one of its parts, while in ‘exocentric’ compounds, the
lexical and semantic categories of the whole cannot be determined from one of its parts.
For example, 牛车 niúchē ‘ox cart’ lit. ‘ox-vehicle’ is an endocentric compound with 车
ché ‘vehicle’ as its head. The word 车 chē is a noun, and the compound is also a noun;
semantically, a 牛车 niúchē ‘ox cart’ is a type of 车 ‘vehicle’. In contrast, 开关 kāiguān
‘switch’ lit. ‘open-close’ is an exocentric compound because both components are verbs,
while the compound as a whole is a noun. Chao (1968: 260) observes that exocentric
constructions are more common in Mandarin compounds than in phrases. He cites the
phrase 跑街 pāojiē ‘run errands’ lit. ‘run-street’ as an example of an endocentric phrase
with 跑 pāo as the head, and the homophonous word 跑街 pāojiē ‘errand boy’ lit. ‘run-
street’ as an example of an exocentric compound.

The lack of transparency of many Mandarin compounds as proposed by Chao (1968)
runs counter to the view in morphology that compounding is productive in word
formation because it creates compositional, and therefore transparent, outputs (Katamba
1981: 320, Booij 2005: 34). The contradiction between Chao’s observations about
Chinese compounds and the general transparency of compounds as predicted by Katamba
(1981) and Booij (2005) can be reconciled, however. Fabb (1998: 66) notes that although
compounds tend to be compositional to some extent, their meanings are not necessarily
predictable. He posits two reasons for the lack of predictability of the meanings of
compounds: first, that compounds are subject to semantic drift, and second, that there are
many possible semantic relations between the parts in a compound which are not readily
apparent from its components. Fabb’s observations can help us to understand why the meanings of Chinese compounds may not be apparent even when they are compositional.

Similarly to Fabb (1998), Packard’s (2000) discussion of ‘lexicalization’ also identifies semantic drift as an aspect of compounds that contributes to the opacity of their meanings. Packard (2000: 219) offers an explanation for the lack of transparency of many Mandarin compounds by arguing that their meanings are determined by different degrees of ‘lexicalization’, that is, how deeply the form is embedded in the lexicon. A compound may be considered ‘weakly’ or ‘strongly’ lexicalized depending on the extent to which the components retain their individual semantic and grammatical identity.

In discussing ‘lexicalization’, Packard (2000) follows Anderson (1992), who states that “the longer a word exists in a language as a lexical item, the more various parts of its structure may become idiosyncratic, so that eventually this structure can become quite opaque” (p. 194). According to Packard (2000: 217), Anderson sees the semantics and the grammatical structure of words as independent, separable, and differently susceptible to reduction due to degree of lexicalization.

Expanding on Anderson’s (1992) view, Packard (2000: 219-223) posits five categories corresponding to a gradient measure of a word’s lexicalization with respect to meaning and grammatical structure: 1. ‘conventional lexicalization’ represents the smallest degree of lexicalization and refers to words whose meanings can generally be determined from the components (e.g., 吃饭 chǐfàn ‘eat a meal’ lit. ‘eat-rice’); 2. ‘metaphorical lexicalization’ refers to words whose components take on a metaphorical meaning but retain their grammatical relationship (虫牙 chōngyá ‘cavity’ lit. ‘insect-tooth’, which is not really caused by an insect); 3. ‘asemantic lexicalization’ refers to words whose
component meanings are lost but whose grammatical relationship remains (千张 qiānzhāng ‘a kind of dried bean curd’ lit. ‘thousand-sheet’); 4. ‘agrammatical lexicalization’ refers to words in which the components contribute to the semantic meaning of the word but not to its internal structure (沟通 gōunèng ‘communicate’ lit. ‘ditch-connect’); 5. ‘complete lexicalization’ represents the greatest degree of lexicalization and refers to words that have components whose internal structure and original meanings are completely opaque (花生 huāshēng ‘peanut’ lit. ‘flower-born’).

In Packard’s view, compounds may become more lexicalized over time, with the result that the relationship between the meaning of the compound and the meanings of its components diverge. This may help to explain why the meanings of certain Mandarin compounds are opaque. Newly formed compounds in Mandarin may be ‘weakly’ lexicalized, while older compounds may be more ‘strongly’ lexicalized and therefore less compositional and predictable in their meanings. As for hybrid compounds, such as X光 ‘X-ray’ lit. ‘X-ray’, for example, such words are a new addition to the Mandarin lexicon, so we expect them to be ‘weakly’ lexicalized.

2.3.2 Duanmu’s View of Compounds

Duanmu (2000: 97) suggests that words which contain two or more morphemes can be called compounds regardless of whether both of the morphemes are free. For example, he considers 高兴 gāoxìng ‘happy’ lit. ‘high-mood’ to be a compound even though 兴 xìng ‘mood’ is a bound morpheme. Duanmu’s view departs from that of Packard (2000: 81), who argues that only words composed of ‘root words’ can be called compounds (e.g., 冰
bǐngshān ‘iceberg’ lit. ‘ice-mountain’, in which both components are root words). In Packard’s (2000) typology of Mandarin words, words with one or more ‘bound roots’, such as 高兴 gāoxìng ‘happy’ are called ‘bound root words’, while in Duanmu’s view, they are considered ‘compounds’.

Following Fan (1958) and Lu (1990), Duanmu (2000: 98, 100) further proposes that modifier-noun [Mod N] nominals are words, and more specifically, compounds, while nominals of the type [Mod de N], that is, those that include the 的 de particle, are phrases. For example, Duanmu considers 新书 xīnshū ‘new book’ to be compound and 新的书 xīndē shū ‘new book’/‘book that is new’ to be a phrase. Derivatives of [Mod N] nominals, such as [Mod [Mod N]], [[Mod N] N], [[Mod N] [Mod N]] are also compounds. Thus, expressions such as 新书 xīnshū ‘new book’, [小 xiǎo 新书 xīnshū] ‘small new book’, [[大眼睛 dà yǎnjīng] 姑娘 gūniáng] ‘big-eyed girl’, and [[长毛 chángmáo] 小狗 xiǎogǒu] ‘long-haired small dog’ are all compounds in Duanmu’s framework.

2.3.3 Our View of Compounds

Similarly to Chao (1968), Duanmu (2000), and Booij (2005), we take a broad view of compounds, defining them as combinations of two or more words or non-affixal roots. We agree with Li and Thompson (1981: 45), who suggest that no matter what criteria are used, there is no clear distinction between compounds and non-compounds in Mandarin. In their view, compounds are “all polysyllabic units that have certain properties of single words and that can be analyzed into two or more meaningful elements, or morphemes, even if these morphemes cannot occur independently in Mandarin” (p. 46). A less
restrictive view of compounds enables us to identify and describe patterns in the structure of lettered words more easily than a narrow definition requiring the components to be free roots (e.g., as in Packard 2000 and Dai 1997).

With respect to morphological structure, we follow Duanmu’s (2000) proposal that modifier-noun [Mod N] nominals without a de particle are compounds and that derivatives of [Mod N] nominals are also compounds. As for the meaning of compounds, in contrast to Chao’s (1968: 363) assertion that compounds usually have non-compositional meanings, we follow Li and Thompson (1981) and Duanmu’s (2000) view that compounds may have either compositional or non-compositional meanings. This view accords with our observation that hybrid lettered words normally have compositional meanings.

2.3.4 Application to Lettered Words

The description of compounds provided by Chao (1968) and Booij (2005) are applicable to hybrid lettered words and can help us to describe their morphological structure. In later sections, we show that hybrid lettered words generally fit Chao’s (1968) view of compounds as combinations of “two or more words bound together to form one word” (p. 483), in which one word can be a bound morpheme other than an affix, as well as Booij’s (2005) view that compounds are “combinations of lexemes and/or non-affixal roots” (p. 30). We find many examples of borrowings nativized as hybrid lettered words (e.g., VISA 卡 VISA kā ‘VISA card’) and hybrid neologisms (e.g., 金 K jīn ‘alloyed gold’ [K < carat]) that fit Chao’s and Booij’s definitions.
Duanmu's (2000: 98) proposal that modifier-noun [Mod N] nominals are compounds is also useful in analyzing hybrid lettered words. Many hybrid lettered words are [Mod N] nominals in which the modifier is the lettered element and the noun is a Mandarin morpheme-character or compound. The majority of hybrid lettered words we examined have this structure (e.g., ATM 卡, ATM kā ‘ATM machine’, VISA 卡, VISA kā ‘VISA’ card’, 合金, 合金, ‘alloyed gold’).

Lastly, Li and Thompson's (1981) definition of compounds as “polysyllabic units that act like single words and may include morphemes that cannot occur independently” (45) also applies to hybrid lettered words. Hybrid words are polysyllabic; Mandarin speakers consider them to be single words; and hybrid words sometimes have meaningful elements that do not occur independently in Mandarin. For example, in X 光, X guāng ‘X-ray’, X does not occur independently with the same meaning as in X guāng, and in GRE 名, GRE zǔ ‘GRE test-takers’, zǔ is a bound morpheme.

Booij (2005) suggests that in many languages, compounding is the “most frequently used way of making new lexemes” (p. 75) and that it is a productive word formation process due to its versatility. Compounding is also highly productive and versatile in Mandarin (Hippsley et al. 2005: 131).

Now that we have identified hybrid lettered words as a type of compound in Mandarin, in later chapters, we analyze their structure and discuss ways in which they extend existing compounding patterns in Mandarin.
2.4 Pronouncing Lettered Words

Lettered words exhibit an unusual relationship between orthography and pronunciation: the spoken form is derived from the written form. Interestingly, once lettered words are created, they may not necessarily be used widely in speech. For example, the initialism PSC ‘Mandarin Proficiency Exam’ is rarely spoken; rather, the exam is referred to by its Mandarin name, Pǔtōnghuà Shuìpǐng Cèshì. One explanation for this is that many lettered words represent jargon in fields such as computer science, technology, medicine, and international business and are convenient to use in print, if not necessarily in speech. Thus, certain lettered words may appear in print but may be replaced with morpheme-character equivalents in speech.

Chan and Kwok (1982: 8) make a similar observation about Hong Kong Cantonese, noting that some phonetic loans from English entered Cantonese via Mandarin through the written medium rather than through speech. Sun and Jiang (2000: 103) also suggest that English initialisms and acronyms are preferred in the written media in China to save time and to avoid awkward translations, implying that abbreviations may not be used equally often in speech. In general, Mandarin speakers may see a variety of lettered words in print but may normally say only a small number of common lettered words and, in the case of educated speakers, lettered words in their fields of interest and expertise.

The precedence of the written form over the spoken form in lettered words represents a new manifestation of the relationship Hannas (2003: 220) discusses between speech and writing. Hannas argues against traditional accounts of the nature of language which view speech as primary and writing as secondary and supports the modern view of speech and writing as parallel expressions of language, each manifesting structures generated
through the body of rules that make up a language. Our study of lettered words in
Mandarin leads us to agree with this view; the borrowing and formation of lettered words
is linked with their usefulness in both spoken and written Mandarin. We suggest that the
diffusion of lettered words relies not only on their use in speech in Mandarin but also on
the functions they serve in the written language.

2.5 Native Processes of Forming Abbreviations

Mandarin has a native system of forming abbreviations which may facilitate speakers’
use of roman letters in borrowing and word formation. Chen (1998) states that most
abbreviations in Mandarin are disyllabic and that they are usually formed by taking the
first morpheme of each word to create the abbreviation. This method is not used, however,
when it results in potential non-recoverability of the original. The formation of Mandarin
abbreviations can be illustrated with the name *Beijing Broadcasting Institute* (now called
the *Communication University of China*), as shown in (4).

(4) 北京 广播 学院

*bēi-jīng guǎng-bō xué-yuàn*

(lit.) north-capital broad-broadcast study-academy/institute

‘Beijing Broadcasting Institute’

Abbreviations are formed from the name in (4) in two ways. The first method forms a
disyllabic abbreviation by combining the first morpheme of the first two words: 北京广播学院
*Bēijīng Guǎngbō Xuéyuàn > Bēiguǎng 北广*. This method follows the form of
most abbreviations in Mandarin as described by Chen (1998).
The second method also forms a disyllabic abbreviation but omits the word *Bèijīng* and uses the other two compounds, *guāngbō* ‘broadcasting’ and *xuéyuàn* ‘institute’, to form the abbreviation. The second abbreviation is formed by combining the first morpheme in *guāngbō* ‘broadcasting’ with the second morpheme in *xuéyuàn* ‘institute’:

*Bèijīng Guāngbō Xuéyuàn > Guāngyuàn* 广院. The first morpheme in *xuéyuàn* ‘institute’ (xué ‘study’), is not combined with *guāng* ‘broad’ in an abbreviation because this reduction would create semantic ambiguity. The combination *guāngxué* ‘broad+study’ could be interpreted meaningfully, but speakers would not consider it to be an abbreviation for *Bèijīng Guāngbō Xuéyuàn* ‘Beijing Broadcasting Institute’.

The two abbreviations for *Bèijīng Guāngbō Xuéyuàn* ‘Beijing Broadcasting Institute’ have sociolinguistic significance. An individual’s choice of an abbreviation reveals his or her relationship with the institute. ‘Outsiders’ not affiliated with the institute tend to use the first abbreviation, while ‘insiders’ affiliated with the institute tend to use the second abbreviation to indicate their closer relationship with the institute.

Mandarin speakers’ understanding of the processes for forming abbreviations in Chinese may be a source of knowledge in their formation of natively coined initialisms. In particular, using the first morphemes in a series of compounds to form Mandarin abbreviations, as in *Bèiguāng*, is analogous to using the first letters of words in a phrase to form English initialisms or acronyms (e.g. *WTO, SARS*). When Mandarin speakers coin initialisms for Chinese words written in *pīnyīn* romanization, such as *HSK* < *Hànyǔ Shuǐpíng Kāoshi* 汉语水平考试 ‘Mandarin Proficiency Exam’, they may draw on their understanding of abbreviatory processes in both Mandarin and English to form these abbreviations.
2.6 Headedness of Compounds and ‘Head Families’

2.6.1 Headedness of Compounds

We defined compounds as being composed of two or more words or non-affixal roots. Compounds of the form \([N1 \, N2]_N\) are the most common type of compounds in English (Fabb 1998: 74) and also in Mandarin (Hippisley et al. 2005: 143). Most of the hybrid lettered words in our corpus are also of this form (e.g., \(K \, jīn\) ‘alloyed gold’, lit. ‘carat gold’ [K < carat]; \(PC \, jī\) ‘personal computer’, lit. ‘PC machine’).

Compounds in English also tend to be ‘endocentric’ (Katamba 1981: 311), meaning that they have a head which represents the core meaning of the word and its word class (e.g., in \(dogsled\), the head is \(sled\) rather than \(dog\)). The head normally appears as the right-most constituent of the word in English compounds (Katamba 1981: 311, Aronoff and Fudeman 2005: 107). For example, in \(Red \, River \, Valley\), the head is \(valley\), and it is the right-most constituent.

Many Mandarin compounds are also endocentric and have a right-hand head (Hippisley et al. 2005: 143). For example, in \(huángdòu\) ‘soybean’, lit. ‘yellow-bean’, \(dòu\) ‘bean’ is the head, and it is on the right. Foreign nouns adapted in Mandarin with traditional borrowing processes other than phonetic adaptation also tend to be endocentric and have a head on the right. For example, the native creation \(náitàng\) ‘toffee’, lit. ‘milk candy’, has a head \(táng\) ‘candy’ on the right. The right-hand head expresses a general semantic category in Mandarin, so that foreign words or concepts are adapted to become members of basic semantic categories in the language (i.e., \(toffee\) is interpreted to be a type of \(táng\) ‘candy’ in Mandarin).
Hybrid lettered words, which are usually nouns, follow the same pattern: they have a head; it is normally the right-most constituent in the word; and in most cases, the head is a word expressed in Chinese morpheme-characters. In pH 值 pH zhi ‘pH level’, for example, the Mandarin morpheme-character 值 ‘level’ is the head. The head expresses a basic semantic category in Mandarin and identifies the hybrid word as a member of that category, making it more transparent.

2.6.2 ‘Head Families’

The notion of ‘head families’ is important to consider with respect to compounds and their connection to one another in the lexicon. Several linguistic studies define terms for describing groups of semantically related words that are useful for our analysis of hybrid words. Krott et al.’s (2001: 51) study of linking morphemes\(^{22}\) in Dutch describes the notion of a ‘constituent family’ as the “set of existing compounds that share the first (or second) constituent with the novel compound.” Krott et al. found that the choice of linking morphemes\(^{23}\) in novel compounds in Dutch is analogically determined by the distribution of linking morphemes in ‘constituent families’, particularly the family of the left constituent (the ‘modifier family’). In a separate study, Krott and Nicoladis (2005)

\(^{22}\) Krott et al. (2005: 51, 54) explain that linking -s- or -en- can appear between constituents in Dutch nominal compounds. They find that the choice of linking morphemes in novel compounds is analogically determined by the distribution of linking morphemes in the set of existing compounds sharing the first or second constituent with the novel compound, that is, its ‘constituent family’ (e.g., fiets ‘bike’ in fiets-pad ‘bike path’ and fiets + bel ‘bicycle bell’; winkel ‘shop’ in schoen + winkel ‘shoe shop’ and hoed + en + winkel, lit. ‘hat + PLURAL + shop’, ‘hat shop’).

\(^{23}\) Krott et al. (2005: 52) claim that linking elements are rare in English. They cite only a few examples, all with the linking element -s- and the head word man: sportsman, craftsman, kinsman, tradesman, and spokesman.
found that the size of the ‘modifier family’ in nominal compounds affected children’s segmentation of compounds. Modifiers with large families facilitated parsing, and heads with large families may also have facilitated parsing.

We use Krott et al.’s (2001, 2005) notion of a ‘constituent family’ and ‘head family’, in particular, to describe families of Mandarin compounds that share the same head constituent. For example, 呼机, hūjī ‘beeper’ lit. ‘call-machine’, 耳机, ěrjī ‘earphones’ lit. ‘ear-machine’, ATM 机, ATM jī ‘ATM machine’ lit. ‘ATM-machine’, and PC 机, PC jī ‘PC’ lit. ‘PC-machine’ all share the head 机, jī ‘machine’ and are all members of the 机 jī ‘machine’ head family. In the following chapters, we show that sinicized foreign words and hybrid lettered words are nearly always adapted to become members of established ‘head families’ in Mandarin.

Hippisley et al.’s (2005) study of term extraction in English and Mandarin shows that compounds in both languages follow the ‘head-modifier’ principle of compound formation. The head-modifier principle identifies the set of compounds related through hyponymy with the head of the compound, which constitutes the hypernym. This relationship is depicted in ‘type hierarchies’. The head, or ‘hypernym’ (superordinate category), names the general semantic category to which the whole word belongs, and the modifier, or ‘hyponym’ (subordinate category), distinguishes a particular compound from

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24 Hippisley et al.’s (2005) study exploits this feature to develop techniques for information retrieval in texts.
other members in a set of hyponyms (Hippisley et al. 2005: 130). The following example of a type hierarchy is adapted from Hippisley et al.’s study of compounds:

(5)  

\[
\begin{array}{c}
\text{boat} \\
\text{sailboat} & \text{speedboat}
\end{array}
\]

*Boat* is the head in *sailboat* and *speedboat*, and it is also the hypernym. *Sailboat* and *speedboat* are hyponyms of *boat* (i.e., they are types of boats). The modifiers *sail* and *speed* distinguish *sailboat* and *speedboat* from other hyponyms of *boat* (e.g., *motorboat*, *tugboat*). The type hierarchy in (5) would be depicted in the same manner in Mandarin:

(6)  

\[
\begin{array}{c}
\text{船} chuán ‘boat’ \\
\text{帆船} fānchuán ‘sailboat’ & \text{快船} kuàichuán ‘speedboat’ \\
\text{lit. ‘sail-boat’} & \text{lit. ‘rapid-boat’}
\end{array}
\]

*Chuán* 船 ‘boat’ is the hypernym in (6), and 帆船 *fānchuán* ‘sailboat’ and 快船 *kuàichuán* ‘speedboat’ are hyponyms of 船 *chuán* ‘boat’. These types of boats are distinguished from other hyponyms of 船 *chuán* ‘boat’, such as 汽船 *qīchuán* ‘motorboat’ and 拖船 *tuōchuán* ‘tugboat’.

The type hierarchies in (5) and (6) can also be called ‘head families’. The head of the family is the superordinate category, or hypernym, and the other members of the head family are the subordinate categories, or hyponyms. The concepts of ‘type hierarchies’ and ‘head families’ are crucial for our analysis of hybrid words and traditionally adapted borrowings expressed entirely in Chinese morpheme-characters. In later chapters, we
show that both traditional borrowings and hybrid words are normally adapted to fit into existing type hierarchies in Mandarin. They are both ‘sinicized’ to be hyponyms of Mandarin hypernyms.

2.7 Compounding and Four-part Analogy

The hybrid lettered words we examined are formed through the use of one of two word formation processes: ‘compounding’ and ‘four-part analogy’, both of which produce compounds. Both processes result in the same surface form, but the mechanism used to arrive at the surface form differs in each case.

First, some hybrid lettered words are formed through ‘compounding’, the novel combination of two words or non-affixal roots. Booij (2005: 34) describes compounding as a prime example of concatenative morphology, in which morphological constituents are concatenated in a linear fashion. Examples of lettered compounds in Mandarin include calques of English compounds (e.g., X光 Xguāng ‘X-ray’), which retain the original English initialism, acronym, or label and translate the other element; and neologisms (e.g., AA制 AA zì ‘splitting the bill’ lit. ‘AA-system’), in which the roman letter element is concatenated in a novel combination with the Mandarin element.

Second, many compounds represent cases of ‘four-part analogy’,\(^{25}\) in which a new word is formed by four-part analogy with an existing word or words rather than through the novel concatenation of two elements as in compounding. Booij (2005: 13) provides

\(^{25}\)Hock and Joseph (1996: 160) explain the notion of four-part analogy as involving the “remaking of a morphologically ‘derived’ formation on the model of another, generally more productive derivational pattern by means of an analogy which can be expressed by a proportion involving four parts: \(a : a' = b : X (= b')\).”
an example from Dutch, the word *boeman* ‘ogre’ lit. ‘boo-man’ and its female counterpart *boevrouw* ‘female ogre’ lit. ‘boo-woman’. Booij explains that *boevrouw* was coined by means of a four-part analogy with *boeman* rather than through the concatenation of *boe* and *vrouw* in a novel combination. In *boevrouw*, the constituent *man* ‘man’ is replaced with *vrouw* ‘woman’, as in (7).\(^{26}\)

(7) \[ \text{man} : \text{vrouw} = \text{boeman} : X = \text{boevrouw} \text{ ‘female ogre’} \]

Four-part analogy can also be illustrated with examples from Mandarin. The English word *mini* is particularly productive in Mandarin in the coinage of new compounds. *Miniskirt* was nativized in Cantonese as the phonetic loan/native creation 迷你 *mini* ‘mini’ lit. ‘enchant-you’ and the calque 裙 *qún* ‘skirt’ (Cheung 1972: 215). The adaptation was most likely subsequently borrowed into Mandarin. *Mini* has since become productive in coining other new terms, such as 迷你电脑 *mini diànnào* ‘minicomputer’, 迷你电视 *mini diànshi* ‘mini television’, and 迷你光碟 *mini guāngdié* ‘minidisk’, all of which are formed by four-part analogy with *miniqún* ‘miniskirt’ and other *mini*-prefixed words, as shown in (8).

(8) \[ qún : \text{miniqún} \quad \text{diànnào} : X = \text{miní diànnào} \]
\[ \text{裙} : \text{迷你裙} \quad \text{电脑} : X = \text{迷你电脑} \]
\[ \text{‘skirt’} : \text{‘miniskirt’} \quad \text{‘computer’} : X = \text{‘minicomputer’} \]
\[ diànshi : X = \text{miní diànshi} \quad guāngdié : X = \text{miní guāngdié} \]
\[ \text{电视} : X = \text{迷你电视} \quad \text{光碟} : X = \text{迷你光碟} \]
\[ \text{‘television’} : X = \text{‘mini-television’} \quad \text{‘disk’} : X = \text{‘minidisk’} \]

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\(^{26}\) The proportion in (6) is: \[ a : b = a' : X = b'. \]

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Some hybrid compounds are also formed through four-part analogy in the same manner the compounds in (8) written entirely in Chinese characters. One example is \textit{XO酱 \textit{XO jiàng} ‘XO sauce’}. This word was most likely formed by a four-part analogy with \textit{XO酒 \textit{XO jiǔ} ‘XO liquor’},\textsuperscript{27} as in (9).

(9) 酒 \textit{jiǔ} ‘liquor’ : 酱 \textit{jiàng} ‘sauce’
\[
\vdots\]
\textit{XO酒 \textit{XO jiǔ} ‘XO liquor’ : X = XO酱 \textit{XO jiàng} ‘XO sauce’}

In Chapter 6, we show that lettered elements, especially initialisms, acronyms, and individual letters functioning as labels, are used productively in the coinage of hybrid compounds, many of which are formed by four-part analogy with existing native, borrowed, or hybrid forms.

\subsection*{2.8 Compounding Patterns}

To discuss compounding patterns as they pertain to Mandarin, we will first introduce the notion of a ‘paradigm’. A ‘paradigm’ is defined as the set of inflected forms of a lexeme (Aronoff and Fudeman 2005: 42, Hock 1991: 168), such that for the lexeme \textit{walk}, the forms \textit{walk, walks, walking, walked} constitute its paradigm. Booij (2005: 10) states that once speakers discover the abstract systematic pattern behind a set of related words, they can extend it to other words, adding members to an existing paradigm. For example, with regard to the words \textit{buy, eat, paint} and \textit{buyer, eater, painter}, once speakers

\textsuperscript{27} \textit{XO} stands for ‘extra old’. It is used by liquour manufacturers to designate a grade of cognac. \textit{XO} is associated with high quality and luxury in Hong Kong and Taiwan and is now used on the labels of various domestic liquors. Its use has also been extended to a certain type of seafood sauce used in Hong Kong and Taiwan. \textit{XO sauce} is described in the following entry at Reference.com: http://www.reference.com/browse/wiki/XO_sauce.
discover the abstract pattern in (10), they can extend it to new verbs, such as swim, adding swimmer to the paradigm of words ending in the deverbal agentive suffix -er.

(10) Pattern [X]v : [X-er]n ‘one who Vs’; swim : swimmer

From our point of view, an important limitation of the type of pattern in (10) is that it refers to derived words rather than compounds. We believe, however, that ‘patterns’ are important in the formation of compounds in Mandarin, rather than simply derived words. Speakers discover grammatical and semantic patterns in Mandarin compounds and extend these patterns to new words and concepts, adapting them to existing Mandarin head families. For example, just as in (10), speakers discover the pattern [X]n : [X
[chê]n]n (车 chê ‘vehicle’) through various words of the form [N chê]n, such as 火车 huôchê ‘train’ lit. ‘fire-vehicle’, 汽车 qichê ‘car’ lit. ‘steam-vehicle’, and others, and extend it to newly borrowed words to adapt them to the chê ‘vehicle’ head family (e.g., 吉普车 jípûchê ‘Jeep’ lit. ‘Jeep-vehicle’). Of particular interest to us is that the newest types of words formed through the extension of existing patterns are hybrid compounds such as ATB 午 ATB chê ‘all-terrain bike’ lit. ‘ATB-vehicle’, MTB 午 MTB chê ‘mountain bike’ lit. ‘MTB-vehicle’, and BMW 午 BMW chê ‘BMW’ lit. ‘BMW-vehicle’.

The extension of compounding patterns to lettered elements, and the consequent expansion of Mandarin head families through the addition of hybrid words, is an unprecedented innovation in Mandarin compound formation. This phenomenon is one of the primary developments we explore in this study.

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2.9 Types of Borrowing

In upcoming chapters, we compare lettered words with words adapted through ‘traditional’, or older, borrowing processes in Mandarin. We refer to several types of processes identified by Haugen (1953) and elaborated on by Winford (2003) in his classification of lexical contact phenomena in making our comparisons. Following Haugen (1953), Winford (2003: 45) categorizes lexical contact phenomena into two types: ‘lexical borrowings’, which involve an imitation of the donor model, and ‘creations’, which are entirely native. ‘Lexical borrowings’ are further divided into ‘loanwords’, in which all or part of the loan derives from the donor language, and ‘loanshifts’, in which the morphemic composition of the word is native, while its meaning is derived at least in part from the donor language. Loanwords and loanshifts are subdivided according to the types of importation and substitution involved.

Winford’s (2003) categories explain the formation and structure of some, but not all, borrowings in Mandarin. Considering first to the ‘loanwords’ category, English acronyms and initialisms (e.g. SARS, WTO) may be considered ‘pure loanwords’, which involve the “total morphemic importation of single or compound words” (p. 45). The written form of such initialisms and acronyms is imported directly, and they are pronounced with varying degrees of phonemic substitution. In Winford’s loanshifts category, Mandarin has some examples of ‘semantic loans’, which involve a “shift in the semantics of a native word under influence from a foreign word” (p. 45). For example, the Mandarin word [wɔŋ] wāng ‘net’, which originally denoted a physical ‘net’, has taken on the meaning of ‘net’ used in computer jargon as a result of the borrowing of computer-related terms from English. The use of wāng in a computer-related sense could be considered a semantic loan. When
wāng has this meaning, it is simultaneously also a calque, however, which complicates its classification. Also in the loanshifts category are calques, or loan translations, in which a foreign pattern is replicated using native morphemes. Many English compounds lend themselves easily to loan translation via compounding in Mandarin, and Mandarin has many calques of English compounds as a result. Examples include 酸雨 suānyǔ ‘acid rain’ lit. ‘acid-rain’, 绿卡 lǜkǎ ‘green card’ lit. ‘green-card’, and many others.

Winford’s (2003) ‘native creations’ consist of ‘purely native creations’, which use native words to express foreign concepts, and ‘hybrid creations’, which blend native and foreign morphemes to express foreign concepts. Following Haugen (1953), Winford (2003) considers native creations to be new coinages rather than a type of borrowing. In contrast, we would argue that native creations in Mandarin are type of borrowing: they represent the borrowing of concepts rather than the form of a word or its combination of morphemes.\(^{28}\) As such, we consider ‘native creations’ to be borrowings, and we contrast them with ‘neologisms’, which may use foreign morphemes as components but do so in an innovative manner. Thus, in our view, an example such as the Japanese word wan-man-ka ‘bus without a conductor’ lit. ‘one-man-car’ (Winford 2003: 45), is a neologism rather than a native creation because wan-man-ka as a word is not borrowed from a foreign language (English). Rather, it is a coined natively using borrowed morphemes.

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\(^{28}\) In Chapter 3, we use the notions of the conceptual, lemma, and lexeme levels from Bock and Levelt’s (1994) psycholinguistic model of word knowledge to classify types of borrowing in Mandarin. Their model organizes the mental lexicon at three levels: 1. the conceptual or lexical level consists of nodes that represent concepts – nodes are also connected to other nodes by various relations; 2. the lemma level contains syntactic information about the word; and 3. the lexeme level contains the word’s phonological specification.
Applying this distinction to Mandarin, we would call a word such as 机器人 jiāqirén ‘robot’ lit. ‘machine-person’ a ‘(purely) native creation’ because it combines the native words 机器 jiāqì ‘machine’ and 人 rén ‘person’ to express the concept ROBOT in a novel way not found in the donor language. It is also a loan, however, because it borrows the Western concept ROBOT even though the combination of morphemes used to express that concept is native. Similarly, a word such as 车胎 chētāi ‘tire’ lit. ‘vehicle-tire’ (胎 tāi is a phonetic loan) is a ‘hybrid creation’ because it blends the native morpheme 车 chē ‘vehicle’ with a phonetic adaptation of the English morpheme 胎 tāi ‘tire’ to express the concept TIRE. We consider it to be a borrowing, as well, because the concept TIRE is borrowed even if the Mandarin word for it is natively created.

In contrast to words such as 机器人 jiāqirén ‘robot’ and 车胎 chētāi ‘tire’, a word such as GRE族 GRE zú ‘GRE test-takers’ (individuals in society preparing for the GRE exam) lit. ‘GRE group’, would be a neologism. It uses the borrowed initialism GRE as a component, but the word itself is not borrowed, nor is the concept borrowed. The concept of “GRE test-takers” as a group in society to be labeled and the word GRE族 GRE zú are both developed natively. Mandarin is gaining an increasing number of such neologisms. They are created with borrowed initialisms and acronyms and also with natively coined initialisms, as we show in later chapters.

Haugen’s (1953) and Winford’s (2003) classifications do not take phonetic borrowing into account. ‘Phonetic loans’ are an important type of borrowing in Mandarin. They involve borrowing of a concept represented by a word and the pronunciation of that word, but the meaning of that word is not reflected in the Mandarin adaptation. Chinese
morpheme-characters are used only for their phonetic value, rather than their meaning, to express the foreign word and the concept to which it refers. For example, 巧力 qiăokèlì ‘chocolate’ is a phonetic loan formed by combining from the morpheme-characters 巧 qiăo ‘clever’, 克 kè ‘restrain’, and 力 lì ‘power’. The word represents the concept CHOCOLATE, but the morphemes that are used in it do not convey the meaning ‘chocolate’, only its pronunciation. Words such as 巧力 qiăokèlì ‘chocolate’ in Mandarin embody the borrowed concept and approximate the pronunciation of the original foreign word referring to that concept, but the morphemes used in the adaptation do not express the meaning of the original.

Although Winford’s (2003) classification of lexical phenomena helps us to label certain borrowing processes in Mandarin, we are still left with the problem of distinguishing borrowing processes at the morpheme-character level from those at the word level. Since most morpheme-characters have independent meanings, one borrowing process may operate at the level of the morpheme-character, but a different process may be employed at the level of the word. For example, in the hybrid word C 盘 C pán ‘C drive’, the word 盘 pán ‘tray, plate, dish’ is a semantic loan since the Mandarin word 盘 pán assumes the new meaning ‘drive’ in this loan and in others from the domain of computer science related terms. The word C 盘 C pán as a whole is a loan translation, however, because it imitates the original English pattern C drive. The fact that different borrowing processes may operate at the level of the morpheme-character and at the level of the word creates difficulties in labeling borrowings and neologisms accurately within Winford’s classification. In particular, we find that in some compounds, individual
morpheme-characters may be semantic loans or phonetic loans, while the word as a whole may be a calque or a native creation. The issue of classifying borrowings in Mandarin is addressed in the next chapter.
CHAPTER 3

MANDARIN LEXICON

A model of the Mandarin lexicon is needed to understand the types of words that are contained in the lexicon and their connection to one other. In particular, the relationship between native words, borrowed words, and neologisms that use borrowed elements should be specified, and the orthographies used to write each type of word need to be distinguished. Section 1 of this chapter describes Li's (2004) model of the Mandarin lexicon. Section 2 revises the model to include lettered words. Section 3 discusses differences in reading and pronouncing roman letters and Chinese zi (morpheme-characters). Section 4 describes substitutions in the pronunciation of roman letters in lettered words. Section 5 discusses substitutions in the pronunciation of acronyms, and Section 6 describes the pronunciation of www and other repeated letters. Section 7 outlines general factors affecting the pronunciation of lettered words.

3.1 Li's Model of the Lexicon

3.1.1 Description of Li's Model

Li (2004: 119) provides a classification of various types of Chinese words in relation to the orthographic conventions used to write them. He divides the lexicon into two
components, foreign and non-foreign, to categorize words written in Chinese and non-Chinese scripts. Li’s model and his examples of various types of Mandarin words are shown in Figure 3.1.

![Chinese lexicon diagram](image)

Figure 3.1: Chinese lexicon\(^{29}\) (Li 2004: 119)

Li’s model of the Chinese lexicon\(^{30}\) aims to show the effects of lexical borrowing on the Chinese lexicon and the entry of non-Chinese orthographies into the Chinese language. The lexicon is divided into two components: ‘non-foreign’ (i.e. native) and ‘foreign’. The non-foreign component contains neologisms and other types of words, namely standard words in the Mandarin vocabulary, such as ‘basic’ words, and non-

\(^{29}\) The words in parentheses in Figure 2.1 are examples. The English meanings of the words written in Chinese characters and labeled with superscript lowercase letters are as follows: a. rēgōu ‘hot dog’ lit. ‘hot-dog’, b. kāwāyī ‘cute’ (a phonetic loan from Japanese), c. qiāokēlǐ ‘chocolate’ (a phonetic loan from English).

\(^{30}\) Li’s (2004) use of the term *Chinese* is equivalent to our use of the term *Mandarin*.
standard lexical items drawn from classical Chinese and varieties of Chinese other than Standard Mandarin. The foreign component is divided into calques and loanwords ‘proper’, which consist of phonetic loans and pure loanwords not nativized with the Chinese script. Loanwords are divided into ‘assimilated’, or acknowledged, loans and ‘unassimilated’, or unacknowledged loans. Both types of loans are further subdivided into those written with the Chinese script and those written with a non-Chinese script.

Li (2004: 117) claims that xenophobic purism leads Chinese speakers to reject romanized forms as Chinese words even though pure loanwords from English such as DVD and CD are commonly used in modern Mandarin. As mentioned in Chapter 1, Chinese language authorities have already recognized the entry of romanized forms into Mandarin, and their current goal is to standardize such forms rather than to eliminate them from the language. Thus, the purism Li discusses may be less severe than claimed in his study. Nonetheless, Li (2004: 117) points out several important questions which have yet to be investigated regarding romanized words in the Mandarin lexicon, including the following: Does orthographic representation affect the acceptability of a new lexical item? How do numbers behave in these words and expressions? What happens to non-nativized forms in competition with native forms (e.g., OK [əu.kʰei] vs. 好 hǎo ‘good’) or nativized equivalents (e.g., CD [ɕi.ti] vs. 光盘 guāngpán ‘CD’ lit. ‘light-dish’)? Do different shades of meaning develop? Although the current study does not investigate these questions directly, our discussion of lettered words sheds light on emerging issues regarding the use and structure of lettered words.

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3.1.2 Limitations of Li’s Model

Li’s (2004) model is a useful starting point for conceptualizing the components of the Mandarin lexicon, particularly since it incorporates at least some borrowed words and non-Chinese scripts into the structure of the lexicon. The model has several deficiencies, however, which are revealed when we attempt to categorize lettered words in Li’s framework. First, we find that lettered words consist of two types: words written only with roman letters and hybrid words written with both roman letters and Chinese characters. It is difficult to classify hybrid words such as Dır ‘D-Day’ in Li’s model. Do they fall under ‘Chinese script’ or ‘non-Chinese script’? Second, some initialisms, acronyms, and hybrid words are based on units written in pinyin romanization rather than English. Such words are written with foreign roman letters, but the pinyin romanization they write is of Chinese origin. Should these words be classified as foreign or non-foreign? Lastly, some lettered words that use English elements are coined natively rather than borrowed. Are such words foreign or non-foreign? It is difficult to answer these questions using Li’s model. We revise the model to include various types of lettered words.

Another issue to consider in revising Li’s (2004) model is that China has a long history of nativizing foreign terms, as we discussed in Chapter 1. It is often difficult to tell whether a polysyllabic word is native or foreign. In classifying words as native or foreign, one must decide at what point in history individual foreign words become sufficiently assimilated as to be considered native. We use Tai and Chan’s (1999) periodization of borrowing in Chinese as a guide. In our revised lexicon, we generally consider foreign words adopted since the end of the Opium War (1839-42) to be borrowings and those borrowed prior to that period to be native words.
3.2 Revision of Li’s Model

We revise Li’s (2004) model to describe the entry of different types of lettered words into the Mandarin lexicon. The revised lexicon considers only the effects of English on the Mandarin lexicon since many lettered words are either borrowed from English or influenced by the structure of English words. The effects of Japanese on modern Mandarin should also be considered in future studies.

The revised lexicon also includes only borrowed terms and neologisms that use roman letters, although other orthographies are sometimes also used. Chan (2005: 39) notes, for example, that the Japanese hiragana letter [no] の ‘of’ is commonly borrowed to replace the de ‘of’ and之 zhi ‘of’ in print in the commercial sectors of Taiwan, Hong Kong, and the southern Chinese cities of Zhuhai and Shenzhen. Borrowings from Japanese and the use of non-roman orthographies would be included in a full model of the Mandarin lexicon. Our revised lexicon, which includes only the influences of English on the Mandarin lexicon, is shown in Figure 3.2.
<table>
<thead>
<tr>
<th>Nativeness of orthography</th>
<th>Native</th>
<th>Foreign-influenced (neologisms with a borrowed component)</th>
<th>Foreign (borrowings)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese characters only</td>
<td>'Others' in Fig. 3.1 ‘standard’ and ‘non-standard’ words in Fig 3.1</td>
<td>‘Neologisms’ in Fig. 3.1 非礼 fēīlǐ ‘uncivil’ lit. ‘no-etiquette’</td>
<td>nativized element + native element 酷哥 kūgē ‘cool guy’ lit. ‘cool-older brother’</td>
</tr>
<tr>
<td></td>
<td>Ch. char. + r.l. (pīnyīn) K 书</td>
<td>Ch. char. + r.l. (Sino-alphabet) AA 制</td>
<td>nativized borrowings 热狗 règōu ‘hot dog’</td>
</tr>
<tr>
<td></td>
<td>K shù (&lt; 看书 kàn shū ‘study’) ‘study’</td>
<td>Ch. char. + r.l. (English) GRE 族 GRE zú ‘splitting the bill’ lit. ‘GRE-group’</td>
<td></td>
</tr>
<tr>
<td></td>
<td>r.l. (pīnyīn) HSK (&lt; Hányǔ Shuǐpíng Kǎoshi) ‘Mandarin Proficiency Exam’</td>
<td>r.l. (English) RTV (R &lt; restaurant) ‘restaurant TV’</td>
<td></td>
</tr>
<tr>
<td>roman letters only</td>
<td>Ch. char. + r.l. (Sino-alphabet) roman letters in identity card &amp; license plate numbers</td>
<td>r.l. (English) MBA ‘Master of Business Administration’</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3.2: Revised Mandarin Lexicon
The revised model of the Mandarin lexicon in Figure 3.2 depicts the lexicon in two dimensions. The horizontal dimension shows the degree of nativeness of the word, and the vertical axis shows the degree of nativeness of its orthography. The structure of the word and its orthography are the two distinguishing features of Mandarin words that are relevant for grouping words in the lexicon.

### 3.2.1 Revised Lexicon: Horizontal Dimension

We divide the lexicon into three components, ‘native’, ‘foreign-influenced’, and ‘foreign’ along the horizontal axis in Figure 3.2. Each component is dominated by compounding as the primary word formation process, and it is characterized primarily by the types of elements that are combined to create the words in it.

The native component consists of words that are composed only of native components. It includes what Li (2004) calls ‘neologisms’ and ‘others’ in his model of the Chinese lexicon shown in Figure 3.1. This component also includes lettered words in which roman letters represent pinyin romanization (e.g. K 书 K shū ‘study’, HSK ‘Mandarin Proficiency Exam’), and neologisms that use individual letters from the ‘Sino-alphabet’ (Hansell 1989). In particular, letters from the Sino-alphabet are used as discrete orthographic and phonological units in labels that form components of hybrid words (e.g. AA 制 AA zì ‘splitting the bill’) or components of alpha-numeric expressions, such as identity card numbers and license plate numbers. Based on our discussion of the Sino-alphabet in Chapter 2, we suggest that the alphabet has become sufficiently assimilated
into contemporary Mandarin to be considered ‘native’. For this reason, we classify words such as \( AA \text{ 布 } AA \text{ zhī} \) ‘splitting the bill’, which uses letters from the Sino-alphabet as labels, as ‘native’.

The ‘foreign-influenced’ component consists of Mandarin neologisms that include a borrowed component. For example, 酷哥 \( kúgē \) ‘cool guy’ is composed of the phonetic loan \( kú \) ‘cool’ and the Mandarin word \( gē \) ‘elder brother’. This compound is a neologism, but since one of its components is borrowed, we consider it to be ‘foreign-influenced’ rather than ‘native’. Similarly, the compound \( GRE \text{ zú} \) ‘GRE test-takers’ lit. ‘GRE-group’ is composed of the borrowed initialism \( GRE \) and the Chinese bound root \( zú \) ‘group’. Since \( GRE \text{ group} \) as a collocation and the notion of “GRE test-takers” as a group in society to be labeled do not exist in English, we do not consider \( GRE \text{ zú} \) to be borrowed. Rather, the term is coined natively with a borrowed element. Lastly, \( RTV \) is composed of the English borrowing \( TV \) and the initialism \( R \) meaning ‘restaurant’.

Although the word \( MTV \) exists in English, \( RTV \) does not exist, so we do not consider \( RTV \) as a whole to be a borrowing. Rather, it is composed of a natively coined initialism \( (R < \text{ restaurant}) \) and the borrowing \( TV \). The combination \( RTV \) is a neologism that uses a borrowed element.

The ‘foreign’ component consists of concepts or words that are borrowed. Put differently, items in the foreign component are created through borrowing one or more aspects of a foreign word – the concept it represents, the morphemes used in the word, the word’s form, or its pronunciation. Borrowing also occurs with respect to orthography. The foreign component does not include Mandarin words in which just a foreign constituent is borrowed but not the word as a whole; such words are placed in the
foreign-influenced' component. For example, \text{GRE} 族 \text{GRE} zú ‘GRE test-takers’ lit.

‘GRE group’ is placed in the foreign-influenced component rather than the foreign component because only the constituent \text{GRE} is borrowed, rather than the term \text{GRE} zú lit.

‘GRE group’ as a whole. In contrast, 热狗 règōu ‘hot dog’ lit. ‘hot-dog’ is placed in the foreign component because it is a calque of the English word \text{hot dog}. The individual components of the Mandarin word règōu ‘hot dog’ are not borrowed, but when rè ‘hot’ and gōu ‘dog’ are concatenated to replicate the pattern ‘hot+dog’, this creates a borrowing at the word level.

All the words created through the ‘traditional’ borrowing processes discussed in Chapter 4 are also included in the foreign component, namely ‘phonetic loans’, ‘loan translations’, ‘semantic loans’, ‘native creations’, combination ‘phonetic loan/native creations’, and the ‘two-part’ borrowings that we describe. Each of these processes involves borrowing at one or more levels of the structure of the word as a whole, that is, the concept the word represents, its meaning as expressed by the morphemes used in the word, its surface form, or its pronunciation. As such, we position these words in the foreign component.

The foreign component also includes foreign words adapted as hybrid words with a roman letter component and a Chinese component in their written form. For example, \text{ATM} 机 ‘ATM ji ‘ATM machine’ lit. ‘ATM machine’ is included in the foreign component because it is most likely a calque of the English collocation \text{ATM machine}. Words such as this involve the borrowing of the concept to which a word refers and the word’s surface form. Their roman letter constituents (usually initialisms or acronyms)
also involve the direct importation of the constituent’s foreign orthography, and they may involve borrowing of the English pronunciation of the initialism or acronym.

Lastly, the foreign component also includes MBA and other English initialisms and acronyms. These are ‘pure loanwords’ that involve importation of the concept to which a word refers, as well as its form. In many cases, these words also involve borrowing of the original English pronunciation, and their orthography is also imported directly.

The ‘native’, ‘foreign-influenced’, and ‘foreign’ components of the lexicon are shown with dashed lines between adjacent components to indicate porous borders among the components. The components have a considerable influence on one another, and words in one component serve as models for those in another component. As discussed in subsequent chapters, new words and adaptations of foreign words are created by analogy with words in the same component and in other components. For example, the initialism HSK (＜Hànyǔ Shuǐping Kǎoshi) ‘Mandarin Proficiency Exam’ (for non-native learners) is formed in part by analogy with English initialisms such as MBA. The initialism is formed with the first letters of the romanized words in the Chinese phrase in the same manner as initialisms are formed in English with the first letter of each content word in the expression. It is also formed by analogy with other lettered abbreviations in the native component. HSK is formed in the same manner as the initialism PSC (＜Pǔtōnghuà Shuǐping Cèshì) ‘Mandarin Proficiency Test’ (for native speakers). Since both initialisms refer to Mandarin proficiency tests, one was probably created by analogy with the other.
3.2.2 Revised Lexicon: Vertical Dimension

The vertical dimension of the revised lexicon in Figure 3.2 categorizes words according to the nativeness of their orthography. Orthography is critical in classifying Mandarin words because it is the primary feature that differentiates lettered words from ‘native’ words written in Chinese characters and from ‘traditional’ forms of borrowing in which foreign elements are sinicized with Chinese characters. Three types of orthography are differentiated in the revised lexicon according to their level of nativeness: 1. Chinese characters (native), 2. a combination of roman letters and Chinese characters (less native), and 3. roman letters (not native). These three types of scripts are represented in each component of the lexicon: the ‘native’, ‘foreign-influenced’, and ‘foreign’ components.

Words with the most native orthography are written with Chinese characters. In the ‘native’ component, this would include what Li (2004) calls ‘neologisms’ and ‘others’. It would be useful to differentiate these categories more finely, but doing so would require a detailed investigation not possible in the current study.

In the ‘foreign-influenced’ component, words that are written in Chinese characters would include those which are coined natively but that include a borrowed component. An example would be 酷哥 kùgē ‘cool guy’, a compound written in Chinese characters but composed of the phonetic loan 酷 kù ‘cool’ lit. ‘cruel’ and the Mandarin word 哥 gē ‘elder brother’, which has a slang meaning similar to the American English word ‘guy’.

In the ‘foreign’ component, words written in Chinese characters would include adaptations formed with any of the ‘traditional’ borrowing processes discussed in
Chapter 4 (‘phonetic loans’, ‘calques’, ‘semantic loans’, etc.). For example, 热狗 règōu ‘hot dog’ lit. ‘hot-dog’ is placed in this category because it is a borrowed word written in the Chinese script.

Moving away from the native end of the orthography continuum, the next group of words in the Mandarin lexicon is written with a combination of Chinese characters and roman letters. Such combinations are ‘less native’ than words written only in Chinese characters. As illustrated with the examples K 书 K shū ‘study’, AA 制 AA zhì ‘splitting the bill’, GRE 族 GRE zú ‘GRE test-takers’, and ATM 机 ATM jī ‘ATM machine’ in Figure 3.2, it is important to distinguish what the roman letters in these hybrid expressions actually represent. In general, they write one of three types of items: pīnyīn romanization, letters in the Sino-alphabet, and English words, usually initialisms or acronyms.

The ‘native’ component of the lexicon includes two types of words with a hybrid orthography: 1. words in which roman letters write initialisms or other units in pīnyīn romanization, and 2. words in which roman letters write letters in the Sino-alphabet which represent labels. An example of the former is K 书 K shū ‘study’ (< 看 kàn ‘read’, and an example of the latter is AA 制 AA zhì ‘splitting the bill’ lit. ‘AA-system’, in which the letters AA are units from the Sino-alphabet used as labels to designate the equal share each individual pays in the transaction.

The ‘foreign-influenced’ component of the lexicon is composed of hybrid words in which the roman letter element is a borrowed English word, usually an initialism or
acronym. Our example is GRE 族 GRE zú ‘GRE test-takers’, in which GRE is a borrowed initialism written in its original orthography. The ‘foreign’ component of the lexicon consists of hybrid words in which the roman letter constituent is a borrowed English word, and the Chinese constituent is an adaptation of the second part of the original English compound or a native adjunct. For example, if we consider ATM 里程 ATM jǐ ‘ATM machine’ to be formed on the basis of the English collocation ATM machine rather than the initialism ATM, then 里程 jǐ ‘machine’ is a loan translation of machine. Alternatively, if we consider ATM jǐ to be formed on the basis of the English initialism ATM rather than the collocation ATM machine, then 里程 jǐ ‘machine’ is a native adjunct added to clarify the meaning of ATM.³¹ We discuss native adjuncts further in Chapter 4.

At the ‘foreign’ end of the orthography continuum are words in the Mandarin lexicon written entirely in roman letters. As in the case of words written with both Chinese characters and roman letters, it is important to specify what the roman letters in these words represent. In the ‘native’ component, words written entirely in roman letters are normally initialisms that abbreviate words expressed in pinyin romanization (e.g. HSK ‘Mandarin Proficiency Exam’ (< Hányǔ Shuǐpíng Kāoshi>). It is also possible to use roman letters individually in expressions other than initialisms that abbreviate romanized morphemes. For example, letters in the Sino-alphabet are used as labels in alpha-numeric expressions such as identity card and license plate numbers. Such expressions are not

³¹ In subsequent chapters, we assume that ATM 里程 ATM jǐ is formed on the basis of the English collocation ATM machine rather than the initialism ATM.
exactly ‘words’, but they are linguistic expressions in which roman letters are used in place of Chinese characters. Since we consider the Sino-alphabet to be assimilated into Mandarin, we view the use of roman letters in such expressions to be native rather than borrowed, and since these expressions do not necessarily involve Chinese characters, we classify them at the ‘roman letters only’ end of the orthography continuum.

In the ‘foreign-influenced’ component, words written using only roman letters are natively coined initialisms that include a borrowed constituent. One example of this type of word is natively formed initialisms that use the borrowing TV. In Taiwan Mandarin, these include KTV, ‘karaoke TV’, RTV ‘restaurant TV’, BTB ‘barbershop TV’, and others. The component TV is borrowed, and the initialism before it is natively coined but based on a foreign word (e.g., R < restaurant). These examples are discussed in more detail in Chapter 6.

Lastly, in the ‘foreign’ component, words written using only roman letters consist of borrowed initialisms (MBA), acronyms (SARS), and, less often, other types of words (internet). These words are imported wholesale and may be used in native compounding to form neologisms in the ‘foreign-influenced’ component. For example, the acronym DINK ‘double income no kids’ was borrowed as a pure loanword, and it was subsequently used to create compounds such as DINK 族 DINK zú ‘individuals in society who are DINKs’ lit. ‘DINK-group’.

Overall, the use of roman letters to write both foreign and romanized elements introduces a new level of ambiguity into Mandarin which has yet to be investigated in psycholinguistic studies. One question that arises is how quickly Mandarin speakers determine whether an individual roman letter or groups of roman letters represent units in
the Sino-alphabet, English, or pinyin romanization and what their expectations are when reading such units. Experiments on reading in Mandarin, morphological analysis in Mandarin word recognition, the relationship between speech and reading in Mandarin, and other psycholinguistic issues pertaining to production and processing in Mandarin need to consider the presence of roman letters in Chinese orthography. In this study, however, we aim simply to differentiate the uses of roman letters in Mandarin lettered words and to examine the morphology of words formed from each of their uses.

3.2.3 ‘Accepted’ and ‘Unaccepted’ Loans

One aspect of borrowings the revised model does not consider is the difference between loans that are acknowledged as being part of the Mandarin lexicon and those whose presence is real but not necessarily acknowledged by speakers or language authorities. In particular, lettered words and other borrowings often enter Mandarin as jargon or slang, and only some go on to become established in the standard language (e.g., e-mail, SARS). Hock and Joseph (1996: 313) note that this is a common phenomenon across languages – slang and jargon words enter the ordinary vocabulary despite speakers’ efforts to resist their intrusion into common language use. Since new lettered words enter Mandarin continually, it is difficult to know which words will become established and which ones will not, so we do not differentiate words based on this criterion.

The status of lettered words in Mandarin can also change quickly. This is especially true since lettered words are popular in print and are increasingly accepted by Chinese language authorities. Wang (2004) compared current borrowings in Mandarin with those
in Malischewski (1987) and observed that there are many new borrowings in the
language that were not included in Malischewski’s study. It is likely that at least some of
the borrowings cited by Wang were already present in Mandarin at the time of the earlier
study but were not yet acknowledged as legitimate loans. For example, Sun and Jiang
(2000: 99-103) cite 崩客 bēngkè ‘punk’ and 扎啤 zhāpí ‘draft beer’ as new loans, stating
that 崩客 bēngkè first appeared in print in 1990 and that 扎啤 zhāpí\textsuperscript{32} was introduced in
China in about 1992. Although both words are common in Mandarin, 崩客 bēngkè
‘punk’ does not appear in the latest edition of the Xiàndài Hányǔ Cìdiǎn ‘Modern
Chinese Dictionary’, and 扎啤 zhāpí ‘draft beer’ is listed in the 新词新意 xīncí xīnyì
‘new words, new meanings’ appendix, indicating that it was only recently accepted as a
loan. These examples show that judgements about whether loans have been accepted in

\textsuperscript{32} The English word ‘beer’ was borrowed much earlier as the phonetic-semantic
adaptation 啤 pí. Cheung (1972: 212) cites 啤酒 bējiù [p\textsubscript{\textasciitilde} 55 tsau\textsuperscript{35}] as the word meaning
‘beer’ in Cantonese, and Duanmu (2000: 165) states that the character 啤 pí was created
to mean ‘beer’. Although pí has the meaning of the English word ‘beer’, it is a bound root
that does not occur on its own. Another morpheme-character must be added either before
pí or after it to form a word. To form the word meaning ‘beer’, 啤 pí combines with 酒
jiǔ ‘alcohol’ in the compound 啤酒 pījiǔ ‘beer’ lit. ‘beer-alcohol’. In 扎啤 zhāpí ‘draft
beer’, pí combines with 扎 zhā ‘lit. to prick’, a phonetic loan for the English word jar, to
form the compound meaning ‘draft beer’. The creation of disyllabic terms, that is 啤酒
pījiǔ and 扎啤 zhāpí, rather than monosyllabic (啤 pí) or polysyllabic (扎啤酒 zhāpíjiǔ)
terms may reflect a preference in the metrical structure of Mandarin for disyllabic forms.
Duanmu (2000: 165) suggests that disyllabic forms “serve as a disyllabic foot when the
metrical structure needs it.” Marjorie Chan points out, however, that the creation of
disyllabic 啤酒 bējiù may result from application of the template [X\textsubscript{N} 酒 jiǔ]\textsubscript{N} in the
adaptation of beer. The pattern is used to name many types of alcoholic beverages in
Cantonese (and in Chinese generally), as in the Cantonese examples 酒精 jiānjiù ‘gin’ lit.
‘gin-alcohol’ and 马天尼酒 mǎtiānníjiǔ ‘Martini’ lit. ‘Martini-alcohol’ (source of
 Mandarin are difficult to make with certainty. As a result, we do not include acceptance of loans as a feature to differentiate words in our revised model of the Mandarin lexicon.

3.3 Differences in Reading and Pronouncing Zì and Lettered Elements

3.3.1 Pronouncing Individual Roman Letters

Mandarin speakers use roman letters flexibly as independent units, or labels, in some expressions (e.g., F 號 F hào [ɛf(u).xau] ‘one size’ lit. ‘F-size’ (F < free); AA 制 AA zhì [ɛi.ei.tʂɿ] ‘splitting the bill’, lit. ‘AA system’), and as constituents of initialisms or acronyms in other expressions (e.g., DINK 家庭 DINK jiātīng [tiŋ.kʰə.tɕia.tʰiŋ] ‘DINK family’; LP 唱片 LP chǎngpiàn [ɛi.pʰi.tʂʰaŋ.pʰian] ‘LP record’ [LP < long-playing]). In each case, roman letters are used as discrete graphic units similar to Chinese characters, or logographs. Roman letters in initialisms and acronyms function in the same manner as logographs, each representing a separate element of meaning. In addition, since each roman letter functions as a logograph, roman letters used in initialisms and acronyms can also be read in the same manner as Chinese logographs. Roman letters in initialisms and acronyms also allow free directionality just like Chinese zì and maintain the normal operation of the Chinese writing system (Hansell 1989: 170). For example, the expression ‘IBM Building’ can be written from left to right as IBM 大厦 or from right to left as 厦大 MBI (Hansell 1989: 175). Each letter and character is perceived to be a discrete unit, and the units are also combined at higher levels to create compounds (namely, IBM, 大厦 dàshà ‘building’ lit. ‘big-mansion’, and IBM 大厦 ‘IBM Building’).
Roman letters used as discrete graphic units are also preferred for ease of pronunciation. In lettered words, the letter names (e.g., F in ㄈ F hào ‘one size’) have the same relationship to the letters as Mandarin morphemes do to the graphs that write them (e.g. hào ‘size’ to the character ㄈ). The letters can be pronounced as if they were logographic representations of their names. Hansell (1989: 170-171) also makes this observation, suggesting that Mandarin speakers prefer words in which roman letters are pronounced with their citation form, or ‘letter name’, rather than in combinations requiring complex graph-to-phone correspondences. For example, to interpret the instances of c in call, ceiling, delicious, and cello, speakers need to know various spelling rules and phonological rules of English, but no such knowledge is needed for the c in CBS and 125 cc. Speakers simply need to know the association between the graph and its pronunciation as /si/ (Hansell 1989: 171). As a result, CBS and cc would be preferred to call, delicious, and cello as loanwords in Mandarin, and natively created words would tend to be initialisms such as CBS and cc, or hybrid words that use these initialisms, rather than the other types of words. The large number of borrowed and natively created initialisms in our corpus provides further confirmation of Mandarin speakers’ preference for words in which roman letters can be pronounced in their citation form. Such words require minimal knowledge of sound-to-spelling correspondences to pronounce; speakers simply need to know the letter name associated with each graph.

A less common way of dealing with the spoken form of roman letters is to give them a name in Mandarin that describes their visual shape (Hansell 1989: 193, Zhang 2005: 391). In some words, the iconicity of letter shapes is equated with a similar-looking character in Mandarin (e.g., LIKELY is pronounced as the character ㄝ dìng in ㄝpective dìngzi chi ‘T-
square’ lit. ‘ding-character-ruler’). In certain other words, the iconicity of the letter’s shape is represented with a description of the shape (e.g., O is described as 环形 huánxing ‘round-shaped’ in 环形圈 huánxing juān ‘O ring’ lit. ‘round-shape-ring’, and V is described as 三角 sānjiǎo ‘three-cornered, angled’ in 三角皮带 sānjiǎo pídài ‘V-belt’ lit. ‘three-corner/angle-leather-belt’). Hansell (1989: 192) also notes that some shape iconic forms are borrowed from English (e.g., 领毛衣 V领 mào yī ‘V-neck sweater’ lit. ‘V-collar-sweater’), while others are native creations (e.g., 型弯筝 S弯筝 wānzhēng ‘figure S wānzhēng’ lit. ‘S-model-curved-zither’, a type of traditional Chinese instrument).

3.3.2 Pronouncing Acronyms

Mandarin speakers’ general preference for words in which roman letters can be pronounced in their citation form does not explain the use of acronyms in Mandarin, in which letters are assembled to represent the phonemes in the phonological form corresponding to the written acronym (e.g., the phonological form /sarz/ which corresponds to the acronym SARS). It is important to point out that acronyms in Mandarin are primarily borrowings from English and other languages. Mandarin speakers rarely coin acronyms with roman letters. Rather, Mandarin speakers tend to use roman letters individually as labels (e.g., A in A 拷 kǎo [ei kʰau] ‘videotape copied from a master’ lit. ‘A-copy’) or in initialisms (G 贡 G贡 [tsi tsu] ‘GRE test-takers’ lit. ‘G

33 The fact that Mandarin speakers equate individual letter shapes with the shapes of individual Chinese zi provides additional evidence that roman letters are interpreted as
group' [G < GRE]) since letter names can be used to pronounce the roman letters in such words. Nonetheless, acronyms do appear as borrowings in Mandarin (e.g., *PISA* [wei.sə], *TOEFL* [tuə.fu]). Of the one hundred forty-two lettered words in the *Xiàndài Hányǔ Cìdiàn* ‘Modern Chinese Dictionary’, at least ten would be pronounced as acronyms in English. Written representations of acronyms are relatively easy for Mandarin speakers to process as long as the pronunciation of the word is not involved since each roman letter is read as a discrete unit similar to a Chinese character.

Pronunciation of acronyms is more difficult for Mandarin speakers since there are no native spelling-to-sound rules that would allow them to assemble the letters in acronyms into pronouncable words. Speakers have devised three strategies for pronouncing acronyms in light of this complication. First, acronyms that have been borrowed as loanwords into Mandarin and that also have equivalent phonetic or combination phonetic loan/native creation tend to be pronounced in the manner of the loan equivalent rather than the acronym as it is pronounced in English. Speakers substitute the pronunciation of the loan equivalent for the English pronunciation of the acronym. For example, *TOEFL* has a ‘phonetic loan/native creation’ equivalent, 托福 *tuōfù*. Speakers tend to use the pronunciation of the loan equivalent for both the acronym written with roman letters and for its equivalent written in Chinese characters.

The second strategy for pronouncing acronyms is to imitate the English pronunciation of the acronym even if the acronym has also been adapted with a loan equivalent in Mandarin. The English acronym *SARS* was adapted as the native creation 非典型肺炎

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Chinese *zi* in the Mandarin lexicon.
fēidiānxìng fèiyán ‘severe acute respiratory syndrome’; the abbreviation 非典 fèidiān ‘severe acute’ is used in informal conversation. While the terms fēidiānxìng fèiyán or fèidiān are both frequent in speech, some speakers also say [sa.s̚] in imitation of the pronunciation of the English acronym. It is unlikely that average Mandarin speakers arrived at the pronunciation [sa.s̚] by assembling the pronunciations of the letters S, A, R, S to form the acronym SARS. Rather, it is more likely that the first individuals to imitate the English pronunciation [sɔrз] were bilingual speakers who had heard the pronunciation [sɔrз] in English. It is also possible that some of these speakers were aware of the acronym SAR ‘Special Administrative Region’, the term used to designate the territory of Hong Kong after its repatriation in 1997 and pronounced as [sa] in Cantonese. In any case, monolingual speakers heard the pronunciations of bilingual speakers and imitated them, substituting similar-sounding Mandarin syllables for the unfamiliar English pronunciation.

Mandarin speakers tend to substitute the Mandarin syllable [sa] for English [sɔr] and the syllable [s̚] for English [z] in the word SARS. Syllable-final [-r] does not occur in Mandarin except in morphemes to which the ʃ-ér suffix is added, and speakers may also imitate r-less British pronunciations of the combination sɔr in SARS and SAR. Mandarin also does not have a voiced alveolar fricative [z], but it does have a voiceless dental fricative [s] which can be substituted to pronounce SARS as a word. Mandarin syllable structure constrains the interpretation of [z] once [sa] has been established as the pronunciation of English [sɔr]. As discussed in Chapter 2, a well-formed Mandarin syllable consists of three components: 1. an optional initial consonant; 2. a ‘final’
composed of an optional glide, an obligatory nuclear vowel or diphthong, and an optional syllabic ending, and 3. a tone. Of the vowels [a, ə, u, əu] that can follow [s] to form a syllable, [a] is the best candidate for forming a syllable that resembles the pronunciation of English [z]. As for tone, a common strategy is to give [sa] a falling tone and [sə] a neutral tone; another is to give [sa] a dipping tone and [sɨ] a high tone. A more extensive discussion of the tones Mandarin speakers assign to English acronyms and initialisms in their pronunciations is discussed in a later section.

The third strategy for pronouncing acronyms is to pronounce them as initialisms. For example, Hansell (1989: 174) reports that speakers of Taiwan Mandarin speakers sometimes pronounce the acronym AIDS as if it were an initialism. Rather than treating the acronym as the monosyllabic word /ɛjdɛ/, speakers pronounce each letter separately so that the pronunciation becomes [ei aɪ tɨ sɨ]. Hansell (1989: 174) also provides two examples of English words used in Taiwanese television commercials that are pronounced as initialisms. The brand names Oak (milk powder) and Bic (pens) are spoken as O-A-K and B-I-C, respectively. This phenomenon is not surprising since Mandarin speakers are more familiar with the individual letter names of roman letters rather than their pronunciations in various words. Aside from individuals who have some proficiency in English, Mandarin speakers would not know the graph-to-sound correspondences of the letters in o, a, and k in Oak and the letters b, i, and c in Bic to assemble them into the English pronunciations /ək/ and /bɪk/. 

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3.4 Substitutions in the Pronunciation of Roman Letters

The Xiàndài Hàn yú Cìdiàn ‘Modern Chinese Dictionary’ and Xiàndài Hàn yú Guìfàn Cìdiàn ‘Standard Dictionary of Modern Chinese’ include appendices with lists of initialisms, acronyms, and hybrid words, but they do not specify the pronunciation of the lettered portions of words other than acronyms that have phonetic or phonetic loan/native creation equivalents (e.g., DINK = 丁克 dìngkè, OPEC = 欧佩克 ōupèikè). Studies of lexical borrowing in Chinese also discuss English initialisms and acronyms in Mandarin, but they, too, generally fail to specify the phonetic realizations of these terms.

Initialisms and individual letters are written with roman letters, but some are spoken by substituting similar sounding Mandarin syllables for the sounds that correspond to the graphs. Table 3.1 shows examples from Zhang (2005) and Hansell (1989).

<table>
<thead>
<tr>
<th>hybrid word or initialism</th>
<th>English</th>
<th>Mandarin</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP 电话 IP diànhuà</td>
<td>/ai.pi/</td>
<td>ai pi [ai.pʰi]</td>
<td>‘IP phone’</td>
</tr>
<tr>
<td>E 型弯头 E xíng wāntōu</td>
<td>/i/</td>
<td>yi [ji]</td>
<td>‘E bend’</td>
</tr>
<tr>
<td>V 形弯 V xíngguān</td>
<td>/vi/</td>
<td>wei [wei]</td>
<td>‘V-shaped tube’</td>
</tr>
<tr>
<td>X 射线 X shèxiàn</td>
<td>/eks/</td>
<td>aksi [ai,kʰa.sʰ]</td>
<td>‘X-ray’</td>
</tr>
<tr>
<td>H 型网络 H xíng wāngluò</td>
<td>/etʃ/</td>
<td>aiqu [ai.tʰə.y]</td>
<td>‘H-network’</td>
</tr>
<tr>
<td>K 金 K jīn also 开金 kāi jīn</td>
<td>/ke/</td>
<td>kai [kʰai]</td>
<td>‘alloyed gold’</td>
</tr>
<tr>
<td>T恤(衫) T Xiù (shān)</td>
<td>/tʃi/</td>
<td>ti [tʰi]</td>
<td>‘T-shirt’</td>
</tr>
<tr>
<td>cc (also 西西 xīxī)</td>
<td>/si.si/</td>
<td>xīxi [ɕi.ɕi]</td>
<td>‘cc’</td>
</tr>
<tr>
<td>CD</td>
<td>/si.di/</td>
<td>xidi [ɕi.tʰi]</td>
<td>‘compact disk’</td>
</tr>
<tr>
<td>NG</td>
<td>/en.dʒi/</td>
<td>[ən] [tœi]</td>
<td>‘NG’ (&lt; no good)</td>
</tr>
</tbody>
</table>

Table 3.1: Substitutions in the Pronunciation of Roman Letters

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34 Examples 1-6 are from Zhang (2005), and 7-10 are from Hansell (1989). The word shirt in T-shirt was adopted in Cantonese as a phonetic loan, that is, the morpheme-character 恤 pronounced sēut in Cantonese; the word T-shirt is pronounced tīsēut

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Although tones may be added to speakers’ pronunciations of lettered elements, no tones are given in Zhang and Hansell’s transcriptions. The pronunciations provided by Zhang (2005) and Hansell (1989) are impressionistic and may not be accurate for all speakers, as there is some variability in the degree to which Mandarin speakers borrow the English pronunciation of roman letters based on speech context, degree of proficiency in English, and other factors. The words in Table 3.1 show varying degrees of phonetic substitution from Mandarin in the pronunciation of letters and initialisms. The pronunciation of IP, E, K, D in CD, and G in NG have the least substitution because Mandarin has syllables that approximate the pronunciation of these letters, namely ai [ai], pi [pʰi], yi [ji], kai [kʰai], di [ti], en [en], and ji [tɕi]. The term carat in carat gold (alloyed gold) was originally borrowed as the phonetic loan 开 kāi ‘lit. open’. When the letter K was borrowed for the meaning ‘carat’, it was naturally pronounced as kāi [kʰai].

The pronunciation of V [vi] is approximated with wei [wei]. Of the labial initials in Mandarin b [p], p [pʰ], m [m], f [f], w [w] (Norman 1988: 139), the voiced labial continuant [w] is selected to approximate the English voiced labiodental fricative [v].

As for finals, although bi [pi], pi [pʰi], and mi [mi] are syllables in Mandarin, *fi [fi] and *wi [wi] are not. Of the finals that can combine with w [w] to form syllables, [ei]

(Cheung 1972). The Cantonese word T恤 ‘T-shirt’ was probably later borrowed into Mandarin and is pronounced láhù [ləhʊ]. Although恤 sēu combines with other nativized elements to describe foreign shirts in Cantonese (夏威夷恤 ‘Hawaiian shirt’, 士石本恤 sīhūsēu ‘sports shirt’), it does not have this usage in Mandarin.

35 The initial [w] may be a particularly suitable substitution for Beijing speakers since they tend to pronounce [w] as [v], [u], or [β]. The historical reasons for variation in the pronunciation of [w] in Mandarin are addressed in Lien (1986), Shen (1987), Hu (1999), and Li (1999), among others.
approximates [i] in \( V \) most closely. Thus, based on the allowable combinations of initials and finals in Mandarin, [wei] is a close approximation of \( V [vi] \).

The pronunciation of \( X [\text{eks}] \) and \( H [\text{et}] \) in English does not conform to the phonotactic constraints of Mandarin. Mandarin does not allow consonant clusters, and the only consonants allowed in coda position are [n] and [ŋ]. Mandarin also does not have the mid front vowel [ɛ] except after [i] and [y] (in [ie], [ian], and [ye]). Due to these constraints, more than one Mandarin syllable is needed to approximate the pronunciation of these letters. \( X \) is approximated with three syllables, \( ai [\text{ai}] \), \( ke [k\text{h}ə] \), and \( si [sɨ] \), whose pronunciation represents the three phones in the English pronunciation of \( X [\text{eks}] \).

Adaptation of the pronunciation of the letter \( X \) in this manner may have originated in Cantonese. Cheung (1972: 213, 232) states that \( X \)-ray was nativized as both \( X \) 光 and as the phonetic loan 爱克斯光 \( ēksihgwōŋ \) ‘lit. love-restrain-refined’ in Cantonese. The phonetic loan from Cantonese may have been borrowed into Mandarin.

\( H \) is approximated with two syllables, \( ai [\text{ai}] \) and \( qu [tɕʰy] \) which approximate the combination of [e] and [tʃ] in English. Although Zhang posits [ai] in the pronunciation of \( H \) in 型网络 \( H \text{xing wāngluò} \) ‘H-network’, the syllable \( ei [\text{ei}] \) would more closely approximate the English mid front vowel [ɛ]. The syllable [ai] occurs more frequently in Mandarin as a morpheme-character than [ei], however, which may be one reason it is preferred to [ei] as a substitution for English [ɛ].

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36 Thanks to Marjorie Chan for pointing this out. \( Xīnhuà Zìdiǎn \) 新华字典 ‘New China Dictionary’, a dictionary of Mandarin morpheme-characters, includes thirty-one entries.
The pronunciation of C [si] in cc and CD is approximated with the Mandarin syllable [ɕi]. Although the dental sibilant [s] occurs in Mandarin, in syllables with a CV structure, it can only combine with the vowels [a, a, i, u], none of which sound like the high front vowel [i]. The other dental sibilants in Mandarin, z [ts] and c [tsʰ] also combine with the same vowels. Of the fricatives f [f], s [s], sh [ʂ], x [ɕ], and h [x] in Mandarin, the high front vowel [i] combines only with the palatal fricative x [ɕ]. Due to these constraints on Mandarin syllable formation, the Mandarin syllable xi [ɕi] may serve as the best approximation of English [si]. Further evidence of this substitution can be seen in the pronunciation of the term cc in Taiwan Mandarin. Cc has been nativized as the phonetic loan 西西 xi-xi [ɕiɕi] ‘lit. west-west’. The transliteration of the roman letter c in the initialism cc as the character 西 xi may lead to the pronunciation of the letter c as [ɕi] in other initialisms, but this could also be due to the influence of Japanese pronunciations on certain words in Taiwan Mandarin.

Hansell (1989: 173 provides two pronunciations of the N in NG, [ən] and [ɛn], taken from a Taiwanese radio interview in which the interviewer used the first pronunciation and a film star used the second. The first pronunciation substitutes the Mandarin syllable en [ən] for English [ɛn], while the second pronunciation imitates English [ɛn]. The syllable [ɛn] does not exist in Mandarin; the closest equivalent is the syllable en [ən]. Mandarin has a vowel [ɛ], but it occurs only in combination with a medial high front vowel [i] in the finals -ie [ie] and -ian [iɛn] in syllables such as bie [pie] and bian [piɛn] of morpheme-characters pronounced as [ae] (p. 2-4) but only one pronounced as [ei] and
and with a medial palatal glide [y] in -üe [ye] in syllables such as lüe [lye] and nüe [nye].

The nasal consonant [n] can occur in coda position in Mandarin, as it does in English [en]. Of the vowels [a, ə, ji] that combine with [n] to form syllables that have a VC structure, en [ən] sounds the most like English [e]. As for the alternate pronunciation [en], some speakers may have acquired it by imitating the English pronunciation of NG [en.dʒi].

3.5 Substitutions in the Pronunciation of Acronyms

English acronyms borrowed into Mandarin sometimes have a phonetic equivalent that approximates the pronunciation of the original, or they may have a phonetic loan/native creation equivalent that approximates both the pronunciation of the original and some aspect of its meaning. The English acronyms that have phonetic loan or phonetic loan/native creation equivalents tend to be borrowings used frequently in Mandarin. Although both the roman letter versions of the acronyms and their Mandarin equivalents are used in writing, the acronyms are normally pronounced with the pronunciations of the Chinese characters used to write them. Average speakers are more likely to be familiar with the pronunciation of the Mandarin equivalents than the original acronyms. Although speakers may not know which characters are used to write the nativized equivalents of English acronyms, they usually know how the Mandarin equivalents are pronounced from hearing them in daily life and in the media. Xiàndài Hányù Cídian 'Modern Chinese

eight that have [ei] as an alternate pronunciation (p. 118-9).
Dictionary’ and Xiàndài Hànyǔ Guīfān Cídiǎn ‘Modern Chinese Standard Dictionary’ provide several examples of acronyms and their loan equivalents, as shown in (1a) and (1b).

(1a) **acronyms and their phonetic equivalents**
- OPEC 欧佩克 ōupèikè (OPEC < Organization of Oil Exporting Countries)
- DINK 丁克 dīngkè (DINK < Double Income No Kids)

(1b) **acronyms and and their phonetic loan-native creation equivalents**
- AIDS 艾滋 àizī lit. ‘mugwort-propagate’
- TOEFL 托福 tuōfú lit. ‘rely on - good fortune’

The transcriptions of **OPEC** and **DINK** in (1a) are phonetic adaptations. The Chinese morpheme-characters that transcribe the acronyms are used for their phonetic value only. The transliteration of **TOEFL** is a combination phonetic loan and native creation. The morpheme-characters that transliterate the acronym have positive meanings, namely ‘rely on’ and ‘good fortune’. The transliteration of **AIDS** uses 艾 ài ‘mugwort’ as a phonetic adaptation and 搽 zī ‘propagate’ as a combination phonetic loan and native creation. The Mandarin equivalents of the term **AIDS** are discussed in Chapter 4.

**3.6 Pronunciation of www and Other Repeated Letters**

The third pattern in the pronunciation of roman letters applies to initialisms that involve repetitions of one letter, such as **www** ‘worldwide web’. Rather than pronouncing the letters in succession, many Mandarin speakers use a digit to represent the number of times the letter is repeated and then say the name of the letter itself. The English term **www** is usually pronounced in of two ways: 三 w [san wei] ‘three w’ or 三 w [san dāblju] ‘three w’. The first pronunciation uses the word 三 sān ‘three’ followed by [wei], a
Mandarin syllable that is often used as the pronunciation of the letter w in speech. The syllable also corresponds to w orthographically since it uses w as the first letter in pinyin romanization. The second pronunciation also uses the word sān ‘three’ but follows it with an imitation of the English pronunciation of the letter w, that is [dablju]. An even newer pattern is the pronunciation of wvw as [dablju dablju dablju]. The newest pronunciation gives the term wvw full status as a loanword in Mandarin since both its orthography and pronunciation are imported directly into the language.

Another pattern of pronunciation is the use of a number name together with a pronunciation of the letter itself in an extension of a well-attested and long-standing pattern of forming aphorisms in classical and modern Chinese. The word for a digit representing the number of items in question is combined with another word that serves as the abbreviation for the series of items or concepts, as in the following examples: 三 个 sān jié ‘three festivals’ (the three major festivals in Chinese society), 四民 sì mín ‘four classes of people in ancient China’ (scholars, farmers, artisans, and merchants); 三从四德 sān cōng sì dé ‘three obediences and four virtues of women’; 一国两制 yī guó liǎng zhì ‘one country two systems’. In the last two expressions, the pattern is repeated

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37 The three festivals are the Dragon Boat Festival, the Mid-Autumn Festival, and the Lunar New Year Festival (端午 duānwǔ, 中秋 zhōngqiū, 春节 chūnjiē).
38 In ancient China, a woman was required to obey her father before marriage (在家从父 zài jiā cóng fù), her husband after marriage (出嫁从夫 chū jià cóng fù), and her sons in widowhood (夫死从子 fū sǐ cóng zǐ). The four virtues were fidelity, physical charm, propriety in speech, and efficiency in needlework (妇德 fùdé, 妇容 fùróng, 妇言 fùyán, 妇工 fùgōng).
39 The ‘one country two systems’ model of governance was originally proposed by Deng Xiaoping, then paramount leader of the P.R.C., for the unification of China. The principle is that Hong Kong, Macao, and Taiwan can continue to practice capitalism with a high degree of autonomy for fifty years after reunification with China.
to form two coordinate components in each expression, namely sān cóng ‘three obediences’ and sì dé ‘four virtues’ and yī guó ‘one country’ and liǎng zhì ‘two systems’.

Comparing the examples above with those in (2) from Liu (2001), we see that the productive morphological pattern of combining a number with an abbreviation has now been extended to the domain of lettered elements to form shorthand lettered expressions of the same form as natively formed aphorisms in Mandarin.

(2)  a. 四 P 優素 si P yōu-sù ‘four Ps of marketing’
lit. ‘four-P-elements’ (product, price, promotion, place)

b. 三 B sān B ‘baby, beauty, beast’ lit. ‘three-B’
(the topics of television advertising in recent years)\(^\text{46}\)

c. 三 K 党 sān K dǎng ‘KKK’ lit. ‘three-K-party’ (Ku Klux Klan)

In (2), the letters are initialisms representing two or more items whose written names begin with the same letter, and the number name represents the number of times the initialism is repeated. The function of the initialism after the digit is analogous to that of the morpheme-character after the digit in patterns that form natively formed expressions. Both units abbreviate a series of words, but whereas earlier expressions filled the slot after the digit with a morpheme-character, newer expressions fill it with an initialism.

In addition to similarities with Mandarin aphorisms, the examples in (2) also show similarities with English expressions. The structure of (2a) is analogous to English phrases such as the “3Rs” in primary education (reading, writing, and arithmetic), a similarity that results from calquing the first part of the expression. The first component in the Mandarin expression is a calque of the English phrase 四 P sì P ‘four Ps’ in the original English expression ‘four Ps (of marketing)’. The structure in (2b) is also identical
to that of (2a) and the "3 Rs," but it is natively coined rather than borrowed. The structure of (2c) is like that of www ‘wordwide web’. The letter K is repeated three times in KKK just as w is repeated three times in www. To pronounce KKK, speakers use a strategy similar to the second pattern for pronouncing www. The number 三 sān ‘three’ is used and is then followed by an imitation of the English pronunciation of K as [kʰe]. Interestingly, speakers do not use [kʰai] as they do for the K in 开金 Kjīn ‘alloyed gold’, most likely because the sources of the initialism K are different in each case.

3.7 General Factors Affecting the Pronunciation of Lettered Words

Various tendencies in the pronunciation of lettered words are discussed in preceding sections, but it is important to note that the pronunciations of lettered words are actually quite variable. Several factors that contribute to this variability. First, although a large number of lettered words are used in print, they may not necessarily be spoken by average speakers in daily conversation. Average speakers may have greater proficiency in reading a variety of lettered words than they do in pronouncing them. Rather, speakers are more likely to know the pronunciations of familiar lettered words spoken in daily life rather than those that are less frequent in speech, especially since it is the more common lettered words that tend to have phonetic equivalents that are used to pronounce them. For example, TOEFL is pronounced as tuōfú.

Second, speakers’ proficiency in English may also affect their pronunciation of lettered words. Bilingual speakers’ knowledge of initialisms, acronyms, and letter names

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40 The term 三 B sān B ‘three Bs’ is also found in Sun and Jiang (2000: 104).
as they are pronounced in English may lessen the amount of interference from Mandarin or other varieties of Chinese in their pronunciation of lettered words in Mandarin.

Third, bilingual speakers may vary their pronunciations according to the speech of their interlocutors. They may be more likely to draw on their knowledge of English pronunciations in pronouncing lettered words when communicating with other bilingual speakers rather than when they communicate with monolingual speakers. Bell (1991: 244) proposed that speakers design their speech style primarily for and in response to their ‘audience’. When bilingual speakers address others who are bilingual, they may use English-style pronunciations to affirm both speakers’ status as bilinguals and their shared knowledge of the English pronunciations of imported lettered words and elements.

Lastly, when speaking with monolingual Chinese speakers, bilingual speakers may use more Chinese-style pronunciations to affirm both speakers’ status as members of the Chinese speech community. We suggest that bilingual speakers are more likely to pronounce lettered words according to the norms of the Chinese-speaking community when in that community and are unlikely to deviate considerably from their community’s common pronunciations of lettered words. As noted by Giles and Powesland (1975: 155) in their description of ‘accommodation theory’, individuals can induce others to evaluate them more favorably by reducing dissimilarities between them, including those in speech. To be recognized as members of the Mandarin speech community, bilingual speakers may use accepted local pronunciations of lettered elements even if those pronunciations deviate from what bilingual speakers know to be correct pronunciations in English.

In addition to these sociolinguistic considerations, purely linguistic considerations also affect the pronunciation of lettered words. Speakers’ native speech habits in Mandarin
and in other varieties of Chinese they know most likely affect the types of substitutions they make in the pronunciation of letter names and lettered elements. Speakers in different dialect regions of China may differ in their pronunciations of lettered words. Moreover, the pronunciation of certain letters also varies based on word context. For example, K becomes [kʰai] in Kjîn ‘alloyed gold’ due to the influence of the phonetic loan kāi jîn ‘alloyed gold’ pronounced as [kʰai.tɕin], but K becomes [kʰei] in the Taiwan Mandarin word K ㄆ K shū ‘study’. In addition, speakers also fit lettered words into the prosody of Mandarin or whatever variety of Chinese they are speaking which could affect pronunciation of the lettered elements.

If speakers view individual roman letters as the equivalent of one Chinese morpheme-character, which we assume they do in lettered words, they may also apply a tone to each roman letter as they do to individual zi. Based on our discussion of Mandarin syllable structure in Chapter 2, we expect that Mandarin speakers may apply tones to roman lettered elements since tone is one of the integral parts of syllable structure in Mandarin. Hansell (1989: 111) considered the issue of tones in lettered words, noting that his informants in Taiwan either did not know whether particular English borrowings had tones or that they claimed borrowings had no tones since they are foreign. Our analysis of lettered words suggests that tones are applied to lettered elements as part of Mandarin speakers’ adaptation process in pronouncing lettered elements. The use of tones enables lettered elements to fit easily into the surrounding Mandarin prosodic context.

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41 Hansell (1989: 114) attributes the pronunciation of K as [kʰei] in K ㄆ K shū to the filling of a phonological gap in Mandarin, which has the syllables gei [kei] and hei [xei] but not *kei [kʰei].
Lettered words are most likely also adapted to the metrical structure of Mandarin to maintain a balance of stressed and unstressed syllables according to the phonological rules of the language. Duanmu (2000: 10) suggests, for example, that main stress in disyllabic Mandarin compounds is on the left. It would be instructive to know whether hybrid words are pronounced with main stress on the left-positioned lettered element in the same manner as Mandarin compounds expressed entirely in morpheme-characters.

Relevant questions for future research are identifying patterns in the application, or non-application, of tones to lettered elements and determining how lettered words are adapted to the metrical structure of Mandarin. Substitutions in the pronunciations of individual roman letters in different words also require further study.
CHAPTER 4

TRADITIONAL BORROWING PROCESSES

Hybrid lettered words (words consisting of a roman letter component and a Mandarin component in their written form) are formed in part on the basis of earlier processes of borrowing in Mandarin which ‘sinicized’ foreign words and concepts through the use of Chinese morpheme-characters. Sinicized words and hybrid words are also formed with native compounding patterns which position these words in the same ‘head families’ as native Chinese compounds that share their head.

In this chapter, we examine earlier sinicizing processes of borrowing, which we call ‘traditional’ borrowing processes, that have shaped the development of lettered words. In later chapters, we explore ways in which hybrid lettered words represent both an extension of these earlier sinicizing processes and a departure from them, and we discuss how hybrid lettered words are formed by analogy with other Mandarin compounds through the use of compounding patterns.

Section 1 of this chapter compares classifications of borrowing processes in Mandarin with general borrowing processes identified by Haugen (1953) and Winford (2003). Section 2 introduces our classification the five ‘basic’ processes of borrowing in Mandarin. Section 3 describes degrees of lexicalization as they apply to borrowed words. Section 4 discusses the lack of equivalence in meaning between Chinese zi and English
words, which complicates the adaptation of foreign words in Mandarin. Section 5 describes ‘two-part’ borrowing strategies that involve either the use of a basic borrowing process followed by a Mandarin ‘explicative adjunct’ (Hansell 1989) or the serial application of two basic borrowing processes. Section 6 compares traditional borrowing processes with lettered words. Section 7 describes the structure of nativized words, and section 8 explores the adaptation of foreign words through compounding in Mandarin. Section 9 discusses the meanings of nativized compounds.

4.1 Classifications of Borrowing Processes

Traditional forms of borrowing in Mandarin rely on the use of Chinese morpheme-characters to represent foreign concepts and the meaning and/or pronunciation of foreign words. Before turning to the classification of borrowing processes proposed in section 4.2, we compare the classifications of borrowing types developed by Chinese linguists with those developed by Haugen (1953) and elaborated on by Winford (2003).

4.1.1 Comparison of Classifications of Borrowing

Linguists\textsuperscript{42} writing on borrowing in Mandarin and Cantonese have developed numerous classifications of borrowed words. Although the categories and their corresponding category names vary across these studies, the classifications that have been proposed generally categorize loans based on a few key types of borrowing processes.

Cheung’s (1972: 212-214) categories of borrowing processes in Cantonese can serve as a representative example of five of the categories that apply not only to Cantonese but also to Mandarin. Cheung divides loans in Cantonese into the following types: 1. ‘phonetic transcription’ (音译) in which Chinese morpheme-characters are used only for their phonetic value to represent the pronunciation of the word (e.g. 咪 māi ‘microphone’); 2. ‘semantic translation’ (意译) in which Chinese morpheme-characters are used for their meaning but not their phonetic value (e.g. 短裙 ‘miniskirt’ lit. ‘short-skirt’); 3. ‘half phonetic transcription, half semantic translation’ (半音译半意译) in which part of the foreign word is adapted phonetically and part of it is adapted semantically (e.g. 奶昔 náaihsīk ‘milkshake’ in which milk is adapted semantically with 奶 náaih ‘milk’ and shake is adapted phonetically with 昔 sīk ‘former times’); 4. ‘simultaneous phonetic transcription and meaning translation’ (音义兼译) in which morpheme-characters are chosen for their phonetic resemblance to the original and their ability to express at least some aspect of its meaning (e.g. 披头四 pēihtàuhsei ‘Beatles’ lit. ‘disheveled-hair-four’ in which the three morpheme-characters convey the pronunciation of the word, as well as a metaphorical interpretation of its meaning); and 5. ‘phonetic transcription with a native explicative element’ (音译之外，再加说明) in which a phonetic loan is combined with a Chinese explicative element that describes the word’s meaning or semantic category (e.g. 啤酒 bējāu ‘beer’ in which 啤 bēi is the phonetic loan for ‘beer’ and 酒 jāu is the native explicative element meaning ‘liquor’).
We add ‘calques’ to Cheung’s list as another basic category of loans described in various studies on borrowing in Chinese (e.g., Hansell 1989, Chen 1999, T’sou 2001, Wang 2004). Calques involve the literal translation of the meaning and structure of the foreign term to achieve a morpheme-by-morpheme correspondence between the words in the two languages. For example, 篮球 làngqù ‘basketball’ translates the English word basketball directly with the Mandarin words 篮 lán ‘basket’ and 球 qiú ‘ball’ combined in the same manner as in the original English word.

If we consider Cheung’s five categories and calques to be the general types of borrowing processes identified by Chinese linguists, we can compare these processes to the types of borrowing processes proposed by Haugen (1953) and explicated by Winford (2003). The only category that has a direct equivalent in Winford’s framework is calques. Just as in the German word Wolkenkratzer ‘skyscraper’ lit. ‘cloud-scraper’ (Winford 2003: 44), for example, Chinese morpheme-characters are combined in calques to imitate a foreign pattern either exactly or at least very closely.

‘Phonetic transcriptions’ do not have a corresponding category in Winford’s classification. They are a necessary category in Chinese, however, because most Chinese morpheme-characters have inherent meanings that must either be utilized in the adaptation process or suppressed so that morpheme-characters can be used simply for their phonetic value.

‘Semantic translations’ also do not have an exact equivalent in Winford’s framework. They generally correspond either to ‘semantic loans’ (‘extensions’) or to ‘purely native creations’, depending on the word. In semantic loans, Chinese morpheme-characters or their combinations undergo a shift in meaning to accommodate the meaning of the
foreign word (e.g., 私 sī which originally meant ‘secret, illicit’ and now also means ‘private’). Although semantic loans occur in Chinese, it is difficult to find examples in modern Mandarin because semantic loans are generally used primarily at the morpheme-character level of adaptation rather than at higher levels of a word’s branching structure. (This is discussed in detail in the next section.) In other words, semantic loans occur as part of other processes for adapting foreign words into Mandarin rather than independently of other processes. It is unusual for an existing compound or an individual Chinese morpheme-character not embedded in a compound to undergo a semantic shift to express the meaning of a foreign word. Rather, new compounds are formed to accommodate the meanings of foreign words. Novel combinations of existing morpheme-characters are created to express foreign words and meanings. Individual morpheme-characters used in these compounds may also shift in meaning in the context of the compound as part of the compound’s expression of meaning.

For example, the English word motorcycle was borrowed into Mandarin as 摩托车 mòtuō chē lit. ‘rub-pull-vehicle’. At the morpheme level of the adaptation, motor is adapted as the phonetic loan 摩托 mòtuō, and 车 chē ‘vehicle’ undergoes a semantic change to express the meaning ‘cycle’. These two processes at the morpheme level do not, however, explain the more important process at work in adapting the word and concept of a ‘motorcycle’ to Mandarin. It is actually the novel combination of mòtuō ‘motor’ and chē ‘vehicle’ at the word level that expresses the meaning ‘motorcycle’ rather than the individual processes that occur at the morpheme level. Although adaptation of motorcycle involves a phonetic loan and a semantic loan at the morpheme level, it is actually the creation of the new compound ‘motor-vehicle’ that expresses the meaning ‘motorcycle’.

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More specifically, 'motor-vehicle' is added to the various types of 车 chē 'vehicle' in Chinese as a new type of 'vehicle'. In other words, the foreign notion of 'motorcycle' is adapted to fit into the Chinese semantic category of chē 'vehicle'.

Ultimately, it is not so much that chē 'vehicle' shifts to express the meaning 'cycle' as that 'motorcycle' shifts to become a 'motor-vehicle' in Chinese. Referring back to our discussion of type hierarchies in Chapter 2, mōtuōchē 'motorcycle' lit. 'motor-vehicle' is adapted to become a subordinate category of the Chinese superordinate semantic category chē 'vehicle'. Thus, the basic semantic category of chē 'vehicle' is expanded to include the type of vehicle denoted by 'motorcycle'; it does not actually "shift" to accommodate the meaning 'cycle'.

The word 摩托车 mōtuōchē 'motorcycle' is an example of the more common process of borrowing in Chinese, which is 'purely native creations'. In Winford's (2003) terms, 'purely native creations' involve the "innovative use of native words to express foreign concepts" (p. 45). In Chinese, this involves the innovative use not of words, actually, but rather of Chinese morpheme-characters. As shown in the motorcycle example, morpheme-characters are combined in new ways to express the meanings of foreign words or concepts, and it is through these innovative combinations that foreign concepts are conveyed in Chinese. For example, the use of 郵票 yóupiào lit. 'mail-ticket' for stamp could be classified as a 'purely native creation' (henceforth 'native creation'): 郵 yóu 'mail' and 票 piào 'ticket' are combined innovatively to express the meaning 'stamp'.

As we noted in Chapter 2, although Winford (2003) considers native creations to be

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43 This example is from Cheung (1972). The pronunciation in Cantonese is not provided.
coinages rather than borrowings, we consider them to be borrowings in Mandarin since they borrow the meaning, if not the form or pronunciation, of a foreign word. The word 郵票 yóupiào borrows the meaning ‘stamp’ even though it is expressed with the morphemes 郵 yóu ‘mail’ and 票 piào ‘ticket’.

Unlike native creations, Cheung’s (1972) third and fourth categories, ‘half phonetic transcription – half semantic translation’ and ‘simultaneous phonetic transcription and semantic translation’ do not have corresponding categories in Winford’s (2003) framework. We attribute this to the nature of Chinese morpheme-characters as discrete phonological and semantic units that are usually combined to create new words. In adapting foreign words to Chinese, speakers face “trade-offs” in selecting morpheme-characters to express the pronunciation of the original, or an aspect of its meaning, or both, to some degree. They must also consider how the meanings of individual morpheme-characters can be combined in compounds to express the meaning of the original. Winford’s framework is not organized around such constraints. Borrowings are classified according to the manner in which they express the meaning and form of the original word, and pronunciation is generally not considered to be a complicating factor. In contrast, Chinese speakers must make clearly defined choices in representing the pronunciation of a foreign word, or its meaning, or some compromise between the two through the use of individual morpheme-characters or their combinations.

Cheung’s (1972) final category, ‘phonetic transcription with a native explicative element’, corresponds loosely to Winford’s (2003) category of ‘hybrid creations’, in which blends of foreign and native morphemes are used to express foreign words. For example, Winford (2003: 42) discusses the Yaqui hybrid creation lios-nóoka ‘pray’,
which combines Spanish Dios ‘God’ with Yaqui nóoka ‘speak’. Similarly, in the Mandarin word 啤酒 píjiǔ ‘beer’, pronounced in Cantonese as bējāu, a phonetic adaptation of the English word beer is combined with the Chinese word 酒 ‘liquor’ to express the meaning ‘beer’. This example differs somewhat from the types of hybrid creations Winford (2003: 45) describes, however, in that the foreign morpheme is not actually used directly. It is first adapted phonetically with a similar-sounding Chinese morpheme-character and then combined with a native morpheme to express the pronunciation and meaning of the original.

4.1.2 Complications in Classifying Borrowing Processes in Mandarin

It is apparent from the lack of equivalent categories in Chinese linguists’ classifications of borrowing processes and in Haugen’s (1953) and Winford’s (2003) classifications that borrowing in Chinese involves unique considerations that need to be understood to explain borrowing in Chinese. We describe these considerations here before providing a more detailed description of Chinese borrowing processes in the following sections.

The first issue we want to address is the possibility of different levels of borrowing within a polysyllabic word in Mandarin (this also applies to Chinese generally). As discussed in Chapter 2, in most cases, each Chinese morpheme-character represents a discrete word, morpheme, syllable, and graph, and new words in Mandarin are usually formed by combining existing morpheme-characters into polysyllabic words rather than by creating new morpheme-characters. The implication for compounds is that they can be analyzed at the level of the individual morpheme-characters and at higher levels of
concatenation. It is possible for compounds that are adaptations of foreign words to use
different borrowing processes at the lowest level of branching than at higher levels. For
example, the word 摩托车 mòtūōchē ‘motorcycle’, which has the structure [[mòtūō] chē],
involves combining the phonetic loan 摩托 mòtūō ‘motor’ with the semantic loan 车 chē
‘vehicle’. In contrast, the word 迷你裙 mǐníqún ‘miniskirt’ lit. ‘enchant-you-skirt’, which
has the structure [[mǐnǐ] qún], involves the ‘phonetic loan/native creation’ 迷你 mǐní
‘mini’ (lit. ‘enchant-you’), and the calque 裙 qún ‘skirt’. 迷尼 ‘mini’ is both a phonetic
loan and a native creation since the pronunciation of the adaptation imitates the original
and since mǐ ‘enchant’ and nǐ ‘you’ are combined in a novel way to convey an association
with the word miniskirt, if not its literal meaning as a ‘small skirt’.

The possibility that different processes operate at the morpheme-character level and at
higher levels of a borrowing makes it difficult to categorize polysyllabic loans
consistently either in the classification schemes developed by Chinese linguists, such as
Cheung (1972), or those developed by Haugen (1953) and Winford (2003). In many
cases, there are discrepancies between the classification of the borrowing processes
acting on one or more of the word’s components and the process acting at the level of the
word as a whole. To address this complication, we categorize loan types at the word level
when possible, but we also discuss the processes acting on their morpheme-character
components when needed.

The second issue we want to address is the problem of what Cheung (1972) and others
(e.g., Chen 1999, T’sou 2001, Hu and Xu 2003, Wang 2004) have called ‘semantic’
adaptation. As described earlier, this notion is sometimes equivalent to ‘semantic loans’
as described in Winford (2003), but more commonly, it actually refers to ‘purely native creations’. Cheung (1972) and others do not clearly distinguish the process involved in ‘semantic loans’ from that involved in ‘native creations’, and it is important to understand why they tend to conflate the two categories into what are generally understood to be simply ‘semantic loans’ (意译).

We suggest that ‘semantic loans’ and ‘native creations’ are generally considered to be one category as a result of the compromises involved in using Chinese morpheme-characters to express foreign words and concepts. Borrowings in Mandarin can express either the pronunciation of the original, or something about its meaning, or some combination of pronunciation and meaning. As a result, in Mandarin, the relevant question with respect to the expression of the meaning of foreign words is not how the meaning will be expressed but rather whether it will be expressed. The critical issue is not whether a foreign meaning will be expressed with a semantic loan or a native creation but whether it will be expressed at all, especially since doing so may require sacrificing the expression of the pronunciation of the original. Therefore, the relevant parameters for classifying borrowing processes in Mandarin are somewhat different from those proposed by Haugen (1953) and Winford (2003). In developing our classification of borrowing types, rather than aiming to tease apart different types of “semantic” borrowing, we focus instead on describing the compromise between the expression of pronunciation and the expression of meaning in different types of borrowing processes in Mandarin.
4.2 Our Classification of Borrowing Processes in Mandarin

Our aim is to combine insights from the classification of Chinese borrowing processes proposed by Chinese linguists (e.g., Cheung 1972, Chen 1999, T'sou 2001) with the classification proposed by Haugen (1953) and elaborated on by Winford (2003). That is, we strive to develop a classification that incorporates the conceptualization of Mandarin borrowing processes developed in Chinese linguistics together with the categories of borrowing processes developed in general linguistic theory. To account for the view in Chinese linguistics that borrowing involves compromises in the expression of meaning and pronunciation, we propose that borrowing occurs at one or more of the three levels of word knowledge proposed by Bock and Levelt (1994), that is, the conceptual level (meaning), the lemma level (syntax and morphology), and the lexeme level (phonology). To account for the difference between "semantic loans" and "native creations" proposed by Haugen (1953) and Winford (2003), we include both types of words in our classification.

We propose five "basic" processes of borrowing in Mandarin: 1. "calques", 2. "phonetic loans", 3. "semantic loans", 4. "native creations", and 5. combination "phonetic loan/native creations". Each of these processes involves the use of a foreign word's features at one or more levels of word knowledge as defined by Bock and Levelt (1994). Bock and Levelt's "conceptual level" represents the meaning of the word; the "lemma level" represents its morphological features and syntactic specification; and the "lexeme level" represents its phonological shape. We suggest that borrowing in Mandarin does not necessarily involve the "borrowing" of information at one or more of levels of word knowledge of a foreign word. Rather, adaptations may simply be inspired or influenced.
by information at one or more of these levels – they may use the information indirectly; hence the possibility of ‘native creations’ as a type of borrowing.

We classify borrowing processes into five basic types based on the levels of word knowledge reflected in the adaptation. Since Chinese speakers make compromises in the expression of pronunciation and meaning in adaptations of foreign words, we classify borrowing processes based on the types of information about the foreign word or concept that are actually reflected in the form of the Mandarin adaptation, as shown in Table 4.1.

<table>
<thead>
<tr>
<th>Influence from the Conceptual Level: Native Creations</th>
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<table>
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<tr>
<th>Influence from the Conceptual &amp; Lemma Levels: Semantic Loans</th>
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</thead>
<tbody>
<tr>
<td>私 sī used to mean ‘private’ in 私人 ‘private’ lit. ‘private-person’, 车 chē used to mean ‘cycle’ in 摩托车 mótuōchē ‘motorcycle’ lit. ‘motor-vehicle’</td>
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</table>

<table>
<thead>
<tr>
<th>Influence from the Conceptual &amp; Lemma Levels: Calques (loan translations)</th>
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<tbody>
<tr>
<td>A. Exact Translation</td>
</tr>
<tr>
<td>热狗 règǒu ‘hot dog’ lit. ‘hot-dog’, 蜜月 mìyuè ‘honeymoon’ lit. ‘honey-moon’</td>
</tr>
<tr>
<td>B. Close Translation</td>
</tr>
<tr>
<td>网民 wǎngmín ‘netizens’ lit. ‘net-people’, 鸡酒 dànjiǔ ‘eggnog’ lit. ‘egg-liquor’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Influence from the Lexeme Level: Phonetic Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>沙发 shā-fà ‘sofa’, formed from the morpheme-characters ‘sand’ and ‘send out’</td>
</tr>
<tr>
<td>吉他 jí-tā ‘guitar’, formed from the morpheme-characters ‘lucky’ and ‘he’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Influence from the Conceptual &amp; Lexeme Levels: Phonetic loan/native creations</th>
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</table>

Table 4.1: Basic Borrowing Processes Classified According to the Primary Levels of Word Knowledge Influencing their Form
Table 4.1 shows five borrowing processes categorized according to the primary levels of information about the foreign word that influence the form of the Mandarin adaptation. Native creations, the first type of borrowing process in Table 4.1, involve the use of information primarily from the conceptual level of the foreign word. Information about the lexical category of the word from the lemma level is also often reflected in the Mandarin adaptation, but it does not serve as the primary source of influence for the adaptation. Native creations express conceptual information about foreign words or concepts with different degrees of faithfulness to the original. For example, 苹果汁 pingguo zhī ‘cider’ lit. ‘apple-juice’ expresses the meaning of the original more faithfully than 话筒 huàtóng ‘microphone’ lit. ‘speech-tube’. Native creations may also simply express a description of the foreign original (e.g. hippie is adapted as 嬉皮 xǐpí lit. ‘play-naughty’).

‘Semantic loans’ are the second type of borrowing process in Table 4.1. They involve influences from both the conceptual and lemma levels of the foreign word. In particular, speakers aim to express the concept of the foreign original, and they also select a word or morpheme that has the same lexical category as the foreign original. We provide two examples: 私 sī, which originally meant ‘secret, illicit’, and later gained the Western meaning of ‘private’ in some word contexts, and 车 chē referring to ‘cycle’ in 摩托车 mòtuōchē ‘motorcycle’ lit. ‘motor-vehicle’. As mentioned in earlier, it is difficult to find examples of semantic loans above the morpheme-character level in modern Mandarin. Borrowings may include a semantic loan, but semantic loans are not frequent as independent words. This is because borrowings are most often expressed as polysyllabic
words, and they most often involve concatenating morpheme-characters in new combinations rather than shifting the meaning of existing polysyllabic words.

‘Calques’ are the third type of borrowing process in Table 4.1. They involve a novel combination of native Mandarin words or non-affixal roots to translate the morphemes in a foreign word to match the structure of the word and the literal meanings of its component parts. As in semantic loans, calques are influenced primarily by information at the conceptual and lemma levels of the foreign word. The influence is different than in semantic loans, however. Whereas in semantic loans, the meanings of Mandarin morphemes shift to express foreign meanings, in calques, the morphemes in the original are translated directly with corresponding Mandarin morphemes. Mandarin morphemes that match the foreign lemma (or multiple lemmas in a compound) are selected and concatenated as in the pattern of the foreign word.

We divide calques into those that match the foreign original exactly and those that are near-translations of the original. In ‘exact translations’, there is a one-to-one correspondence between the Mandarin words used in the translation and the words in the English compound. In ‘close translations’, there is some difference in the meaning of the Mandarin words used in the calque and the words in the original English compound, but the meanings of the Mandarin words are close enough to the original that the adaptation can still be considered a loan translation. For example, in 热狗 règōu ‘hot dog’ lit. ‘hot-dog’, speakers select words that correspond exactly to the lemmas ‘hot’ and ‘dog’ and combine them in the same order as in the original, while in 蛋酒 dànjiǔ ‘eggnog’ lit. ‘egg-liquor’, the match is not as precise because Chinese does not have a word with a
meaning equivalent to that of ‘nog’. A problem that arises in near-translations is that if the translations stray far enough away from the original, they should be considered native creations. The boundary between the two categories is difficult to delineate.

Next in Table 4.1 are ‘phonetic loans’, or borrowings influenced by word knowledge primarily at the lexeme level. Phonetic loans involve the use of Chinese morpheme-characters for their phonetic value to transcribe the pronunciation of the foreign word. The meanings of the Chinese morpheme-characters used in the transcription are irrelevant when using the words in speech and writing. For example, \textit{shāfā 沙发} ‘sofa’ is composed of the morpheme-characters \textit{沙 shā ‘sand} and \textit{发 fā ‘send out}, and \textit{吉他 jītā ‘guitar} is composed of the morpheme-characters \textit{吉 jí ‘lucky} and \textit{他 tā ‘he}. but in both cases, the logographic value of the morpheme-characters is suppressed. Phonetic adaptation has the advantage of representing the pronunciation of the original, but the meaning of the original is not conveyed by the logographic form. Modern Mandarin has many phonetic loans in spite of their limitations in expressing meaning. Sun and Jiang (2000), Hu and Xu (2003), and Wang (2004) provide numerous examples.

The last type of borrowing process in Table 4.1 is combination ‘phonetic loan/native creations’, which involve influences from both the conceptual and lexeme levels. Combination ‘phonetic loan/native creations’ are formed by selecting morpheme-characters, or more commonly combinations of morpheme-characters, that sound like the original and also express aspects of its meaning. As in native creations, these loans may simply express concepts associated directly or metaphorically with the original rather than its actual meaning (e.g., \textit{霓虹 níhóng ‘neon} lit. ‘primary rainbow – secondary
rainbow’). The use and interpretation of conceptual level information may be rather loose to facilitate the selection of morpheme-characters that can also imitate the sound of the foreign original.

T'sou (2001), Zuckerman (2003), and Hu and Xu (2003) consider ‘phonetic loan/native creations’ to be the ideal form of nativization because they express the most information about the original. In other words, these loans convey both conceptual level and lexeme level information and are therefore thought to involve the fewest compromises in the expression of meaning and pronunciation. Hu and Xu (2003: 321-2) list several advantages of phonetic loan/native creations, namely that they maintain the phonetic value of the original, convey the novelty of the foreign concept, limit the randomness of phonetic adaptation, and enrich the Mandarin lexicon through semantic change. T'sou (2001: 50) suggests that Chinese advertisers make the most effective use of this borrowing process, creating memorable phonetic loan/native creations. The most famous early example may be 可口可乐 kēkǒu kělè ‘Coca Cola’ lit. ‘can ingest – can enjoy’. The parallel structure of its two constituents, 可口 kēkǒu and 可乐 kělè, has a unique rhythmic, visual, and semantic symmetry.

4.3 Degrees of Lexicalization

In addition to the classifications in Table 4.1, we can also categorize ‘native creations’ and combination ‘phonetic loan/native creations’ in terms of Packard’s (2000: 222) description of lexicalization in polysyllabic (‘complex’) words in Mandarin, which we outlined in Chapter 2. The process of assigning meanings to compound words in
Mandarin may also be used to adapt the meanings of foreign words in the language. In other words, borrowed words may show different degrees of lexicalization in the same manner as other complex words in Mandarin. Our classification of ‘native creations’ and ‘phonetic loan/native creations’ according to different degrees of lexicalization is shown in Table 4.2.

<table>
<thead>
<tr>
<th><strong>Native Creations</strong></th>
<th><strong>Phonetic Loan/Native Creations</strong></th>
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</thead>
<tbody>
<tr>
<td>I. Conventional Lexicalization</td>
<td>I. Conventional Lexicalization</td>
</tr>
<tr>
<td>萬果汁 píngguǒ zhī (non-alcoholic) ‘cider’ lit. ‘apple-juice’</td>
<td>拖车 tuōchē ‘trailer’ lit. ‘pull-vehicle’</td>
</tr>
<tr>
<td>人造黃油 rénzào huángyóu ‘margarine’ lit. ‘manmade-butter’ ('butter' = ‘yellow-oil’)</td>
<td>黑客 hēikè ‘hacker’, lit. ‘wicked-visitor’</td>
</tr>
<tr>
<td></td>
<td>维他命 wéitáomíng ‘vitamin’ lit. ‘nurture-his-life’</td>
</tr>
<tr>
<td></td>
<td>披头四 pītóusi ‘Beatles’ lit. ‘disheveled-hair four’</td>
</tr>
<tr>
<td>II. Metaphorical Lexicalization</td>
<td>II. Metaphorical Lexicalization</td>
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<td></td>
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</tbody>
</table>
4.3.1 Native Creations

‘Native creations’ are divided into types according to their degree of lexicalization. Packard (2000: 219) states that in ‘conventional lexicalization’, components of complex words retain their grammatical and semantic identity (e.g., 吃饭 chīfàn ‘eat a meal’ lit. ‘eat-rice’). The same holds true in borrowed words adapted as native creations through conventional lexicalization; the meaning of the individual word components is retained and non-metaphorical. For example, in 苹果汁 pingguō zhī (non-alcoholic) ‘cider’ lit. ‘apple-juice’, both components retain their original grammatical and semantic category, and the meaning of the compound is compositional.

‘Metaphorical lexicalization’ refers to “words whose components lose their original meaning and take on a figurative or metaphorical interpretation, while the grammatical relationships in the word continue to obtain” (Packard 2000: 220). Packard describes two types of metaphorical lexicalization: ‘component metaphorical lexicalization’ and ‘word metaphorical lexicalization’. In the former, one or both of the word components take on a metaphorical meaning, while the grammatical relationship of their components continues to obtain. The overall meaning of the word is compositional from its parts (e.g., 赤道 chídào ‘equator’ lit. ‘red-band’). In the latter, the meaning at the level of the word is metaphorical, but the components retain their original meaning. Figurative interpretation takes place at the word level rather than at the component level, and the meaning of the whole derives compositionally from the individual components but has a metaphorical interpretation (e.g., 软木 ruǎnmù ‘cork’ lit. ‘soft-wood’).

The use of metaphorical lexicalization is common in native creations in Mandarin, and many examples of this process can be found. It is difficult, however, to divide native
creations into those that are metaphorically lexicalized at the ‘component’ level from those that are lexicalized at the ‘word’ level. This seems to be a matter of interpretation based on one’s understanding of the meaning of the components and the word as a whole. As such, we do not subdivide metaphorical lexicalization into these two types. Examples of adaptations that are metaphorically lexicalized include 电视 diànhì lit. ‘electric-vision’ and 话筒 huàtǒng lit. ‘speech-tube’, which are interpreted metaphorically at the word level as ‘television’ and ‘microphone’, respectively.

Packard (2000: 221) states that in ‘asemantic’ lexicalization, “the word component meanings are lost, but the grammatical relationship between [them] continues to obtain” (e.g., 问世 wènshì ‘(said of a book) to be published’ lit. ‘ask-world’). Asemantic lexicalization is possible in borrowing, but it is not as frequent as conventional and metaphorical lexicalization, and we did not find any examples of it.

In ‘agrammatical’ lexicalization, “clear semantic relations are perceived, but grammatical relationship is non-standard” (Packard 2000: 221). In other words, no grammatical relationship obtains between the constituents. This type of lexicalization is also possible in native creations, but we found no examples.

Lastly, in ‘complete’ lexicalization, “both the internal structure of the word and the original meanings of the components are completely opaque” (Packard 2000: 222) (e.g., 烧卖 shāomài ‘a type of snack’ lit. ‘burn-sell’). Packard notes that phonetic loans would fall into this category. We suggest that complete lexicalization is avoided in native creations since, in theory, they aim to convey aspects of the meaning of the original word.
4.3.2 Phonetic Loan/Native Creations

'Phonetic loan/native creations' combine the advantages of both phonetic loans and native creations. Mandarin morphemes and characters are selected to represent both the phonetic value of the original word and aspects of its meaning. In Table 4.2, we categorize combination phonetic loan/native creations according to their degree of lexicalization just as we did native creations.

The least lexicalized phonetic loan/native creations are 'conventionally' lexicalized. Both components retain their individual meanings and the grammatical relationship between them is maintained. The meaning of the word is compositional from its parts. For example, in the compound 拖车 tuōchē 'trailer' lit. 'pull-vehicle', both words retain their individual meanings and the meaning of the word is compositional. Conventional lexicalization is less common for phonetic loan/native creations than for native creations since it is difficult to find words in Mandarin whose meaning and pronunciation both match those of the original, an issue that once again highlights the compromise Chinese speakers must make between expressing meaning and pronunciation in borrowing.

One way to improve the match between the meaning and pronunciation of Mandarin words used in adaptations is to employ 'metaphorical' lexicalization. The meanings conveyed in this type of lexicalization are not as close to the foreign original as those in 'conventional' lexicalization, but some of the phonetic value of the original is expressed, unlike in semantic loans. Metaphorical lexicalization is commonly used in the creation of phonetic loan/native creations since it combines aspects of both the meaning and the pronunciation of the original. One example is the borrowing 黑客 hēikè 'hacker', lit.
‘wicked-visitor’, in which 黑 hēi ‘wicked’ and 客 kè ‘visitor’ have a clear grammatical relationship (modifier-noun) and their combination is used metaphorically to express the meaning ‘hacker’. Another example is 维他命 wéitāming ‘vitamin’ lit. ‘nurture-his-life’.

Each component retains its individual meaning, and the grammatical relationship between the components is maintained (verb-object). The combination ‘nurture-his-life’ takes on a metaphorical interpretation at the word level to mean ‘vitamin’.

‘Asemantic’ lexicalization is also more common for phonetic loan/native creations than for native creations. One reason for this may be that speakers are willing to take more liberties in the expression of meaning so that they can also retain the phonetic value of the original. An example of asemantic lexicalization is the borrowing 霓虹 níhóng ‘neon’ lit. ‘secondary rainbow-primary rainbow’. The grammatical relationship of the components is retained; the component nouns 霓 ní and 虹 hóng have a parallel relationship. The meanings of the components are also recognizable, but they bear no relationship to the overall meaning of the word.

‘Agrammatical’ lexicalization is also possible for phonetic loan/native creations, but it seems to be infrequent. Our only example is 蹦极 bèngjí ‘bungee’, lit. ‘bounce-extreme’, in which there is no apparent grammatical relationship between the verb 蹦 bèng and the adjective 极 jí. There is a semantic relationship between the components, however, and their individual meanings contribute to the meaning of the word as a whole.

Lastly, ‘complete’ lexicalization involves the use of components whose internal structure and original meanings are completely opaque. This type of lexicalization is
avoided in phonetic loan/native creations since, in theory, such borrowings aim to convey either the meaning of the word or at least some aspects of its meaning.

4.4 Lack of Equivalence in Meaning between Chinese Zi and English Words

With the exception of calques, the borrowing processes in Table 4.1 show a lack of equivalence between Chinese morpheme-characters and English words which leads to complications in adaptation. First, the amount of semantic information carried in an English word is different from that in one Chinese zi. It is often difficult to express the meaning of an English word in just one Chinese zi unless the two words both represent the same basic semantic category. For example, *liquor* translates directly as 酒 *jiǔ*, but *beer* must be expressed with two morpheme-characters, 啤酒 *píjiǔ* lit. ‘beer-liquor’.

Second, word formation in English relies in part on derivation, while word formation in Mandarin relies almost exclusively on compounding. There is no Mandarin equivalent of the English agentive suffix *-er/-or* in deverbal agent nouns (e.g. *scanner, dryer*), for example. Mandarin translates the suffix with an appropriate word via compounding (e.g., 扫描器 *sǎomáqi* ‘scanner’ lit. ‘sweep-copy-tool’, 烘衣机 *hōngyījī* ‘dryer’ lit. ‘dry-clothes-machine’). Because of these differences, two or more zi usually need to be combined to express the meaning of many English words (e.g., 滑 *huá* ‘slippery’ is combined with 雪 *xuě* ‘snow’ in the adaptation of the *skiing/to ski*). The concatenation

\[\text{44 Mandarin compounds are also used in adaptations (e.g., 人造黄油 *rénzào huángyōu* ‘margarine’, lit. ‘man-made butter’; ‘butter’ = ‘yellow-oil’).}\]
of two or more morpheme-characters to represent the meaning of foreign words creates complications in the precise expression of meaning in borrowings since each morpheme-character also has its own independent meaning.

Another complication in borrowing is the mismatch in meaning between the original word and components of the compound used as its adaptation. Mandarin compounds usually have one component that serves as the semantic head. The head represents a basic semantic category in Mandarin, but that category may not match the semantic category of the original. For example, *motorcycle* is adapted as 摩托车 mòtuōchē, lit. ‘mótuō-vehicle’, but ‘vehicle’ is a more general semantic category than ‘cycle’; it is a superordinate of ‘cycle’. This type of mismatch is even more apparent in the case of *piano*, which is nativized as a type of 琴 qín ‘string instrument’ (钢琴 gāngqín lit. ‘steel - string instrument’). A ‘piano’ is not considered a string instrument in English, however.

Although the lack of equivalence between English words and Chinese *zi* complicates adaptation, the manner in which meanings are expressed in adaptations of borrowed words is advantageous for Mandarin speakers. The fact that many compounds have a semantic head means that speakers can determine at least the basic syntactic and semantic category of the term even if they are unfamiliar with the compound as a whole. For example, even if speakers do not know the meaning of 钢琴 gāngqín ‘piano’ lit. ‘steel - string instrument’, they can nonetheless determine that it is a noun and that it is a type of string instrument. Later in the study, we show that hybrid lettered words usually have the same type of structure as words adapted through traditional borrowing processes and that the semantic head also tends to be a Chinese *zi* or compound representing a native
semantic category familiar to Mandarin speakers. This allows speakers to position hybrid words in the semantic space of Mandarin in the same manner as words adapted through traditional borrowing processes.

4.5 ‘Two-part’ Borrowing Strategies

This section describes ‘two-part’ strategies that involve ‘basic’ borrowing processes. The first strategy uses a basic borrowing process and follows it with a native adjunct. The second strategy involves the serial application of two basic borrowing processes.

4.5.1 Borrowing Processes that Add a Mandarin Explicative Adjunct

In addition to the processes in Table 4.1, other borrowing strategies also exist in Mandarin, as shown in Tables 4.3 and 4.4. Table 4.3 shows the application of each of the basic processes in Table 4.1 followed by the addition of a Mandarin explicative adjunct\(^{45}\) that clarifies the meaning and lexical category of the borrowed word.

\(^{45}\) The term ‘explicative adjunct’ is used by Hansell (1989: 105).
<table>
<thead>
<tr>
<th>Loan Translation and a Native Explicative Adjunct</th>
<th>loan translation</th>
<th>native adjunct</th>
</tr>
</thead>
<tbody>
<tr>
<td>鸡尾酒 jiàn wěi jiǔ</td>
<td>jiàn wěi ‘lit. cock + tail’</td>
<td>jiǔ ‘liquor’ ‘cocktail’</td>
</tr>
<tr>
<td>植物人 zhí wù rén</td>
<td>zhí wù ‘plant’</td>
<td>rén ‘person’ ‘vegetable’ (slang)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phonetic Loan and a Native Adjunct</th>
<th>phonetic loan</th>
<th>native adjunct</th>
</tr>
</thead>
<tbody>
<tr>
<td>吉普车 jí pú chē</td>
<td>jí pú ‘Jeep’</td>
<td>chē ‘vehicle’ ‘Jeep’</td>
</tr>
<tr>
<td>华尔兹舞 huá ěr zǐ wǔ</td>
<td>huá ěr zǐ ‘waltz’</td>
<td>wǔ ‘dance’ ‘waltz’</td>
</tr>
<tr>
<td>比萨饼 bǐ sà bǐng</td>
<td>bǐ sà ‘pizza’</td>
<td>bǐng ‘cake’ ‘pizza’</td>
</tr>
<tr>
<td>古龙水 gǔ lóng shuǐ</td>
<td>gǔ lóng ‘cologne’</td>
<td>shuǐ ‘water’ ‘cologne’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phonetic Loan/Native Creation and a Native Adjunct</th>
<th>phonetic-semantic loan</th>
<th>native adjunct</th>
</tr>
</thead>
<tbody>
<tr>
<td>爱滋病 ài zī bìng</td>
<td>ài zī ‘AIDS’ ‘love-propagate’</td>
<td>bìng ‘disease’ ‘AIDS’</td>
</tr>
<tr>
<td>坦克车 tàn kē chē</td>
<td>tàn kē ‘tank’ ‘level-subdue’</td>
<td>chē ‘vehicle’ ‘tank’</td>
</tr>
<tr>
<td>拉力赛 lā lì sài</td>
<td>lā lì ‘pull-power’</td>
<td>sài ‘competition’ ‘rally’</td>
</tr>
<tr>
<td>耐克鞋 nài kē xié</td>
<td>nài kē ‘Nike’ ‘endure-subdue’</td>
<td>xié ‘shoe’ ‘Nikes’</td>
</tr>
</tbody>
</table>

Table 4.3: Borrowing Processes that Add a Mandarin Explicative Adjunct

The additional borrowing processes in Table 4.3 adapt foreign elements by using one of the basic processes in Table 4.1. A native explicative adjunct is added after the adaptation to specify the semantic and lexical category of the word, thereby reducing the opacity of the foreign element. Hansell (1989: 125) also makes the observation that native adjuncts produce compounds that have valid subcategorizations and differentiate borrowed words from their native referents. For example, the addition of 人 rén ‘person’ to 植物 zhí wù ‘plant’ differentiates the physical state of being a 植物 zhí wù ‘vegetable’

46 This term is used in Taiwan Mandarin and in Cantonese. In the P.R.C., a different ài morpheme is used, namely, 艾 ài ‘mugwort’, a phonetic adaptation of Al in AIDS.
from 植物 zhīwù meaning ‘plant’. The native adjunct added after the foreign element is often monomorphemic and monosyllabic, and it can be either a free root (such as 车 chē ‘vehicle’) or a bound root (such as 赛 sài ‘competition’). The adjunct can also be a compound, as in 马拉松赛跑 málāsòng sàipǎo ‘marathon’, lit. ‘marathon-competition’, in which the compound 赛跑 sàipǎo ‘competition’ is the adjunct.

Another way to interpret the addition of the native adjunct in borrowings is that it represents information from the conceptual level of the original word that may otherwise be lacking in the adaptation. Loan translations, phonetic loans, and even combination phonetic loan/native creations all potentially benefit from an adjunct because each of these borrowing processes may result in an insufficient representation of semantic information to make the adaptation meaningful to Mandarin speakers. For example, pizza is adapted as the phonetic loan 比薩 bǐsà (lit. ‘compare-Sà [a surname]’) and the native adjunct 饼 bǐng ‘cake’. Without addition of the native adjunct, the adaptation would include no information about the semantic category of the term.

Processes that involve a ‘phonetic loan and a native adjunct’ or a ‘phonetic loan/native creation and a native adjunct’ may be used more frequently than the other two processes in Table 4.3. Both retain the phonetic value of the foreign term and specify its general semantic category. In contrast, neither of the other two processes in Table 4.3 expresses the phonetic value of the foreign term. It appears that maintaining the phonetic value of foreign words is important to Mandarin speakers. According to Hu and Xu (2003: 321), retaining the sound of the original word is useful in borrowing because it “increases the number of words in the target language which are interlinked to and communicating
with those in the source language.” Of the numerous examples of recent borrowings cited by Wang (2004: 48), many involve phonetic adaptation or phonetic-semantic adaptation. It is our impression that retaining the phonetic value of borrowings from English allows Mandarin speakers to have the feeling of speaking English while actually speaking Mandarin. This may be an example of what Sun and Jiang (2000: 106) call China’s desire to “share the world’s languages” as the nation “becomes part of the world beyond itself.”

4.5.2 Serial Application of Basic Borrowing Processes

While the preceding section discussed adaptations formed through the use of a basic borrowing process followed by the addition of a native explicative adjunct, this section discusses the serial application of two separate borrowing processes in one adaptation. The difference between the types of borrowing discussed in the previous section and those discussed here is that borrowings with an explicative adjunct add an additional element to the adaptation which is not found in the form of the original. In contrast, borrowings formed from the serial application of two borrowing processes do not add an additional morpheme not found in the surface form of the original; they simply represent the morphemes in the original.

Since compounding is an important morphological process used to nativize foreign words in Mandarin, the serial application of two (or possibly more) borrowing processes is common in Mandarin loans. The components of compounds may be nativized independently of each other with different processes. Table 4.4 shows examples of the serial application of two ‘basic’ borrowing processes in adaptations of foreign words. Compounds with more than two constituents may include yet other basic borrowing
processes for additional constituents. Various combinations of borrowing processes are possible, and Table 4.4 provides only a few possibilities and examples for illustration.

<table>
<thead>
<tr>
<th><strong>Calque and Native Creation</strong></th>
<th><strong>Native Creation and Loan Translation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>软饮料 ruǎn yǐnlǐào ruǎn ‘soft’ + yǐnlǐào ‘drink’ lit. ‘drink-material’ ‘soft drink’</td>
<td>软饮</td>
</tr>
<tr>
<td>连裤袜 liánkùwà liánkù ‘connect-pants’ + wà ‘stocking’ ‘pantyhose’</td>
<td>连裤袜</td>
</tr>
<tr>
<td><strong>Phonetic Loan and Loan Translation</strong></td>
<td><strong>Phonetic Loan and Semantic Loan</strong></td>
</tr>
<tr>
<td>因特网 yīntèwǎng yīn ‘Inter.’ + wǎ ‘net’ ‘Internet’</td>
<td>因特网</td>
</tr>
<tr>
<td>摩托车 mòtuōchē mòtuō ‘motor’ + chē ‘vehicle’ ‘motorcycle’</td>
<td>摩托车</td>
</tr>
<tr>
<td><strong>Phonetic Loan/Native Creation and Loan Translation</strong></td>
<td><strong>Phonetic Loan/Native Creation and Loan Translation</strong></td>
</tr>
<tr>
<td>迷你裙 minǐqǐn mini enchant-you ‘mini’ + qǐn ‘skirt’ ‘miniskirt’</td>
<td>迷你裙</td>
</tr>
<tr>
<td>呼啦圈 hūlāquān hūlā call-pull ‘hula’ + quān ‘circle, hoop’ ‘hula hoop’</td>
<td>呼啦圈</td>
</tr>
</tbody>
</table>

Table 4.4: Serial Application of Basic Borrowing Processes

Each of the processes in Table 4.4 involves adaptation of the unfamiliar foreign word through the use of two separate borrowing processes. Numerous possibilities exist for combining different borrowing processes to express information from the conceptual, lemma, and lexeme levels of word knowledge from the foreign original. As in all Mandarin borrowings, compromises are made in the expression of the meaning and pronunciation of the original word, and combinations of different borrowing processes are needed to convey sufficient information about the original.

47 *Hula* is a type of traditional Hawaiian dance.
Earlier in this chapter, we pointed out that identifying the borrowing processes for the constituents of compounds may not be sufficient for understanding the borrowing process at the word level. Table 4.4 shows several examples of this complication. The word 软饮料 ruǎn yínliào ‘soft drink’ involves a calque, 软 ruǎn ‘soft’, and a native creation, 饮料 yínliào ‘drink’ lit. ‘drink-material’. Looking only at the adaptation of the components does not, however, reveal that at the word level, ruǎn yínliào is actually a calque of soft drink. In other words, the calque ruǎn ‘soft’ and the native creation yínliào ‘drink’ combine to form the Mandarin calque of soft drink. In Table 4.4, the adaptations of Internet, motorcycle, miniskirt, and hula hoop are also calques of their English equivalents at the word level even though they involve other borrowing processes for the individual constituents.

The addition of a native adjunct as shown in Table 4.3 and the use of two borrowing processes as shown in Table 4.4 represent different types of borrowing strategies, but they ultimately create the same morphological structure in the adaptation. In particular, both strategies usually create right-headed compounds, and more specifically, they create compounds whose head expresses a basic semantic category in Chinese (e.g., 群 qún ‘skirt’ in 迷你群 míníqún ‘miniskirt’) or a familiar compound (e.g., 饮料 yínliào ‘drink’ in 软饮料 ruǎn yínliào ‘soft drink’). In other words, foreign words are adapted through the addition of a native adjunct or by combining two processes so that the modifier on the left formed from either strategy represents the new, foreign component, and the head on the right represents a familiar, native component. In both cases, the unfamiliar foreign element is nativized through one of the basic borrowing processes in Table 4.1, and that
element is followed by a Mandarin component that forms the head of the word and expresses its semantic and grammatical category. The difference between the strategies in Table 4.3 and Table 4.4 is that in Table 4.3, the final component is a Mandarin adjunct added to the nativized foreign word, while in Table 4.4, the final component is an adaptation of the final word or morpheme in the original foreign word. In Chapters 5 and 6, we show that the same type of structure is also achieved in most hybrid words: the left-hand component represents the innovative lettered element, and the right-hand component represents a familiar Mandarin word or morpheme that functions as the head.

4.6 Traditional Borrowing Processes Compared with Lettered Words

Each of the processes in Tables 4.1 to 4.4 requires a compromise between the representation of meaning and the representation of pronunciation. Adaptations that involve phonetic loan/native creations retain more of the meaning and pronunciation of the original than the other processes. In all cases, however, the original roman letter orthography is replaced by Chinese characters.

In Chapter 6, we compare the traditional forms of borrowing with lettered words to argue that loan processes with lettered words involve less substitution from Mandarin in only one respect, the written form of the word. The original roman letter orthography is retained in initialisms and acronyms and in hybrid words that include borrowed initialisms or acronyms (e.g., WTO, APEC, ATM 机, ATM 机 ‘ATM machine’, DINK 夫 女 DINK ㄈㄕ ‘DINKs’ lit. ‘DINK-couple’), eliminating adaptation via Chinese logographs in the manner of the traditional borrowing processes. In contrast, the
pronunciation of lettered words and lettered components of hybrid words generally shows the same tendency to substitute Mandarin syllables for foreign phonological forms as found in traditional phonetic loans. Representations of the meanings of words adapted via traditional borrowing processes are mediated by Chinese morpheme-characters, which have their own individual meanings. This interface between foreign words and users of Mandarin is eliminated in the case of initialisms and acronyms: speakers/readers either understand the abbreviation as it is expressed in roman letters, or they do not understand it at all. Some mediation is provided in the case of hybrid words, which almost always have a Mandarin head, or at least a highly assimilated head written with a Chinese character. The Chinese head situates the roman letter element in established Mandarin head families.

4.7 Structure of Nativized Words

The examples of natively words in Tables 4.1 to 4.4 are all nouns. Based on the examples of borrowed words given in various studies of lexical borrowing in Mandarin (e.g., T'sou 2001, Li 2004, Wang 2004, Zhang 2005), it appears that nouns are borrowed from English into Mandarin more frequently than words from other lexical classes. This phenomenon is not unique to Mandarin. It is true of lexical borrowing generally and is predicted by the “hierarchy of borrowability” (Winford 2003: 51), which states that open-class content items such as nouns and adjectives are borrowed most easily, while closed-class items such as pronouns and conjunctions are least likely to be borrowed.

Many borrowings also fit language specific patterns in Mandarin morphology. Huang's (1997) study of disyllabic words in Mandarin found [N1 N2]N forms to be most
numerous, followed by words of the form \([V \ V]_V, [A \ N]_N, \) and \([V \ N]_V\). Packard (2000: 85) also found nouns of the form \([N1 \ N2]_N\) to be most numerous in his corpus of disyllabic Mandarin words. Although many of the borrowings we have analyzed have more than two syllables, if we apply Huang’s analysis to the words in Tables 4.1, 4.3, and 4.4, we find structural patterns similar to those identified by Huang and Packard even in words that have more than two syllables. Excluding phonetic loans in which the Chinese morpheme-characters are used only for their phonetic value, several of the native creations, calques, and phonetic loan/native creations in Table 4.1 have the form \([N1 \ N2]_N\) (e.g., 苹果汁 pinggúōzhī ‘cider’ lit. ‘apple-juice’, 蜜月 miyuè ‘honeymoon’, 体质 tǐsù ‘tissue’ lit. ‘body-matter’). All of the borrowings in Tables 4.3 have this form, and two of the borrowings in Table 4.4 also do so (摩托车 mòtuōchē ‘motorcycle’ and 呼啦圈 hūlāquān ‘hula hoop’). Of the words in the tables that do not have this form, most have either the form \([A \ N]_N\) or \([V \ N]_N\), as shown in (1).

(1)  
\[\begin{array}{ll}
[A \ N]_N: & 热狗 règǒu ‘hot dog’ lit. ‘hot-dog’  
黑客 hēikè ‘hacker’ lit. ‘wicked-visitor’  
软饮料 ruǎn yǐnlǐào ‘soft drink’ lit. ‘soft-drink’  
迷你裙 mínjīn ‘miniskirt’ lit. ‘enchant-you skirt’  
连裤袜 liánkùwà ‘pantyhose’ lit. ‘connect-pants stockings’  \\
[V \ N]_N: & 拖车 tuōché ‘trailer’ lit. ‘pull-vehicle’  
抬头 tāitóu ‘title’ lit. ‘elevate-head’  
维他命 wéitáomìng ‘vitamin’ lit. ‘sustain his-life’  
发动机 fàdòngjī ‘engine’ lit. ‘initiate-machine’ (‘initiate’ = ‘send out - move’)  \\
[V \ A]_N: & 蹦极 bèngjí ‘bungee’ lit. ‘jump-extreme’
\end{array}\]

Although the types of words in (1) are of interest in our study, their structures are less common than words of the form \([N1 \ N2]_N\). Therefore, words that are combinations of
nouns are therefore the primary focus of our analysis. In Chapters 5 and 6, we will show that hybrid lettered words also tend to be of the form \([\text{N}_1 \text{N}_2]_N\) and that they have structures similar to those of the words in Tables 4.3 and 4.4.

The foreign elements before the native adjuncts in Table 4.3 are all nouns, forming \(\text{N}_1\) in the \([\text{N}_1 \text{N}_2]_N\) pattern. For example, 鸡尾 jiāwěi ‘chicken-tail’ is the \(\text{N}_1\) in 鸡尾酒 jiāwějiǔ ‘cocktail’ lit. ‘cocktail-liquor’. 吉普 jípū ‘Jeep’ is the \(\text{N}_1\) in 吉普车 jípūchē ‘Jeep’ lit. ‘Jeep-vehicle’, and so on. Two words in Table 4.4 also have this structure, namely 摩托车 mòtuōchē ‘motorcycle’ and 呼啦圈 hūlāquān ‘hula hoop’, in which 摩托 mòtuō ‘motor’ and 呼拉 hūlā ‘hula’ are the \(\text{N}_1\), respectively.

As for \(\text{N}_2\) in words of the form \([\text{N}_1 \text{N}_2]_N\), all of the native adjuncts in Table 4.3 are nouns and function as \(\text{N}_2\). For example, 比萨饼 bǐsàbǐng ‘pizza’ lit. ‘bǐsà-cake’ uses 饼 bǐng ‘cake’ as \(\text{N}_2\), and 拉力赛 lālìsài ‘rally’ lit. ‘rally-competition’ uses 赛 sài ‘competition’ as \(\text{N}_2\). Words in Table 4.4 that have the structure \([\text{N}_1 \text{N}_2]_N\) use the second constituent as \(\text{N}_2\). The word 摩托车 mòtuōchē ‘motorcycle’ lit. ‘motor-vehicle’ uses 车 chē ‘vehicle’ as \(\text{N}_2\), and 呼啦圈 hūlāquān ‘hula hoop’ lit. ‘hula-hoop’ uses 圈 quán ‘hoop’ as \(\text{N}_2\). Words in Tables 4.3 and 4.4 that have the other structures shown in (1), which we can generalize as \([X \text{N}]_N\), also use the second constituent as the noun in the pattern. For example, 连裤袜 liánkùwà ‘pantyhose’ lit. ‘connect-pants stockings’ uses 袜 wà ‘stockings’ as \(\text{N}\); 迷你裙 mínǐqún ‘miniskirt’ uses 裙 qún ‘skirt’ as \(\text{N}\), and so on.

In summary, all of the native adjuncts in Table 4.3 and all of the second constituents in the words in Table 4.4 are nouns. Although the words we examined are not all disyllabic, their structure mirrors Huang’s (1997) finding regarding disyllabic words,
which is that words in which nouns are the second element are more frequent than those with verbs or adjectives as the second element. We can also observe that the words in Tables 4.1 to 4.4 are all nouns, which supports Huang's finding that nouns outnumber verbs and adjectives in disyllabic Mandarin word structures.

4.8 Adaptation through Compounding

Words adapted with the processes in Tables 4.3 and 4.4 are nativized as compounds with the structure [Mod N]_n, in which the noun is the head and Mod is a modifier. We explore the use of this compounding pattern in borrowing in this section. Words formed through phonetic adaptation and loan translation are excluded from discussion since phonetic adaptations combine Chinese morpheme-characters only for their phonetic value and since loan translations replicate a foreign morphological pattern. Phonetic loan/native creations are discussed, but they actually employ a wider range of compounding patterns than just [X N]_n and are sometimes exocentric. For example, 蹦极 bèngji ‘bungee’ lit. ‘bounce-extreme’ has a [V A]_n structure and no head, and 霓虹 níhóng ‘neon’ lit. ‘secondary rainbow – primary rainbow’ has a [N N]_n structure in which the nouns have a parallel relationship.

4.8.1 Characterization According to Duanmu's View of Compounds

The results of borrowing processes other than those involving phonetic loans and calques can be characterized in terms of Duanmu's (2000) description of compounds. As noted in Chapter 2, Duanmu (2000) argues that all modifier-noun [Mod N] nominals without a de particle are compounds. In Table 4.1, all of the examples of native creations

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and phonetic loan/native creations have a [Mod N]N pattern except 维他命 wēitāmìng
‘vitamin’ lit. ‘nurture his-life’, 抬头 táitóu ‘title’ lit. ‘elevate-head’, and 蹦极 bèngjí

All of the examples in Tables 4.3 and 4.4 also follow this pattern. In Table 4.3, each compound is composed of an imported modifier and a noun denoted by the Mandarin adjunct. In 鸡尾酒 jīwèi jiǔ ‘cocktail’ lit. ‘cocktail-liquor’, the loan translation 鸡尾 jīwèi ‘cocktail’ modifies the native adjunct 酒 jiǔ ‘liquor’; in 吉普车 jípūchē ‘Jeep’ lit. ‘Jeep-vehicle’, the phonetic loan 吉普 jípū ‘Jeep’ modifies the native adjunct 车 chē ‘vehicle’, etc. In Table 4.4, each example is composed of an imported modifier and a familiar noun denoted by the adaptation of the second component of the word. Thus, in 摩托车 mótuōchē ‘motorcycle’ lit. ‘motor-vehicle’, the phonetic loan 摩托 mótuō ‘motor’ modifies the semantic loan 车 chē ‘vehicle’; in 迷你裙 mǐnīqún ‘miniskirt’ lit. ‘enchant-you skirt’, the phonetic-semantic loan 迷你 mǐnī ‘mini’ modifies 裙 qún ‘skirt’, etc. As shown by these examples, many borrowed words adapted through the traditional borrowing processes in Tables 4.1, 4.3, and 4.4 have a structure similar to that of native modifier-noun nominals, or compounds, in Duaamu’s definition. Since hybrid words extend traditional borrowing processes, we can expect that they will have the same structure as the ‘traditionally’ adapted words in Tables 4.1, 4.3, and 4.4.
4.8.2 Nominal Heads

Following the work of generative morphologists such as Williams (1981a, 1981b), Di Scullo and Williams (1987), and Selkirk (1982) on English words, Packard (2000) applies the X-bar theory of syntax to Mandarin to show that words in Mandarin have heads just as phrases in Mandarin syntax have heads. Packard’s investigation of complex words in Mandarin yields the following Headedness Principle for Chinese words:

“(bisyllabic) noun words have nominal constituents on the right, and verb words have verbal constituents on the left.” We found that all of the words in Tables 4.3 and 4.4 have a head and that many of the native creations and phonetic loan/native creations in Table 4.1 also have a head. Moreover, all of the headed words in the tables are nouns and have a nominal head on the right. In Chapters 5 and 6, we show that hybrid lettered words also tend to be nouns and almost always have a head on the right. The endocentric structure of both ‘traditionally’ adapted borrowings and hybrid lettered words makes them more transparent semantically and syntactically and lessens the opacity of the borrowed element since since the familiar Mandarin component normally serves as the head.

4.9 Meanings of Nativized Compounds

4.9.1 Semantic Relations of the Components

Packard (2000: 88) explains that in complex two-syllable nouns of the form \([N_1 N_2]_N\), the relations between \(N_1\) and \(N_2\) can be either hierarchical or parallel. Hierarchical relations are exemplified by the components of the words in Tables 4.3 and 4.4, all of which have a ‘modifier-modified’ relationship. A non-hierarchical ‘parallel’ relation is exemplified by the components of words such as 森林 sēnlín ‘forest’ lit. ‘forest-woods',
in which both items are nearly synonymous, and by the components of words such as 刀枪 dāoqiāng ‘weapons’ lit. ‘knife-gun’, in which the items have different meanings but are hyponyms of the larger class that is the meaning of the compound. Packard notes that in words of the second type, the meaning of the whole is usually a superordinate class that includes both nouns.

Looking first at nativized words of the type [N1 N2]\textsubscript{N} in Tables 4.3 and 4.4, we find that the relationship between the two nouns is hierarchical rather than parallel in all of our examples. This is predictable based on our discussion of headedness in nativized borrowings – the words in Table 4.3 add a Mandarin adjunct to clarify the meaning of the foreign foreign, and the words in Table 4.4 adapt the second component to become a word that denotes a familiar Mandarin semantic category. It is not surprising that the foreign N1 and the native N2 have a hierarchical relationship. The “unfamiliar” foreign N1 acts as a modifier for the “familiar” native N2. In each case, the N2 on the right is the native element. The N2 is the head and positions the foreign word in Chinese head family.

Following Chao (1968) and Li and Thompson (1981), Packard (2000: 86-9) lists sixteen types of hierarchical relationships that obtain among complex two-syllable nouns. These sixteen N1-N2 relationships are shown in Table 4.5.

| 1. N1 is where N2 operates or is located (眼镜 yǎnjīng ‘glasses’ lit. ‘eye-lens’) |
| 2. N2 indicates a medical condition of N1 (皮疹 pízhēn ‘rash’ lit. ‘skin-rash’) |
| 3. N1 depicts the form of N2 (片剂 piànji ‘medicine pill’ lit. ‘tablet-medicine’) |
| 4. N2 depicts the form of N1 (雪花 xuēhuā ‘snowflake’ lit. ‘snow-flower’) |

Table 4.5: N1-N2 Words: Semantic Relations (source: Packard 2000: 86-88)

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Table 4.5 continued

5. N2 is used for N1 (烟斗 yāndǒu ‘pipe’ lit. ‘tobacco-cup’)
6. N1 is the habitat of N2 (壁虎 bihǔ ‘gecko’ lit. ‘wall-tiger’)
7. N2 is caused by N1 (水灾 shuǐzhāi ‘flood’ lit. ‘water-disaster’)
8. N2 is a container for N1 (茶杯 chábēi ‘teacup’ lit. ‘tea-cup’)
9. N2 is produced by N1 (鱼卵 yúluǎn ‘roe’ lit. ‘fish-egg’)
10. N2 is made from or composed of N1 (猪肉 zhūròu ‘pork’ lit. ‘pig-meat’)
11. N1 is a type or subclass of N2 (松树 sōngshù ‘pine tree’ lit. ‘pine-tree’)
12. N2 is a source of N1 (电池 diànchí ‘battery’ lit. ‘electricity-pool’)
13. N1 is a source of N2 (海盐 hǎiyán ‘sea salt’ lit. ‘sea-salt’)
14. N2 is something that N1 has or contains (房顶 fāngdǐng ‘roof’ lit. ‘house-top’)
15. N1 is something that N2 has or contains (斑马 bānmǎ ‘zebra’ lit. ‘stripe-horse’)
16. N1 is a metaphorical description of N2 (银行 yínháng ‘bank’ lit. ‘silver-business’)

The relationship ‘N1 is a type of N2’ (e.g., 兰花 lānhuā ‘orchid’ lit. ‘orchid-flower’)

applies to many [N1 N2]N words adapted through the borrowing processes in Tables 4.3
and 4.4. In Table 4.3, the foreign N1 represents the type or subclass of the native N2, the
Chinese adjunct that specifies the term’s semantic category. Examples are shown in (2).

(2) ‘N1 is a type or subclass of N2’ (examples from Table 4.3)

<table>
<thead>
<tr>
<th></th>
<th>N1</th>
<th>N2</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>鸡尾酒 jīwěijiǔ</td>
<td>荷酒 jiānju</td>
<td>荷酒</td>
<td>‘cocktail’ lit. ‘cocktail-liquor’</td>
</tr>
<tr>
<td>植物人 zhíwùrén</td>
<td>植物人 jiānju</td>
<td>植物人</td>
<td>‘vegetable’ lit. ‘veget.-person’</td>
</tr>
<tr>
<td>吉普车 jípūchē</td>
<td>吉普 jiānpǔ</td>
<td>车</td>
<td>‘Jeep’ lit. ‘Jeep-vehicle’</td>
</tr>
<tr>
<td>华尔兹舞 huāěrzǐwǔ</td>
<td>华尔兹</td>
<td>舞</td>
<td>‘waltz’ lit. ‘waltz-dance’</td>
</tr>
<tr>
<td>比萨饼 bìsābǐng</td>
<td>比萨 bǐsā</td>
<td>饼</td>
<td>‘pizza’ lit. ‘pizza-cake’</td>
</tr>
<tr>
<td>古龙水 gǔlónghuǐ</td>
<td>古龙水</td>
<td>水</td>
<td>‘cologne’ lit. ‘cologne-water’</td>
</tr>
<tr>
<td>爱滋病 àizhibìng</td>
<td>AIDS</td>
<td>病</td>
<td>‘AIDS’ lit. ‘AIDS-disease’</td>
</tr>
<tr>
<td>坦克车 tānkēchē</td>
<td>坦克</td>
<td>车</td>
<td>‘tank’ lit. ‘tank-vehicle’</td>
</tr>
<tr>
<td>拉力赛 lālìsài</td>
<td>拉力</td>
<td>赛</td>
<td>‘rally’ lit. ‘rally-match’</td>
</tr>
<tr>
<td>耐克鞋 nàikēxiē</td>
<td>耐克</td>
<td>鞋</td>
<td>‘Nikes’ lit. ‘Nike-shoe’</td>
</tr>
</tbody>
</table>

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The word 摩托车 mótúōchē ‘motorcycle’ lit. ‘motor-vehicle’ in Table 4.4 also has the same pattern as the words in (2). A mótúōchē ‘motorcycle’ is a type of 車 chē ‘vehicle’. The foreign N1 mótūō ‘motor’ represents the type or subclass of N2 chē ‘vehicle’, a semantic loan that denotes a familiar semantic category in Mandarin. The word 呼拉圈 hūlāquān ‘hula hoop’ fits the relation ‘N2 is used for N1’. This relation is the same as that in 球拍 qiúpāi ‘racket’ lit. ‘ball-paddle’, for example.

4.9.2 Nativized Compounds as Members of Head Families

We stated in previous sections that many borrowed words are nominal compounds and that they have a head on the right. The components of nativized words also tend to have the semantic relationship ‘N1 is a type or subclass of N2’. These two facts – first, that many nominal borrowings are adapted as compounds which have a head, and second, that the relation between the components tends to be ‘N1 is a type of N2’ – enable us to describe borrowings as members of established head families in Mandarin. Most of the nominal compounds we discussed in this chapter have the general structure [Mod N]N, and more specifically, the structure [N N]N, with particular root words or non-affixal roots in Mandarin as the N2. For example, one common structure is [Mod chē]N (车 chē ‘vehicle’). Examples of borrowed words formed with this pattern include 拖车 tuōchē ‘trailer’, 摩托车 mótúōchē ‘motorcycle’, and 吉普车 jípūchē ‘Jeep’. The tendency to adapt foreign words with particular compounding patterns enables Mandarin speakers to position these words in native head families composed of other compounds formed with the same patterns. Thus, 拖车 tuōchē ‘trailer’, 摩托车 mótúōchē ‘motorcycle’ and 吉普
The Chinese characters 車 jípūchē ‘Jeep’ are interpreted as types of 車 chē ‘vehicle’ in a head family consisting of compounds representing many other types of chē. The English words trailer, motorcycle, Jeep and other ‘vehicles’ we discuss are adapted by analogy with the many other words in Mandarin that are types of chē ‘vehicle’. In other words, they are adapted to become hyponyms of the hypernym chē ‘vehicle’. This way of nativizing foreign terms allows Mandarin speakers to interpret foreign words meaningfully in terms of existing native semantic categories. In Chapters 5 and 6, we show that hybrid words are also formed with existing compounding patterns, which enables them to be positioned in existing Chinese head families.
CHAPTER 5

BORROWING AND COINAGE

IN MIXED SCRIPTS

Recent studies of new words in Mandarin acknowledge that borrowing and coinage now occur not only with words written solely in Chinese characters but also with words written in roman letters and in a mixture of Chinese and roman letter scripts (cf. Sun and Jiang 2003, Hu and Xu 2003, Li 2004, Wang 2004, Zhang 2005). Roman letter words have yet to be compared with traditional forms of borrowing and native compounding processes in Mandarin. In this chapter, we explore how traditional processes of borrowing and compounding are extended in the creation of hybrid lettered words that include both Chinese and roman letter components in their written form.

Section 1 discusses the borrowing processes used to create hybrid words through a mixture of roman letters and Chinese morpheme-characters. Section 2 describes the grammatical and semantic relations of the components of hybrid words. Section 3 compares hybrid words with loans adapted through traditional borrowing processes. Section 4 discusses the positioning of hybrid words in Mandarin head families.

5.1 Borrowing Processes Used to Create Hybrid Words

Borrowing in the form of hybrid lettered words employs processes that involve either ‘orthographic borrowing’ followed by a ‘basic’ borrowing process or ‘orthographic
borrowing’ followed by a ‘native explicative adjunct’. Both processes import the orthography of all or part of the original word and the meaning of the original word. The imported component is combined with a traditional borrowing process that expresses the semantic category of the original word with a Chinese root or compound.

Orthographic loans may be adapted as phonetic loans, or their original English pronunciation may be imported directly. This depends in part on the frequency and complexity of the roman letter component. Some roman letter components are adapted as phonetic loans in speech (e.g., VISA [wei.sa]), while others are pronounced as they are in English (e.g., Amazon [æməzən], BASIC [besɪk]). In the latter case, individuals who have not heard the word spoken or who are not bilingual would be unable to pronounce the roman letter component. They may substitute a native creation or phonetic loan/native creation, if one exists for the term, rather than using the English pronunciation, or they may sound out the letter names if the word is an acronym. Examples of borrowings adapted as hybrid words in their written form are shown in Table 5.1.
<table>
<thead>
<tr>
<th>Orthographic Loan and a Native Adjunct</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ortho</strong></td>
</tr>
<tr>
<td>MS 病</td>
</tr>
<tr>
<td>BASIC 语言</td>
</tr>
<tr>
<td>eBay 网</td>
</tr>
<tr>
<td>PC 机</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Orthographic Loan and a ‘Basic’ Borrowing Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ortho</strong></td>
</tr>
<tr>
<td>X 光</td>
</tr>
<tr>
<td>D 日</td>
</tr>
<tr>
<td>C 盘</td>
</tr>
<tr>
<td>U 转</td>
</tr>
<tr>
<td>Amazon 网</td>
</tr>
<tr>
<td>‘LP 唱片’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unclear Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ortho</strong></td>
</tr>
<tr>
<td>ATM 机</td>
</tr>
<tr>
<td>ATB 车</td>
</tr>
<tr>
<td>VISA 卡</td>
</tr>
</tbody>
</table>

Table 5.1: Borrowing Processes that Use Chinese and Roman Letter Scripts

Table 5.1 shows examples of hybrid words adapted as an ‘orthographic loan’ followed by a ‘native adjunct’ and those adapted using an ‘orthographic loan’ followed by a ‘basic’ borrowing process. An example of the first strategy is **MS 病** **MS bìng** ‘MS’ (< multiple sclerosis). The initialism **MS** is imported directly in writing. The Mandarin root word **病** **bìng** ‘disease’ is added to **MS** to indicate the semantic category of the term, and it also indicates its lexical category as a noun. An example of the second strategy is **X 光** **X**
guāng 'X-ray'. The component X is imported directly, and ray is adapted as the calque 光 guāng 'ray'. Unlike the first strategy, the second strategy adds no additional component in the adaptation of X-ray. Rather, only the morphemes in the original are represented in the adaptation.

Table 5.1 also includes several examples of unclear cases (e.g., pH 值 pǐ hěi ‘pH (level)'). Further information about the etymology of these words would be required to confirm whether the first or second strategy was used in their adaptation. Whether the second component in these examples is a native adjunct or an adaptation with a basic borrowing process depends on the form of the English word on which they are based. For example, ATM 机 ATM jī ‘ATM machine’ would be an ‘orthographic loan’ followed by a ‘native adjunct’ if the initialism ATM served as the foreign original on which the adaptation ATM 机 ATM jī is based, but it would be an ‘orthographic loan’ and a ‘calque’ if the compound ATM machine served as the original on which the adaptation is based. In either case, the adaptation results in the same form, a lettered modifier followed by a Chinese morpheme-character head.

To compare the structure of the hybrid lettered words in Table 5.1 to foreign words adapted with traditional borrowing processes in Tables 4.3 and 4.4 in Chapter 4, we need to consider two dimensions of comparison: orthography and pronunciation. The words in Table 5.1 differ considerably from the words in Tables 4.3 and 4.4 in Chapter 4 with respect to their orthography. Rather than sinicizing the foreign modifier with Chinese morpheme-characters, hybrid words import the orthography of the foreign element directly, retaining an important feature of the original that is lost in traditional borrowing processes. Orthographic borrowing of initialisms and acronyms is more common than the
borrowing of other types of words since abbreviations conform to the constraint of the
Sino-alphabet, which is that the roman letters are read and spoken as discrete units rather
than combined into words.

Some of the words in Table 5.1 have the same pattern of pronunciation as the
borrowings in Table 4.3 in Chapter 4 adapted as a ‘phonetic loan’ and a ‘native adjunct’
and those in Table 4.4 adapted as a ‘phonetic loan’ followed by another borrowing
process. The roman letter modifiers are pronounced as phonetic loans, that is, Mandarin
syllables are substituted for their English pronunciation, and the morpheme-character
head is pronounced as it is in Mandarin. For example, eBay 网 eBay 网 ‘eBay’ lit.
‘eBay net’, which substitutes the Mandarin syllables [jǐ] and [pei] for English /ibe/, is
similar to 比萨饼 bǐ sā bǐng [pi.sa.piŋ] ‘pizza’ lit. ‘pizza-cake’ in Table 4.3 in Chapter 4.
Both eBay 网 and bǐ sā bǐng pronounce the foreign component as a phonetic loan ([ibe]
and bǐ sā, respectively) and then combine it with a native adjunct (wǎng ‘net’ and bǐng
‘cake’). X 光 X guāng ‘X-ray’ is similar to 摩托车 mó tuō chē ‘motorcycle’ in Table 4.4
since both X guāng and mó tuō chē pronounce the foreign component on the left as a
phonetic loan and combine it with an adaptation of the right-hand component (the calque
光 guāng ‘ray’ and the semantic loan 車 chē ‘vehicle’).

Two of the words in Table 5.1 import the English pronunciation directly rather than
pronouncing the roman letter component as a phonetic loan, namely BASIC 语言 BASIC
yǔ yán ‘BASIC’ and Amazon 网 Amazon wǎng ‘Amazon.com’. Such pronunciations are
less common than phonetic loans because they may be difficult to imitate for
monolingual Mandarin speakers. Some words also have a mixed pronunciation,
combining substitutions of Mandarin syllables with English pronunciations of some elements. For example, in the pronunciation of UHT牛奶 UHT niúnái ‘UHT milk’, speakers may substitute [jʌu] for U /ja/ and [tʰi] for T /ti/, but H may be pronounced either as English /ɛtʃ/ or as [ai.tʃʰ(y)]. We expect that mixed pronunciations will increase as more Chinese individuals gain proficiency in English and introduce English phonological features into their pronunciations of borrowed words in Mandarin. English phonological features may also be introduced through code-switching.⁴⁸

Considering our classification of ‘basic’ borrowing processes in Table 4.1 in Chapter 4, it is a challenge to classify orthographic borrowing in terms of the three levels of word knowledge that influence traditional borrowing processes, that is, information at the conceptual (semantics), lemma (syntax and morphology), and lexeme levels (phonology). The lettered components of hybrid words reflect influences from the conceptual and lemma levels of foreign words since hybrid words directly import lemmas and their corresponding concepts. If the foreign pronunciation is retained, information from the lexeme level also has an influence on the lettered component. In addition, the orthography of words has clearly also become an important aspect of word knowledge used in Mandarin lexical borrowing.

As shown in Table 5.1, the Chinese component in hybrid words is often a calque or semantic loan. For example, in C 盘 C pán ‘C drive’ lit. ‘C-dish’, 盤 pán is a semantic loan. Native creations are also used, as in LP 唱片 LP chàngpiàn ‘LP record’ lit. ‘LP sing-flat piece’, in which 唱片 chàngpiàn ‘record’ is a native creation. Interestingly, the

⁴⁸ Myers-Scotton (1992) discusses the impact of code switching on language change.
Chinese component in hybrid words is rarely a phonetic loan or phonetic loan/native creation, indicating that it may not be important to represent information from the lexeme level of the foreign original in the Chinese component. This may be due to the critical role the Chinese component plays in conveying the meaning of the hybrid word since the roman letter component is semantically opaque. The pronunciation of the original is sacrificed in the morpheme-character component of hybrid words in favor of expressing the meaning of the word. In \[\text{C 盘} \ C \text{ pán} \] ‘C drive’ lit. ‘C dish’, for example, it may be more important or useful for the Chinese morpheme-character component to express the meaning ‘drive’ than it is for the morpheme-character to convey the pronunciation of English word \textit{drive}.

5.2 Grammatical and Semantic Relations of Hybrid Word Components

All of the hybrid words in Table 5.1 are endocentric nouns. They have a head on the right, following Packard’s (2000) Headedness Principle for noun words. In each example, the nativized, Chinese N2 is the syntactic and semantic head, and the imported, roman letter N1 is the modifier. For example, in \[\text{VISA \ 卡} \ VISA \ kā \ ‘VISA (card)’\], the imported lettered component \textit{VISA} is the modifier, and the phonetic loan \ 卡 \ ‘card’ is the head.

This pattern holds for each of the words in Table 5.1, as it did for all of the traditional borrowings in Tables 4.3 and 4.4 in Chapter 4 that have the structure \([\text{N1 N2}]_\text{N}\) or any structure \([\text{X N}]_\text{N}\) in which X is an adjective, noun, or verb. Comparing hybrid words with the borrowed words in Tables 4.3 and 4.4, we find that hybrid words follow the standard

\[Kā \ 卡 \ ‘card’\] is an exception. Although originally a phonetic loan, the morpheme-character used for the transliteration now has ‘card’ as one of its meanings.

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pattern of adaptation in Mandarin we have identified: as in traditional borrowings, the new foreign component is the modifier and the familiar Chinese component is the head.

Also as in the borrowed words in Tables 4.3 and 4.4 in Chapter 4, the most common type of relation for components of hybrid words is ‘N1 is a type or subclass of N2’. The components of the words in Table 5.1 all exhibit this relation. For example, \textit{VISA 卡} \textit{VISA (card)} is a type of \textit{kā ‘card’}; \textit{X 光 X guāng ‘X-ray’} is a type of \textit{guāng ‘ray’}; \textit{MS 传染病 MS bing ‘MS’} is a type of \textit{bing ‘disease’}; and so on.

Anderson (1992) suggests that “the longer a word exists in a language as a lexical item, the more various parts of its structure may become idiosyncratic, so that eventually this structure can become quite opaque” (p. 194). Since hybrid words are a new addition to the Mandarin lexicon, we expect their structure and meanings to be transparent. Viewed in terms of Packard’s (2000) five categories of lexicalization, hybrid words could be considered examples of ‘conventional’ lexicalization. The components retain their individual grammatical and semantic identity, and they are generally not used metaphorically. The overall meaning of the word is compositional from its parts and is usually also not metaphorical.

Packard (2000: 219) states that words that are ‘conventionally’ lexicalized are “recently lexicalized” and “least lexicalized,” both of which are fitting descriptions for hybrid words. Hybrid words are “recently lexicalized” in the sense that they are newly formed words in Mandarin. They are also “least lexicalized” since roman letters and lettered components have narrow functions in Mandarin – they are constrained by limitations in uses of the Sino-alphabet. Lettered words generally have only literal meanings, and the grammatical relationships between components in hybrid words are
retained. For example, in ATM 机, ‘ATM machine’, the components ATM and 机, 机 ‘machine’ retain their original meanings and their grammatical identity as nouns. The meaning of the compound is compositional from its parts, and it also a noun.

According to Packard (2000: 217), the degree of lexicalization of a word determines the applicability of the Headedness Principle: the more strongly lexicalized a word is, the weaker the connection between the properties of the word and the properties of the constituents. ‘Weakly lexicalized’ words, such as hybrid words, are likely to have a strong connection between the properties of the components and the properties of the word. Therefore, while we might expect older compounds in Mandarin to undergo ‘asematic’ and ‘agrammatical’ lexicalization, for example, we would not expect hybrid words to exhibit these deeper degrees of lexicalization. We expect that the components of hybrid compounds will retain their grammatical relations and word component meanings, as this helps to reduce the opacity of lettered elements. We suggest, however, that as the Sino-alphabet and roman letter elements become more integrated into Mandarin and more widely used in the language, greater degrees of lexicalization may occur in hybrid words just as they do in other Mandarin compounds.

5.3 Hybrids Compared with Loans Adapted with Traditional Borrowing Processes

5.3.1 Differences

The primary difference between the hybrid lettered words in Table 5.1 and the borrowed words in Tables 4.3 and 4.4 in Chapter 4 is the direct importation of their roman letter orthography. This is an unprecedented innovation that departs radically from traditional forms of borrowing which sinicized foreign words through the use of Chinese
morpheme-characters. Haugen's (1953) distinction between *importation* and *substitution* can help to explain this development. *Importation* refers to the adoption of foreign forms and/or their meaning, while *substitution* refers to the process of by which native sounds or morphemes are substituted for those in the donor language. For example, Taiwan Mandarin imported the meaning and pronunciation of the English word *out* (Hansell 1989: 112), but imitating the pronunciation of the word involves the substitution of the Mandarin syllable [au] to elide the final obstruent in the English pronunciation /aut/.

We suggest that importation in hybrid words is greater than in traditional processes of borrowing since both the meaning and the orthographic form of all or part of the original word are imported, if not its pronunciation. The result is that the form, structure, and meaning of the original word is mediated to a lesser degree by Chinese morpheme-characters than in traditional borrowing. Native adjuncts and 'basic' borrowing processes are substituted to express one component of the meaning, pronunciation, and orthography of hybrid words, while the other component is imported directly.

*Substitution* also occurs in hybrid words even though they contain a roman letter component. As discussed previously, some roman letter elements are adapted as phonetic loans in pronunciation; a smaller number are pronounced in the manner of the original; and some have mixed pronunciation. The degree to which average Mandarin speakers can imitate the original varies considerably based on their exposure to English. For example, referring again to the borrowing of *out* in Taiwan Mandarin, monolingual speakers would be unable to pronounce the syllable-final /t/ in /aut/ without training, but bilingual speakers would not experience this difficulty, although they would probably use the Taiwan Mandarin pronunciation [au] in Mandarin speech contexts. Substitution of
native sounds and syllables for roman letter components in speech may be more likely to occur among speakers with limited proficiency in English, and it also varies based on speech context and familiarity with a particular lettered word.

5.3.2 Similarities

The primary similarities between hybrid words and words adapted through traditional borrowing processes are their morphological structure and the representation of their meaning. Both types of words have structures of the general form [Mod N] in which the modifier is the foreign component and the head noun is a native Mandarin component. The head noun is either a native adjunct or an adaptation of the part of the foreign word that corresponds to a Mandarin root word or compound. For example, in 摩托车 mòtuōchē ‘motorcycle’ lit. ‘motor-vehicle’, the phonetic loan of the foreign component摩托 mótuō ‘motor’ is the modifier, and the semantic loan 車 chē ‘vehicle’ is the head. Similarly, in BMW 車 BMW chē ‘BMW’ lit. ‘BMW-vehicle’, the orthographic loan BMW is the modifier, and the native adjunct 車 chē ‘vehicle’ is the head.

In words of the form ‘orthographic loan and a native adjunct’, such as BMW 車 BMW chē ‘BMW’, the first component represents the foreign element that would have been nativized with traditional borrowing processes in the past (e.g., just as Jeep was nativized as the phonetic loan 吉普 jīpū). Now, however, the orthography of these elements is imported directly. A native explicative adjunct is added to express to semantic and lexical category of the foreign element as in traditional borrowing. For example, 車 chē ‘vehicle’ is added to BMW just as it was to 吉普 jīpū ‘Jeep’. In words that are composed of an
'orthographic loan' followed by a 'basic' borrowing process, the foreign component is
adopted directly, and the second foreign component is adapted with a 'basic' borrowing
process since it corresponds to a familiar root word or compound in Mandarin. For
example, D D ri 'D-Day' borrows D directly and adapts day as its equivalent in
Mandarin, the word ri 'day'.

In both types of hybrid borrowings, the expression of meaning is mediated by the
Mandarin head, which positions the foreign word in an existing Mandarin semantic
category. Thus, BMW 車 BMW chē 'BMW' becomes a type of chē 'vehicle', and D
D ri 'D-Day' becomes a type of ri 'day'. Hybrid words are adapted to become
Chinese in form and meaning in the same way as loans nativized with the traditional
borrowing processes, as shown in Tables 4.1 and 4.3 in Chapter 4.

5.4 Positioning Hybrid Words in Mandarin Head Families

Looking at the borrowing processes shown in Table 5.1 and in Tables 4.1, 4.3 and 4.4
in Chapter 4, it may seen that they are chosen in a more or less haphazard way to express
the meaning of the original, or its pronunciation, or both. The adaptation of foreign words
is actually quite systematic, however, in a manner that is not revealed simply by
identifying the borrowing process(es) used in the adaption. That is, borrowing processes
which create compounds are selected to position hybrid words in Mandarin head families
that normally have many other native and nativized compounds as members. In other
words, compounding patterns are used as a type of folk etymology to reanalyze foreign
words so that they will fit into established semantic categories.
More specifically, words are adapted with compounding patterns in which a familiar Mandarin root word or compound is the head, and the head then determines the hybrid word’s head family. For example, motorcycle, Jeep, BMW, and ATB (< all-terrain bike) are all adapted with the pattern \([X]_N : [X \text{[chē]}]_N\) to become types of 车 chē ‘vehicle’ in Mandarin, namely, 摩托车 mòtuōchē ‘motor-vehicle’, 吉普车 jípūchē ‘Jeep-vehicle’, BMW 车 BMW chē ‘BMW-vehicle’, and ATB 车 ATB chē ‘ATB-vehicle’. Thus, although each of these adaptations could be considered independently in terms of the borrowing processes used to create them, we also need to recognize the commonalities among them (and many others) as a group of morphologically and semantically related words. These words are adapted to share a particular morphological structure and the same general meaning. In other words, they are all reanalyzed with a particular compounding pattern to be members of the same semantic category in Mandarin.

In hybrid words, the roman letter component represents a subordinate category of the superordinate category represented by the Mandarin head. For example, eBay 网 eBAY wǎng ‘eBay’ lit. ‘eBay-net’ and Amazon 网 Amazon wǎng ‘Amazon.com’ lit. ‘Amazon-net’ are formed by extending the pattern \([X]_N : [X \text{[wǎng]}]_N\), where X is a noun and 网 wǎng means ‘net’ (as in Internet). (The component X can also be an adjective, verb, or verb-noun combination in many compounding patterns, but hybrid words usually have the form \([N1 N2]_N\).) Through adaptation with the pattern \([X]_N : [X \text{[wǎng]}]_N\), the words eBay and Amazon.com become members of the Mandarin head family of compounds formed with the same pattern, including compounds such as 因特网 yīntèwǎng ‘Internet’, 万维网 wànwéiwǎng ‘worldwide web’ lit. ‘ten thousand-join-net’, 互联网 hùliǎnwǎng
‘internet’ lit. ‘mutual-join-net’, and others. In other words, eBay 网 eBay wang and Amazon 网 Amazon wāng become new hyponyms of the hypernym 网 wāng ‘net’ in the Mandarin head family representing different types of “nets.”

Borrowed words such as these may also have been adapted by analogy with specific words, such as万维网 wànwéiwāng ‘worldwide web’, 因特网 yīntèwāng ‘Internet’, and others. Mandarin speakers know many compounds representing various types of 网 wāng, which are formed either with the pattern [X]N : [X wāng]N or other patterns in which the modifier is not necessarily a noun (e.g., 互联网 hùliánwāng ‘internet’, in which 互联 hùlián lit. ‘mutual-join’ is a verbal construction), and they may adapt eBay and Amazon.com to match particular words in the wāng head family. Similarly with 车 chē ‘vehicle’, speakers know various types of chē that are formed with the pattern [X]N : [X chē]N, and they know types of chē formed with patterns in which the modifier is an adjective or a verb (e.g., 快车 kuàichē ‘express train or bus’ lit. ‘fast-vehicle’, 拖车 tuōchē ‘trailer’ lit. ‘pull-vehicle’). Speakers may adapt words denoting types of foreign vehicles by analogy with the many types of vehicles that are already in the chē ‘vehicle’ head family.

In summary, each of the words in Table 5.1 is formed through the extension of a particular compounding pattern, and they may also be formed by analogy with specific words that share that pattern. (For example, there is a close semantic connection between因特网 yīntèwāng ‘Internet’, 互联网 hùliánwāng ‘internet’, and万维网 wànwéiwāng ‘worldwide web’). The important result is that foreign words are positioned in established Mandarin head families. Hybrid words, just like foreign words adapted with earlier
"traditional" borrowing processes, are adapted to become a new subordinate category of the superordinate category represented by the native adjunct or adaptation which forms the head of the compound. We view this as the extension of an established form of sinicization used in traditional borrowing processes. Foreign objects and concepts are interpreted in terms of semantic categories already present in the Mandarin lexicon, increasing their similarity with Chinese words and their familiarity to Chinese speakers.
CHAPTER 6

NATIVELY COINED LETTERED WORDS

Many lettered words are coined natively rather than borrowed. These ‘lettered neologisms’ are created with Mandarin compounding patterns, English word formation processes, English and Chinese processes of abbreviation, and by analogy with specific Mandarin and English words. It is because of these influences from both Mandarin and English in the formation of lettered neologisms that we posited porous borders among different components of the Mandarin lexicon in Chapter 3. In analyzing natively coined lettered words, we find connections with the ‘native’, ‘foreign-influenced’, and ‘foreign’ components of the mental lexicon. New lettered words are created by analogy with words in all three components of the Mandarin lexicon.

This chapter discusses the structure of lettered neologisms. Our aim is to identify how they are formed and how they are influenced by words in various components of the Mandarin lexicon. Section 1 outlines the general structure of lettered neologisms, including both initialisms and hybrid lettered words. Section 2 discusses the formation of natively coined initialisms. Section 3 describes the formation of hybrid neologisms by analogy with other hybrid words, and hybrid neologisms are also compared with their translated or transliterated equivalents. Section 4 discusses the use of compounding
patterns used in the formation of hybrid neologisms. Section 5 highlights Mandarin and English words and affixes used productively in the coinage of Chinese lettered words.

6.1 Structure of Lettered Neologisms

Natively created lettered words usually have one of two types of structure. First, some are initialisms that abbreviate romanized Mandarin elements (e.g., *HSK* < *Hànyǔ Shuǐpíng Kǎoshi* 汉语水平考试 ‘Mandarin Proficiency Exam’ for non-native speakers) or English elements (e.g., *RTV* ‘restaurant TV’). Words of this type are relatively infrequent. Second, many have a hybrid structure like that of the borrowed words in Chapter 5 and that of other natively created hybrid lettered words. For example, the neologism *VAD* 牛奶 *VAD* niúnǎi ‘milk with vitamins A and D’ lit. ‘VAD-milk’ has the same \([N1 N2]_N\) structure as the borrowing *UHT* 牛奶 *UHT* niúnǎi ‘ultra high temperature milk’ lit. ‘UHT-milk’, and the neologism *G* 群 *G* zú ‘GRE test-takers’ lit. ‘G-group’ \([G < \text{GRE}]\) has the same structure as the neologism *T* 群 *T* zú ‘TOEFL test-takers’ lit. ‘T group’ \([T < \text{TOEFL}]\). In each case, the related borrowings and neologisms both have a roman letter modifier (e.g., *VAD* and *UHT*; *G* and *T*), and they share the same head (牛奶 niúnǎi ‘milk’, 群 zú ‘group’).

The lettered neologisms examined in this chapter show influences from Mandarin and English in several ways. The processes of forming initialisms in English (and other Western languages) are borrowed to create native initialisms. Mandarin compounding patterns are also extended to form the words, and some lettered neologisms are formed by analogy with specific native or borrowed words. These influences suggest that there are
interactions between the native, foreign, and foreign-inspired components of the
Mandarin lexicon. Mandarin speakers draw on forms in all three components of the
lexicon to coin new lettered words.

6.2 Initialisms

Of the 142 entries in the lettered words appendix of the Xìàndài Hàn yǔ Cìdiǎn 现代汉语词典 ‘Dictionary of Modern Chinese’, 95 are initialisms and acronyms adopted from
English, and 3 are initialisms formed from words in pīnyīn romanization. These English
initialisms and acronyms are what Hu and Xu (2003: 311) call “copying without
translation” or “zero translation.” Using Haugen’s (1953) terminology, English
initialisms and acronyms that undergo “zero translation” in Mandarin are examples of
complete morphemic and orthographic importation. Substitution of native sounds and
syllables still occurs in their pronunciation, however, as discussed in Chapters 2 and 5.

Although many initialisms and acronyms are borrowed from English, some initialisms
are also created natively and usually abbreviate Romanized elements. The three entries
for Mandarin abbreviations in the ‘Dictionary of Modern Chinese’ are shown in (1).

(1) a. HSK (< Hàn yǔ Shūpíng Kǎoshi) 汉语水平考试 ‘Chinese proficiency test’
lit. ‘Chinese-level-test’ (for non-native speakers)

b. PSC (< Pǔtōnghuà Shūpíng Cèshì) 普通话水平测试 ‘national language
proficiency exam’ lit. ‘common language-level-exam’ (for native speakers)

c. RMB (< Rènmínbi) 人民币 ‘Chinese currency’ lit. ‘people-currency’

The Mandarin initialisms in (1) are formed with a process of abbreviation borrowed
from English, and probably also from other Western languages, in which the first letters
of succeeding words or syllables are combined to form an initialism.\textsuperscript{50} English words serve as examples from which Mandarin initialisms are formed by analogy through borrowed process of abbreviation. The Mandarin initialisms HSK and PSC are created by analogy with English initialisms formed by taking the first letter of each (content) word in the expression and combining the letters in the written form. The \textit{pīnyīn} initialisms HSK and PSC are formed in an analogous manner by combining the first letter of each romanized compound, as shown in (2).

(2) \textit{Graduate Record Examination} : GRE
\textit{Hányǔ Shuǐping Kāoshi} : \textit{X} = HSK ‘Chinese proficiency test’
lit. ‘Chinese-level-exam’ (for non-native speakers)

\textit{Pǔtōnghuá Shuǐping Cèshì} : \textit{X} = PSC ‘national language proficiency exam’
lit. ‘common language-level-exam’ (for native speakers)

In contrast to (2), English initialisms can also be formed by combining the first letters of successive syllables (e.g., \textit{TV} = \textit{TeleVision}, \textit{PJs} = \textit{PaJamas}) (Hock and Joseph 1996: 302). This alternate way of forming initialisms has also been borrowed into Mandarin, and initialisms in \textit{pīnyīn} are formed in the same manner by analogy with other similarly created forms. The first letter of successive syllables is used in some Mandarin initialisms, creating forms such as \textit{RMB} in (1), in which \textit{R} and \textit{M} stand for the first roman letter in the root words \textit{rén} ‘person’ and \textit{mín} ‘people, masses’ which combine to form the compound \textit{rénmín} ‘people’. The letter \textit{B} stands for the word \textit{bì} ‘currency’.

\textsuperscript{50} Although the initialisms in (1) are actual dictionary entries, the initialisms \textit{PSC} and \textit{RMB} are normally used only in print, and then only in limited contexts. For example, \textit{PSC} is used in the booklet that records test-takers’ score on the exam, and \textit{RMB} is used in the financial press. When referring to \textit{PSC} and \textit{RMB} in speech, most speakers use the morpheme-character equivalents of these words, \textit{Pǔtōnghuá Shuǐping Cèshì} and \textit{rénmínbì. HSK} is used more broadly in speech, however, as pointed out earlier. The \textit{HSK} test is
Although native initialisms are created in part by analogy with English initialisms, they are also formed by analogy with Mandarin initialisms. RMB, for example, is created with reference to TWD ‘Taiwan Dollar’ and HKD ‘Hong Kong Dollar’, in which each morpheme is abbreviated by a roman letter, as shown in (3).

\[
(3) \quad \text{Taiwan Dollar: TWD} \quad (tài 台 and wān 灣 are separate morphemes in Mandarin)
\]

\[
\text{Hong Kong Dollar: HKD} \quad (Hong Kong consists of the two morphemes 香港 romanized as Hong Kong in English and as Xiāng gāng in Mandarin; 香港 is pronounced as [hæŋ kɒŋ] in Cantonese)
\]

\[
\text{Rénmínbi: X = RMB} \quad (币 bi ‘currency’ is analogous to dollar in this context)
\]

Liu (2001) gives additional examples of pīnyīn initialisms not found in the Xiàndài Hányǔ Cìdiǎn ‘Modern Mandarin Dictionary’ which are formed with the processes of abbreviation just discussed. ZRG (< Zhōnghuá Rénmín Gònghéguó 中华人民共和国) ‘People’s Republic of China’ is formed by combining the first letters of the words in the expression in a manner similar to the initialisms in (2). The letters Z, R, and G abbreviate the compounds Zhōnghuá 中华 ‘China’, Rénmín 人民 ‘people’, and Gònghéguó 共和国 ‘republic’ just as the letters H, S, and K abbreviate the compounds Hányǔ 汉语 ‘Chinese’, shuǐpíng 水平 ‘level’, and kǎoshì 考试 ‘exam’ in (2). The initialism GB ‘national standard’ is formed by reducing each word in guóbìào, the romanized form of the Mandarin abbreviation 国标, to its first letter. The abbreviation guóbìào 国标 is formed from the compounds guójìa 国家 and bāo zhǔn 标准 in the expression, guójìa bāo zhǔn

administered to non-native speakers, and the nature of communication with foreigners regarding the test may lead to greater use of the initialism than its Mandarin equivalent.
国家标准 ‘national standard’. The first morpheme-character in each compound is used to abbreviate the compound, and the first letter of the romanized form of those morpheme-characters is then used in the initialism.

Mandarin initialisms can sometimes also be formed from intermediate levels of a compound’s branching structure. For example, in JF, which abbreviates jiniàn yóuzī fēng 纪念邮资封 ‘commemorative postage envelope’, J abbreviates jiniàn 纪念 ‘commemorative’, and F abbreviates fēng 封 ‘envelope’, but there is no Y to abbreviate yóuzī 邮资 ‘postage’. The reason for this is that the initialism is created from a higher level of the word’s branching structure. Rather than using the lowest level of the compound’s branching structure, that is, [jiniàn][yóuzī][fēng], the initialism is formed from the next higher level of branching: [jiniàn yóuzī][fēng]. Initialisms formed in this manner are less common than those which abbreviate the romanized form of each morpheme-character in a compound (e.g., RMB [< rénmínbi] ‘China’s national currency’) or each compound in a phrase (e.g., HSK [< Hányǔ Shuǐpíng Kǎoshi] ‘Chinese Proficiency Exam’ for non-native speakers).

6.3 Creating Hybrid Neologisms by Analogy with Other Hybrid Words

6.3.1 Hybrid Borrowings

Hybrid neologisms are created with the same processes as foreign borrowings natively as hybrid words. In Table 5.1 in Chapter 5, we gave examples of hybrid borrowed words adapted as an ‘orthographic loan and a native adjunct’ or as an ‘orthographic loan and a basic borrowing process’. We noted that hybrid borrowed words
have forms similar to borrowings nativized as a ‘phonetic loan and a native adjunct’ or as a ‘phonetic loan and a basic borrowing process’. Not surprisingly, hybrid neologisms also have structures like those of hybrid borrowed words. The lettered component is normally the modifier, and it is placed in the same position as the lettered component in hybrid borrowed words (i.e., the same slot as X in X 光 X guāng ‘X-ray’, for example). The Mandarin component is normally the head, and it is placed in the same position as the native explicative adjunct (e.g., 病 bing ‘disease’ in MS 病 MS bing ‘MS’ lit. ‘MS-disease’) or the component adapted with the basic borrowing process (e.g., the calque 光 guāng ‘ray’ in X 光 X guāng).

Hybrid neologisms are also formed by analogy with specific hybrid borrowed words nativized as an ‘orthographic loan and a native adjunct’ or as an ‘orthographic loan and a basic borrowing process’. Some hybrid neologisms use the same roman letter component as their borrowed counterpart. For example, the prefix e- in the neologism e 家庭 e jiā tíng ‘e-family’ is the same as e- in the borrowing e 商务 e shāngwù ‘e-commerce’.

Other hybrid neologisms use a natively coined lettered component that corresponds to one that is borrowed. For example, the natively coined initialism VAD in VAD 牛奶 VAD niú nǎi ‘milk with vitamins A and D’ lit. ‘VAD-milk’ corresponds to the borrowed initialism UHT in UHT 牛奶 UHT niú nǎi ‘UHT milk’ [UHT < ultra high temperature].

The roman letter components are combined with a Chinese morpheme-character component that corresponds to a native adjunct or an element adapted through a basic borrowing process. Examples are shown in Table 6.1.

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51 Thanks to Mary Beckman for pointing out this fact about Chinese initialisms.
### Hybrid Neologisms

<table>
<thead>
<tr>
<th>lettered orthographic component</th>
<th>Chinese orthographic component</th>
<th>Chinese meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. XO 酱 [ekʰs.əu] jiàng XO</td>
<td>+ jiàng ‘sauce’</td>
<td>‘XO sauce’</td>
</tr>
<tr>
<td>b. DINK 夫妇 [tiŋ.kʰ(ə)] fūfū DINK</td>
<td>+ fūfū ‘couple’</td>
<td>‘DINK-couple’ (DINK &lt; double income no kids)</td>
</tr>
<tr>
<td>d. F号 [ɛ̃(u)] hào F</td>
<td>+ hào ‘size’</td>
<td>‘one size’ (F &lt; free)</td>
</tr>
</tbody>
</table>

### Hybrid Borrowed Words with the Same Structure

<table>
<thead>
<tr>
<th>orthographic loan</th>
<th>native adjunct</th>
<th>orthographic basic borrowing process</th>
<th>native meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. XO 酒 [ekʰs.əu]jiǔ XO</td>
<td>+ jiǔ ‘liquor’</td>
<td>(UHT &lt; extra old)</td>
<td>‘XO’ (XO &lt; extra old)</td>
</tr>
<tr>
<td>b. DINK 家庭 [tiŋ kʰ(ə)]jiātíng DINK</td>
<td>+ jiātíng ‘family’</td>
<td>‘DINK family’</td>
<td>‘DINK family’</td>
</tr>
<tr>
<td>d. S号 [es(ŋ)] hào S</td>
<td>+ hào ‘size’</td>
<td>(sem. loan) ‘size small’</td>
<td>‘small size’</td>
</tr>
</tbody>
</table>

Table 6.1: Hybrid Neologisms Formed by Analogy with Hybrid Borrowed Words

The lettered neologisms in Table 6.1 have the same structure as borrowings nativized with an ‘orthographic loan and a native adjunct’ and an ‘orthographic loan and a basic borrowing process’. Both hybrid borrowings and hybrid neologisms have a lettered orthographic component in the modifier position and a Chinese character element in the head position.

---

52 XO jiàng XO 酱 ‘XO sauce’ is a type of seafood/barbecue sauce used in Hong Kong and Taiwan.
Table 6.1 shows examples of hybrid neologisms formed by analogy with particular English words that are borrowed as hybrid loans. In examples a) and b) in Table 6.1, the borrowed lettered component is retained in the hybrid neologism, and the native component is changed to a new word. \( \text{XO 酱 XO jiàng 'XO sauce'} \) is formed on the basis of the borrowing \( \text{XO 酒 XO jiǔ 'XO liquor'} \). In \( \text{XO jiǔ 'XO liquor'} \), 酒 jiǔ 'liquor' is a native adjunct added to clarify the meaning of XO. The combination \( \text{XO jiǔ} \) then serves as the pattern for \( \text{XO jiàng 'XO sauce'} \), in which 酱 jiàng is not an optional adjunct but a native orthographic component. Similarly, the neologism \( \text{DINK 夫妇 DINK fūfù 'DINKs' lit. 'DINK-couple'} \) could be formed on the basis of the borrowing \( \text{DINK 家庭 DINK jiātíng 'DINK family'} \), which adds the native adjunct 家庭 jiātíng 'family' to express the semantic category of the foreign acronym. The proportions for creating the neologisms \( \text{XO jiàng and DINK fūfù by analogy with corresponding hybrid borrowed words are shown in (4a) and (4b).} \)

\[(4a) \quad \text{酒 : 酱 jiǔ : jiàng 'liquor : sauce'}\]
\[ \text{XO 酒: X = XO 酱 XO jiàng 'XO liquor: X = XO sauce'} \]

\[(4b) \quad \text{家庭 : 夫妇 家庭 jiātíng : fūfù 'family : couple'}\]
\[ \text{DINK 家庭: X = DINK 夫妇 DINK jiātíng : DINK fūfù 'DINK family: X = DINK couple'} \]

The combination \( \text{DINK 家庭 DINK jiātíng} \) also serves as the pattern for other analogous DINK-related collocations, including \( \text{DINK 家族 DINK jiāzū 'DINK clan/family'} \), \( \text{DINK 时尚 DINK shìshí 'DINK fashion'} \), \( \text{DINK 专栏 DINK zhūānlán 'DINK special column'} \), and others. \( \text{XO 酒 XO jiǔ} \) may also provide a pattern for further
coinages, but thus far, it appears that its use has been limited to the neologism *XO* 酱 *XO jiàng* ‘XO sauce’.

Two steps are needed to form the hybrid neologisms in examples c) and d) in Table 6.1. First, an initialism is coined on the basis of the borrowed English initialism, and then the structure of the hybrid borrowed word is used to form the neologisms as in 4a and 4b. *Vitamin A (and) D* is shortened to *VAD* just as the borrowed initialism *UHT* is shortened from *ultra high temperature*. *VAD* is then attached to 牛奶 *niúnǎi* ‘milk’ just as *UHT* is attached to 牛奶 *niúnǎi* ‘milk’. The process for creating *VAD niúnǎi* by analogy with *UHT niúnǎi* is shown in (5).

(5) \[
\begin{align*}
\text{ultra high temperature} : & \ UHT \\
vitamin A (and) D : & \ X = VAD \\
UHT : & \ UHT \text{ 牛奶} \\
VAD : & \ X = VAD \text{ 牛奶} \\
\text{UHT} : & \ UHT \text{ niúnǎi} \quad \text{‘UHT : UHT milk’} \\
\text{VAD :} & \ X = \text{VAD} \text{ niúnǎi} \quad \text{‘VAD : VAD milk’}
\end{align*}
\]

In *F 号* *F hào* ‘free size’, *F* abbreviates *free* in the same manner as the borrowed initialisms *S*, *M*, and *L* abbreviate the words *small*, *medium*, and *large*. *F* is attached to 号 *hào* ‘size’ just as *S*, *M*, and *L* are attached to *hào*. The process is shown in (6).

(6) \[
\begin{align*}
\text{small} : & \ S \\
\text{free} : & \ X = F \\
S : & \ S 号 \\
F : & \ X = F 号 \\
\text{S : S hào} \quad \text{‘S : S size’} \\
\text{F : X = F hào} \quad \text{‘F : F size’}
\end{align*}
\]

6.3.2 Hybrid Neologisms

Hybrid borrowed words such as those in Table 6.1 serve as one source of patterns for hybrid neologisms, but hybrid creations are also formed by analogy with hybrid words that are coined natively and do not have corresponding borrowed forms. Hybrid
neologisms usually have the form we have come to expect over the course of this study: the lettered unit is usually the modifier, and the native adjunct is the head. Examples are shown in Table 6.2.

<table>
<thead>
<tr>
<th>1. Borrowed Initialisms and Acronyms</th>
<th>Chinese orthographic component</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRE 族 [tɕi.ar.ji] zú</td>
<td>GRE + zú ‘category’ ‘GRE group’</td>
</tr>
<tr>
<td>TOEFL 族 [tua.tu] zú</td>
<td>TOEFL + zú ‘category’ ‘TOEFL group’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Natively Coined Initialisms</th>
<th>Chinese orthographic component</th>
</tr>
</thead>
<tbody>
<tr>
<td>G 族 [tɕi] zú</td>
<td>G + zú ‘category’ ‘G group’ (G &lt; GRE)</td>
</tr>
<tr>
<td>T 族 [tʰi] zú</td>
<td>T + zú ‘category’ ‘T group’ (T &lt; TOEFL)</td>
</tr>
<tr>
<td>BO 族 [pi.əu] zú</td>
<td>BO + zú ‘category’ ‘BO group’ (BO &lt; burned out)</td>
</tr>
<tr>
<td>STS 教育 [es(t).i.es(t)] jìàoyù</td>
<td>STS + jìàoyù ‘education’ ‘STS education’</td>
</tr>
<tr>
<td>TDK 现象 [tʰi.t.kʰi] xiànxìàng</td>
<td>TDK + xiànxìàng ‘phenomenon’</td>
</tr>
<tr>
<td>‘TDK phenomenon’</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Roman Letters Used as Labels</th>
<th>Chinese orthographic component</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA 制 [ei.ei] zìhì</td>
<td>AA + zìhì ‘system’ ‘splitting the bill’</td>
</tr>
<tr>
<td>AB 制 [ei.pi] zìhì</td>
<td>AB + zìhì ‘system’ ‘using two actors to play one role’</td>
</tr>
<tr>
<td><strong>Taiwan usages:</strong></td>
<td></td>
</tr>
<tr>
<td>A 拷 [ei] kǎo</td>
<td>A + kǎo ‘copy’ ‘copy of a master videotape’</td>
</tr>
<tr>
<td>B 拷 [pi] kǎo</td>
<td>B + kǎo ‘copy’ ‘copy of the A copy of a videotape’</td>
</tr>
<tr>
<td>A 餐 [ei] cān</td>
<td>A + cān ‘meal’ ‘(set) meal A’</td>
</tr>
<tr>
<td>B 餐 [pi] cān</td>
<td>B + cān ‘meal’ ‘(set) meal B’</td>
</tr>
</tbody>
</table>

Table 6.2: Hybrid Neologisms Formed by Analogy with Other Hybrid Coinages

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53 The current focus in China’s educational system on science, technology, and sociology rather than political ideology.

54 The three preoccupations of young people in China: TOEFL, dancing, and kissing.

Table 6.2 provides examples of hybrid neologisms with three different types of lettered elements: 1. borrowed initialisms or acronyms, 2. natively coined initialisms, and 3. individual roman letters that denote part of the meaning of the hybrid word. In the first group, a borrowed initialism or acronym is combined with a Mandarin word to create a word not found in English. \textsc{GRE} 族 \textit{GRE} zú ‘GRE group’ and \textsc{TOEFL} 族 \textit{TOEFL} zú ‘TOEFL group’ combine the borrowed elements \textit{GRE} and \textit{TOEFL} with the Mandarin bound root 族 zú ‘group’ to form a compound. These two neologisms have parallel meanings and forms: both refer to exams taken to apply for study in the United States, and both use a native morphological pattern in which 族 zú ‘group’ combines with a modifier to signify a type of ‘group’. Hybrid constructions that combine words with 族 zú ‘group’ form members of a head family in Mandarin that includes many different types of native and borrowed 族 zú ‘group’. Productive patterns in Mandarin such as [X]ₙ: [X [zú]ₙₙ] are discussed in a later section.

The next set of hybrid neologisms in Table 6.2, \textsc{G} 族 \textit{G} zú ‘G(RE) group’ and \textsc{T} 族 \textit{T} zú ‘T(OEFL) group’, involves the use of natively coined initialisms that abbreviate borrowed initialisms. Initialisms borrowed from English are shortened and used to coin new hybrid words. \textit{GRE} and \textit{TOEFL} are abbreviated to \textit{G} and \textit{T} to shorten the already existing neologisms \textsc{GRE} 族 \textit{GRE} zú ‘GRE group’ and \textsc{TOEFL} 族 \textit{TOEFL} zú ‘TOEFL group’ to the disyllabic compounds \textsc{G} 族 \textit{G} zú and \textsc{T} 族 \textit{T} zú. It is worth noting that the Chinese and roman letter components of these compounds are symmetrical in several ways. \textit{G} and \textit{T} and the morpheme-character 族 zú are all discrete graphs; each functions as an individual morpheme; and each is pronounced as an individual syllable ([tœi], [tʰi], 163
and [tsu]). The symmetrical use of Chinese and roman letter units in this way may provide evidence of the Hansell’s (1989) proposal regarding the Sino-alphabet, namely, that roman letters tend to be used and interpreted in Mandarin in the same way as Chinese morpheme-characters. Similarities in the use of roman letters and Chinese morpheme-characters in hybrid neologisms such as 族 G zú and 族 T zú may be motivated by a desire to treat both elements as the same kind of linguistic unit, that is, a Chinese zi.

In the next set of hybrid neologisms, initialisms are coined to abbreviate English expressions or series of words and are then used to coin hybrid expressions. 匍族 BO zú ‘burned out group’ is formed by abbreviating the English expression ‘burned out’ as an initialism and adding bound root 族 zú ‘group’ to it. The word is formed with the same compounding pattern as GRE 族 GRE zú, TOEFL 族 TOEFL zú, G 族 G zú, and T 族 T zú, in which 族 zú is the head and the lettered element is the modifier. 族教教育 STS jiào yù ‘STS education’ (STS < science, technology, sociology), and 现象 TDK xiàn xiàng ‘TDK phenomenon’ (TDK < TOEFL, dance, kiss) are coined by abbreviating a series of English words with an initialism and adding a native head for which the lettered initialism serves as a modifier.

The third type of hybrid neologism in Table 6.2 uses roman letters individually as labels to denote an aspect of the meaning of the hybrid word. Roman letter elements in these words do not abbreviate morphemes or words in English or in pinyin romanization. Rather, they are used as labels to represent an order or a relationship between two or more elements. In A 抄 A kāo ‘copy of a master videotape’ lit. ‘A-copy’ and B 抄 B kāo ‘copy of an A copy of a videotape’ lit. ‘B-copy’, A stands for the first or original item,
and B stands for the copied item. In AA 制 AA zhi ‘splitting the bill’ lit. ‘AA-system’ and AB 制 AB zhi ‘using two actors to play one role’ lit. ‘AB-system’, AA symbolizes the equal contribution of the two parties in the bill-paying 制 zhi ‘system’, and AB represents the two parties involved in the acting 制 zhi ‘system’ (and possibly their order). In A 餐 A cān ‘(set) meal A’ and B 餐 B cān ‘(set) meal B’, the letters A and B are used as a shorthand for naming set meals in a restaurant (e.g., A 餐 A cān might be a set meal with chicken, while B 餐 B cān might be a set meal with fish). Each of the examples uses roman letters to place entities in a particular order or to express a relationship between them. These hybrid neologisms and the others in Table 6.2 are formed by analogy with one another rather than by analogy with English words since the combinations they involve do not exist as regular collocations in English.

6.3.3 Translation Equivalents of Hybrid Neologisms

Hybrid neologisms sometimes have a translation or transcription equivalent that has the same meaning and structure as the hybrid neologism. In each case, the lettered component is adapted through one of the traditional borrowing processes in Table 4.1 in Chapter 4, and the Mandarin component is the same in both types of words. Also, as in hybrid borrowed words, the Mandarin component is the head, and the lettered component is the modifier.

Although sinicized equivalents contain only Mandarin morpheme-characters rather than a combination of lettered and Mandarin components, they have the same meaning and structure as the corresponding hybrid neologisms. The hybrid neologisms and their

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nativized equivalents are closely related to each other. They would be classified in the same component of our model of the Mandarin lexicon discussed in Chapter 3 but would appear in different parts of the component based on their orthography. ‘One size’ lit. ‘F(size)’, for example, would appear twice in the foreign-influenced component in the revised model of the lexicon: once in the ‘Chinese characters + roman letters’ section as **F hào** and once in the ‘Chinese characters only’ section as its sinicized equivalent **jūnhào** ‘one size’ lit. ‘equal-size’. Table 6.3 shows the sinicized equivalents of several hybrid neologisms.

<table>
<thead>
<tr>
<th>lettered</th>
<th>orthographic component</th>
<th>native stem</th>
<th>borrowing</th>
</tr>
</thead>
<tbody>
<tr>
<td>hybrid neologisms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. F 号 F hào  F + hào ‘size’ ‘one size’ lit. ‘F(size)’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. K 金 K jīn K + jīn ‘gold’ ‘alloyed gold’ lit. ‘carat-gold’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. BP 机 BP jī BP + jī ‘machine’ ‘beeper’ lit. ‘B(ee) P(er) machine’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. e 化 e huà e + huà ‘-ize’* ‘electronicize’ lit. ‘e-ize’</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*huà as a suffix is discussed in section 6.5.1

<table>
<thead>
<tr>
<th>sinicized equivalents</th>
<th>borrowing process for the lettered component</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 均号 jūnhào ‘free size’ lit. ‘equal-size’</td>
<td>semantic loan</td>
</tr>
<tr>
<td>b. 开金 kāijīn ‘alloyed gold’ lit. ‘K(arat)-gold’</td>
<td>phonetic loan</td>
</tr>
<tr>
<td>c. 呼机 hūjī ‘beeper’ lit. ‘call-machine’</td>
<td>semantic loan</td>
</tr>
<tr>
<td>d. 电子化 diànzhīhuà ‘electronicize’ lit. ‘electron-ize’</td>
<td>native creation</td>
</tr>
</tbody>
</table>

Table 6.3: Translation and Transliteration Equivalents of Hybrid Neologisms

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**56** BP is an abbreviation for beeper borrowed from English, but the abbreviation is not used frequently in English.
The examples in Table 6.3 all have a sinicized equivalent that exists in parallel with the hybrid neologism. In each pair, one of the two words may be used more frequently than the other word, or it may be used in certain contexts. For example, some hybrid words may be used in writing, while their sinicized equivalents are used in speech. Semantic adaptation, phonetic adaptation, or native creations are used to nativize the lettered component of the hybrid word. Simultaneous phonetic loan/native creations are also possible, but no examples were found in our data.

6.4 Common Structures and Use of Compounding Patterns

6.4.1 Morphological Structure

Like many hybrid borrowed words, hybrid neologisms have the structure [M N]N. In many words, the structure is [N1 N2]N, and the two components have a hierarchical relationship, usually of the form ‘N1 is a type or subclass of N2’. Several of the words in Tables 6.1 and 6.2 have this structure. For example, in GRE 族 GRE zú, GRE is N1 and zú is N2, such that GRE 族 GRE zú is a type of 族 zú, and in STS 现象 STS xiànxiàng ‘STS phenomenon’, STS is N1 and 现象 xiànxiàng ‘phenomenon’ is N2; an STS 现象 STS xiànxiàng is a type of 现象 xiànxiàng ‘phenomenon’. Several words also have the

structure \([A \text{ N}]_N\), in which the adjective modifies the noun. For example, in BO 族 \(BO \text{ zú}\) 'burned out group', \(BO\) modifies 族 zú; in \(F \frac{1}{2} F \text{ hào}\) ‘one size’ lit. ‘f(ree)-size’, \(F\) modifies \(\frac{1}{2} hào\), and so on.

The examples in Table 6.2 which use roman letters as labels are more difficult to classify in terms of lexical categories since they refer to particular entities in a symbolic manner. For example, in AA 制 \(AA \text{ zhi}\) ‘splitting the bill’ lit. ‘AA-system’ and AB 制 \(AB \text{ zhi}\) ‘using two actors to play one role’ lit. ‘AB-system’, the letters \(AA\) and \(AB\) represent the nature of the ‘system’, with \(AA\) symbolizing ‘same’ or ‘equal’ and \(AB\) symbolizing ‘different’. The abstract nature of the relationship between the roman letters and their referents makes them difficult to classify in particular lexical categories. Nonetheless, the structural relationship between labels and Chinese morpheme-character components in hybrid words is the same as in other hybrid words. In most cases, the roman letter label is the modifier, and the Chinese component is the head.

Based on our examples in Tables 6.1 to 6.3, we can conclude that hybrid neologisms with any structure \([X \text{ N}]_N\) will normally be endocentric and will usually have a head on the right. The Chinese morpheme-character component is most frequently the noun on the right and almost always serves as the head, and the lettered element, no matter what its lexical category, is normally on the left and almost always serves as the modifier.

### 6.4.2 Extension of Compounding Patterns

Hybrid neologisms are formed with compounding patterns that position the words in existing Mandarin head families which have natively formed compounds, words nativized with traditional borrowing processes, and other hybrid words as members.
Hybrid neologisms normally have the structure \([X \text{ N}]_N\) in the same manner as the other words in these head families. In most cases, the head noun represents a general semantic category in Mandarin, and hybrid neologisms become subordinate categories under it.

For example, 制 zhi ‘system’ represents a semantic category in Mandarin, and there are many words that share the pattern \([X\text{ N}]_N: [X [zhi]_N]\) to denote various types of 制 zhi. Examples include 三班制 sānbān zhi ‘system of working in three shifts’ lit. ‘three-shift-system’, 两党制 liǎngdǎng zhi ‘two-party system’, and 学分制 xuéfēn zhi ‘credit system’ lit. ‘study-point-system’. Other similar patterns have an adjective or verb as the first component and 制 zhi as the second component (e.g., 公 gōngzhi ‘metric system’, in which 公 gōng ‘metric’ is an adjective, and 建制 jiànzhi ‘build-system’ ‘organizational system’, in which 建 jiàn ‘build’ is a verb). The hybrid words AA制 AA zhi ‘splitting the bill’ lit. ‘AA-system’ and AB制 AB zhi ‘using two actors to play one role’ lit. ‘AB-system’ represent new types of zhi ‘system’ added to the constituent family headed by zhi.

Throughout this study, we have focused on the use of word formation and borrowing strategies that position hybrid words in particular ‘head families’. New hybrid words are also formed through the extension of compounding patterns and by analogy with existing hybrid words to become members of ‘modifier families’. The formation of XO酱 XO jiàng ‘XO sauce’ by analogy with XO酒 XO jiǔ ‘XO liquor’ is an example. These two words are currently the only members of the XO modifier family, but other members may be added. In contrast, the DINK modifier family has many more members, including DINK家庭 DINK jiātíng ‘family’, DINK家族 DINK jiāzū ‘DINK clan/family’, DINK
Words such as these with DINK as the modifier are simultaneously members of a
Mandarin head family (e.g., 族 zú ‘group’ for DINK 族 DINK zú ‘DINK group’) and a
roman letter modifier family (DINK). We have not explored the characteristics of hybrid
words as members of modifier families in the current study, but this issue deserves
attention in further research on hybrid words.

6.5 Productive Morphemes in Hybrid Coinage: e-, TV, 車 chē, 卡 kǎ, 机 jī, 族 zú

In examining hybrid neologisms and borrowings nativized as hybrid words, we have
found that several Chinese and English morphemes are productive in the formation of
these words. They appear frequently in new lettered terms in specific morphological
patterns. Use of these morphemes in borrowing and coinage demonstrates that lettered
 borrowings and neologisms are formed by analogy with existing forms in the foreign,
foreign-influenced, and native components of the lexicon and through the extension of
compounding patterns. Lettered words formed with abbreviatory processes used in
English indicate that those processes have been borrowed into Mandarin.

6.5.1 e- prefix

One particularly productive morpheme used in borrowing and coinage with lettered
elements is the English prefix e- (< electronic). Since the prefix e- is borrowed rather than
native and since the number of e- prefixed words in Mandarin is still limited, we suggest
that new e- prefixed words are formed by analogy with existing e- prefixed words in the
foreign and foreign-influenced components of the Mandarin lexicon. One example of borrowing and word creation with the e- prefix is shown in (7).

<table>
<thead>
<tr>
<th>component of the lexicon</th>
<th>example</th>
<th>word formation process</th>
</tr>
</thead>
<tbody>
<tr>
<td>foreign</td>
<td>e-mail (&lt; electronic mail)</td>
<td>adopted as a pure loanword</td>
</tr>
</tbody>
</table>
| foreign                  | commerce: 商务 shāngwù ‘commerce’
                          | e-commerce: X = e 商务 e shāngwù  ‘e-commerce’ | nativized as an ‘orthographic loan & calque’ |
| foreign -influenced      | 商务 shāngwù: 家庭 jiāzú ‘e-commerce’
                          | e 商务 e-shāngwù : X = e 家庭 e jiāzú  ‘e-clan/family’ | coined by analogy with words such as e 商务 e shāngwù  ‘e-commerce’ |

The word e-mail in (7) was adopted directly into Mandarin without nativization (however, the native creation 电子邮件 diànzi yóujiàn ‘electronic mail’ is also used in parallel with e-mail). Since e-mail is one of the earliest e-preixed borrowings in Mandarin, other e-preixed words in the foreign and foreign-influenced components of the Mandarin lexicon are most likely formed by analogy with it. If we assume, for example, that the word e 商务 e shāngwù ‘e-commerce’ was borrowed before the neologism e 家庭 e jiāzú ‘e-clan/family’ was created, we can show the entry of these words into Mandarin as in (7).

The term e-commerce was nativized as an ‘orthographic loan and calque’ as the hybrid word e 商务 e shāngwù ‘e-commerce’. The term e 家庭 e jiāzú ‘e-clan/family’ was then formed on the basis of e 商务 e shāngwù. The structure of the words is the same: the derivational prefix e- is the modifier on the left, and the Mandarin noun is the head on the right, forming an [A N]_N structure.

Although we have described the formation of e- prefixed words as cases of word formation by analogy with particular words in the Mandarin lexicon, there are enough e-
prefixed nouns in Mandarin now that a productive derivational pattern \([X]_N : [e-X]_N\) has been established, in which the modifier is the English prefix \(e\)-, and the head noun is a Mandarin root word or compound. Words created with this pattern form a modifier family to which new \(e\)-prefixed borrowings and native creations are added. Hybrid words prefixed with \(e\)- are also members of the head families to which their Mandarin component belongs. The \(e\)-prefixed examples we have discussed provide evidence of Krott et al.'s (2001) finding that the ‘constituent family’, that is, the family of the first or second constituent, is the primary basis for analogical prediction in nominal compounds.

6.5.2 \(e\) 力 \(e\)-huà

Among \(e\)-prefixed hybrid words in Mandarin, \(e\) 力 \(e\)-huà [e-ize] ‘electronicize’ is one example of a word formed somewhat differently from the examples in (7), and it does not fit the modifier family of words that share the pattern \([X]_N : [e-X]_N\). The word \(e\) 力 \(e\)-huà consists of a derivational prefix, the lettered prefix \(e\)-, attached to the derivational suffix, 力-huà, the equivalent of the English suffix ‘-ize’ semantically (Li and Thompson 1981: 42). Huà is a semantic and derivational borrowing that may have entered Chinese via Japanese. It serves as one of few derivational affixes in Mandarin, making verbs from nouns and adjectives (e.g., 氧化 yánghuà ‘oxidize’ lit. ‘oxygen-ize’ and 老化 lǎohuà ‘age’ lit. ‘old-ize’). Although -huà is not an indigenous affix, Chan and Tai (1995: 49-50) consider huà suffixation to be an important part of verbalization in Mandarin.

In \(e\) 力 \(e\)-huà, the derivational pattern of this suffix has been extended to a lettered element, the derivational prefix \(e\)-. The word \(e\)-huà is formed by analogy with native -huà
suffixed forms in which a verb is created from an adjective. It is motivated by proportions of the type: 老 lào ‘old’ : 老化 làohuà ‘age’; 纯 chún : 纯化 chúnhuà ‘purify’, and so on. Huà suffixed words that share the derivational pattern [X]A : [X-huà]V form the head family to which e 化 e huà has now been added.

The word e 化 e huà is the only example we have found of a hybrid word that can be characterized as a ‘derived word’, a free or bound root and a word-forming affix, in Packard’s (2000) typology of gestalt Chinese words. It is the only hybrid word we have identified thus far in which a lettered element is combined with a morpheme-character representing a derivational affix (化 -huà “-ize”). Mandarin has only a small number of derivational affixes, most of which have been borrowed, that could be employed in the creation of hybrid words. In light of this limitation, we suggest that it is the unique meaning and function of -huà as the equivalent of English ‘-ize’ that makes the combination of e- and -huà possible; Mandarin has no indigenous suffix that could carry out an equivalent derivational function. It is also worth noting that although the form e 化 e-huà deviates from the [Mod N]N structure of most hybrid words, it nonetheless follows the general pattern we have identified for hybrid words. The Mandarin morpheme-character component serves as the head and the lettered element serves as the modifier.

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58 Li and Thompson (1981: 36-45) discuss derivational and inflectional affixes in Mandarin. They list the following derivational suffixes in Mandarin: 儿 -er (diminutive suffix for nouns, e.g. 块 kuài ‘piece’ vs. 块儿 kuàir ‘small piece’); 学 -xué (equivalent to English -ology, e.g. 社会学 shèhuìxué ‘sociology’ lit. ‘society-ology’); 家 -jiā
6.5.3 TV

The word TV is the only English morpheme we have found so far that serves as the head of lettered words. Unlike other English units, such as the prefix e-, which normally function as modifiers for Mandarin heads, TV is used productively as a head in lettered words. One explanation for this may be that TV has become such a commonly and frequently used loanword in Mandarin that it is familiar enough to Mandarin speakers to serve as a 'native' head in Mandarin words.

Speakers in Taiwan have used the morpheme TV to coin several initialisms, some of which are shown in (8), and speakers in the P.R.C. coined the hybrid word in (9).

<table>
<thead>
<tr>
<th>(8) component of the lexicon</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>foreign</td>
<td>MTV 'music television' adopted directly</td>
</tr>
<tr>
<td>foreign-influenced</td>
<td>karaoke &gt; K</td>
</tr>
<tr>
<td></td>
<td>M : K = MTV : KTV 'karaoke TV'</td>
</tr>
<tr>
<td>foreign-influenced</td>
<td>restaurant &gt; R</td>
</tr>
<tr>
<td></td>
<td>M : R = MTV : RTV 'restaurant TV'</td>
</tr>
<tr>
<td>foreign-influenced</td>
<td>barber(shop) &gt; B</td>
</tr>
<tr>
<td></td>
<td>M : B = MTV : BTV 'barber(shop) TV'</td>
</tr>
<tr>
<td>foreign-influenced</td>
<td>disco &gt; S</td>
</tr>
<tr>
<td></td>
<td>M : S = MTV : STV 'sleeping television' (recreational center)</td>
</tr>
</tbody>
</table>

| (9) foreign                                   | MTV 'music TV' adopted directly                                         |
| foreign-influenced                            | M : 相声 xiàngsheng =                                                    |
|                                              | MT V : 相声 TV xiàngsheng TV                                             |
|                                              | 'cross-talk TV'                                                         |

(equivalent to English -ist, e.g. 科学家 kēxuéjiā 'scientist', lit. 'science-ist'); 话 -huà (equivalent to English '-ize', e.g. 工业化 gōngyèhuà 'industrialize', lit. 'industry-ize').

The word MTV gained a new meaning in Taiwan. In addition to the meaning 'music television', MTVs are also a type of business where individuals can rent videos and watch them in a private room. MTVs were popular in the 1990s but have generally given way to KTVs, where individuals can rent a private room to sing karaoke to music videos on a television screen. It is the later meaning of MTV as a type of business that led to the creation of other -TV suffixed words representing similar types of businesses in Taiwan.
In (8), the natively created initialisms \textit{KTV}, \textit{RTV}, \textit{BTV}, and \textit{STV} (all from Liu 2001) are formed by analogy with the earlier borrowed form \textit{MTV} and also by analogy with one other. In each case, \textit{TV} is the head of the initialism, and the one-letter initialism before it is the modifier.

\textit{Xiàngsheng TV} 相声 TV ‘cross-talk television’ in (9) is a new art form in the P.R.C. that developed from \textit{xiàngsheng} 相声 ‘cross-talk’, a traditional humorous art form of verbal exchanges in northern China performed by two actors without sets or background music. According to Sun and Jiang (2000: 104), 相声 xiàngsheng was revitalized in 1993 on television through the use of music and film-making techniques, and the new art form was called 相声 TV xiàngsheng TV.

The word 相声 TV xiàngsheng TV shows a different development of \textit{TV} in both meaning and combinatorial properties than the neologisms in (8). While the suffix -\textit{TV} in (8) is associated with a type of business, in 相声 TV xiàngsheng TV, the word \textit{TV} has shifted to mean a type of ‘television performance (or program)’. In addition, the examples in (8) from Taiwan Mandarin are all initialisms that combine -\textit{TV} with a lettered modifier. A hybrid word using \textit{TV}, such as 相声 TV xiàngsheng TV, has yet to occur in Taiwan Mandarin.

\textit{Xiàngsheng TV} is one of few examples of hybrid words in which the modifier is a Mandarin word and the head is an English word. It reverses the predominant pattern we have seen throughout this study in which the Mandarin word is the head and the lettered component is the modifier. \textit{Xiàngsheng TV} is also unusual because \textit{TV} is preceded by a Mandarin word rather than a roman letter as it is in the examples from Taiwan Mandarin.
Words such as xiàngshēng TV may become more common in Mandarin as English loanwords and natively formed lettered neologisms become increasingly familiar to monolingual speakers.

6.5.4 车 chē, 卡 kǎ, 机 jī

The morpheme-characters 车 chē ‘vehicle’, 卡 kǎ ‘card’, and 机 jī ‘machine’ are productive in hybrid borrowing and coinage. Chē and kǎ are noun ‘root words’, or free morphemes, in Packard’s (2000: 74) typology of Chinese morphemes. They stand alone as words and also combine with other root words and bound roots to form compounds. Jī is a noun ‘bound root’ that combines with other free or bound roots to form compounds (e.g., 机器 jīqì ‘machine’ lit. ‘machine-tool’).

Chē ‘vehicle’ and jī ‘machine’ are particularly productive in native Mandarin word formation. Kǎ ‘card’ is also productive, but examples of compounds that use 卡 kǎ as a right-hand head are less numerous than those with 车 chē and 机 jī as right-hand heads.

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60 In Packard’s (2000: 74) typology, 车 chē combines with other morpheme-characters to create the following disyllabic words: 1. ‘compounds’, which are formed from two root words (e.g. 牛车 niúchē ‘ox cart’ lit. ‘ox-vehicle’); 2. ‘bound root words’, which combine a root word and a bound root or two bound roots (e.g. 车祸 chēhuò ‘car accident’ lit. ‘vehicle-misfortune’); and 3. ‘derived words’, which combine a bound root or root word and a word-forming affix (车子 chēzi ‘car’ lit. ‘vehicle-AFF’). Jī combines with other morpheme-characters to form ‘bound root words’ (呼机 hūjī ‘beeper’ lit. ‘call-machine’) and ‘derived words’ (机子 jīzi ‘machine’ lit. ‘machine-AFF’). Kǎ combines with other morpheme-characters to form ‘compounds’ (饭卡 fànkǎ ‘meal card’ lit. ‘food-card’) and ‘bound root words’ (贺卡 hèkǎ ‘greeting card’ lit. ‘congratulate-card’). For our purposes, Packard’s ‘compounds’ and ‘bound root words’ can both be considered compounds. Interestingly, with the exception of 电子 e-huà ‘(electronic)-ize’, in which the borrowing huà ‘-ize’ is a word-forming affix, we have found no hybrid ‘derived words’.
since kǎ has a more narrow meaning in Mandarin than chē and jī. The words chē, jī, and kǎ combine with modifiers, such that the combinations form sub-types of the general semantic categories denoted by chē, jī, and kǎ. For example, 电车 diànchē ‘streetcar’ lit. ‘electric-vehicle’ is a type of 耳机 ěrjī ‘earphones’ lit. ‘ear-machine’ are a type of 机 jī; and 生日卡 shēngrì kǎ ‘birthday card’ lit. ‘birth-day-card’ is a type of 卡 kǎ.

Chē and jī frequently serve as the native adjunct, calque, or semantic loan in traditional borrowing processes. For example, in 自行车 zìxíngchē ‘bicycle’ lit. ‘self-travel-vehicle’, 车 chē is a semantic loan, while in 洗衣机 xiǎyījī ‘washing machine’ lit. ‘wash-clothes machine’, 机 jī is a calque. Chē and jī also function as the native adjunct, calque, or semantic loan in hybrid borrowing and coinage (e.g., in MTB 车 MTB chē ‘mountain bike’ lit. ‘MTB-vehicle’, 车 chē is a semantic loan, while in PC 机 PC jī ‘PC’ lit. ‘PC-machine’, 机 jī is native adjunct).

Kǎ ‘card’ is a phonetic loan from the English word card. It is used in both traditional and hybrid borrowing and in coinage. There are many examples of different kinds of cards in Mandarin, such as 谢卡 xièkǎ ‘thank you card’ lit. ‘thank-card’ and 信用卡 xīnyòngkǎ ‘credit card’ lit. ‘trust-use-card’. Now, there are also cards that denote an entity expressed with roman letters, such as ID 卡 ID kǎ ‘ID card’, IP 卡 IP kǎ ‘IP telephone card’, and VIP 卡 VIP kǎ ‘VIP card’.

Use of the words chē ‘vehicle’, jī ‘machine’, and kǎ ‘card’ in hybrid borrowing and coinage indicates that their modifiers can now be lettered elements rather than simply
words expressed in Chinese morpheme-characters. Hybrid combinations are the newest members of the head families formed with چئ ‘vehicle’, じ ‘machine’, and 卡 ‘card’.

6.5.5 族 zu

The word zu is a bound root meaning ‘clan’, ‘race or nationality’, or a ‘class of things with common features’. It combines as a head with nouns, adjectives or phrases to form compounds meaning a ‘type of clan, race, or category’ (e.g., 大族 ��이 ‘a family with many branches’ lit. ‘big-clan’, 外族 wéizú ‘foreigner’ lit. ‘foreign-nationality’, 蒙古族 ménggǔzú ‘Mongolian nationality’ lit. ‘Mongol-nationality’). Zu is used productively in Mandarin to designate various clans, races, and groups of people. Its use has been extended in contemporary Mandarin to designate new categories of people that have emerged in modern society, such as 上班族 shàngbānzú ‘office workers’ lit. ‘go-to-work-group’, 打工族 dāgōngzú ‘temporary workers’ lit. ‘temporary-work-group’, and the humorous coinage in Taiwan Mandarin, 欧蕾族 óulèizú ‘women who use Oil of Olay skincare products’ lit. ‘Olay-group’, that is, women over thirty who use anti-aging skincare products.

Most recently, the patterns [X]N: [X zu]N and [X]A: [X zu]N, with the meaning ‘category of people’, have been extended to designate new groups in modern Chinese society. These groups are described with a borrowed or natively created initialism or acronym referring to an English word or expression. Examples of such groups include 软族 HO zu ‘home office group’, DINK族 DINK zu ‘DINK group’, BP族 BP zu ‘beeper group’, BO族 BO zu ‘burned out group’, and many others. Hybrid words formed
with 族 zú follow the usual structural pattern in hybrid word formation that we have 
documented throughout this study, that is, the lettered element is the modifier, and the 
native Mandarin morpheme 族 zú is the head. The meaning created by this combination 
is that the hybrid word is a ‘type of’ 族 zú. Thus, HO zú ‘HO group’ is a type of zú; DINK 
zú ‘DINK group’ is a type of zú, and so on. As with chē ‘vehicle’, jī ‘machine’, and kā 
‘card’, the use of zú in hybrid borrowing and coinage extends compounding patterns in 
which it is a head into the domain of lettered units. In particular, the patterns in which it 
appears are now used to name categories of people in modern society denoted by lettered 
elements. These new categories become subtypes under the basic Mandarin semantic 
category zú.
CHAPTER 7

CONCLUSION

Although roman letters are not a native form of orthography in Chinese, they have become part of Mandarin and are used creatively and productively in borrowing and coinage. Previous studies acknowledge the existence of lettered words but generally do not examine their structure in detail, nor do the studies necessarily treat lettered words as types of Chinese words. Our assumption in examining lettered words is that they are types of Chinese words and that their morphology can be analyzed in the same way as the morphology of other Chinese words. We aim to expand on previous research concerning lettered words to describe the morphology and semantics and lettered words as types of Chinese words. In this study, we compared traditional borrowing processes with the formation of lettered words to identify patterns in the structure of lettered words and in their expression of meaning, and to establish connections among lettered words and other words in Mandarin.

We divided lettered words into three types: 1) initialisms, 2. acronyms, and 2) hybrid words that include both a lettered component and a Chinese morpheme-character component in their written form. We developed a model of the Mandarin lexicon based on this classification that includes lettered words. The model is divided into three components: 1. the ‘native’ component consists of native Mandarin words, 2. the
'foreign' component consists of borrowed words, and 3. the 'foreign-influenced' component consists of neologisms that include a borrowed component. Each component is also subdivided according to the orthography used to write the words included in it. This is essential for understanding lettered words because they are frequently preferred in print in Chinese but may not be spoken by a large number of average speakers. Lettered words may also be used side by side with their Chinese morpheme-character equivalents (e.g., BP 吧 BP jì and 吧拟 hūjì both mean 'beeper').

We identify three types of orthographies for Chinese words: 1. words written only in Chinese characters, 2. words written only in roman letters, 3. and words written in a mixture of Chinese characters and roman letters. We suggest that the three components of the lexicon influence one another and that new words are formed by analogy with words in any or all of the three components. Compounding patterns are also extended from the native component to the foreign and foreign-influenced components so that native, foreign, and hybrid compounds all have the same morphological and semantic structure.

Words are formed with roman letters in the 'foreign', 'foreign-influenced', and 'native' components of the lexicon. Roman letters write borrowed initialisms, acronyms, and other words in the foreign component. They write either English units or units written in Mandarin pīnyīn romanization in the foreign-influenced component; and they write natively coined initialisms and labels in the native component. The use of roman letters to write words in Mandarin defies the commonly held view that words in Chinese must be written with Chinese characters (cf. Pasierbsky 1989, Zuckermann 2003). On the contrary, we find that words in Mandarin are new written in Chinese characters, or roman letters, or a mixture of Chinese characters and roman letters.
Initialisms are borrowed and coined most frequently in Mandarin, as evidenced by the prevalence of initialisms in the lettered word appendices of Mandarin dictionaries. The processes of forming initialisms in English and in other Western languages have been borrowed into Mandarin to augment native processes of forming abbreviations. Natively created initialisms are formed from English words (e.g., Fǔ F hào ‘one size’ lit. ‘free-size’ [F < free]) and words written in Mandarin pīnyīn romanization (e.g., RMB ‘Chinese currency’ [RMB < rénmínbì 人民币, lit. ‘people-currency’], and they are used independently (as in RMB) or in combination with Mandarin morphemes (as in Fǔ F hào ‘free size’). Acronyms are frequently borrowed but are rarely coined natively. Other types of English words tend to be nativized through one of the ‘traditional’ borrowing processes we describe rather than being imported directly.

Mandarin speakers’ preference for initialisms over acronyms and other types of English words may be due to their greater familiarity with the pronunciation of each roman letter’s individual ‘letter name’ rather than the pronunciation of roman letters in combinations that require an understanding of complex spelling and phonological rules to pronounce. For example, CD would be preferred to cycle as a borrowing because in CD, the letter <c> is pronounced as its letter name /si/, while in cycle, the first letter <c> is pronounced as /s/ and the second <c> as /k/.

Mandarin speakers’ preference for initialisms also builds on an abbreviation process already in the language, in which first elements of lower-level branching structures of layered components are combined (as in, for example, 北大 Běidà < 北京大学 Běijīng Dàxué ‘Beijing University’). Roman letters and their letter name pronunciations have been imported into Mandarin in a ‘Sino-alphabet’ (Hansell 1989) used to write borrowed
initialisms (e.g., MBA), natively coined initialisms (e.g., the letters BO in BO 族 BO zú ‘burned out group’) and labels (e.g., the letters AA in AA 制 AA zhì ‘splitting the bill’).

Speakers’ preference for initialisms and roman letter labels is most likely also due to the similarity of initialisms to Chinese logographs (zì) in pronunciation and reading. The letters in initialisms and labels are pronounced individually, just as each zì is pronounced individually, and each letter is interpreted as a discrete unit read like a Chinese logograph (C in CD) rather than as one of several units assembled into a word (c in candle). As noted by Hansell (1989: 174), initialisms are assimilated readily into written Chinese in part because they maintain the flexible directionality of the Chinese writing system. The similarity of initialisms to Chinese zì makes them easier to read and pronounce for Mandarin speakers than acronyms and other kinds of English words, and they are therefore also preferred as lettered words.

We discussed the notion of ‘word’ and ‘compound’ in Mandarin to develop a classification of lettered words. The concept of ‘word’ in Chinese is difficult to describe in terms of ‘morphemes’ as they are normally defined in linguistics. Chinese zì ‘morpheme-characters’ correspond to an orthographic form and lemma, while ‘morphemes’ correspond to a phonological form and lemma, creating a mismatch in the terminology available for discussing Mandarin words. The sociological word in Chinese is the zì rather than the ‘word’ as we understand it in English. One question in our study has been whether lettered elements initialisms and acronyms are perceived as equivalent to Chinese zì or whether each letter is perceived as a zì. Based on Mandarin speakers’ preference for the use of roman letters as labels and in initialisms rather than other kinds
of English words, and their preference for pronouncing roman letters with discrete letter names, we suggest that each roman letter is treated as the equivalent of a Chinese zì by speakers of Mandarin.

Hybrid lettered words fit Chao (1968) and Duanmu’s (2000) definitions of compounds. Chao (1968: 483) argued that compounds are “two or more words” or non-affixal “bound morphemes” joined together to form one word. Hybrid lettered words are usually combinations of words (e.g., XO 酱 XO jiàng ‘XO sauce’ in which XO and jiàng are both words) or combinations of free and bound morphemes (e.g., DINK 族 DINK zǔ ‘DINK group’ in which DINK is free and 族 zǔ is bound). Hybrid lettered words also fit Chao’s definition if we consider roman letter labels to be words (e.g. X in X 光 X guāng ‘X-ray’, A in A 餐 A cān ‘set meal A’).

The structure of many hybrid lettered accords with Duanmu’s (2000) description of compounds as modifier-noun [Mod N] nominals without a nominalizing de particle. Most hybrid borrowed words and coinages are formed with the compounding pattern [Mod N]N, and many hybrid words have the structure most commonly found in other Mandarin compounds, [N1 N2]N. Some hybrid words also have the less frequent structure [A N]N and other minor types of structures. In almost every hybrid word we examined, the modifier is the lettered component, and the noun is the native Mandarin component. Moreover, in hybrid words of the form [N1 N2]N, the semantic relations between the first and second noun are most commonly of the type ‘N1 is a subtype or class of N2’, where N1 is the lettered element and N2 is a native semantic category. For example, in PC 机 PC jī ‘PC’ lit. ‘PC-machine’, PC is N1 and 机 jī ‘machine’ is N2.

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All of the hybrid words examined for this study are endocentric. We find that the head in hybrid words is nearly always the Mandarin root word or compound, and the modifier is nearly always the lettered element. Since most of the words we found are nouns, the head is nearly always the nominal component on the right, and the modifier is the component on the left. The endocentric structure of hybrid words lessens their semantic and syntactic opacity, as it allows Mandarin speakers to identify the semantic and lexical category of the word even if they are unfamiliar with the lettered element. Speakers can determine the most basic semantic and syntactic information about a hybrid word from its Mandarin head. For example, speakers can determine that PC 机 PC jī ‘PC’ lit. ‘PC-machine’ is a type of jī and that it is a noun even if they do not know the meaning of PC.

We examined traditional ‘sinicizing’ borrowing processes to find parallels between these processes and the formation of lettered words. Five ‘basic’ traditional processes of borrowing were identified: 1. native creations, 2. semantic loans, 3. calques, 4. phonetic loans, and 5. phonetic loan/native creations. We use Bock and Levelt’s (1994) psycholinguistic model of word knowledge to explain that each of these processes involves the use of information about the foreign word from one of more levels of word knowledge. The surface form of the Mandarin adaptation reflects information from the ‘conceptual’ level, the ‘lemma’ level’, and/or the ‘lexeme’ level. These three levels correspond to the word’s meaning, its syntactic and morphological specification, and its phonological specification, respectively. Native creations use information from the conceptual level only. Semantic loans and calques are influenced by the conceptual and
lemma levels. Phonetic loans use information primarily from the lexeme level, and phonetic loan/native creations are influenced by both the conceptual and lexeme levels.

Two other strategies were also identified for adapting foreign words to Mandarin. The first strategy involves the use of a ‘basic’ borrowing process for the first foreign component and the addition of a native adjunct to clarify the meaning of the foreign component (e.g., 车 chē ‘vehicle’ in 吉普车 jípúchē ‘Jeep’ lit. ‘Jeep-vehicle’). The second strategy involves the serial application of two basic borrowing processes (e.g., 因特网 yīntèwǎng ‘Internet’ lit. ‘yīntè-net’ in which 因特 yīntè is a phonetic loan and 网 wǎng ‘net’ is a calque). In almost all cases, the Mandarin adjunct or other Mandarin element on the right serves as the head, and the borrowed, nativized component on the left serves as the modifier.

Borrowed words adapted as hybrid lettered words are formed primarily with two processes that are analogous to the ‘traditional’ strategies just described. Some words use an ‘orthographic loan and a native adjunct’ (e.g., PC 机 PCjī ‘PC’ lit. ‘PC-machine’ in which PC is an orthographic loan and 机 jī ‘machine’ is an adjunct) and others an ‘orthographic loan and a basic borrowing process’ (e.g., C 盤 C pán ‘C drive’ lit. ‘C-dish’ in which C is an orthographic loan and 盤 pán is a semantic loan). The original orthography of one component in the word is retained so that its visual form and meaning is mediated to a lesser degree by Chinese morpheme-characters than in traditional borrowing. The direct importation of lettered units creates a lack of transparency with respect to the meaning of the lettered component, however. This deficiency is addressed by ‘sinicizing’ the head of the foreign word (as in ATM 机 ATMjī ‘ATM machine’,
where 机 jī ‘machine’ is the head) or by adding a native adjunct to the lettered word (e.g., PC 机 PC jǐ ‘PC’ lit. ‘PC machine’, which adds the native adjunct 机 jī ‘machine’ to PC). The native adjunct or other Chinese morpheme-character component designates the basic semantic and lexical category of the hybrid word.

Some lettered words are formed by four-part analogy with specific words in one or more of the three components of the lexicon. For example, the neologism XO 酱 XO jiàng ‘XO sauce’ in the foreign-influenced component is formed by analogy with the borrowing XO 酒 XO jiǔ ‘XO liquor’ in the foreign component, as in the following proportion: jiǔ : jiàng = XO jiǔ : XO jiàng (酒 : 酱 = XO 酒 : XO 酱).

Lettered words are also formed with productive compounding patterns in Mandarin that have resulted in ‘head families’ with many members. Hybrid words formed by extension of these patterns represent the most innovative additions to particular head families. They are the newest hyponyms, or subordinate categories, of the hypernyms, or superordinate categories, which are the Mandarin heads. For example, MTB 车 MTB chē ‘MTB (bike)’ (MTB < mountain bike) joins 自行车 zìxíngchē ‘bicycle’ lit. ‘self-travel-vehicle’, 火车 huǒchē ‘train’ lit. ‘fire-vehicle’, 跑车 păochē ‘sports car’ lit. ‘run-vehicle’, and many other transportation devices as a ‘type of’ 车 chē ‘vehicle’ in the chē head family. All the words in the chē head family, including MTB 车 MTB chē, share the form [Mod chē]. Thus, MTB 车 MTB chē, or “MTB-vehicle,” becomes a hyponym of the Mandarin hypernym chē ‘vehicle’ in the same manner as other transportation devices traditionally expressed entirely with Chinese morpheme-characters.
The extension of compounding patterns into the domain of lettered words indicates that lettered elements now serve as modifiers to the head noun in Mandarin nominal compounds. This is a significant innovation in Mandarin morphology and a radical departure from previous borrowing processes. Roman letter elements that are now imported directly previously underwent sinicization as phonetic loans, calques, semantic loans, native creations, or phonetic loan/native creations. Assimilation of the Sino-alphabet into Mandarin has induced this momentous change. Direct borrowing of roman letter elements is now possible thanks to the Sino-alphabet, as is the use of roman letters in natively coined lettered neologisms, including initialisms, labels, and hybrid words.

Hybrid words do not depart entirely from previous borrowing and word formation processes, however. The head noun is almost always a Mandarin root word or compound that augments the lettered elements. Hybrid words follow the pattern of foreign words adapted with traditional borrowing processes; many of those words also have a familiar native head that supplements the nativized component. Apart from the innovative roman letter label, initialism, or acronym, hybrid words reflect the same sinicization of structure and meaning as foreign words adapted with older borrowing processes. The only difference between hybrid words and words that contain only Chinese morpheme-characters is their orthography; the structure of hybrid words and native or nativized compounds is the same.

Although lettered elements in hybrid words are not nativized with Chinese morpheme-characters, substitution still tends to occur with respect to their pronunciation. Certain roman letters in hybrid words and other lettered words are pronounced with Mandarin syllables that approximate the pronunciation of the letters in English. Some letters, such
as \( K \) [ke] in \( K \text{金} \) \( K \text{jīn} \) ‘carat gold’, can be approximated with one Mandarin syllable \( (kāi \text{[kai]} \), but those that violate the phonotactic constraints of Mandarin are approximated with several syllables, each of which is used to pronounce one or more of the phones in the English pronunciation of the letters. For example, \( X \text{[ɛks]} \) in \( X \text{guānɡ} \) ‘X-ray’ is approximated with \( aɪ-ke-si \text{[ai.ʃæ.s]} \), in part to avoid the \([k,s]\) consonant cluster in the English pronunciation of \( X \). Some letter names are pronounced with an approximation of their English pronunciation rather than by substituting similar-sounding Mandarin syllables. \( L \), for example, is pronounced as \([ɛl]\) even though there is no syllable \([ɛl]\) in Mandarin. Acronyms are generally pronounced with their phonetic or phonetic loan/native creation equivalents in Mandarin. Thus, \( D \text{INK} \) is pronounced as its Mandarin phonetic equivalent \( dǐngkē \text{[dïŋkè]} \) rather than English \(/dnk/\). Acronyms without written native phonetic equivalents tend to be pronounced by substituting similar-sounding Mandarin syllables for parts of the acronym (e.g., \( SARS /\text{scriz} \) is pronounced as \([sa.ʂ]\)).

Hybrid neologisms are formed by analogy with specific hybrid borrowed words, other hybrid neologisms, or other compounds. At the same time, they are also created through the extension of existing compounding patterns which position these words in particular head families. Some hybrid neologisms also have translation or transliteration equivalents in which the lettered component is adapted through one of the basic borrowing processes (e.g., \( \text{BP 机} \) \( \text{BP jǐ} \) ‘beeper’ lit. ‘beeper-machine’ has a semantic equivalent, \( \text{呼机} \text{hūjī} \) ‘beeper’ lit. ‘call-machine’). Hybrid words and their translation or transliteration equivalents may be used in different contexts. Hybrid words are preferred in print, for example, which their morpheme-character equivalents may be preferred in speech.
Several root words that are productive in native compounding are also productive in the borrowing and coinage of hybrid words, namely 车 chē ‘vehicle’, 机 jī ‘machine’, 族 zǔ ‘clan, race, category’, and 卡 kā ‘card’. These root words function as the nominal head in hybrid words of the form [Mod N]N, and lettered elements function as the modifier. The words 车 chē ‘vehicle’ and 机 jī ‘machine’ may be productive in hybrid compounding because they denote broad semantic categories in Mandarin and are frequently used as heads in native compound formation; 卡 kā ‘card’ is also used productively in compounding but has a narrower meaning. The word 族 zǔ ‘clan, race, category’ appears often in hybrid words because it has the function of designating new groups in modern society, some of which are designated with roman letter initialisms and acronyms (e.g., DINK族 DINK zǔ ‘DINK group’, i.e. ‘individuals in society who are DINKs’). Productive use of these root words in hybrid borrowing and coinage indicates that native compounding patterns in which they function as a head have now been extended to include lettered elements. Moreover, these words’ head families, which previously included only modifier-head combinations in which all the constituents were expressed with Chinese morpheme-characters, now include combinations in which the modifiers are written in roman letters.

The English prefix e- and the word TV are also productive in hybrid borrowing and coinage (e.g., e 商务 e shāngwù ‘e-commerce’, KTV ‘karaoke TV’, 相声 TV xiàngshēng TV ‘cross-talk TV’). The use of e- in hybrid words is a relatively infrequent case of derivational affix borrowing in Mandarin, and the use of TV as a head in the compound xiàngshēng TV represents a rare departure from Chinese heads in hybrid compounds.

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Future studies need to address several issues. First, a clearer understanding of the relationship between Chinese 咱 and roman letters would help to determine the connection between 咱 as the ‘sociological word’ in Chinese and the roman letter units that have entered the language. Psycholinguistic studies are needed to determine how Mandarin speakers process roman letters in lettered words. In particular, it is important to know whether roman letters are interpreted in the same way as Chinese 咱.

Second, a broader array of lettered words should be examined to confirm the basic form of hybrid words we have identified in this study, that is, a lettered modifier combined with a Chinese head. Exceptions to the basic form should also be analyzed. Hybrid words with unique forms, such as 电子 e-huà ‘e(lectronic)-ize’ and 相声 TV xiàngshēng TV ‘cross-talk TV’, for example, can help us to identify a wider range of patterns used in the formation of lettered words.

Third, the headedness of hybrid words deserves further attention since it is one of the most basic features of their morphology. Further examination of headedness in hybrid words would provide a more complete picture of the ways in which meaning and structure are expressed through combinations of lettered and Chinese components.

Fourth, modifier families of which hybrid words are members also deserve further study (e.g., the DINK modifier family which includes the words DINK 家庭 DINK jiātīng ‘DINK family’, DINK 族 DINK zú ‘DINK group’, and others). Identifying the characteristics of lettered modifier families and their members is important for understanding the creation of new hybrid words in Mandarin and the productivity of certain lettered modifiers.
Fifth, the pronunciation of lettered words also needs to be investigated to identify degrees of substitution from Mandarin in the production of lettered elements. This would be especially useful since the roman letter elements in lettered words currently have no standard pronunciations in Chinese dictionaries. A central issue concerning substitution is the use of tones in lettered words. Although speakers may be unaware of using tones in lettered elements, our observation is that speakers do apply tones to lettered words in speech. A related issue that also needs to be investigated is the strategies speakers use for adapting lettered words to the metrical structure of Mandarin.

Sixth, the examination of lettered words in Mandarin would benefit from a comparison of their structure with lettered words in language varieties influencing Mandarin. Hong Kong Cantonese, in particular, uses many lettered words and exerts a considerable influence on Mandarin. In fact, many lettered words in Mandarin originate in Cantonese. Lettered words in Japanese also need to be examined, as Taiwan Mandarin and Hong Kong Cantonese borrow heavily from Japanese, and these words then enter P.R.C. Mandarin through borrowing from Taiwan Mandarin and Hong Kong Cantonese.

Lastly, we need to gain more awareness of the unique relationship between print media and lettered words. Lettered words are used frequently in print and many may not be spoken by average monolingual speakers. Speakers may be able to read and understand a variety of lettered words but not necessarily to pronounce them. Examination of the relationship between print media and lettered words would also bring to light the stratification of Chinese society with respect to individuals’ facility in using lettered words. Individuals’ use of lettered words ultimately reflects their participation in China’s ongoing modernization and internationalization, as many lettered words are
jargon and slang used by well-educated groups in Chinese society, especially in the P.R.C. Although lettered words have proliferated in Mandarin, we need to know which Mandarin speakers/readers are using the words and how they are using them in speech and writing to fully understand the role of lettered words in Mandarin, and their structure as the newest types of Chinese words.
APPENDIX

LETTERED WORDS IN THE THESIS
ARRANGED ALPHABETICALLY
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>A 購 A kāo [ei kʰau] ‘videotape copied from a master’, lit. ‘A-copy’</td>
</tr>
<tr>
<td>AA 削 AA zhì [ei.ei tsʰu] ‘splitting the bill’, lit. ‘AA-system’</td>
</tr>
<tr>
<td>AB 制 AB zhì [ei.pi tsʰu] ‘using two actors to play one role’, lit. ‘AB-system’</td>
</tr>
<tr>
<td>Amazon 网 Amazon wǎng [æməζən.waŋ] ‘Amazon.com’, lit. ‘Amazon-net’</td>
</tr>
<tr>
<td>ATM 机 ATM jī [ei.pi.em tsʰi] ‘ATM machine’</td>
</tr>
</tbody>
</table>

三 B sān B [san pi] ‘baby, beauty, beast’, lit. ‘three-B’ (the topics of television advertising in recent years) |

<table>
<thead>
<tr>
<th>B 餐 B cān [ei tsʰan] ‘(set) meal B’, lit. ‘B-meal’</th>
</tr>
</thead>
<tbody>
<tr>
<td>B 超 B chāo [pi tsʰau] ‘ultrasonic diagnosis B’</td>
</tr>
<tr>
<td>B 拷 B kāo [pi kʰau] ‘copy of a master copy of a videotape’, lit. ‘B-copy’</td>
</tr>
<tr>
<td>BASIC 语言 BASIC yǔyán [besik jy.jan] ‘BASIC’, lit. ‘BASIC-language’</td>
</tr>
<tr>
<td>BMW 车 BMW chē [pi.tʰi.dəblju tsʰə] ‘BMW’, lit. ‘BMW-vehicle’</td>
</tr>
<tr>
<td>BO 族 BO zú [pi.əu tsu] ‘individuals burned out from work related stress’, lit. ‘BO-group’ (BO &lt; burned out)</td>
</tr>
<tr>
<td>BP 机 BP jī [pi.pi tsʰi] ‘beeper’, lit. ‘BP-machine’ (BP &lt; beeper)</td>
</tr>
<tr>
<td>BP 族 BP zú [pi.pʰi tsu] ‘individuals with beepers’, lit. ‘beeper-group’</td>
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<td>BTV [pi.pi.pi] ‘barbershop TV’</td>
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<tr>
<td>C 盘 C pán [ci.pi.an] ‘C drive’, lit. ‘C-dish’</td>
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<tr>
<td>cc [ci.ci] (= 西西 xi.xi) (cc &lt; cubic centimeter)</td>
</tr>
<tr>
<td>CAT [ci.ei.pi] (CAT &lt; computerized axial tomography)</td>
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<tr>
<td>CD [ci.ti] (CD &lt; computer disk)</td>
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<tr>
<td>CT [ci.pi] (CT &lt; computerized tomography)</td>
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<tr>
<td>D 日 D rì [ti.ts] ‘D-Day’ (June 6, 1944, the day on which the Allied forces invaded France during World War II).</td>
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<td>DINK [tiŋ.kʰ(ə)] (=丁克 dingkè) ‘DINK’ (DINK &lt; double income no kids)</td>
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<tr>
<td>DINK 丈夫 DINK fūfu [tiŋ.kʰ(ə) fu.fu] ‘DINKs’, lit. ‘DINK-couple’</td>
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<td>DINK 家庭 dingkè jiātìng [tiŋ.kʰə tsia.tʰiŋ] ‘DINK family’</td>
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<td>DINK 时尚 DINK shìshàng [tiŋ.k(ə) si.šan] ‘DINK fashion’</td>
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<tr>
<td>DINK 专栏 DINK zhúānlán [tiŋ.k(ə) tʃuan.lan] ‘DINK special column’</td>
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<td>DINK 族 DINK zú [tiŋ.k(ə) tsu] ‘individuals who are DINKs’, lit. ‘DINK-group’</td>
</tr>
<tr>
<td>E 型弯头 E xíng wāntóu [ji.qiŋ wan.piou] ‘E-bend’</td>
</tr>
<tr>
<td>e 化 e huà [ji.xia] ‘electronicize’, lit. ‘e-ize’</td>
</tr>
</tbody>
</table>
e 家庭 e jiātíng [ji τɕia.tʰiŋ] ‘e-family’

e 商务 e shāngwù [ji ʂɑŋ.wu] ‘e-commerce’

eBay 網 eBay wàng [ibe wɑŋ] ‘eBay’, lit. ‘eBay-net’

e-mail [ji.mei(l)] ‘electronic mail’

F 号 F hào [ef(u).xau] ‘one size’, lit. ‘F-size’ (F < free)

G 族 G zú [ʨi.tsu] ‘GRE test-takers’ (individuals preparing to take the GRE),
lit. ‘G-group’ (G < GRE)

GB [kuo.piou] ‘national standard’ (< guó(jiā) biāo(zhǔn) 国(家)标(准))

GRE 族 GRE zú [ʨi.ar.ji tsu] ‘GRE test-takers’ (individuals preparing to take the GRE),
lit. ‘GRE-group’

H 型网络 H xìng wǎngluò [aitɕ.yiŋ waŋ.luo] ‘H-network’

HO 族 HO zú [aitɕ.yiŋ au tsu] ‘individuals who have a home office’, lit. ‘HO-group’ (HO < home office)

HSK [ai.tɕi,y.es.kʰei] (< Hányǔ Shūpǐng Kǎoshì 汉语水平考试) ‘Chinese proficiency test’ (for non-native speakers), lit. ‘Chinese-level-test’

IC 卡 IC kǎ [ai.ci kʰa] ‘IC card’

ID 卡 ID kǎ [ai.pi kʰa] ‘ID card’

IP 电话 IP diànhuà [ai.pʰi tɕi.n.xua] ‘IP phone’

IP 卡 IP kǎ [ai.pʰi kʰa] ‘IP card’

JF (< jinjiàn yóuzī fēng 纪念邮资封) ‘commemorative postage envelope’ – the pronunciation of the original Mandarin expression is used in speech

三 K 党 sān K dǎng [san.kʰei taj] ‘KKK’, lit. ‘three-K-party’ (Ku Klux Klan)

金 K jīn [kʰei.tsin] ‘alloyed gold’, lit. ‘carat-gold’ (K, 开 kai < carat)


KTV [kʰei.tʰi.ɕi] ‘karaoke TV’

LP 唱片 LP chāngpiàn [el.pʰi tsʰan,pʰian] ‘LP record’ [LP < long-playing]

MBA [em.pi.ɕi] ‘Master of Business Administration’

MS 病 MS bìng [em(u).es(j) piŋ] ‘MS’, lit. ‘MS-disease’ (MS < multiple sclerosis)

MTB 車 MTB chē [em(u).tʰi.pi tʰɔ] ‘MTB’, lit. ‘MTB-vehicle’ (MTB < mountain bike)

MTV [em(u).tʰi.ɕi] ‘music television’

NG [ŋn.tɕi] or [ŋn.tɕi] (NG < no good; used in film-making)

OK [au.kʰei]

OPEC [au.pʰei.kʰa] (= 欧佩克 òupèikè [au.pʰei.kʰa]) ‘Organization of Oil Exporting Countries’

四 P 要素 si P yàosù [si.pʰi.jau,su] ‘four Ps of marketing’, lit. ‘four-P-elements’ (product, price, promotion, place)

PC 机 PC jī [pʰi.ɕi tɕi] ‘personal computer’, lit. ‘PC machine’

PSC ‘Mandarin proficiency exam’ (for native speakers) [<Pǔtōnghuà Shuǐpíng Cèshì] 普通话水平测试, lit. ‘common language-level-exam’ – the pronunciation of the original Mandarin expression is used in speech

RMB [rɛm.pi] ‘Chinese currency’ (RMB < rěnmínbì 人民币, lit. ‘people-currency’)

RTV [rɛ.ti.vi] ‘restaurant television’

S 号 S hàò [sə.xau] ‘size S’, lit. ‘S-size’ (S < small)

S 型弯筝 S xíng wānzhēng [sə.xiɔn wan.tʂɔn] ‘figure S wānzhēng’, lit. ‘S-model-curved-zither’

SARS [sa.s] ‘severe acute respiratory syndrome’

STS 教育 STS jiàoyù [sə.ti.es tɕiau.jy] ‘science, technology, and sociology education’ [STS < science, technology, sociology]’

STV [sə.ti.vi] ‘sleeping TV’ (a type of recreational center)

T 衫(T恤) T xièn (shǎn) [tʰi.ʃy ʂan] ‘T-shirt’

T 族 T zú [tʰi.tsu] ‘TOEFL test-takers’ (individuals preparing to take the TOEFL exam’, lit. ‘T-group’ [T < TOEFL]

TDK 现象 TDK xiànxiàng [tʰi.ti.kʰei tɕיאn.tɕian] ‘young people’s preoccupation with TOEFL, dancing, and kissing’, lit. ‘TDK phenomenon’ (TDK < TOEFL, dance, kiss)

TOEFL [tuo.fu] (= 托福 tuǒ-fú [tuo.fu]) ‘Test of English as a Foreign Language’

TOEFL 族 TOEFL zú [tuo.fu.tsu] ‘TOEFL test-takers’ (individuals preparing to take the TOEFL exam’, lit. ‘TOEFL-group’

相声 TV xiāngshēng TV [ɕiɑŋ.ɕei tʰi.vi] ‘cross-talk TV’

X 光 X guāng [ai.kʰa.s.kuaŋ] or [ekʰs.kuaŋ] ‘X-ray’

X 射线 X shèxiàn [ai.kʰa.s sæ.ɕian] or [ekʰs sæ.ɕian] ‘X-ray’

XO 酱 XO jiàng [ekʰ.s.ɕi ɕiaŋ] ‘XO sauce’ (XO < extra old [cognac])

XO 酒 XO jiǔ [ekʰ.s.ɕu ɕiau] ‘XO liquor’ (XO < extra old [cognac])

U 转 U zhuǎn [jau.tsuan] ‘U-turn’

UHT 牛奶 UHT niúnái [jau.ai.tɕʰ(y).tʰi niu.nai] ‘ultra high temperature milk’


V 形管 V xíng guān [wei.xiɔŋ kuən] ‘V-shaped tube’


VISA 卡 VISA kǎ [wei.sa kʰa] ‘VISA card’


WTO [dablju.tʰi.au] ‘World Trade Organization’

ZRG (< Zhōngguó Rén-mín Gònghéguó 中华人民共和国) ‘People’s Republic of China’ – the pronunciation of the original Mandarin expression is used in speech
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