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THE COPULA IN CLASSICAL CHINESE DECLARATIVE SENTENCES

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ABSTRACT*

It is generally believed that declarative sentences in Classical Chinese (CC) contained no copula, and that the copula *shi* 是 developed from a Demonstrative pronominal form (D-pro, for short) in such sentences only after the Zhanguo period (475-221 B.C.). To date, the development of the copular *shi* from the D-pro *shi* has not been adequately explained.

In this paper it is argued that the overt phonological form of a pause in the surface syntax, i.e. between the topic and the comment, did indeed exist in early Classical Chinese declarative sentences, and that the D-pro *shi* evolved into the copular *shi* because of the weakening of the function of the D-pro *shi* and the lack of necessity for the pause. Consequently the pronoun was grammaticalized as a copula and the pause disappeared.

It is also argued that a crucial syntactic environment - the triggering experience that the person hears and which permits the growth of the relevant grammar - was necessary for the development of *shi*, and that adverbs preceding *shi* in this syntactical environment were partially responsible for the development of copular *shi* as well.

1. BACKGROUND

In Classical Chinese there was no copula in sentences as shown in the following before the late Zhanguo period[1]:

(1) 仲尼日月也
Zhongni[2], ri yue ye.
Zhongni sun moon prt.
Zhongni (is) the sun and the moon. *Lunyu. Zizhang*

(2) 孔子賢人也
Kongzi, xian ren ye.
Confucius, virtuous person prt.
Confucius (is) an able and virtuous person. *Zhanguoce. Zhaoce*

(3) 姬姓日也
Ji xing, ri ye.
Ji name, sun prt.
The name of Ji (is) like the sun. *Zuo-Cheng. 3*

It has been argued that declarative sentences in CC contained no copula. (Wang 1940) This view originally put forth by Wang has now been widely accepted. But several lexical elements did indeed occur in some declarative sentences and functioned as copulas in CC. For example:

(4) 厥草維夭 厥木維喬
Jue cao *wei* yao jue mu *wei* qiao.
Its grass is tender its tree is tall
Its grass is greener, its trees are taller. *Shu. Yugong*

(5) 其帶伊絲其弁伊騏
Qi dai *yi* si qi bian *yi* qi.
His tie is silk his cap is skin of horse.
His tie is silk, his cap is made of horse-skin.
Shijing. Caofeng

(6) 民不易物維德緊物
Min bu yi wu wei de *yi* wu.
People not change things only morality is thing.
People do not change things, only moralities (are the real) thing.
Zuo-Xi.5

(7) 梁父即楚將項燕
Liang fu *ji* Chu jiang Xiang Yan.
Liang's father just Chu general Xiang Yan
Liang's father is just the Chu general Xiang Yan.
Shiji. Xiang Yuji

(8) 是乃仁術也
Shi *nai* ren shu ye.
This just benevolent trickery prt.
This is just benevolent trickery. *Mengzi. Liang Huiwang*

Wang in "Copulas in Chinese Grammar" (1940) argued that these lexical elements are not copulas at all. He considered *wei* 維 in 4 as an interjectional particle, without further discussion of *yi* 伊 and *yi* 繄. As for *ji* 即 and *nai* 乃, he treated them as "adverbs with only a few copular properties". These are what he called the "semi-copula". (Wang 1940)

But, in 1959, Chou in his "Classical Chinese Grammar" listed all those lexical items cited above in 4 - 8 under the label of 'copula'.

In 1986, Xie published an article and argued in opposition to Wang's idea. He argued that in the Shijing all the *wei* 維's that occur between subjects and predicates, have to be considered copulas, since all the *wei*'s in this position function or can be interpreted as copulas, just as *shi* in modern Chinese.

Most recently, in his important study of the copulas in Shang Chinese, Takashima (1990) has analyzed *wei* 維 as a non-modal, explanatory copula, and *hui* 惠 as a modal, non-explanatory copula.

However, declarative sentences in Late Archaic Chinese (LAC) contained no copula as cited in 1 - 3. Therefore, opinions on the question of whether or not the Shang copula *wei* 維 ,interjections such as *yi* 伊 , *yi* 繄 , and adverbs such as *ji* 即 and *nai* 乃 in LAC can be interpreted as copulas, and why they should be, are still not unanimous.

Another question about the copular *shi* remains controversial. The most popular theory of the development of *shi* was proposed by Wang (1940). His conclusion was that the copula *shi* in Middle and Modern Chinese developed from the D-pro *shi* in CC.

But Sian (1986) challenged Wang's theory. He suggested that the copula *shi* originally came into the language as a particle of affirmation[3]. Because

the speaker used *shi* 'right' as an antonym for *fei* 'wrong', and since the negative *fei* was probably identified as being the same word as *fei* 'wrong', *fei* was most commonly used before a nominal predicate to negate it. Its affirmative counterpart *shi* naturally began to appear before a nominal predicate, just like a copula. Two related developments in the language motivated reanalysis of this affirmative particle as a copula: (a) disappearance of the sentence final particle *ye*; (b) replacement of the negative *fei* by *bu shi*.

As we can see below, both Wang's and Sian's account of the development of *shi* entail some inherently serious difficulties.

2. THE DIFFICULTIES IN ACCOUNTING FOR THE COPULA IN CC

First, if we accept the view that the interjectional particles such as *yi* 伊, *yi* 繄, and *wei* 維 are not copulas as Wang had suggested, we cannot adequately account for why they are allowed to appear between the subjects and the predicates in declarative sentences without overt semantic functions. But if *wei* is analyzed as a copula in LAC as it was in Shang Chinese, we have to interpret the others, such as *yi* and *yi* as copulas as well. This account however, makes it difficult to explain how and why semantically empty particles could just turn into copulas, since *yi* and *yi* are obviously not copulas in Shang Chinese. Furthermore, why can *wei, yi, yi, ji* and *nai* that belong to different categories, function just like a copula? Notice that *yi, yi* and *wei* exist mostly in parallel sentences as examples 5 and 6 show. Why did they only occur in poetry in the Shijing or in the parallel sentences? The function and the distribution of these elements cause further problem to both approaches.

Secondly, as Sian pointed out, there are some difficulties with Wang's view that the copula *shi* originated from the demonstrative *shi*. Sian questioned how, if the anaphoric function of this D-pro *shi* was transparent, the new generation in the process of acquiring the language failed to perceive *shi* as the anaphoric pronoun. But an even more serious problem for Wang's theory, is that: if the declarative sentences contained no copula (Wang 1940), there would have been no place for *shi* to move into and function as a copula between the subject and the predicate in those sentences. As *shi* evolved into a copula, the D-pro would have to have changed its position from the subject position to a position a copula usually occurs in. Thus according to Wang's assumption, the process by which *shi* evolved as a copula still remains unexplained.[4]

Finally, the view that *shi* came from an affirmative also has a number of problems. By Sian's approach, the development of *shi* may be analyzed as an analogic change:

fei'wrong' :: *shi*'right'
= *fei*'negative' :: *shi* x

this resulted in *shi* being used as an affirmative in the same environment *fei* can occur in, and then functioning as a copula.

The problem with this analysis is that the evidence from the pair of sentences containing *shi* as the antonym of *fei* is not robust enough to have been the triggering experience for speakers. In the Lunheng (ca.100 A.D.), which has been considered as an earlier document in which the changes of *shi* appeared, I found 10 sentences in which *shi* was used as a copula. For example:

(9)a 或言李廣便是熊渠養由基李廣
Huo yan Li Guang bian shi Xongqu
Someone said Li Guang just *shi* Xongqu
Yangyouji Li Guang.
Yangyouji Li Guang.
Someone said that Li Guang is just the person from Xongqu called Li Guang with another name: Yang Youji.
Lunheng p.167

b 余是所嫁婦人之父也
Yu shi suo jia furen zhi fu ye.
I *shi* that married women's father .
I am the father of the married woman. *Lunheng* p.427

But only one of them can be considered as a pair of *shi* and *fei*. For example:

(10) 不能別鳳凰是鳳與非
Bu neng bie Fenghuang shi Feng yu fei.
Not able distinguish Fenghuang is Feng and not.
(They are) unable to tell whether a phoenix is a male phoenix or not.

Lunheng p.388

Let us consider the newly developed syntactic environment of *shi*, namely, the [adv(erb)-*shi*-PRED(icate)]. (A detailed discussion of which is given in 4.3). For instance:

(11) 審是掌之罪也
...shen shi Zhang zhi zui ye.
really is Zhang 's fault prt.
Really this(is) Zhang 's fault. *Lunheng* p.510.

(12) 自是筋力勇怯相勝負也
...zi shi jinli yongque xiang shengfu ye.
definitely is strength brave each-other win-lose
Definitely these (are) the cases that the strong and the brave can defeat the weaklings.

Lunheng p.71.

As discussed in section 4.3, and as Sian (1986: paper, footnote 6) noticed, when adverbs precede *shi*, *shi* is obviously not a D-pro used anaphorically. If we take those instances into account, the number of the paired sentences of *fei* and *shi* are even fewer. Twenty-three sentences like examples 11 & 12 were found in the Mengzi, but only one pair of *fei* and *shi* was found in my data.

Furthermore, since *ze* has two usages in CC: a conjunction word (so) or an adverb (just), in the environment of [*ze*-shi-PRED], *shi* can be analyzed as either a copula as in (13-b) (*ze* is interpreted as an adverb) or as a D-pro as in (13-a) (*ze* is interpreted as a conjunction word). For example:

(13) 魯衛兄弟之國也而君用起則是棄衛
Lu Wei xongdi zhi guo ye er jun yong Qi
Lu Wei brother 's country prt. but you use Qi

ze shi qi Wei.
so/just this/is abandon Wei

Shiji. Sun-Wu zhuan

a. Lu and Wei (are) brother countries. But, you promote Qi, so this (is) to abandon Wei.
b. Lu and Wei (are) brother countries. But that you are promoting Qi is just to abandon Wei.

In the above examples collected from the Mengzi, there were 26 out of 83, i.e. 31% of [*ze*-*shi*-PRED] sentences among the total number of 83 [*shi*-PRED] sentences. Notice that, according to Sian's hypothesis, these sentences cannot be explained as having another potential reading of (13-b), if *ze* is interpreted as an adverb during the time of the Mengzi (ca. 300 B.C.). Because the only possible place for the changes of *shi* to take place is the environment of the *fei*-*shi* (negative-affirmative) paired sentences.

Thirdly, there were two kind of environments in which *shi* occurred showing a complementary distribution in terms of the syntactic function of *shi*. In the environment of [*shi*-adv-PRED], *shi* can only be interpreted as a D-pro, but in the environment of [adv-*shi*-PRED], *shi* can only be interpreted as a copula. The theory proposed by Sian cannot explain why this should be the case.

Finally, if the copula *shi* came from the affirmative *shi* by being used as the antonym of the negative particle *fei*, the newly developed *shi* should even more strongly have reinforced speakers' recognition of the use of *fei* as a negative. Therefore why should another negative *bu* have appeared at all to replace *fei*?

Although it is possible that under the analogical change, the affirmative *shi* might have developed from antonym usage with *fei*, in fact the copular *shi* does not seem to have been developed from the affirmative *shi*.

Since the paired sentences of *shi* and *fei* occurred so infrequently, and since this theory cannot explain a large number of the sentences in question, the affirmative *shi* in this paper is considered as not being responsible for the development of copula *shi*.

3. A NEW APPROACH TO THE COPULA IN CLASSICAL CHINESE

First, I would like to suggest that in Classical Chinese there was an overt pause obligatorily occurring between the topic and the comment in declarative sentences. Second, I shall argue that the D-pro *shi* had changed its lexical category from a [+N] into a [+V] through time. This happens because of the character of this language: Chinese has no inflectional morphology. This happened indeed, because of the weakening of the emphatic function of the D-pro *shi* with the lack of necessity for the pause, and because adverbs pushed the *shi* to merge with the pause and the anaphoric function of *shi* became opaque. Finally *shi* was reanalyzed as a copula and the pause disappeared. This theory is supported by the evidence below.

3.1. The pause between topics and comments

To begin with, I would like to suggest that in Chinese, the so-called subjects and predicates would be better analyzed as topics and comments in the sense of Chao (1968), Li & Thompson (1976) and Tsao (1977), and sentences like 1 will be analyzed as 1-a, rather than 1-b.[5]

(1) 仲尼日月也
Zhongni, ri yue ye.
Zhongni sun moon prt.
Zhongni (is) the sun and the moon. *Lunyu. Zizhang*

(1-a) Zhongni, the sun the moon
TOPIC COMMENT

(1-b) **Zhongni**$_i$, ei the sun the moon
TOPIC SUBJ PREDICATE

The differences between 1-a and 1-b are thus: the subject NP in 1-b is topicalized and leaves a trace in the subject position in co-reference with the topicalized NP. In 1-a, the subject position is merged with the topic position. The following sentence can be analyzed in the same way:

(14) Zhangsan, ta, [shi xuesheng]vp
Zhangsan, he, [is a student]vp
Topicalized-NP Topic Comment

"Zhangsan" is the original topic which is topicalized into a pre-topic position, and a pronoun "ta" (=he) is spelt out in the original topic position in co-referential with the topicalized NP.

Based on this hypothesis, all the 'so-called' subjects will be treated as topics throughout this paper, but for convenience of later discussion, I will still use the terms 'subject' and 'predicate' to refer to the 'topic' and 'comment'. What I am going to argue in this section is that there was indeed a phonological pause obligatorily occurring between subject and predicate, i.e. the topic and the comment in declarative sentences in CC. There are some pieces of evidence which strongly support this hypothesis.

First, we can demonstrate that a semantically empty particle *zhe* often occurs in the position of the posited pause. In traditional analysis, *zhe* had two functions in CC, one as a pronoun, another as an interjectional particle, which is used to emphasize the preceding element/s. For example:

(15) 陳勝者陽城人也
Chen Sheng zhe Yang Cheng ren ye.
Chen Sheng prt. Yang city person (prt.)
Chen Sheng (is) Yang city's person.
Chen Sheng comes from Yang city.
Shiji. Chen She shijia

In example 15, *zhe* can only be an interjectional particle without any content semantically. The place where the interjectional particle *zhe* occurs

is the place between the subject and the predicate. It indicates that between the subject and the predicate there must be a position, which I suggest is the pause position.[6]

Second, we can show that in the early Classical Chinese work of poetry the Shijing (The Book of Odes) semantically empty particles such as *wei*[7], *yi*, or *yi*, (unlike *zhe* which was used to emphasize the subject) were used as metrical place holders to represent the obligatory pause. As most cases show, the semantically empty particle *wei*, *yi*, and *yi* occurred in declarative sentences overwhelmingly in parallel sentences without any semantic functions (whether they have some sort of pragmatic functions is unclear). For example:

(16) 厥草維夭厥木維喬
Jue cao wei yao jue mu wei qiao.
Its grass is tender its tree is tall
Its grass (is) greener, its trees are taller.
Shu. Yugong

(17) 四月維夏六月徂暑
Si yue wei xia, liu yue zu shu.
Fourth month is summer, sixth month go heat.
April is summer, June becomes hot.
Shijing. Xiaoya. Siyue

As most cases show, parallel sentences in poetry or elsewhere, have to have the same number of syllables for each pair of sentences. The following pattern was commonly used in the Shijing:

In Classical Chinese, the four characters per-line in the Shijing follow the law of poetry in pre-Qin (before B.C. 209) which was called "Si-yan-shi"

(four syllables of poetry). We cannot find the following pattern in pre-Qin poetry:

This sort of asymmetrical pattern is not allowed in the poetry of the Shijing. Consider the situation of "yun-liu" (rhythm-law) in poetry, we can easily account for why the semantically empty particles such as *wei*, *yi* and *yi* occurred only in parallel sentences and typically in shijing. This is because the pause in an NP-NP sentence has to be present in order to mark this sentence as an equational sentence. But in order to meet the rhythm-law of poetry, or the parallelism of paired sentences, this pause must be filled in by a phonetically realized element. Of course, the semantically empty particles are the best candidates to meet this requirement. This is why the interjectional particles *wei*, *yi*, and *yi* have the same distribution and the same function in declarative sentences. Notice that if the pause is not necessarily required, these kind of particles would not always have occurred in this position in poetry and parallel sentences. One way to properly account for the behavior of these particles is to consider them metrical place holders, which were used to represent the copular pause. Obviously, these facts strongly suggest that between the subject and the predicate there was a pause and that pause was obligatory.

The last piece of evidence is taken from Modern Chinese. In Wu dialects of Shanghai and Suzhou, for example, there is a 'position' between subject and predicate in the present day spoken language. In Chinese, in almost all dialects, the question-sentence is formed by adding a question-marker "MA" or the same sort of particle to the end of a sentence. Interestingly, in the Shanghai and Suzhou dialects, the question-marker "A" (= "MA" in Mandarin) does not appear at the end of a sentence. Instead it

appears in the position between the subject and the predicate. For example:

BEIJING DIALECT	SHANGHAI DIALECT	SUZHOU DIALECT
Ni chi-le MA?	Nong A chi-le?	
You eat-prt. MA	You A eat-prt.	
Have you eaten?	Have you eaten?	
Ni hao MA?		Nai A hao?
You good MA?		You A good?
How do you feel?		How do you feel?

This fact shows that Chinese permits a pause position between subjects and predicates (the topics and comments). And in some sense this position must be obligatory, otherwise, as in the Shanghai and Suzhou dialects, there would be no way to put the question particle into the sentences to make interrogative sentences. Taking this view into account, it is not surprising that the pause in Classical Chinese declarative sentences existed obligatorily[8].

4. THE DEVELOPMENT OF SHI

4.1. As a D-pro, SHI was necessary to be used in declarative sentences

We have seen from section 2 that the view that the copula *shi* developed from the D-pro *shi*, or the view that the copula *shi* originally came into the language as a particle of affirmation, are both unsatisfactory in giving an adequate explanation of the source of copular *shi*. But, as we can see below, Wang's view is the one that can be further developed under my hypothesis illustrated above. Of course, based on the hypothesis that the pause in declarative sentences appeared obligatorily and that the copular *shi* was developed from the D-pro *shi*, we have to answer the following questions: (a) Why was the D-pro *shi* needed at all in declarative sentences? (b) Why did only the D-pro *shi*, but not the D-pro *ci* develop into a copula? (c) How could a D-pro develop into a copula, i.e. how could the anaphoric functions of a D-pro be lost and how could the syntactic functions of a

copula appear in a D-pro? I will discuss each of these questions in turn.

Let us consider question (a) first. To begin with, let us take the simplest declarative sentences which are formed with only two NPs such as example 1, repeated here as 18:

(18) 仲尼日月也
Zhongni ri yue ye.
Zhongni sun moon prt.
Zhongni (is) the sun, the moon.

The basic form of these sentences can be formulated as follows:

(19) $_S[\ NP_1$ pause $NP_2\ ]^9$

If declarative sentences were always formed in this way, there would have been no need for a D-pro to appear in this environment, and therefore according to my analysis, *shi* would have not developed into a copula. Now, consider the following structure of a complex sentence, taken from the Lunyu:

(20) 富與貴是人之所欲也
Fu yu gui shi ren zhi suo yu ye.
wealth and nobility this person 's thing wang prt.
Wealth and nobility, these (are) the things everybody longs for.

Notice that this structure is exactly like the one in 14, i.e. the compound subject "wealth and nobility" was topicalized and a D-pro was used in the subject position in co-reference with the topicalized compound NP. It shows that a D-pro was necessary in structures of the topicalization of the subject in declarative sentences, because, without the D-pro in sujbect postion, whether "wealth and nobility" occurs in a topicalized position or a sujbect position will be syntactically indistinguishable.

Now, consider a more complex example taken from the *Xunzi*:

(21) 樹鳴星隕是自然之變也
Shu ming xing yun shi ziran zhi bian ye.
tree sound star fall this natural 's change prt.
Trees sound, stars fall, these (are) natural events.

This example can be analyzed in two ways:

(a) "shu ming, xing yun" is interpreted as the topicalized subject and *shi* is a D-pro used in the subject position in co-reference with the topicalized one[10]:

(21') $_S$[[Shu ming, xing yun]$_j$ *shi*$_j$ PRED]
Topic Subj

(b). "shu ming" and "xing yun" are separate sentences, and *shi* with its predicate is another sentence which contained only one subject in co-reference with the sentence/s immediately preceding it:

(21") $_{S1}$[Shu ming]$_i$ $_{S2}$[Xing yun]$_j$ $_{S3}$[*shi*$_{j,i}$ PRED]
Subj

If we accept the first analysis, *shi* is required just as in example 20. If we accept the second analysis, the anaphoric *shi* has to be present. This is because, as I suggested before, there is an obligatory **pause** between the subject and the predicate in declarative sentences as the following formulation shows:

$_S$[SUBJ pause PRED]

If the subject of this sentence is dropped or absent -- for whatever reason, we will get only one predicate in S-3:

(21") $_{S1}$[Shu ming]j $_{S2}$[Xing yun]j S3[_____PAUSE PRED]
Subj

Since a pause must occur between two elements, obviously, the pause cannot be preserved by only one predicate. Thus this sentence will not be well-formed under the "**overt pause**" criterion. One way to avoid this problem is to put a D-pro in the subject (the topic) position, so that the pause will be manifested in the position in which two elements occur alongside of it. The fact that we cannot find a declarative sentence with only a single predicate alone in CC, supports the theory of the obligatory pause and also the argument for the requirement of *shi*. It seems clear that *shi* is necessary in declarative sentences in at least the environments with either a topicalized-subject structure or a structure in which the pause cannot be kept overtly. If this hypothesis is correct, we would further expect that the D-pro *shi* should occur statistically more often in these environments to give robust triggering experiences for the speakers of new generations and for the changes in its syntactic function to take place. Quantitative data show that it is indeed the case as in Fig.1 & 2.

In the Lunyu, the frequency of occurrence of *shi* in the environment [S-*shi*-PRED] is much higher than it is in other environments (except in the environment in which *shi* is the object). In the Mengzi, *shi* occurs most frequently in the environment [S-*shi*-PRED]. In the Lunyu 27% of the *shi*'s occur in the environment [S-*shi*-PRED], and in the Mengzi 34% of the *shi*'s occur in the environment [S-*shi*-PRED]. An increasing rate of the occurrence is very evident between the time of the Lunyu (500 B.C.) and the time of the Mengzi (300 B.C.). The data suggests that the frequency of *shi* in the environment [S-*shi*-PRED] is robust enough to act as a triggering experience for the next generation of speakers to generate a grammar which incorporates the change in the way *shi* functions syntactically.

4.2. The competition between *shi* and *ci* 此

I have suggested that the environment of [NP pause NP] in declarative sentences require a D-pro to be the subject of the predicate if the original subject is topicalized. In fact this argument applies equally to another D-

pro *ci*. The question is why only *shi* developed into a copula and not *ci*? This question will become clear when we compare the relative frequency of *shi* and *ci*, and compare the frequency of *shi* and *ci* as they co-occur with other elements.

First, *ci* was not used as commonly as *shi* in pre-Qin (before 209 B.C.) documents. For example, in Confucius' book the Lunyu, we cannot find any occurrences of *ci*, but *shi* is used very often. It has been suggested that the absence of *ci* in the Lunyu may indicate that *ci* was used in a regional dialect in pre-Qin times (Wang, 1958, p.281). If this is true, the usage of *ci* in dialectic speech at that time may have placed it at a disadvantage in its competition with *shi* for use in the environment [S-PRO-PRED] as the main D-pro.

Second, the frequency of occurrence of *ci* in the environment in which a D-pro is required in the declarative sentences, was much lower than the frequency of occurrence of *shi* in the same environment. This can be seen from the following table which shows the frequency of the occurrence of *shi* and *ci* in the environment of [S-pron-PRED] in the Mengzi. (Here, S stands for sentence/s used as the logical subject in a declarative sentence, and the "pron" stands for an anaphoric demonstrative pronoun in the original subject position in that sentence.)

The frequency of *shi* and *ci* in *Mengzi*

	S-pron-PRED	Others	Total
shi	83	164	247
ci	20	89	109
Total	103	253	356

As a D-pro, either *shi* and *ci* can be used as the object of verbs, modifier of nouns or subject of verbs. All these usages have been counted as "Others". Because only the [S-pron-PRED] environment is relevant to the present thesis, the frequency of *ci* in [S-pron-PRED] is measured against "Others" and the frequency of *shi* is treated in the same way. In the same environment there is 34% of *shi*, but only 18% of *ci*. The differences of the frequency between *shi* and *ci* is significant at the level of $P < .005$ ($X^2 = 8.5589$). Thus the more frequent occurrence would have been an important advantage for *shi* in competition with *ci*.

Finally, another factor, that is crucial to the syntactic change of *shi*, as we will see later, and must be considered in the question of the competition between *shi* and *ci*, is the occurrence of the adverbs that precede the D-pro in the environments in which the changes to these pronouns would take place. Almost without exception adverbs never occur preceding *ci* in the syntactic environment of [S-pron-PRED], but adverbs do appear before *shi* in this environment. For example:

(22) 審是掌之罪也
... shen shi Zhang zhi zui ye.
really is Zhang 's fault prt.
really this (is) Zhang's fault. *Lunheng* p.510.

(23) 自是筋力勇怯相勝負也
... zi shi jinli yongque xiang shengfu ye.
definitely is strength brave each-other win-lose prt.
definitely these (are) the cases that the strong and the brave can defeat the weaklings. *Lunheng* p.71.

Notice that *ci* was exclusively absent in this environment. As we can see in the next section, adverbs must have played a very important role in the syntactic changes of *shi* in this environment. Since *ci* cannot occur in this environment for whatever reason, it was excluded from the change of a D-pro to a copula.

In summery, although *shi* and *ci* can indeed be substituted for each other in certain sentences, *ci* occurred less frequently. This may have been caused by *ci* starting out as a lexical item in a dialect where *shi* had functioned as a D-pro. This phenomena caused *ci* to exhibit a very low rate of occurrence in the [S-*ci*-PRED] environment. *ci* was also excluded from the [adverb-pronoun] form that is a crucial environment for the occurrence of change. As a result of these facts, *ci* did not undergo the change from a D-pro to a copula, and *shi* finally won the competition.

4.3. The syntactic environments and the adverbs

Now, let us consider the question (c) we raised in 4.1.: "How could a D-pro develop into a copula?" In other words, how could the anaphoric functions of *shi* be lost and how could it assume the syntactic function of a copula? Obviously, the suggestion that *shi* had predominated in the environment of [S-pron-PRED], does not mean that the syntactic change of *shi* must be completed all at once in this environment. The situation seems to be much more complex than Wang's explanation (which Sian has criticized.) The complexity of the syntactic environments, in which the changes of *shi* took place and were completed, can be viewed in terms of whether or not reanalysis of the structures, in which the D-pro *shi* occurred, is possible. In other words, this environment included not one, but two kinds of structures that can be analyzed or reanalyzed in two different ways.

Structure I: The structure which cannot be reanalyzed:

(24) 莊子曰是非吾所謂情也

... Zhuangzi yue shi fei wu suowei qing ye."
Zhuangzi say this not I describe feeling prt.
... Zhuangzi said: "this (is) not the feeling I described."

Since the subject was separated from the predicate by some linear distance, *shi* has to appear as an anaphoric pronoun and the pause must remain. There is no reason for a reanalysis to take place. It is impossible for the changes of *shi* to take place in this structure.

Structure II: The structure that can be reanalyzed under certain conditions:

(25) 富與貴是人之所欲也

Fu yu gui shi ren zhi suo yu ye.
wealth and nobility this person 's thing want prt.
Wealth and nobility, these (are) the things everybody longs for.

In this case, the *shi* was required only when the original subject ('wealth and nobility') was analyzed as a topicalization by the speakers. But unlike (I), *shi* is optional in (II), depending on whether or not the subject will be interpreted as a topicalized NP. Thus this sentence could have been reanalyzed as a non-topicalized one, i.e. an ordinary subject-predicate one, if the anaphoric functions of *shi* had already become opaque. Another example of this sort can be seen below:

(26) 樹鳴星隕是自然之變也

Shu ming xing yun shi ziran zhi bian ye.
tree sound star fall this natural 's change prt.
Trees rustle, stars fall, these (are) the natural events.

As we have seen above, "shu ming, xing yun" can be interpreted as a topicalized subject/s, and also can be interpreted as separate sentences. Since this kind of sentence can be analyzed without *shi* (see footnote 10), there was also the possibility of reanalyzing the VP/s or S/s (in front of *shi*) as the subject/s of the predicate, when the anaphoric function of *shi* had became opaque.

It seems that the changes of *shi* from a D-pro to a copula were realized in structures like (II), rather than (I). However, as Sian has argued, the anaphoric function of the D-pro *shi* in environments either like (I) or (II) was very transparent. Thus how did it become opaque?

First of all, I would like to argue that the anaphoric function of the D-pro *shi* is weaker in sentences like 26 than in sentences like 25. In 25, the topicalized elements are NPs, but in 26, the topicalized elements are Sen-

tences. The difference between the topicalized NPs and the topicalized S's is that the D-pro *shi* in the former case was used as emphasis, but in the latter case it was not. This can be seen from the fact that the former was commonly used in parallel sentences to form a sharp contrast. For example, *shi* in 25 was actually used to contrast the 'wealth and nobility' with the 'poor and lowly':

(27) 富與貴是人之所欲也
Fu yu gui shi ren zhi suo yu ye.
wealth and nobility this person 's thing want prt.
貧與賤是人之所惡也
Pin yu jian shi ren zhi suo wu ye
poverty and inferiority this person 's thing hate prt.
Wealth and nobility, these (are) the things everyone longs for
Proverty and inferiority, these (are) the things everyone hates.
Lunyu.Liren

Obviously the contractive usage of *shi* in sentences like 27 shows that its anaphoric function is transparent, while the non-contractive usage of *shi* in sentences like 26 shows that its anaphoric function had been more and more weakening in which its antecedents are very different and abstract. For instance:

(28) 鷹之擊鳩雀鴞之啄鵠鴈未必鷹鴞生南方而鳩雀鵠鴈產於西方也自是筋力勇怯相勝負也

Ying zhi ji jiuque, xiao zhi zhuo huyan, weibi ying xiao sheng Nanfang er jiuque huyan chan yu Xifang ye, zi shi jinli yongque xiang shengfu ye.

The eagles kill sparrows and the owls bite wild geese, it is not necessarily the case that the eagles and the owls are born in the North and the sparrows and the wild geese are born in the West, definitely these (are) the cases in which the strong and the brave can defeat the weaklings. *Lunheng* P.71.

Since *shi* was not used to contrast something with something else, and also since the antecedents of *shi* are so different and abstract, its emphatic

function became weaker in this environment. Consequently its anaphoric function became increasingly opaque, and the overt pause became unnecessary. Based on this analysis, the development of copular *shi* would be more likely realized in the environment of [S/s-*shi*-pred], than in the environment of [NP/s-*shi*-pred]. It is true that among the total number of sentences I collected from Lunyu, 3 out of 16 are [NP/s-*shi*-pred], but 81% are [S/s-*shi*-pred] which strongly supports this analysis.

Second, I would like to suggest that the adverbs seem to have played a very important role in promoting the changes of *shi*. Recall that, between the subject and the predicate there is an overt pause in sentences like the following:

(27') Fu yu gui shi *pause* ren zhi suo yu ye
Topic Comment

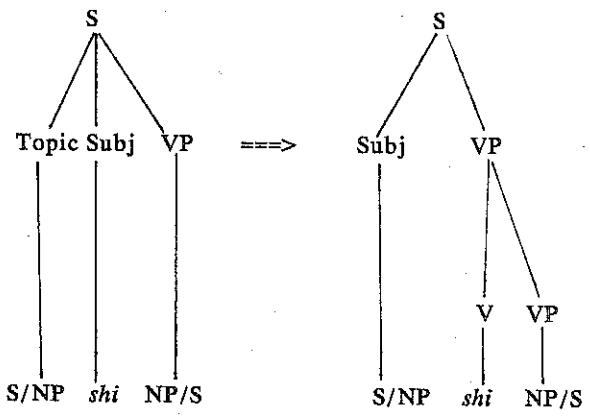
Notice that, since the pause is phonetically empty, if an adverb appears before the *shi* such as the following:

(27") Fu yu gui, gu shi pause ren zhi suo yu ye.
(definitely)

then the adverb would push the *shi* forward to the pause position.

push
1. Adv. ------> *shi* [ ]pause
2. Adv. ------> [*shi*]pause

If these adverbs pushed the anaphoric *shi* forward from the subject position into the pause position, *shi* would merge with the pause, starting to lose its anaphoric function; and the pause would disappear[11]. In the meantime, the reanalyses of the sentence structure as outlined in (II) would take place:



As time went by, there would be more adverbs appearing before *shi*, and more evidence for speakers to generate a new grammar of declarative sentences with *shi* as a verb. Consequently, some examples of completed changes began to appear.

This theory receives support from quantitative analysis. First, adverb/s occurred in the environment [S-*shi*-PRED] at different frequencies through time. In the Mengzi (300 B.C.), we only found one *ze* preceding *shi*, which can be interpreted as either a conjunction word or an adverb. In the Lunheng (100 A.D.), we found 8 adverbs occurring before *shi*, such as *bian* 便 ,*shen* 審 ,*zi* 自 ,*shi* 使 ,*jie* 皆 *fei* 非 ,*guo* 果 ,*ze* 則 . In the Shishuo (ca. 450 A.D.), 32 adverbs were found before *shi*. This fact shows that *ze* was probably the first adverb which started out as a conjunction word and later on was reanalyzed as an adverb. Since *ze* was also an adverb, and since the pause is an empty position, it was very easy for speakers to interpret *ze* as an adverb. In fact, all the *shi*'s which were preceded by *ze* in declarative sentences can be interpreted as copulas. For example:

(29) 識其不可然且之則是乾澤也
Shi qi bu ke ran qie zhi ze shi gan ze ye.
know it not can but will go then it dry river prt.
Mengzi. Gongsun
a. Knowing it cannot be done but doing it, so this (is) to dry the river.
b. Knowing it cannot be done but doing it, is just like emptying a river of water.

This indicates that *ze* could be the first adverb responsible for making the anaphoric function of *shi* more opaque. As time progressed, more adverbs began to appear before *shi*, and then some instances of completed change began to show up in the Lunheng[12], as in the following:

(30) 或言李廣便是熊渠養由基李廣
Huo yan Li Guang bian *shi* Xiongqu Yangyouji Li Guang.

Someone said Li Guang Just shi Xiongqu Yangyouji Li Guang.

Someone said that Li Guang is just the person from Xiongqu called Li Guang with another name Yangyouji.
Lunheng p.167

(31) 余是所嫁婦人之父也
Yu *shi* suo jia furen zhi fu ye.
I *shi* that married the women 's father.
I am the father of the married women. *Lunheng* p.427.

Second, if the theory proposed above is correct, the speed of change of *shi* will depend on how often adverbs appeared before the *shi* in the environment II. In other words, we would expect that the more often the adverbs preceded *shi* in II, the more examples of the completed change of *shi* we can find. Fig.3 shows that this occurs exactly as we predict.

To measure the speed of the changes of *shi* against the frequency of the co-occurrence of the preceding adverbs with *shi*, I used the Lunheng and the Shishuo to provide data from two periods, and took the frequency

of sentences such as examples 30 & 31 as complete changes of *shi* to indicate the speed of its change, and also took the frequency of the preceding adverbs to compare these sentences against. What I found is that: the number of [adv-*shi*] and the number of [*shi*=be] in the Shishuo increased, but both the number of increased [adv-*shi*] and the number of increased [*shi*=be] are exactly parallel to each other. Therefore, as we expected, the more [adv-*shi*] appeared, the more [*shi*=be] was produced in Classical Chinese. Note that the parallel increasing rate of elements in different but related syntactic enviorments is what has been observed under the "Constant Rate Hypothesis" (Kroch, 1990). Obviously, the development of [shi=be] together with [adv-shi] is what otherwise will be unrelated phenomena but is expected under the model of Constant Rate Hypothesis.

5. CONCLUSION

The changes of *shi* can be outlined as follows: I. *shi* predominated in the environment [S-*shi*-PRED] over *ci*; II. In the environment of [S-*shi*-PRED], the emphatic function of *shi* began weakening and the pause between the *shi* and the predicate was progressively attenuated; III. Initially the adverb *ze* and later other adverbs as well pushed *shi* into the pause position, and the function of anaphoric *shi* became opaque. IV. *shi* was reanalyzed as a copula in this environment with the pause disappearing. Finally the environment of [adv-*shi*-PRED] won out in competition with the environment of [*shi*-adv-PRED], and *shi* was no longer interpreted as a D-pro.

Under this analysis, the use of the adverbs *ji* and *nai* as in sentences 7 and 8 in Classical Chinese is also fully accounted for. When they occurred in a declarative sentence in CC, they were adjacent to the pause position. Hence they are easily seen as occupying the pause position and functioning somewhat as a copula.

In addition, this study also suggests that syntactic positions in Chinese

are very important for the study of grammar and the study of syntactic changes cross linguistically. As *shi* developed from D-pro into a copula, its lexical category was changed from [+N] to [+V]. This is almost impossible in languages with rich morphological systems. In those languages, the lexical categories are normally identified strongly by the morphology in the environments in which they occur. Hence reanalysis of their lexical categories is very difficult. But the lexical categories in almost all cases in Chinese are identified not by morphology, but by the word order (syntactic position or strictly speaking, the *categorical position* in syntax) and the distribution of these words. Obviously, the lexical category of a word could possibly be reanalyzed if the position in which it occurred could be identified as other categorical position in a certain context, and if its distribution in this context has been spread out through time. The development of *shi* provides a typical example of this sort. Since the distribution of *shi* in the environment of [S-*shi*-PRED] increased through time, and since there were no inflectional morphological markers at all to identify *shi*, the reanalysis of *shi* finally took place. Notice that as long as the reanalysis took place, the structures of the string [S-*shi*-PRED] are different. In other words, *shi* occupied a different syntactic position even though the surface word order looks the same. There is no reason to assume that the copular *shi* still occupies the position - the subject position - it did, when its change took place. This process of change is only possible if the syntactic position of *shi* is reanalyzed. And the changes from one syntactic position to another - NP to V, are only possible if the language has no inflectional morphologic system or has a very weak one.

The development of *shi* provides evidence for the theory of syntactic change in which a certain lexical category can be reanalyzed and even changed into another in languages having no inflectional morphology like Chinese. This theory can also be supported by the following fact: a noun, even a proper noun, if it is identified as occurring in a verb position, will

be interpreted as a real verb:

(32) 爾欲吳王我乎
Er yu wu-wang wo hu?
you want king of Wu I part.
Do you want to [Wu-king] me?
Do you want me to become the king of Wu? *Zuo-Ding. 10*

It is also true that every noun in CC can be used as a verb. This process is what has been called the rule of "**Mingci dong yong**" (Nouns being used as verbs), and this is possible only when nouns appear in a position that is identified as a Verb-position in the syntax.

NOTES

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[1] See Qiu 1979 and Duan 1989.

[2] When classical records are transferred into modern writing forms, a comma is conventionally inserted after the subject of declarative sentences.

[3] A similar idea can be found in Chuntian Feng's 1984, p341. and Jerry Norman's 1988, p125. Ao (1985) has also an account for the development of *shi*. But it is unclear how a verb *shi* (yes/approve of/consider to be right) in sentences (his type IV) like "baixing jie *shi* wujun er fei linguo" (People all yes/approve of our king but disapprove of the neighboring king) could possibly turn into a copula. In addition, if sentence type IV is taken to be the sourse of copula *shi* as Ao argued (p38), it is unclear how the form [NP1 approve of NP2] as the verb *shi* denoted in type IV, could passibly change into a form [NP1 = NP2] as equational sentences usually denoted.

[4] In fact, Wang did not distinguish the position in which the D-pro *shi* occurred and the position in which the *shi* had turned into a copula. In Elementary Introduction to Chinese (1964), he said: "It so happened that the D-pro in this environment (i.e. [S ... *shi* predicate]) just occupies the position in which a newly developed copula could occur." (Wang Li Wenji "Collected works of Wang Li" p.683.) Similarly, Duan 1989 invoked Chou's account to explain the development of *shi*: (in the environment of [S, *shi* predicate], i.e. "Wang zhi bu wang, *shi* zhe zhi zhi lei ye" 王之不王是折枝之類也) "*shi* is analogous to 'Zhe shi' (this is) in Modern Chinese, it contains (Jianshe 兼攝 , in Chou's term) the double usages of a D-pro and a copula" p.21. This explanation also did not distinguish the position in which a [+N] element can occur and a [+V] element could occur.

[5] Here I assume the subject-predicate relation in Classical Chinese is the same as it is in Modern Chinese.

[6] Unlike interjectional particles *wei*, *yi*, and *yi* which had no any contents semantically, *zhe* as an interjectional particle was always used to emphasize the element/s preceding it: the subject in this case. This is the difference between the pure interjectional particles *wei*, *yi*, *yi* and the emphatic particle *zhe*.

[7] Although *wei* was analyzed as a copula in the Shang Chinese by Takashima and others, it may not be a pure copula in LAC. First, one of the two copulas in the Shang Chinese, namely, *hui* was used only as a "copula-like" one and appears only sporadically in the Shijing and Yijing. (Takashima 1990, footnote 7). It indicates strongly that the copula system has been changed greatly from EAC to LAC. Second, if *wei* can really form a simple equation-type sentence in the inscriptional language, it cannot do so in LAC:

陳勝維陽城人也
*Chensheng *wei* Yangcheng ren ye
Chensheng is from Yang City.

That is, its grammatical function and its syntactic distribution is very strictly limited in LAC. Thirdly, particles such as *yi* and *yi* have newly developed and have the same syntactic distribution as *wei* does with respect to their copula-like function. However, this distribution is not compatible with a pure copula such as *shi* in LHC.

Notice that one of the notable absences in EAC is the prosodic markers such as *ye* 也 and *yi* 矣 marking ultimate and penultimate stress. (Dobson 1962). It indicates that LAC has a different prosodic structure from EAC (For more evidence on the prosodic change, see Feng 1991). The incompatibility of *wei* with *yee* (the prosodic marker) in the structure of *[NP *wei* NP *ye*] seems to be that the copula function of *wei* has also been limited to appear only in contexts where *ye* is absent but the overt pause must be filled. Nevertheless, *wei* is not a pure copula that can be used freely in decleartive sentences in LAC and its copula-like function in LAC will be considered together with the copula-like function of *yi* and *yi*.

[8] Still some other phenomena may be related to this fact and support my argument. First, as I mentioned in footnote 2, when the classical records are transferred into modern writing forms, there is always a comma

inserted after the subject of declarative sentences. Secondly, when one reads such sentences, there is always a pause after the subject. Thirdly, as Zhu argued (1985), one of the five properties of the subject-predicate relation is that "between subjects and predicates, there can be a pause," but it is not allowed between verbs and objects. (P38-39)

[9] The particle ye is optional in a declarative sentence, see Wang 1940 p.217.

[10] The following example shows that a sentence/s can be used as the subject of a sentence:

人不知而不慍不亦君子乎
Ren bu zhi, er bu yun, bu yi junzi hu? Lunyu
People not know but not vex, not also gentleman prt.
Not being known by people, but not being vexed by it, you also become a gentleman.

The same argument can be seen in Wang 1940, p236.

[11] This is why *shi* in "bi *shi*" (definitely *shi*), "jie *shi*" (all *shi*) ... and so on, cannot be interpreted as a demonstrative pronoun any more.

[12] In fact, the copular *shi* can be dated as earlier as the late Zhanguo. For example:

是是帚彗
Shi Shi Zhouhui (Mawangdui Hanmu Boshu Huixingtu)
This is a broom comet.

是是餓鬼
Shi Shi e gui (Yunmeng Shuihudi Qinjian. 834-833.2)
This is a starved ghost.

In these cases, *shi* must be analyzed as a copula as Qiu (1979) and Duan (1989) have pointed out. If it is so, it could pose a problem to my account (and to any account for the development of *shi* as well), since at that time,

there is no evidence that has shown the processes of the change. The plausible explanation to these examples I can come up with is that the language used in Qinjian and Boshu was closer to the vernacular at that time, and in general changes that started in actual speech may have taken a long time to show up in the formal writing system. Therefore what we can see from the documents may be what had already occured centries ealier in actural speech. However, it is very important to realize in the study of diachronic syntax, that we can posit only partial relative chronology, although changes are initiated at an exact period of time. In fact, the dates at which changes start may never be known. What is more important then is not the exact date, but the process or course of the change, and the historical order, in which the output of one change is the input of another. Therefore, information of this sort will be extremely valuable to our study. In the present case, the examples from Qinjian and Boshu would not contradict the hypothesis given here, since there is no counter-evidence to the process of the change of *shi*, although it may actually date the completed changes of *shi* back to a much earlier period of time.

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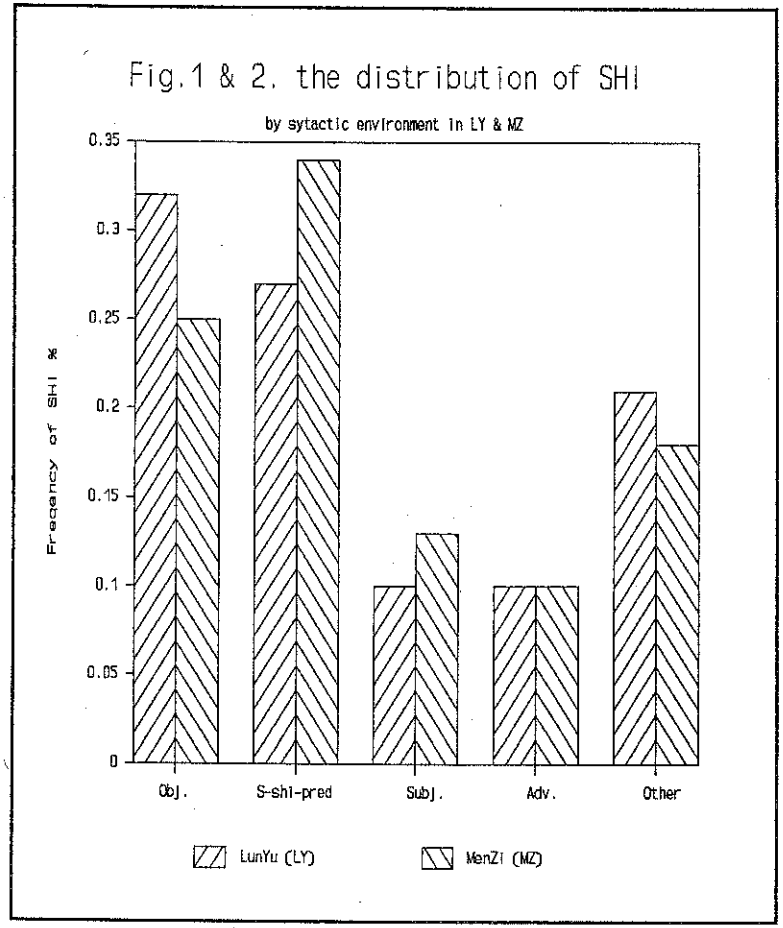

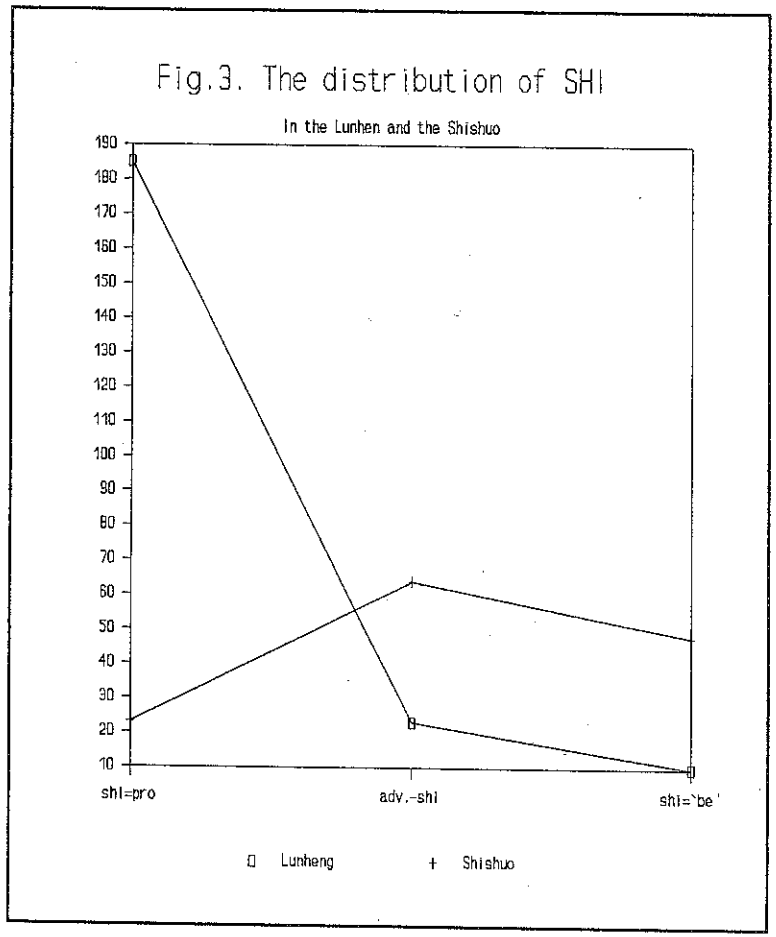

古漢語判斷句中的系詞

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在古漢語史研究中，一般認為上古漢語沒有系詞．系詞“是”是戰國末期從指示代詞“是”發展出來的．但是指示代詞“是”是如何轉變為系詞“是”的問題，至今尚未得到滿意的解釋．

本文根據《詩經》、《孟子》、《論衡》、《世說》等諸方面材料，提出構成上古漢語的判斷句，其主謂之間必有一固定的語音停頓．根據這一分析，“是”的來源及其發展可以得到較為理想的解釋：在日趨增多的新型判斷句中，({S1,S2,...是pred})主語位置上“是”的指代功能不斷弱化．“是”的弱化，導致了主謂之間‘停頓’形式的逐漸消失．最後，愈來愈多的副詞先後出現在弱化了的“是”之前，‘停頓’終於讓位給了“是”．“是”由此而變為系詞．

文章最後指出，句法位置是研究和解釋古漢語語法的關鍵．