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## *New Approaches to Chinese Word Formation*

*Morphology, Phonology and the Lexicon  
in Modern and Ancient Chinese*

*Jerome L. Packard  
(Editor)*



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# New Approaches to Chinese Word Formation

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in Modern and Ancient Chinese

*edited by*

Jerome L. Packard



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For Carol, Errol, Sam and Eric

*“... I hope you don't mind  
that I put down in words,  
how wonderful life is  
while you're in the world ...”*

Elton John

I was struck suddenly by the joke of it all. We social scientists are trying hard to be conscientious, using the methodologies and thought patterns of seventeenth-century science, while the scientists, traveling away from us at the speed of light, are moving into a universe that suggests entirely new ways of understanding. Just when social scientists seem to have gotten the science down and can construct strings of variables in impressive formulae, the scientists have left, plunging ahead into the vast “porridge of being” that describes a new reality.

Margaret J. Wheatley  
*Leadership and the New Science*

## Foreword

The question of wordhood in Chinese has been prominent from the inception of grammatical studies of the language.

Two significant features of Chinese make this question pertinent. First, it has long been observed that, as compared to other languages, Chinese has very little obligatory inflectional morphology of the kind which figures as a major defining feature of such languages as those spoken indigenously in North and South America, for example. The relative lack of “morphology”, particularly inflectional morphological processes, has been featured in typological studies at least since Sapir’s *Language* (1921), and has long been cited as a central distinguishing property of Chinese. The second feature of Chinese that makes the issue of wordhood intriguing is its writing system: which characters and combination of characters should be thought of as “words”? As noted in the Introduction to this volume, there was no term in Chinese for “word” as distinct from “character” until the beginning of the twentieth century. For example, if a combination like *xuexiao* ‘school’ refers to a single “concept”, shouldn’t this be considered a word in spite of the fact that it contains two characters, each with its own semantic content? And related to this issue are two other issues: one is the status of such grammatical forms as *le*, *zhe*, and so on, which have properties of both affixes and clitics in other languages, and the other is the relative abundance of compounding and derivational, as opposed to inflectional, processes in Chinese.

Partially in reaction to the view of Chinese as having “no morphology”, several modern studies, including important contributions by Professor Packard, have addressed these questions from a variety of theoretical viewpoints. It is very much to Professor Packard’s credit that he has brought this collection of articles together to provide a cross-section of research on word-formation in Chinese. This book gives us an in-depth look at a variety of morphological issues for Chinese, both diachronic and synchronic, including not only derivational processes, but also other types of word formation processes such as compounding and reduplication, the dramatic change in the history of Chinese from monosyllabic to bisyllabic lexical units, and analytic issues made visible by recent theoretical issues in linguistics, such as argument structure, transitivity, lexicalization, and the relationship between phonology, prosody, and morphology. By bringing to our attention this complex range of specifically word-

oriented problems, this book not only fills a gap in existing descriptions of Chinese, but sets the pace for future studies in this area.

*Sandra A. Thompson*

## Preface

In trying to understand the nature of a phenomenon, it helps if the vision can be articulated from multiple perspectives. This sort of “triangulation” – or “multiangulation” – helps provide a broader picture of the phenomenon in question, but it is also the hallmark of a discipline at a certain stage of development. Thomas Kuhn has said that a sharp increase in the number of theoretical approaches within a given area of inquiry is characteristic of the period just prior to a “paradigm shift” within that area. If that is so, then the diverse character of the papers in this volume stands as evidence that a shift within the paradigm of Chinese word formation cannot be far off.

It is interesting to consider the differing contemporary views of linguistics and the language faculty as cognitive science, and how the subject of this volume – the analysis of Chinese words and their formation – fits in. At one end of the spectrum is the view that the linguistic ability we are born with that enables us to acquire language is merely a specific application of the generalized psychological principles of mental operation that govern the way we cognitively parse our world. From this perspective, how we build words is simply a particular instance of our general ability to build larger from smaller meaningful units. At the other end of the spectrum is the view that our ability to learn and use language constitutes a set of abilities or “algorithms” specifically dedicated to the language faculty, and that the linguistic subsystems (such as phonology, morphology, syntax and semantics) also represent unique, dedicated “modular” systems that share algorithms neither with each other nor with other cognitive abilities.

My own bias is that within human cognition, language must surely be an instance of a specialized higher-level process involving kinds of rule abstraction and inferencing that differ from those that characterize, for example, visual perception. It may also be that as human linguistic ability developed phylogenetically, it not only allowed the species to achieve more complex modes of communication, but it also enabled successively more complex realms of ideation, so that in a sense the “language” of thought may have its origins in the “language” of language. It is difficult to conceive of anything other than language that has served so exclusively to make us human.



Within this context of language as the great “cognitive enabler”, it takes no great leap of imagination to entertain the hypothesis that both the phylogenetic development and contemporary use of language have crucially depended upon the *word* as a fundamental cognitive construct. The lexicon and the words it contains arguably constitutes the only modular linguistic system via which all other linguistic systems interface: words are nexus of specified sound sequences and stable configurations of meaning, from which the creative trajectories of phrases and sentences spring forth.

If linguists wish to assert that linguistic principles constitute uniquely specialized cognitive principles, then we must be willing to look for evidence of those principles across different, apparently unrelated, languages. In that spirit the present volume looks at Chinese words and their formation, with an eye toward determining if in a language with no grammatical agreement, little morphophonemic alternation and no inflection, it might still be possible to read off a plan in the human mind for the design and use of words. Our perspective is necessarily both synchronic and diachronic, for it is in both the present-day properties of complex words and the evolution of their structures over time that we can best observe the workings of a putatively universal device.

My thanks to all the contributors for their forbearance in the face of unspeakable delays in compilation and production. Thanks also to Sandra Thompson for writing the Foreword, to Werner Winter for his congenial correspondence and for editing the manuscript, to Barbara E. Cohen for making the index and to my colleague C. C. Cheng for his continued support.

The contributors to this volume have been drawn together not by geographic proximity or even agreement on what constitutes the foundations of Chinese morphology, but rather by the shared conviction that the structure and formation of Chinese words is interesting and worth investigating.

*Jerome L. Packard*

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# **Introduction<sup>1</sup>**

Jerome L. Packard

## **1. Introduction**

The subject of this volume is the formation and structure of complex (i. e., multimorphemic)<sup>2</sup> words in Chinese. Within this collection is represented a range of articles that is broad both in theoretical approach and in time period, from word derivation processes in Old Chinese, to the thematic structure of modern Mandarin compounds.

The collection of articles offered here serves to demonstrate the wealth and diversity of scholarship within the field of Chinese word formation. Throughout its history, the Chinese language has manifested word formation processes as disparate as phonological derivation, word splitting, contraction, overt marking of case relations and reduplication. At present many complex issues in Chinese morphology are topics of discussion, including theta assignment principles affecting words and their constituents, determination of wordhood, transitivity and the nature of word-internal arguments and even diachronic shifts in syllable and foot structure.

In this introductory chapter, I present some background information on complex word formation in Chinese, followed by a brief introduction to the papers of the contributors. I will use chronological terminology in this chapter as follows: The period from the appearance of writing (around 1200 BC or so; Boltz 1994: 43) to the end of the Han dynasty (around 220 AD) will be termed Old Chinese (also called “Archaic Chinese” in earlier work). The term “Proto-Chinese” is used to refer to a prehistoric hypothesized language ancestral to Old Chinese, perhaps a precursor of both Tibetan and Chinese. The period starting around the beginning of the Sui dynasty (600 AD) until the end of the Song dynasty (1279 AD) is called Middle Chinese (termed “Ancient Chinese” in earlier work). The term “classical Chinese” is used generally to refer to pre-modern Chinese language written in the classical versus vernacular style. Modern Chinese refers to the vernacular language used since 1900. Otherwise, dates or the names of specific dynasties are used.

## 2. Complex words in Old Chinese

The Chinese language has produced complex words in many ways throughout its history.<sup>3</sup> The most common word formation method (extending even to the present) has been the lexicalization of two juxtaposed words to form a single bisyllabic word. The first bisyllabic words<sup>4</sup> are thought to have been formed by the addition of a second syllable by some sort of phonological reduplication of all or part of a base monosyllable (see 2.2.2). But the earliest type of complex word formation in Old Chinese probably involved derivational processes of either affixation or morphophonological alternation (“derivation by phonological change”) that operated on monosyllabic word bases. It is to this topic that we turn first.

### 2.1. One-syllable words

#### 2.1.1. Derivation by phonological change

At the earliest stages of the Chinese language for which we have a written record,<sup>5</sup> words appear to have consisted mainly of one syllable, with each syllable generally corresponding to one Chinese character and one morpheme<sup>6</sup> (Wang 1980: 343; Norman 1988: 112; and many others). At that time, related words are thought to have been derivable by changing the consonant, vowel or tone of a base word (Karlgren 1956; Pulleyblank 1995: 10–11; Baxter and Sagart, this volume). This would be like in English considering the verb “teethe” to be derived from the noun “teeth” by changing the consonant ([tθ] to [tɪð]), the verb “bleed” to be derived from the noun “blood” by changing the vowel ([blud] to [blɪd]), or the verb “record” [recórd] to be derived from the noun “record” [récord] by changing the tone (here, stress placement) of the word.

The most clearly documented phonological derivation process in Old Chinese is derivation by tone change, specifically derivation involving the ‘going’ tone category (Downer 1959; Chou 1972: 15–22; Wang 1980: 213–217; Schussler 1985; Norman 1988: 84–85; Baxter 1992: 315–317; Baxter and Sagart, this volume). In Old Chinese, there were four tone categories: *píng* (平) ‘level’, *shǎng* (上) ‘rising’, *qù* (去) ‘going’ and *rù* (入) ‘entering’. Many nouns with level, rising or entering tones could be changed to verbs by changing the base tone to a going tone. Such noun-to-verb derivation appears to have been the most common derivation

process, but verb-to-noun derivation occurred as well.<sup>7</sup>

As seen in Table 1, the tonal derivation process also involved grammatical functions other than noun and verb derivation, such as the derived form indicating a causative or transitive meaning. The examples in Table 1 are mostly from Chou (1972: 19), with some from Baxter (1992: 316), both of whom cite Downer (1959) as their source. The phonetic forms in the examples are modified from the sources cited for typographical convenience.<sup>8</sup>

Table 1. Derivation in ‘going tone’

Base word	Gloss	‘Going tone’ derived word	Gloss
<sup>0</sup> kwan 冠	‘cap’	kwan <sup>0</sup> 冠	‘to cap’
<sup>0</sup> hjang 王	‘king’	hjang <sup>0</sup> 王	‘be king’
<sup>0</sup> biwan 飯	‘eat’	biwan <sup>0</sup> 飯	‘food’
<sup>0</sup> ziang 上	‘ascend’	ziang <sup>0</sup> 上	‘above, top’
<sup>0</sup> xao 好	‘pretty’	xao <sup>0</sup> 好	‘to love’
<sup>0</sup> jiwan 遠	‘distant’	jiwan <sup>0</sup> 遠	‘keep distant’
<sup>0</sup> zieu 受	‘receive’	zieu <sup>0</sup> 授	‘give’
<sup>0</sup> mai 買	‘buy’	mai <sup>0</sup> 賣	‘sell’

In Table 1 it can also be seen that characters representing the base and derived forms usually were the same or differed only minimally, sharing the component (i. e., the “phonetic” portion of the character) that reflected their cognate relation. Although going tone derivation is the best known of the Old Chinese phonological derivation processes, there is good evidence that other feature-based phonological processes, such as changes in voicing or vowel quality, were also used to derive words (Karlgren 1956; Norman 1988: 85; Baxter 1992: 176, 218–219; Baxter and Sagart, this volume).

### 2.1.2. Sub-syllabic affixation

It seems likely that Old Chinese retained significant portions of a Proto-Chinese sub-syllabic morphological affixation system,<sup>9</sup> cognates of which may be identified in classical and modern Tibetan (see, e. g., Pulleyblank 1973 a; Schussler 1976: 61–62, 115; Bodman 1980; Baxter 1992: 176,

218–222, 324; Baxter and Sagart, this volume). According to this theory, morphologically-related single-syllable words (i. e., lexemes; perhaps in some cases the members of word families, see Karlgren 1933) were derived by the addition of prefixes, infixes and suffixes, the exact meanings of which are difficult to determine with certainty (Schussler 1976: 51–59, 75–76; Baxter and Sagart, this volume).

#### 2.1.2.1. The written representation of sub-syllabic affixes

If the theory that Old Chinese possessed sub-syllabic affixes is correct, then such affixes would still have existed at the time when the Chinese writing system was invented, and during its early stages of development (from around 1200 to 500 BC). Under such conditions, there were various ways that the characters could have been used to represent a derived word that had been generated from a base word using a sub-syllabic affix. One way was simply to use the same character for both the base and derived words. In this situation, a single character had different pronunciations corresponding to the different (albeit related) meanings, with the reader relying on context to provide the proper reading – a common occurrence in classical Chinese (Pulleyblank 1995: 10; Baxter and Sagart, this volume; see also, e. g., Table 1). A second way was to use a character that was different from (although often graphically related to) the base character, also a common practice in classical texts (see Karlgren 1933; Boodberg 1934; Lu and Wang 1983: 80–81; Baxter and Sagart, this volume).

A third way, generally overlooked but explained in detail by Boodberg as a way of writing consonant clusters (Boodberg 1937: 354–360 [1979: 388–394]), was to use two characters to represent the single-syllable derived word, in violation of the “one-character-one-syllable” principle. For example, in the case of a derived word generated from a base word by prefixation, the initial consonant of the first character would represent (or “spell”) only the prefix, and the second character would represent the pronunciation of the base word. The two characters representing the prefix and base would have rhymed, in the ideal case differing only in the pronunciation of the initial consonant.

Boodberg argued that such two-character combinations (he called them “binoms”) were used precisely in this way, to provide the correct reading of consonant clusters still extant in the phonologically more conservative southern dialects (Boodberg 1937 [1979] footnote 53), or in obsolescent words.<sup>10</sup> Quoting Boodberg (with minor changes made for typographical convenience):

Thus a \**geu* (descended from an original \*\**GLEu*) could be “reconstructed” into its primitive reading by affixing to it a graph read *-\*leu* while a *-\*leu* could serve as a basis for “reconstruction” with a prefixed graph read *\*geu*. In both cases, we would have a binom consisting of two independent graphs *\*geu-\***leu*, the purpose of which would be not so much to represent two words *\*geu* and *\*leu* as to render an obsolescent *\*gleu*.

(1937: 356 [1979: 390])

Boodberg also explicitly mentions the possibility that certain members of such consonant clusters may have functioned as grammatical affixes (Boodberg 1937: 359 [1979: 393] and footnote 61).

The deterioration of the Proto-Chinese sub-syllabic affixal system was presumably already well under way by the time Chinese character writing was invented. Since characters probably were not used extensively to represent such affixes (if indeed they were used at all), the lack of a way to record them in writing undoubtedly would have hastened their demise.

### 2.1.3. Fusion words

Another type of complex monosyllabic word in Old Chinese is what have been termed “fusion” words (Dobson 1959: 167–168; Serruys 1959: 113; Kennedy 1940 [1964 a]: 62–77; Pulleyblank 1995: 9).<sup>11</sup> These words resulted from the contraction of two syllables, the second of which is usually an unstressed pronoun or demonstrative (Norman 1988: 85–86). Since these words came to be spoken with one syllable, they were written with a single character whose pronunciation reflected the contracted form. Table 2 provides some examples, based on Kennedy (1940 [1964 a]). Sound values have been modified for typographical convenience.

Table 2. Fusion words (contractions) in Old Chinese

First word	Gloss	Sound	Second word	Gloss	Sound	Fu-sion	Gloss	Sound
之	‘it’	tsi	於	‘at’	iwɔ	諸	‘it at’	tsiwɔ
而	‘and’	nzi	已	‘end’	i	耳	‘that’s all’	nzi
不	‘not’	pieu	之	‘it’	ti	弗	‘not it’	piuet
何	‘how’	g’a	不	‘not’	pu	盍	‘how not’	g’ap



These words are thought to have undergone lexicalization and then contraction to form monosyllables, implying an intermediate stage of existence as bisyllabic words. This fact, together with the posited existence of sub-syllabic affixes (see 2.1.2 and note 7), implies the presence of greater numbers of multimorphemic words than generally has been recognized for Old Chinese.

## 2.2. Two-syllable words

With the possible exceptions of the progenitors of fusion words discussed in the previous section, and proper names (see note 4), the earliest productive creation of two-syllable words for which we have direct evidence involves the operation of phonological processes upon monosyllabic word roots. Those phonological processes were the complete or partial reduplication of monosyllabic words, and possibly the splitting of monosyllabic words into words of two syllables. The linguistic function of these phonological word formation processes may have been to produce lengthened word forms, in order to distinguish words in danger of losing their lexical identity through homophony.

### 2.2.1. Why did Chinese words become bisyllabic?

If we assume a fairly close correspondence between the spoken and written language in Old Chinese (but see note 5), then one of the clearest developmental changes in the history of the Chinese language has been a shift from monosyllabic to bisyllabic words, begun in earnest probably at some time during the Zhou dynasty, around 1000–700 BC (Cheng 1981 b: 44; Boltz 1994: 171; Feng: this volume).

A general simplification of the Chinese phonological system<sup>12</sup> is believed to have occurred at about the same time as the incipient shift to bisyllabism. The cooccurrence of these two phenomena in time suggests a cause-effect relationship. The question is, if there was a causal relation, in which direction did it occur?

Cheng (1981 b: 57–58) argues that bisyllabism occurred first, leading to the simplification of the phonological system. According to Cheng, societal forces resulted in pressure to enlarge the lexicon, and two-syllable words were created as a means of rapidly increasing the number of words.