

# Morphological Structure of the Chinese Lettered Words

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**Summary.** The usage of a newly developed loanwords adoption method for the Mandarin Chinese language known as lettered words has significantly increased in the past decade. The first half of this paper presents a detailed analysis on the morphological structure of the traditional Chinese lettered words. Subsequently, the second half of this paper proposes that it is a new loanwords adoption methodology which combines the shorthand of donor language's and Semantic loans.

**Keywords:** Chinese Lettered Words, Morphology, Loanwords.

## 1 Introduction

In the past decade the usage of a newly developed loanwords adoption method for the Mandarin Chinese language known as lettered words has significantly increased. There are many existing papers written about the formation, usage, and history of the Chinese lettered words. Notwithstanding none of them are given detail analysis on the morphological structure of the lettered word. In this paper I present a detailed analysis on the morphological structure of the traditional Chinese lettered words and propose that it is a new loanwords adoption methodology which combines the shorthand of donor language's and Semantic loans.

In section 1 I will introduce the morphological structure of existing loanwords adoption methods in Chinese besides lettered words. Section 2 will describe the history of loan words in China from 206BC to 19<sup>th</sup> century with morphological structure analysis. The brief history of Chinese lettered words will be given in section 3. In section 4 I will describe the structure, formation, and usage of the existing lettered word. The detailed analysis on lettered word with examples listed in The Language Situation in China, 2006 will be used to analyze the formation, morphological structure, and productivity of lettered words will be present in section 5 and section 6. Section 7 concludes the paper.

## 2 Loanwords adoption methodologies

Li(1993), Miao(2005), Wang (2004), Wiener (2009) and Yu(1995) they all give similar descriptions on loanwords adoption methodologies. After reading the article written by Zhou and Jiang (2004) which responses Wang's article and comparing three sources, I summarized the similarities and eliminated the redundancies among the three sources with the list below:

- Semantic loans

The meanings of the donor language's words translate into Chinese morpheme by morpheme literally.

Example: 睡袋  
/ʃuiV-daiV/  
sleep-bag  
"sleeping bag"

- Combination of literal translation and Semantic loans

Translate the donor language's words into Chinese literally then add a generic morpheme to clarify the meaning.

Example: 雞尾酒  
/dzi1-wei1-dziu1/  
chicken-tail-liquor  
"cocktail"

- Combination of Phonemic loans and Semantic loans

Translate the donor language's words pronunciation into Chinese phonemically then add a generic morpheme to clarify the meaning.

Example: 艾滋病  
/aiV-dzi1-hiV/  
end-grow-disease  
"AIDS"

- Phonemic loans

Translate only the pronunciation of the donor language's words with the closest available phonemes in Chinese via phoneme substitution.

Example: 布丁  
/buVdin1/  
cloth-male labor  
"pudding"

- Phono-semantic translation

Translate both the pronunciation and semantic of the donor language's words with the closest available phonemes in Chinese which carry similar semantic information.

Example: 維他命  
 /wei1-ʂʌŋ1-suŋ/  
 cloth-male labor  
 maintain-life-element  
 "vitamin"

Both combination of literal translation and semantic loans and combination of phonemic loans and Semantic loans are similar. The difference between these two loans methodologies is one translates the donor language before the generic morpheme at the end literally and the other translate the donor language before the generic morpheme at the end phonemically as illustrate in the examples above.

For the example of phono-semantic translation although vitamin is not a kind of medicine for people to maintain their life, people can get the sense that vitamin is something helps people to have a healthy life. In this case, some Chinese linguists defined such kinds of translation are astonishingly close to the original meaning and grouped them into the phono-semantic translation category.

### 3 The History of loanwords in China

Li (2004) pointed out that foreign loanwords were existed in Chinese long before the Zhou Dynasty (1046 BC). The numbers of written record of the foreign loanwords in that period of time are limited. Started from the Han Dynasty (206 BC) there were various complete written records preserved. Below are summarized descriptions of the borrowed words in different periods that Li stated in his book.

#### 3.1 Han Dynasty (206BC to 220AD)

Han Dynasty is regarded as one of a high point in Chinese civilization. There were consistent trading activities between Han Chinese and the Eurasian tribes. During that period of time most of the loanwords were borrowed from Hunnic and ancient Elamite language. Almost all the popular loanwords were animals or food that the Han Chinese never seen before and adopted into Chinese by phonemic loans. Examples of ancient Elamite loan words are given below:

Ancient Elamite	Chinese	Notes
"lion"	獅子	The pronunciation of the Chinese language in Han Dynasty is different compared to the model Chinese listed here. Yet, the paper didn't give any detailed information on phonemic change.
"lion"	/ʂʌŋ1-tszʌŋ1/ "lion"	
budawa "grape"	葡萄 /p <sup>h</sup> u1-t <sup>h</sup> au1/ "grape"	
arsak "pomesranate"	安石榴 /an1-ʂʌŋ1-liu1/ "pomegranate"	

(Sources: Feng, 2004: 203 - 204)

#### 3.2 Jin, Tang, and Song Dynasties (AD265 to AD1127)

Under Buddhism's influence, the majority of the loanwords from Jin to Song Dynasty were related to Buddhism and borrowed from Sanskrit. In fact Buddhism first reached China from India during

the Han Dynasty. Notwithstanding, before Jin Dynasty all the Buddhist scriptures were translated into Chinese phonetically based on pronunciation. As a result, the Sanskrit loanwords weren't widely spread and the Buddhist scriptures were only read by the monks until Jin Dynasty.

In the Jin Dynasty there were people started to translate Buddhist scriptures into Chinese literally for the public. During the Tang Dynasty the influence of Buddhism in China reached its peak. A famous Chinese Buddhist monk, Xuanzang, set up a large translation for the Buddhist scriptures he brought from India with the emperor's support. Xuanzang translated both the meanings and pronunciations of the Sanskrit words which were quickly adopted by the Chinese. The Buddhist scriptures that translated by Xuanzang were the first written record found in Chinese history which used the combination of meanings and pronunciations translation methodology. Examples of Buddhist terms loan words are given below:

Sanskrit	Chinese	Notes
Kalpa 'disaster'	劫波 /teie1-buo1/ disaster-Waves 'destined disaster'	The pronunciation of the Chinese language in Han Dynasty is different compared to the model Chinese listed here. Yet, the paper didn't give any detailed information on phonemic change.
Mala 'devil'	魔羅 /mo1-luo1/ evil-net 'evil spirits'	
Samata 'equality'	平等 /piŋ1-dan1/ equal-wait 'equality'	

(Sources: Feng, 2004: 206 - 207)

### 3.3 Yuan Dynasty (AD1206 to AD1368)

Although the Mongolian ruled the Han Chinese for about one hundred sixty years, there weren't much Mongolian loanwords preserved. The few Mongolian loanwords that survived until nowadays mostly are related to governmental system or geographic location. These words are translated phonetically based on the Mongolian pronunciations. Examples are given here:

Mongolian	Chinese
Govi "desert"	戈壁 /gɿ1-biŋ/ Dagger axe-Wall "large desert region"
Hotton "alley"	胡同 /xu1-tuŋ1/ Recklessly-Same "alley"
Qaghan "king"	可汗 /kʰɿ1-xanŋ/ Can-Sweat "king"

(Sources: Miao, 2005: 25)

### 3.4 Ming Dynasty (AD1368 to AD1644)

In the late Ming there were numerous Jesuit missionaries from Europe such as Matteo Ricci and Nicolas Trigault worked with the Chinese scientists to translate the Euclid's Elements into Chinese. Meanwhile, the missionaries also introduced Western visual arts and Roman Catholics scriptures to the Chinese. Examples of Christianity terms loan words are given below (Since it is hard to trace the origin of each individual term, only the English forms are given although English might not necessarily be the source language):

English	Chinese
Amen	阿門 /a1-mən1/ Pander-Door "Amen"
Satan	撒旦 /sa1-tanV/ To let go-Dawn "Satan"
Judas	猶大 /iou1-taV/ Similar-Big "Judas"

(Sources: Miao, 2005: 25)

### 3.5 Qing Dynasty (AD1616 to AD1911)

Similar to the Mongolian even though the Manchu people ruled the Han Chinese for about two hundred and ninety-five years there weren't much Manchu loanwords adopted into Chinese. Ironically the Manchu people adopted many Han traditions and Chinese language. The few Manchu loanwords that were adopted into Chinese only limited to governmental system and food. Examples are given here:

Manchu	Chinese
Sacima "egg soft flour cake"	薩奇馬 /saV-zil-ma1/ Bodhisattva-Odd-Horse "egg soft flour cake "

(Sources: Li, 1993:36)

### 3.6 Post Opium War

After the Opium War the Chinese government was forced to open the trade ports to foreigners. At that time many translation companies were established by the Chinese government. Large volumes of science politic, history, art, law, etc. texts are translated from different European countries into Chinese. Consequently, in the 19th-century there were huge amount of European languages loanwords adopted into Chinese. At first pure phonemic translation loanwords adoption methodologies were used to adopt the foreign loanwords.

Examples:

European Languages	Chinese	European Languages	Chinese
Calorie	卡路里 /kʰaɬ1-luV-liɬ1/ Card-Road- Neighborhood "calorie"	Khaki	卡其 /kʰaɬ1-ziɿ/ Card-That "light shade yellow- brown color"

(Sources: Li, 1993: 86)

Miao (2005) stated that phonemic borrowings were served as transitional purpose in the history of foreign loans. Eventually the phonemic borrowings were replaced by the Phono-semantic translation or combination of literal translation and semantic borrowings to express the concept of the original borrowing. Below are the examples provided in Miao's PhD thesis:

Example 1:

English	Chinese	Notes
President	伯理喜頓 /bɔ1-liɬ1-ɕiɬ1-ɕunV/ Uncle-Truth-Happy-To stop "president"	<b>Phonemic loans</b> In Loanword Adaptation in Mandarin Chinese: Perceptual, Phonological and Sociolinguistic Factor Miao stated that these two phonemic loans were used during the period from 1840 to 1898.
	伯理璽天德 /bɔ1-liɬ1-ɕiɬ1-tain1-dy1/ Uncle-Truth-Emperor's Seal-Heaven-Virtue "president"	
	統領 /tuŋɬ1-lɿŋɬ1/ To govern-To lead "president"	
	總統 /dzuŋɬ1-tuŋɬ1/ General-To govern "president"	<b>Phono-semantic loans</b> The phonemic loans are changed to phono-semantic loans to express the concept borrowed after 1898 and replaced the phonemic loans. The form in boldface is used in modern Mandarin Chinese as the standard form.

Example 2:

English	Chinese	Notes
Science	賽因思 /saiŋjinʃi/	<b>Phonemic loans</b> In Loanword Adaptation in Mandarin Chinese: Perceptual, Phonological and Sociolinguistic Factor Miao stated that this phonemic loan was used during the period from 1840 to 1898.
	科學 /kəɫɿ-ɕyɛɿ/	<b>Phono-semantic loans</b> The phonemic loans are changed to phono-semantic loans to express the concept borrowed after 1898 and replaced the phonemic loans. The form in boldface is used in modern Mandarin Chinese as the standard form.

Example 3:

English	Chinese	Notes
Telephone	得利風 /dyɿ-liV-fɿŋ/	<b>Phonemic loans</b> In Loanword Adaptation in Mandarin Chinese: Perceptual, Phonological and Sociolinguistic Factor Miao stated that this phonemic loan was used during the period from 1840 to 1898.
	電話 /tiɛŋɿ-xuaɿ/	

#### 4 Chinese Lettered Words

According to Xue (2007) the Chinese lettered word (X-ray) was used in the book 《新尔雅》 (The New Terminology) which published in 1903. In 1979 there were 69 Chinese lettered words listed in the dictionary published by Zhonghua Book Company. After the 90s, the numbers of new Chinese lettered words grew rapidly. There were 2015 Chinese lettered words listed in Yongquan Liu's Chinese lettered words Dictionary published in 2009. Language Situation in China: 2006 reported that in year 2006 the usage of Chinese lettered words was 9% among the 7,311,749 sample texts collected from newspaper, television scripts, and internet.

#### 5 The Morphological Structures of Chinese Lettered Words

Even though Chinese lettered words were first used in 1903, Chinese scholars still couldn't come up a unified definition for the term Chinese lettered words. Some scholars argued that Chinese lettered words are words that combine Indo-European languages' alphabets with Chinese character(s). Whereas some scholars consider standalone Acronyms generated from the original languages, Latin numbers, Greek alphabets, etc. are also subgroups of Chinese lettered words.

Currently Chinese lettered words is broadly referred to Indo-European languages' alphabets that being used in texts or conversations with the Chinese language. Totally there are thirteen different kinds of Chinese lettered words' structures stated in the papers written by Hue (1936), Wei (2010), Zhou (2010), and Zhu (2010):

1. Acronym of the original languages
2. Internet shorthand
3. Chinese Pinyin acronym
4. Combination of symbol or numerical and Chinese character(s)
5. Combination symbol and internet shorthand
6. Latin numbers
7. Combination of English letters and numbers
8. Combination of English letters and Chinese character(s) to describe the objects' shape
9. Combination of English letter and Chinese character(s)
10. Combination of other Indo-European languages' letters and Chinese character(s)
11. Combination of the original languages and Chinese Pinyin acronym
12. Combination of Chinese Pinyin acronym and Chinese character(s)
13. Other transformation

In Language Situation in China: 2006, Chinese lettered words are divided into two groups: traditional Chinese lettered words and non-traditional Chinese lettered words. Below are the properties to distinguish two groups of Chinese lettered word. If a Chinese lettered word has two or more properties listed under the formation category and all the properties under the usage category, then it is considered as traditional Chinese lettered words. The Chinese lettered word that only has one property listed under the formation category and all the properties under the usage category are defined as non-traditional Chinese lettered words. A word must satisfy at least one property under the formation category in order to be considered as a Chinese lettered word.

#### Formation

1. Combination of letters and Chinese character(s).
2. The pronunciation of the letter(s) is/are same as the original languages that the letter(s) borrowed from.
3. The letter(s) must be all in capital.
4. The letter(s) is/are the acronym of the original languages or Chinese Pinyin.

#### Usage

1. The words are referring a board category instead of one specific object.
2. Known and heard by the general public.
3. Used by the public media frequently over a period of time.

## 6 Analysis

In Language Situation in China: 2006, the report included both traditional and non-traditional Chinese lettered words that being used on the internet and in media with high frequency usages. Since there are disagreements among the Chinese scholars whether non-traditional Chinese lettered words should be considered as Chinese lettered words or not, only traditional Chinese lettered Words will be analyzed in this paper. Based on the data listed in the Language Situation in china:2006, the structure of traditional Chinese lettered words can be described as Indo-European



languages' letters and Chinese character(s) compounds words' The Chinese character(s) is/are functioned as the formal and semantic head. Whereas the letter(s) and Arabic number is/are the acronym of the original languages or Chinese Pinyin, used as short hand, to categorize items, or describe the objects' shape.

The first table below is the examples from Baker's and Riha's paper. The second table below is the traditional Chinese lettered Words that Zhang and Zheng mentioned in their paper. The last table below is the traditional Chinese lettered Words listed in the table of Language Situation in China: 2006. The non-traditional Chinese lettered Words listed in the report and papers are being excluded since it is beyond the scope of this paper.

Table 1:

Chinese Lettered Words	Notes	Chinese Lettered Words	Notes
ATM機 /e-ti-ɛm-dʒi/	A kind of technology which combine RS, GIS, and GPS	維生素A /wei1-ʂaŋ1-su1-e/	
A-T-M-machine "Automated Teller-Machine"		maintain-life-element-A "vitamin-A"	
BP機 /bi-pi-dʒi/	A type of stocks in the China stock market that only allow PRC citizens to purchase	X光 /ɛks-guaŋ/	
B-P-machine "Beeper"		X-light "X-ray"	
T恤 /ti-ɛy/		IP地址 /ai-pi-ti1-zɪ1/	
T-shirt "tee-shirt"		I-P-earth-address "Internet Protocol- Address"	

Table 2:

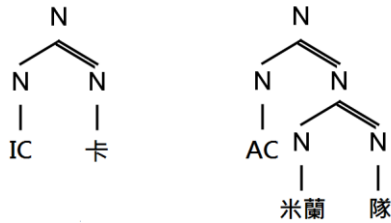
Chinese Lettered Words	Notes	Chinese Lettered Words	Notes
維生素B /wei1-ʂaŋ1-su1-bi/		S型 /ɛs-ɛiŋ/	It is used to refer to the shape of objects.
maintain-life-element-B "vitamin-B"		S-shape "S shape"	
K粉 /khe-fən1/		G網 /dʒi-waŋ1/	GSM-(cell phone) Network
K-power "ketamine-Power"		G-net "GSM Network"	
3G技術 /san-dʒi-dʒi1-ʂu1/		DVD機 /di-vi-di-dʒi/	
three-G-technical-skill "3G Technology"		DVD-Machine "DVD Player"	
POS機 /pi-o-ɛs-dʒi/			
P-O-S- machine "Point of sale Machine"			

Table 3:

Chinese Lettered Words	Notes	Chinese Lettered Words	Notes
4S店 /siV-ɛs-dienV/ 4-S-shop "4S shops"	Auto-shops that provide sale, spare part, service, and survey for customers	B型 /bi-ɛiŋV/ B-type "B type"	Usually it is used to refer to blood type
IC卡 /ar-si-khaV/ I-C-card "Integrated circuit-Card"		U轉 /ju-zuanV/ U-around "U-turn"	
B股 /bi-guV/ B-stock "B-stock"	A type of stocks in the China stock market that allow foreigners to purchase	LG電子 /ɛl-dzi-dienV-dzɔwV/ L-G-electric-little "LG electronics"	Usually it is used to refer to the Electronics products produced by LG
B超(聲診斷) /bi-tʃauV/ B-scan "Bi-scan"		CDMA手機 /si-di-ɛm-e-ʂouV-dziV/ C-D-M-A-hand- machine "code division multiple access-cell phone"	
3D眼鏡 /sanV-di-iɛnV-ɛiŋV/ three-D-eye-glass "3D glasses"		SD卡 /ɛs-di-khaV/ I-C-card "Integrated circuit-Card"	
CBA聯賽 /si-bi-e-lienV-saiV/ C-B-A-connect-match "China Basketball Association-Match"	China Basketball Association-Match	USB接口 /ju-ɛs-bi-dzɛV-ɛV-kouV/ U-S-B-connect-mouth "USB-Port"	
QQ號 /kju-kju-xaoV/ Q-Q-Number "QQ-(account) Number"	QQ is the most popular free instant messaging computer program in Mainland China	K歌 /khe-ghaV/ K-song "karaoke-sing"	
3G手機 /sanV-dzi-ʂouV-dziV/ three-G-hand- machine "3rd generation cellphone"	Third-Generation-Cell phone	IT業 /ar-ti-jɛV/ I-T-Industry "IT Industry"	
MP3播放器 /ɛm-pi-sanV-ɸɔV-faŋV-teiV/ M-P-three-play-open-machine "MP3-Player"		F1賽車 /ɛf-jiV-saiV-dzyV/ F-one-match-car "F1 Race Car"	

The hierarchical structures tree diagrams of the examples clearly illustrate the relationship between the Chinese character(s), Indo-European language letter(s), and Arabic number in Chinese lettered word.

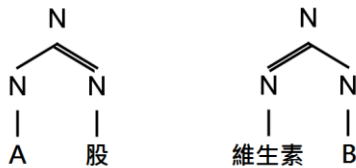
Acronym of the original languages or Chinese pinyin:



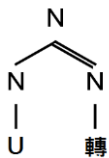
Used as short hand:



The letter(s) is/are used to categorize items:



Describe the objects' shape:



## 7 Conclusion

The traditional Chinese lettered words can be classified as a new loanwords adoption methodology which combines the shorthand of donor language's and Semantic loans. It extracts the acronym or the first letter from the donor language's words then adds a Chinese generic morpheme to clarify the meaning. The Chinese characters are always functioning as the head of the tradition Chinese lettered words. Unlike the old loanwords adoption methodologies of combining literal or phonemic translation and semantic loans, the traditional Chinese lettered words directly borrow a part of the original donor language and attach to Chinese morpheme(s).

Yongquun Liu (2009) described the advantages of Chinese lettered words are quick, clear and easy new loanwords adoption methodology to adopt foreign words into Chinese which can be broadly understood by the public. This reflects there were huge amount of foreign words adopted into Chinese in the past two decades. As a result, Chinese lettered words loanword adoption methodology is created to convert foreign words into Chinese loanwords in a short period of time.

Some of the Chinese lettered words underwent old loanwords adoption methodologies of combining literal or phonemic translation and semantic loans then turned into pure Chinese character loanwords. Nevertheless, there are also huge amount of Chinese lettered words that haven't been underwent the transformation. It can't be concluded that whether Chinese lettered words is served as transitional purpose in the process of foreign loanwords adoption or not at this point since this loanwords adoption methodology is relatively new and currently there are debate on this methodology.

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