Morphological awareness in Chinese vocabulary learning

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This study explores the similarities and differences between Chinese and English in terms of morpheme and its impact on vocabulary learning. Morphological relationships between prime and target words influence performance in lexical decision and word recognition tasks in both Chinese and English (Taft & Zhu 1995; Ku & Anderson 2003). Also, Chinese and English both have root words, bound roots, inflectional affixes and derivational affixes. However, fundamental differences do exist in the two languages: 1. morphemes in Chinese are written in logoscripts rather than alphabets; 2. morphemes in Chinese are arranged non-linearly to form a word rather than linear arrangements; 3. morphemes are basic units in Chinese rather than phonemes; 4. morphemes in Chinese are character blocks based on which new words are formed rather than changing phonological or orthographic form to create new words.

Based on these similarities and differences, an e-learning Chinese program is designed and implemented in Nottingham University in the UK. The program is composed of morpheme-level, character-level, word-level, sentence-level and discourse-level Chinese vocabulary learning. The experiment lasted for one academic year and during the process of which, students were able to decompose unfamiliar words into familiar meaningful units and then derive the meanings of the words by combing the units. With the aid of the e-learning Chinese program, students were able to treat new words analytically and understand the internal structure of words. The findings of this study confirm the proposal that morpheme awareness facilitates Chinese vocabulary learning where a purposefully-designed CALL (computer-assisted language learning) plays an important role.

Scholars have long believed that morphological awareness is important in vocabulary growth (White, Power & White, 1989; Rastel, Davis, Marslen & Tyler 2000; Taft & Zhu 1995). They suggest that morphology could be a powerful device for facilitating the acquisition of polymorphism vocabulary items and improving the retention of such items. However, recent models of word recognition do not implement morphology but regard it as a by-product of the language system, emerging from semantic and formal similarity (Zwitserlood, Bolwiender & Drews 2005; Plaut & Gonnerman, 2000; Rueckl, Mikolinski, Raveh, Miner & Mars, 1997; Plunkett & Marchmann, 1993). To be more specific regarding the Chinese language, Chinese words have conventionally been considered uninteresting as objects of morphological investigation because they do not manifest characteristics thought critical to the concept of morphology, as it has little morphology nor inflection (He, 1996). To clarify the concept of morphemes of Chinese and further to facilitate Chinese vocabulary learning, it is necessary to look into Chinese morphology in order to discover how morphemes affect Chinese vocabulary learning and what students can gain from morpheme awareness while learning Chinese. With universal notions developed for affixes, words and compounds, an investigation of derivation, inflection and compounding in Chinese is conducted in this study.

Morpheme in both English and Chinese

A morpheme is a meaningful linguistic unit that contains no smaller meaningful units (Payne, 1997). Morphemes vary in kind and function, but on the whole, they can be classified into free vs. bound; derivational vs. inflectional and lexical vs. grammatical morphemes.
A free morpheme can constitute a word on its own; while a bound morpheme is a grammatical unit that does not occur by itself, but is always attached to some other morphemes (Johnson 2002; Spencer, 1992).

Free morphemes can stand alone or appear with other lexemes. In English, many root morphemes are free, and many English content and function words consist of single morphemes, e.g. “hunt”, “kill”, and “the”. The same is true of Chinese e.g. 山、水 (standing alone) and 高山、流水 (with other lexemes).

Bound morphemes are always attached to another morpheme, as plural form “s” in “books” and prefix “un” in “uncomfortable” in English, and “葡萄”, “玫瑰”, “蜘蛛”, “糊涂”, “尴尬”, “玻璃” in Chinese. None of these morpheme units can stand alone. The individual morphemes in these cases are meaningless on their own and always occur in tandem.

Derivational morphemes derive a new word by being attached to root morphemes or stems. Inflectional morphemes signal grammatical information such as tense, plural form etc. Derivational morphemes build new words, often with their own idiosyncratic meaning, while inflectional morphemes permit a word to agree with other words in its context. Although some affixes make it possible to derive new words from old, others have more grammatical functions. These inflectional endings contain information about the relation between words in sentences or utterances. Derivational affixes are more lexical in nature since they are used to form new lexical entities, and inflectional affixes are more grammatical in nature because they are used to show syntactic relations.

Derivational morphemes are mainly prefixes and suffixes (Hatch & Brown 1995:265), and they can change meaning or part of speech of the stem. For example, the morpheme of “无” in “无声”, “无力”, or “反” in “反战”, “反贪污”, “反浪费”, changes the semantics of these words. The same applies to “的” and “似的” in “吸引人的” “孩子似的” and “超” in “超声波”, “超高速”, with these affixes, nouns are changed into adjectives. When the morpheme of “员” is put in “教员”, “售货员” verbs become nouns; and “主义” in “现时主义”, “理想主义” adjectives become nouns; “化” in “工业化”, “现代化” nouns are changed into verbs. The affixes thereby help to identify relationships within words. “Derivational morphemes typically indicate semantic relations within the word; typically occur with only some members of a class of morphemes; and typically occur before any inflectional suffixes are added” (Ohio State University).

Inflectional morphemes, in contrast, indicate the syntactic relation between words and function as grammatical markers, e.g. ‘-ed’, ‘-ing’, ‘-s’, ‘-en’ in English and plural morphemes “们” in “我们” in Chinese. Unlike derivational morphemes, the number of inflections is small and they apply more regularly across a larger range of items. They are more regular and productive. They form the basis of most grammar-based programs of language instruction, e.g. “我的”, “老师的”; “比较发达”, “更发达”, “最发达”. “Inflectional morphemes do not change meaning or part of speech of stem; typically indicate syntactic or semantic relations between different words in a sentence; typically occur with all members of some large class of morphemes; and typically occur at margins of words” (Ohio State University).

Lexical morphemes are content words or open class morphemes (nouns, verbs and adjectives) where new morphemes can be coined and added to the category; whereas grammatical morphemes are functional words or closed class morphemes (determiners, prepositions etc).

Lexical morphemes tend to be free morphemes which have stateable lexical meaning, e.g. “download” in English and “电视” “电话” in Chinese. Lexical morphemes are the majority in the language.
Grammatical morphemes can either be free or bound morphemes, e.g. “can, but” etc. in English and “了”, “过” etc. in Chinese. Grammatical morphemes are largely or wholly grammatical and do not carry the main semantic content. The number of function words is limited in the language.

Characters based on morphemes and words based on characters

As can be seen from the above, while Chinese might not have word forms that undergo morphological alternatives (such as give, gave, giving, given), morphology is still the basic unit to build characters. Sometimes this is simply a case of adding a suffix or prefix to a character; while in others, meaningful components go together to form characters. Some Chinese words consist of single morphemes, but the majority consist of two morphemes. Two-morpheme words are constructed variously by repeating the same or similar morpheme, by attaching a bound morpheme as a suffix or prefix to a free morpheme, or by joining two free morphemes.

The prefixes include “第, 老, 阿, 非, 过, 初, 可, 相, 打” etc. The prefix “第”, for example, turns cardinal numerals into ordinal numerals, as in “第一, 第二”, and “老” helps “虎” to become a word “老虎”. The suffixes include “子, 头, 书, 代, 亭” etc. The suffix “子”, for example, is attached to many nouns that name concrete objects, as in “鼻子, 刀子, 叉子, 狮子, 帽子, 桌子” and “头” in “木头, 斧头, 枕头, 度” in “知名度, 透明度”. In modern times Chinese has adopted prefixes and suffixes modelled on European languages, such as ‘化-ise’, ‘-isation’, as in “现代化” ‘to modernise, modernisation’. In addition to that, the suffix -r is attached optionally to many nouns and a few verbs to add a familiar, diminutive, and sometimes pejorative flavour, as in “这儿”, ‘little horse’, “官儿”, ‘petty official’, “玩儿’, ‘to play’.

Apart from the “morpheme + prefix or suffix” pattern discussed above, reduplications can be formed by merely repeating the same morpheme, as in “爸爸, 妈妈, 哥哥, 妹妹” and 'person person' in “人人进步”, ’good good’ in “好好学习”, and “walk walk” in “出去走走”.

To a certain extent, morphemes in these words can be regarded as independent ‘building blocks’ that keep the language flexible. For instance, the word for ‘lift / elevator’ is “电梯”’electric ladder’. Words are created around the character of “梯” to indicate different kinds of lift: “客梯” ’guest lift’, “货梯”’goods lift’, “服务梯”’service lift’, etc. Colloquially, a lift is known as a “梯子’ ‘ladder’. The characters are at once a reflection of this flexibility and a factor that keeps it that way.

Although Chinese is highly colored by the characters, much more common is the case where two or more characters combine to make new words, which are also called compound words. Compound words refer to meaningful characters joined together to form larger words. In everyday speech, a number of words that were originally one character have become two characters or more through this process, e.g., “月” and “亮” become “月亮” and “云” and “彩” become “云彩”.

Compound words lead to a concept of “词”. The major advance of “词” is that, in addition to information for the character as a whole, there is a list of “词” in which longer combinations of the character occur, e.g. “午”, “上午”, “中午”, “下午”, “午间”, “午饭”, “午休”. The general meaning given for the character “午” attempt to cover all its different meanings. This includes “午” as an independent word and “午” as the mere component of a word.

In addition to several “词” centering around one character, there are other Chinese compound words which are parallel to Chinese sentences in syntactic construction. For example, a compound can have a subject + verb construction, as in “头疼”([My] head ache[s’]), which becomes the noun “头疼”(headache); “大人” (adjective +
noun: big + person = adult); “吃饭” (verb + object: eat meal). The syntactic method of compounding is simple and straightforward in Chinese, because Chinese sentences tend not to contain the equivalents of the English inflections and function words.

Many Chinese compound words are also formed by joining two synonyms, as in “美麗” (‘beautiful + exquisite’ = ‘beautiful’), “道路” (way + road = ‘road’). The practice of joining two synonyms into a word crept into Chinese-based pidgin English, in words such as “看看” look-see. In some other compound words, two antonyms are joined, as in 大小 (‘large + small’ = ‘size’) and 多少 (‘much + few’ = ‘quantity’).

Since many compounds are fairly transparent combinations of independent words, it is likely to be taken for granted that they can be combined together quite freely. As a matter of fact, compounds are integral units with their own independent existence, not simply convenient combinations created at will. The following examples will illustrate that the meaning of the whole can be somewhat more than the meaning of the parts. e.g. “文学” (written language + study, the total meaning is literature), “经济” (govern + assist, the total meaning is economy), “动物” “to move + thing”, the total meaning is animal. Apart from that, sometimes, the meanings of the component morphemes contribute to the meaning of the compound word but the word order can also make the meanings different, e.g. “马上” (‘horse, above’ means ‘at once’) and “上马” means get on the horse or make a start.

Besides, many characters do not occur alone, always forming compounds with other characters, e.g., “喜” (‘joy’) and “欢” (‘pleasure, welcome’) are found together in the word “喜欢” (‘to like’). Both characters only ever occur in combination with other characters, in words such as “喜悦” ‘joy, pleasure’, “欢迎” ‘welcome’, etc. They never occur by themselves as “喜”or “欢”. Neither has the full independence and freedom of a word, e.g. “辅” in “辅助” “丰” in “丰收”and “概” in “概念”.

E-learning Chinese experiment

Since morpheme does play a role in character building and therefore vocabulary developing as discussed above, it is necessary to explore whether morpheme awareness helps Chinese vocabulary learning and if it does, in what way(s). To answer this research question, an e-learning Chinese program is designed and implemented at Nottingham University, UK.

The e-learning Chinese program is composed of morpheme-level, character-level, and word-level vocabulary learning. In the morpheme-level vocabulary learning, three groups of characters are introduced and practised: 1. morphologically transparent characters with radicals familiar to students; 2. morphologically transparent characters with radicals unfamiliar to students; 3. morphologically opaque characters. With this practice, students are engaged in decomposing a new word according to the morpheme function and predicting the meaning of the word. At the character level, the components of the characters are displayed and explained so that students will understand that a complicated character is made of smaller components and learn how to predict the meaning of the characters by understanding the components. At the word level, students are guided to find out what characters are used in the words and how the characters are put together to form the words, e.g. subject + verb, adjective + noun or verb + adverb etc.

The experiment was carried out in both autumn and spring semester in the academic year of 2004-2005 at Nottingham University, the UK. The subjects were 42 undergraduates doing Chinese as a ten-credit course. In theory, these students should have three hours of class contact time and three hours after class for self-study. The e-learning Chinese program was designed for their three hours of after class activities, however, they did it optionally. The
e-learning program went consecutively with the in-class teaching, and therefore, by the time students completed their in-class course, they had completed the e-learning Chinese program as well. During the course, five minutes were used at the beginning of each week to check out the three groups of characters, that is, seven words with familiar morphemes, seven words with unfamiliar morphemes, and seven words with opaque morphemes.

The results of the experiment show that morphology was of great value when the words were built up with transparent characters, less efficient with not-so transparent morphemes and most difficult with the morphologically opaque characters. This implies that character and word acquisition can be enhanced when students are able to triangulate different sources of information, that is, morpheme, character and word.

Students become aware of the information in word parts, are able to decompose complex words into informative parts, and are able to use information in word parts to estimate the meanings of unfamiliar complex words.

The implication that emerged from this study involves the need to provide students with opportunities to try alternative combination of morphemes, character and words and reflect upon their practice. The pedagogical implication for Chinese language teaching can be:

1. To add the rational of morpheme to vocabulary learning, guide students to decompose the structure of the word, analyse the components, gain a cluster of words e.g. 鸡蛋・鸭蛋・鹅蛋, generate the rules on their own so as to enlarge vocabulary efficiently. “Meanings of the constituents of poly-morphemic Chinese words are more manifest than often is the case with constituents of multi-morphemic English words” (Hoosain 1992:115).

2. To apply morpheme awareness to reading comprehension. Once they have mastered the rule and regularity, they can deduce the meaning of new words e.g. 大人・大学・中学・小学 with the new combination of the characters they have learnt. “The process of breaking an unfamiliar word into units and then recombining the units into a meaningful whole, enables students to figure out the meanings of newly encountered words and may enhance memory for these words” (Ku 2003: 400);

3. To avoid or reduce semantic mistakes. During the process of producing their language output using the vocabulary they have recently learnt, they might occasionally make mistakes, some of which belong to semantics, while some others to the lack of knowledge of structure. Mastering the structure of words or compound words helps avoid structure mistakes (见面一位太太,带头我们学习).

Carlisle (1995) proposed that morphological awareness might be particularly important because “morphological decomposition and problem-solving provide one way to understand and learn that large number of derived words used in the books they read (p205), and this study supports his view.

Computer-assisted morpheme awareness in Chinese learning is still in its infancy and greater collaboration between universities who are teaching Chinese as a foreign language is needed. Toward that end, this study can serve as a stepping stone.

Reference:


