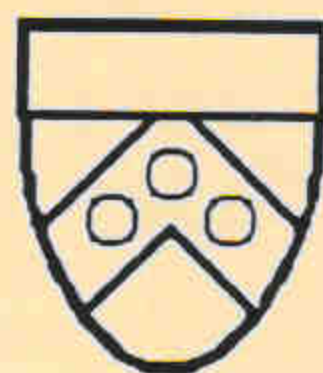


*The* Penn Review  
of Linguistics

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Volume 15  
Spring 1991

**The Penn Review of Linguistics**  
**Volume 15**

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# PROSODIC STRUCTURE AND WORD ORDER CHANGE IN CHINESE\*

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## 1. Introduction

There have been arguments for and against the assumption that Chinese is changing from a basically SVO language into a SOV language (Li & Thompson 1973, Huang, S.F. 1978, and many others). In this paper, I will propose the existence of a prosodic structural change in the history of the Chinese language and suggest that some word order changes discussed in the literature can be accounted for under the hypothesis that the principles of rhythm shape the output of the grammar by filtering out rhythmically ill-formed sentences (Adams 1987).

In what follows, I will present some evidence for two distinct prosodic changes in Chinese. First, from 770 B.C. to 220 A.D., that is, from the Chunqiu period to the Han Dynasty, the prosodic target is more and more focused on the sentence-final elements. Second, from 500 A.D. on, that is, from the Nanbei Dynasty on, the prosodic target is more and more focused on the last main verb.

## 2. The Prosodic Structural After 770 B.C.

Although the exact nature of the prosodic structure of classical Chinese is unclear, there are strong indications that the rhythmic target has increasingly focused on the sentence final elements (from 770 B.C. to 220 A.D.). The evidence for sentence final stress appears in six domains as shown below.

### 2.1. The Loss of Preverbal Particles and The Newly Developed Sentence Final Particles

The loss of preverbal particles such as *yu* 聿 and the newly developed sentence final particles such as *yi* 矣, *yan* 焉, *zai* 哉 (770 B.C.) have been observed widely by traditional grammarians. In early classical Chinese, there were several particles that could only occur preverbally, for example:

- (1) ...*Yu* qiu yuan sheng  
...prt. find great sage  
To find a great sage. (Shu. Tanggao)



Although, the syntactic as well as the semantic functions of those particles have been out of focus (it is not clear whether they are verbal prefixes or some sort of grammatical particles), the fact is that all those particles have disappeared from the latter documents. On the other hand, approximately ten final particles have appeared since 770 B.C. (the Chuenqiu period) For example, *ye* 也, *er* 尔, *fu* 夫, which are the so-called declarative particles; *hu* 乎, *zai* 哉, *yu* 欤, *ye* 耶, *wei* 未, *mo* 未, the interrogative particles; and *yi* 矣, the aspective particle as given in (2):

- (2).           Wu zhi zhi yi  
                   I know it prt.  
                   I knew it.

Most importantly, (i) these particles are newly developed since 770 B.C. (Wang 1958); (ii) they can only be placed at the end of the sentence; and (iii) they always receive heavy stress<sup>1</sup>. The disappearance of preverbal particles together with the newly developed sentence final particles is a very important indication of the change of sentence stress. Because, as those stressed particles appeared at the end of the sentence, it is possible that those final particles have pushed the sentence stress toward the end of the sentence.

## 2.2. The Loss of Enclitics

The replacement of postposition [NP-P] (in 3-a) by preposition [P-NP] (in 3-b) is illustrated by the position yi in (3) and the replacement of [Neg-Pro V] by [Neg V Pro] as in (4) (ca. 206 B.C. to 25 A.D.):

- (3). a.       Li yi zhi zhi, yi yi zheng zhi   (Liji.Sangfu 240 B.C.)  
               Etiquette by govern it, refined manners by rectify it.  
               Govern it by etiquette; Rectify it by refined manners (liter.)
- b.       Yi shuoban pisha zhi       (Shishuo xinyu. 500. A.D.)  
               By hand kill it  
               Kill it by hand.
- (4). a.       Mo wǒ zhi yefu               (Lunyu, Xianwen. 500.B.C.)  
               not me know prt.  
               Don't know me.
- b.       Mo zhi wǒ fu               (Shiji. Kongzi shijia 100 B.C.)  
               not know me prt.  
               Don't know me.

According to recent theories, the pattern of [NP P] and [Neg-Pro V] can be explained nicely in terms of cliticization (Kemenade 1987). Since in classical Chinese, the canonical word order is SVO, but when the objects of



prepositions are pronouns or abstract NPs, they tend to occur prepositionally; and also when the objects of verbs are pronouns in negative and interrogative contexts, those pronouns have to occur preverbally. It has been observed (Ting 1933) that this process has caused the pronoun object, for example "zhi" (it), to be fused with the negation "bu" (not) as in the following sentence:

- (5) Sui you jia yao, *fu* shi bu zhi qi wei ye. (Liji)  
 Though have good food, not-it eat not know its taste prt.  
 Even though you may have good food, if you don't eat it, you won't know its taste.

In this example, the negative form *fu* is only followed by a transitive verb without an overt object, whereas the form *bu* is only followed by a transitive verb with an object. The semantics of each sentence indicates that the missing object must be *zhi* (it). According to the fact that pronoun object must occur preverbally in negative contexts, *fu* must be the result of [not+it]. Given the fusing form *fu*, it follows that the pronoun object *zhi* may have a phonological reduction form in classical Chinese and the pronoun objects in preverbal and pre-prepositional positions can therefore be analyzed as clitics as in Old English and other Romance languages. If examples such as (3-a) and (4-a) are analyzed as cliticization, accordingly, as happened in Old French (see Adams 1987), the loss of enclitics would be another indication of the stress shifting toward the end of the sentence.

### 2.3. The Loss Of The Conjunction Word ER

The loss of the conjunction word "ER" (and), with increasing development of serial verb constructions, may reflect the shift to final stress. The conjunction ER present in early Chinese as in 6-a, 7-a and 8-a has gradually dropped out after ca.300 B.C. as in 6-b, 7-b and 8-b:

- (6). a. Kun...hua ER wei niao, qi min wei Peng.(Zhuangzi.300 B.C.)  
 Kun...change and become bird, it name Peng.  
 Kun...changes and becomes a bird, then it is named Peng.
- b. Wei you nuzi hua wei zhangfu (Shiji. Wei. 100 B.C.)  
 Wei has woman change become man  
 Wei has a woman who changed into a man.
- (7). a. ....she ER sha zhi (Zuo. cheng.17 400 B.C.)  
 ...shoot and kill him  
 ...shoot him and kill him.
- b. ...she sha Huanzhe (Shiji. Jin. 100 B.C.)



...shoot kill Huanzhe  
...shot Huanzhe and killed him.

- (8) a. wei di qiang ER tui, fei fu ye. (Zuo. Xuan. 12)  
hear enemy strong and retreat, not man.  
You would not be a man if you retreated when you heard the enemy is strong.
- b. fa bing xing ji. (Shiji. Xinanyi.)  
Launch war start attack  
Launch a war and start attacking.

Note crucially that, in Modern Chinese, there is no conjunction word, that is a counterpart of "and" in English coordinate structures. The coordinate structure in modern Chinese must be formed by some specific expressions, for example: "you...you..." (again...again...), or by putting a pause between two or three coordinate clauses. This is because the conjunction word "ER" in classical Chinese has lost. Even "*he*", a conjunction word commonly used in modern Chinese and more or less like "and" in English:

Wo *he* Zhangsan                      I and Zhangsan

it cannot be used as "and" to link coordinate clauses, for example:

- (9) \*Zhangsan chi fan le *he* he shui le  
Zhangsan ate food *and* drank water

As far as I know, there is no adequate explanation of why such an important word has disappeared from the language. Now, according to the hypothesis: sentence final elements have become the target of stress, the coordinate structure such as [ [...VP] and [...VP] ] will be strongly disfavored by the rhythmic requirement, since the two parallel VPs in a sentence make it impossible for stress to be placed on each<sup>2</sup>. As a result, the conjunction word ER (and) is finally dropped from the language after the Han Dynasty (23 B.C to 220 A.D.) and the new structure, verb serialization, favored by the rhythmic principle, sharply increases. Again, the loss of ER would be an additional indication of the stress shifting toward the end of the sentence.

#### 2.4. Serializations After The Han Dynasty

If prosodic target is increasingly placed on the end of the sentence, and if the conjunction word ER (and) was disfavored by the rhythmic structure, what happens next is that verbal serializations will come to replace the coordinate structures formed by ER, so as to satisfy the rhythmic requirement. The following examples illustrate this process:



- (10). a. She Gongwang, zhong mu (Zuo.Cheng 16)  
 shoot Gongwang, hit on his eye.  
 Shot Gongwang, it hit his eye.
- b. She zhong Gongwang mu. (Shiji. Jin)  
 shoot hit Gongwang eye  
 Shot and hit Gongwang's eye.
- (11). Tenggong chang xia shou zai zhi. (Shiji. Xiangyu)  
 Tenggong often get off (the carriage) get (him) give (a ride)  
 him.  
 Tenggong often gets off the carriage to take him by giving  
 him a ride.

Sentences in (10) show that although the two writers at different times, have used the same words to describe the same thing, the sentences they formed are different. In Zuo zhuan (400 B.C.), two parallel clauses are used, but in Shiji (100 B.C.), these two parallel clauses have been serialized into one clause. Example (11) shows that even three verbs can be serialized in one sentence in Shiji.

Meanwhile, serial verbs or "pre-pivotal verbs" named by Chao, such as "ling" (order) have increased sharply in Shiji as shown in Table 1. (The following statistic data are taken from He 1986)

Table 1. Pre-Pivotal Verbs

Zuo zhuan	10
Shiji	43

Those verbs include "shi" (make), "ling" (order), "qian" (send), "quan" (persuade), "feng" (confer), "wei" (call), and so on.

Also, the number of so-called resultative verbs in verb serialization such as "sha" (kill) in "she-sha" (shoot to death), "ci-sha" (stab to death), "shao-sha" (burn to death), and so on, has increased tremendously. In Zuo zhuan, there are only 6 resultative verbs of this sort, but we find 27 of them in Shiji as shown in Table 2.

Table 2. Resultative Verb

Zuo zhuan	6
Shiji	27



Directional verbs, such as "xia" (go down), "ru" (go into), and so on, can also form serial verb constructions:

- (12) Chuzhaowang wang chuy Ying (Shiji)  
 CHuzhaowang escape go out Ying  
 Chuzhaowang escaped and went out of Ying.

In Zuozhuan, there were only 5 directional verbs like "chu" (go out), "ru" (come in) "guo" (pass over) "jin" (come in) "zhi" (go to). In Shiji, we found 12 verbs of this kind as in Table 3.

Table3. Directional Verb

Zuozhuan	5
Shiji	12

The increasing serial verb constructions, together with the loss of coordinate structure formed by ER strongly indicate, once again, the prosodic structure change as outlined above.

## 2.5. The Development of Coverbs

It is generally agreed that all coverbs (prepositions) in modern Chinese are derived from verbs. The development of coverbs can be found mostly in the context [V NP V NP] --> [P NP V NP] as shown in (13) and summarized in Table 4.

- (13). a. Dui jiu, dang ge (Cao cao. Duangexing)  
 Face wine, must sing  
 (When you) drink wine, (you) must sing a song.
- b. Dui binke tanxi (ShiJi)  
 Face guests sighed  
 Sighed to the guests.

Table4. Pre-V prepositions Post-V prepositions

Zuozhuan	19	11
Shiji	46	11



As Table 4. shows, the newly developed 27 prepositions are all from the preverbal position. Note that the number of prepositions in the postverbal position in Zuozhuan and Shiji are the same, although, the relative frequency of the postverbal prepositions are less in Shiji than in Zuozhuan. This indicates that the preverbal positions are not stressed positions, so that verbs in these positions can be weakened and became prepositions. On the other hand, we could not find any verb that was weakened and then become a preposition at the post verbal position, that is, the last verb with its object can never been weakened into a preposition. It follows that postverbal position must be different from preverbal position. The difference can be captured by the hypothesis: the last verb is always stressed at the end of the sentence. Therefore, the development of coverbs provides a further evidence for my hypothesis.

## 2.6. The Changes of Poetry Pattern

In classical Chinese, the oldest syllable pattern of poetry was four syllables per line (1100 B.C.). After late Han (200 A.D.), a new pattern of poetry, five syllables per line, started to appear. What is interesting here is that, according to traditional studies of Chinese poetry, the rhythmic structure of the old pattern must be as in (14). (the "\$" represents a syllable, and the slash represents a pause)

(14).

\$ \$ / \$ \$

rather than

\$ / \$ \$ \$ or \$ \$ \$ / \$

On the other hand, the new pattern must be

\$ \$ / \$ \$ \$

rather than

\$ \$ \$ / \$ \$

The crucial difference between these two patterns is that the new pattern has a heavy rhythmical ending, that is, three syllables in one foot, but the old one does not, that is, the last two syllables are equally heavy as the first two. This change is an important indication that heavy stress has come to be placed on the end of the sentence.

Most importantly, we can find only **odd** syllable, but not **even** syllable patterns of poetry after the Han Dynasty. It has been observed in the history of Chinese poetry, that the new pattern of poetry, for example 7 syllables



per line, is developed from the so-called FU (descriptive prose interspersed with verse) (see Zhu "On poetry"). It is not the case that there is no chance for an even syllable pattern to be developed from FU, since before 7 syllable pattern developed, there was the so-called "Si Liu Wen" (FU with only four or six syllables per line) for a short time. The question then arises, why cannot we find even syllable patterns in the later Chinese history? And why cannot the four or six syllable FU survive? Under my hypothesis, this can be explained as follows: since the poetry somehow has to match the natural rhythm of speech patterns, the sentence final stress makes it impossible to form the poetry pattern with a heavy head but light feet ("tou zhong jiao qing" in Chinese terms), or with a head and feet that are equally heavy.

### 3. The Prosodic Structure After 500 A.D.

So far, I have discussed the stress shifting toward the end of the sentence. Next, I will develop the idea that after the stress has been placed on the sentence final elements, the clause final main verb has become the prosodic target (from 500 A.D. on). The evidence is given below.

#### 3.1. The development of Verb DE

- (15) a. Xianwang zhi dao, ke DE er wen ye (Mengzi. 300. B.C.)  
 Xianwang 's system, can get and know prt.  
 We can get and know Xianwang's system.
- b. ....bu DE jian (Hanfeizi. 200. B.C.)  
 not can see  
 ... can not see.
- c. Gong DE shi cheng (Shiji. Suqin)  
 Attack get ten cities  
 Attacked them and got ten cities.
- d. Ping zi rao li, zheng DE tuo. (Shishuo.Guizhen 500 A.D.)  
 Ping son rich strength, struggle get escape  
 Ping's son has great strength, (he) is able to struggle to get out.

(15-a) shows that DE is a verb in classical Chinese, and (15-b) shows that it has been weakened as an Auxiliary verb in the preverbal position after 200 B.C. (15-c) shows that DE is still a verb at a postverbal position while it can be used as an Auxiliary in preverbal position. (15-d) shows that DE starts to be weakened at the postverbal position around the time 500 A.D. Note crucially that we can only find the weakened DE at the preverbal position, but not at the postverbal position before 500 A.D. As we discussed above,



since the stress has shifted toward the end of the sentence after 770 B.C., we would expect to find verbs weakened at preverbal positions, but not postverbal positions, as verbs in stressed positions cannot generally be weakened. This is, in fact, parallel to the process of VP --> PP in preverbal positions but not in postverbal positions. However, after 500 A.D., verbs such as DE in postverbal position can also be weakened, it indicates that the postverbal position occupied by DE must be unstressed. What is really going on after 500 A.D. is that the stress target, I suggest, has shifted to the last main verb.<sup>3</sup> This is why we can find weakened DE preverbally around 200 B.C. but postverbally around 500 A.D. as illustrated in (16):

- |      |                |                |
|------|----------------|----------------|
| (16) | 200 B.C.       | 500 A.D.       |
|      | [ ... DE-V' ]s | [ ... V'-DE ]s |

Obviously, the weakening of verb DE at the postverbal position would be an indication that the stress target has focused on the last main verb.

### 3.2. The Enclitics development

It has been studied that the verb "Liao" (finish) in classical Chinese is a full verb, but somehow it has become an Aspect marker around the 12 century. The environment in which the change took place is:

[V LIAO ] --> [V-LE]v

that is, *Liao* ---> *Le* after the main verb as exemplified in (17):

- |          |                                 |                              |
|----------|---------------------------------|------------------------------|
| (17). a. | Sha Zixu liao...                | (Bianwen. p.27.10th century) |
|          | kill Zixu finish                |                              |
|          | After he killed Zixu...         |                              |
| b.       | Huai le yisheng                 | (Bianwen p.113)              |
|          | ruin Le a life                  |                              |
|          | You will ruin a(n entire) life. |                              |

*Liao* is the main verb in (17-a), latter on, according to Shi's study, it became the secondary verb in the post-verbal position. As the change goes on, it is weakened phonetically as *Le* in (17-b) and syntactically as a clitic onto the main verb, and finally becomes an aspect marker. This process is possible only if *Liao* is unstressed, and the verb that *Liao* is cliticized on is stressed, otherwise the phonological reduction form *Le* cannot take place as shown in the following modern phrase:

- |          |                   |
|----------|-------------------|
| (18). a. | Mei wan mei liao  |
|          | no stop no finish |



- b. \*Mei wan mei le.

In this example, *Liao* cannot be replaced by *Le*, since it is a full verb and receives primary stress at the end of the sentence. For *Liao* to become an Aspect marker in the history, first, it had to become a secondary verb, which is proved by Shi's study, and second, the sentence stress must have been shifted to the main verb preceding *Liao*. Therefore, the development of *Liao* to *Le* indicates that the final main verb has become the prosodic target.

### 3.3. The elision of Preposition after the main Verb

In late classical Chinese and modern Chinese, prepositions come to elide after the main verb, resulting in a compound verb: V P NP --> [V-NP]<sub>v</sub>. For example:

- (19). a. Chu yu yougu (Shijing. ca.1000 B.C.)  
 come from dark-valley.
- b. Zhangsan zhui-ma le (Modern Chinese)  
 Zhangsan fall-horseback prt.  
 Zhangsan fell down from a horseback.

### 3.4. The elision of Preposition before the main Verb

It has also been observed that prepositions come to elide before the main verb, yielding a compound verb: [P NP V] --> [NP-V]<sub>v</sub> :

- (20). a. Yi ren ci Jiuwong (Duan Taiwei yishi zhuang)  
 By knife stab Jiuwong  
 Stab Jiuwong with a knife.
- b. Zhangwo quanli (Modern Chinese)  
 palm-grip power  
 Hold the power.

What is crucial here is that the weakening of a verb to a coverb at the left of the main verb, and the weakening of a verb to an Aspect marker at the right of the main verb both parallel the elision of prepositions, in that (i) elements such as verb and preposition can be weakened at both sides of the main verb and (ii) elements to the right of the main verb are weakened to a much greater degree than elements to the left of the verb (Verbs in preverbal position can be weakened into prepositions, but verbs in postverbal position can be weakened as Aspect markers; also the elision of prepositions in



postverbal position are four times more common than the elision of prepositions in preverbal positions). This clearly shows that the sentence final main verb is the rhythmic target. As this change progresses, the following restriction is expected: the verb of a sentence must occur near the end of the sentence, and can be followed by at most one constituent. This is how Huang's Phrase Structure Constraint (1984) comes about functionally.

Notice, when the prosodic target has fallen on the last main verb, this does not mean that the stress is no longer on the end of the sentence. Recall that the process of change, as stated before, consists of two steps: (a) the appearance of prosodic stress on the sentence final element; (b) a subsequent stress shifting back towards the last main verb, with destressing of elements after the main verb (such as *Le*, DE). Therefore, the shift of prosodic target toward the end of the sentence as the first step of the change, and the shift of prosodic target back to the last main verb as the first change continuing, had made the rhythmic structure come to restrict the final elements of the sentence in such a way: **a sentence must end with a stressed verb**. At this point, if sentences end with verbs, i.e. intransitive verbs, we are free to say that the stress is on the end of the sentence; If sentences end with an object, i.e. transitive verbs, the rhythmic principle would not rule them out, as VO orders are very common in the language. In this case, however, we would say that the final VO--predicate, is indeed the stress target; Only other stressed elements after the VO must be filtered out as an ill-formed sentence by the rhythmic principle.

#### 4. Further Discussion

If the hypothesis presented here is correct, we would expect to find that, as a continuation of its historical development, modern Chinese must exhibit some kind of prosodic structures that are consistent with the one I proposed above. Fortunately, we find interesting studies done by Chao. Chao in his "A grammar of Spoken Chinese" divided stress into 3 degrees: Normal Stress; Contrasting Stress; and Weak Stress. What we want to know here is the pattern of Normal Stress. As Chao pointed out, the normal stress pattern in spoken Chinese is "the last being the strongest, the first next, and the intermediate being least stressed." (p35) He concludes that "these degrees of stress are predictable by position." Examples he gives are:

- (21) Wo mei `dong                    I did not understand.  
      Renren dou xiang `qu.        Everyone wants to go there.

This basically confirms my hypothesis: (i) there is only one primary stress in a sentence; (ii) the primary stress is placed on the end of the sentence. The only difference is that in Chao's pattern the stress is on the last position of a sentence, no matter whether the last position is a verb or an NP, or some



other elements. My hypothesis is that the last main verb receives stress. However, under Huang's Phrase Structure Constraint, Chinese allows at most one constituent after the final verb. If so, what Chao's pattern predicates then is that either the final verb (example 21) or its object can get stressed. In fact, there would be no difference if either the final verb or its object get stressed. At this point, we would say that the prosodic target is on the last minimal VP (by minimal, I mean only verbs with its object/s), and the stress may realized either on the verb or its object. This has several advantages prior to Chao's pattern. First, pronoun objects can never get stressed in Mandarin in the Normal stress pattern, thus there is no need to exclude the pronoun object from the normal stress pattern. Second, in sentences like the following, the last element, clearly, cannot receive stress in the normal sense.

- (22) Ni zou de shihou jiao Laoli yisheng.  
 You leave DE time, call Laoli a sound.  
 When you leave, please give Laoli a call.

(23) strongly supports the hypothesis that normal stress is on the last minimal VP, but creates another exception to Chao's pattern.

Thirdly, if stress is placed on the last position of the sentence, there would be no reason, historically, for verb *Liao* at the end of sentence to be weakened as *Le*. On the contrary, if stress is placed on the last minimal VP, since *Liao* has become a secondary verb, it will be excluded from the last minimal VP, hence the reduction of its phonological shape and the process of cliticization it has undergone.

Finally, the reanalysis of postverbal PP in modern Chinese is another piece of evidence in supporting of my analysis about the stress. It is well-known that the postverbal preposition and preverbal preposition carry different meanings in Chinese. For example:

- (23) a. Ni dao xian shang cai  
 You to line on step  
 You go to the line to step.
- b. Ni cai dao xian le.  
 You step to line prt.  
 You step on the line.
- c. Ni cai-xian le.  
 You step-line prt.  
 You step on the line.

As shown before, the long historical prosodic changing has shaped the output of the grammar in such a way: a sentence must end with a stressed



verb, therefore, elements after the minimal VP tend to be disfavored by the rhythmic structure. As a result, the PP after the final main verb as in (23-b) must undergo some kind of "operation" to meet the rhythmic structure. A simple movement of the PP from postverbal position to preverbal position, or a replacement of the postverbal PP by a preverbal PP, is not valuable, because these operations will create a semantic conflict: the preverbal PP means something differently from the postverbal PP as shown in (23a) and (23b). What is actually happening is that either the preposition must be dropped to yield a compound verb as in (23-c), or the preposition must be cliticized onto the verb to yield a reanalyzed new verb category, and the object of the preposition becomes the object of the now verb as in (23-b), so that, the rhythmic requirement is satisfied.

Notice that within the new form in (23-b), that is, in the reanalyzed form [V-P], the preposition can never be stressed as in (24):

(24). \*Ni cai-`dao xian le.

This shows that after the main verb (or its object), the sentence is not allowed to have any category that carries stress. It follows that the last main verb, or the last minimal VP is the prosodic target. It would be otherwise difficult to explain the process of the elision of the preposition and the reanalysis of the [V-P], if according to Chao's stress pattern.

To sum up, this study has the potential to resolve the long debate about changes from SVO to SOV in Chinese. As stated before, the process of prosodic stress change consists of these steps: (a) the appearance of sentence stress on the sentence final element; (b) a subsequent destressing of this element such that stress shifts back towards the final main verb; and a further consequence of the destressing of final elements (PP, for example) is their tendency to either drop completely (as P-->0) or to cliticize onto the preceding main verb (as [V-P]), which now serves as the site of prosodic stress in the sentence. This argues that word order and the assignment of prosodic stress interacted such that a change in stress assignment triggered the ultimate position of the main verb. If my hypothesis is correct, the study will provide an independent assessment of Adams' (1987) proposal that change in prosody can be important in questions of how word order change comes about. If this is so, the model of grammar must be constructed in such a way that prosodic structure is properly represented at some or other level of the grammar. This poses a challenge to current syntactic theories that syntax has nothing to do with phonology, and give a picture of how phonology may interact with syntax. Furthermore, this study may also show that diachronic research can provide crucial insights into the theory of grammar.



## NOTES

\*I would like to thank Professor Tony Kroch, Gillian Sankoff, Ellen Prince, Jerry Packard and Thomas Ernst for thoughtful suggestions and comments.

1. The fact that two final particles can be fused into one in classical Chinese indicates that at least one of them receives stress at sentence final position; and that, in classical Chinese, three final particles can be placed together at the end of the sentence which would be impossible if they did not receive stress. In addition, sentence final exclamation particles such as "zai" must receive stress.

2. Note that, in a coordinate structure ---[VP1 and VP2], VP1 and VP2 are not only structurally parallel, but also semantically parallel. Therefore, each of the VPs must receive equal heavy stress to license their parallelism, if they receive stress at all. As I have hypothesized above, since only sentence final element can receive primary stress, a single stress pattern would not allow two parallel stresses in a sentence. Thus it is impossible for VP1 in [VP1 and VP2] to get a equal stress as VP2 does. As a result, the coordinate structure will be destroyed by the new rhythmic principle. The single primary stress pattern is also true in modern Chinese. (see Chao below)

3. The following example shows that, before DE was weakened, it had become a secondary verb at the postverbal position around 80 A.D.:

Wei renchen zhi shi, zao-de e ye (Lunhegn, Mingyi.)  
Say pregnant 's time, suffer-DE awful prt.  
It is said that in the time of pregnancy, one suffers from  
awfulness.

In this example, "awfulness" is not an object of DE, but of "suffer", which is newly developed since latter Han (see Yang 1989). Therefore DE does not mean "get" in this case, but indicates a result of an action denoted by the preceding verb. As a result, DE cannot be analyzed as a main verb in the newly developed context.

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