

Prosodic Structure and Bare Adjectives in Chinese

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Abstract

In Chinese, bare adjectives in [NP A] structures usually imply a comparison. However, when they occur in parallel sentences the comparative meaning disappears. To date, there is no adequate explanation for why this is so. This paper argues, following Hale and Keyser (2002), that the [NP A] sentences are generated by a conflation construction and that the comparative degree morpheme is nonovert in Chinese; thus, the comparative structure is obtained by conflation of a bare adjective with a zero morpheme. It is further argued that there is a second type of phonologically nonovert head that can only be licensed by prosody; hence, only in prosodically licensed environments can adjectives be in the absolute degree. Given this analysis, the zero copular and semi-copular in Archaic Chinese can also be explained.

提要:

汉语中挂单形容词一般表示比较的意思，然而在并列排比句中，比较的意思却不复表现。为什么呢？本文根据Hale and Keyser (2002)提出的溶合结构（conflation construction）理论，认为汉语的比较语素可以分析为一种零形式；同时，系动词也可以分析为零形式但它必须在韵律句法环境的严格限定之下才能实现。文章最后指出：根据本文的理论，先秦汉语中的零系词与准系词同样可得到相应的解释。

Keywords: Bare adjectives, Conflation, Prosodically licensed empty verb, linking-pause
挂单形容词，结构溶合，韵律限定的空动词，系词性停顿

1. Introduction

It has traditionally been recognized that in Chinese, Bare Adjectives (B-adjective, henceforth) in the [NP A] environment exhibit a special syntactic behavior, as stated in (1) (taken from *Chinese Primer* 1994:25):

1. Generalization for Bare Adjectives (GBA)

In general, an adjective that directly follows a subject usually implies comparison.

According to the GBA, [NP A] sentences in Mandarin must be translated into English as [NP be A-er] or [NP be more A]:

2. a. Zhe zhang zhuo.zi da.
this CL table big
'This table is bigger.'
'*This table is big.'
- b. Wo.de yizi shu.fu
my poss chair comfortable
'My chair is more comfortable.'
'*My chair is comfortable.'

(2a) cannot be simply interpreted as 'this table is big' and (2b) cannot be paraphrased as 'My chair is comfortable.' However, when the same B-Adjectives are used in parallel sentences such as the one in (3), there is no comparative meaning denoted by the bare adjectives in the [NP A] structures (taken from *Chinese Primer*).

3. Xuesheng duo, laoshi hao, ke.shi ni jue.de hai bu gou hao.
student many, teacher good, but you feel still not enough good
 'It has lots of students and has good teachers. But that's not enough for you.'

Why is there no comparative meaning in *xuesheng duo, laoshi hao*? There is no answer in previous studies.¹ To date, we still don't know why the B-Adjectives must be interpreted as comparative (or contrastive) expressions when they occur in the [NP A] structure while the comparative meaning is gone in contexts like (3). However, whatever the reason might be, there must be a rule in the syntax saying something like the following (the arrow means 'imply'):

4. **The Comparative Function of Adjectives (CFA)**
 Adjectives → Comparative degree / [NP ____]

The CFA could generate all sentences like (2). There are many questions regarding the rule given in (4), however. First, what is the syntactic structure of sentences in (2) and what makes the B-Adjectives function as comparative degree adjectives? Furthermore, what is the syntactic structure that generates the B-Adjectives without the comparative meaning as in (3)? To put it differently, how does (4) work in (2) and why does it not work in (3)? On the surface of (4), what we want to know is when and where the CFA is overridden and what is the driving force that makes the rule inoperable in (3). This paper deals with these questions.

In what follows I will propose, following Hale and Keyser (2002), that the NP + adjective sentences are actually generated by a conflation construction where an empty head projects two argument positions: one is a specifier (the subject NP) and the other is the adjectival complement. Secondly, I propose that the comparative degree morpheme (like the comparative expression *bijiao* 'relatively') is nonovert or zeroed in Chinese; thus, the comparative structure is obtained by conflation of the bare adjective with the zero morpheme in the head position. It is further argued that there is a second type of phonologically nonovert head that can only be licensed by prosody; hence, only in prosodically licensed environments can adjectives be in the absolute degree.

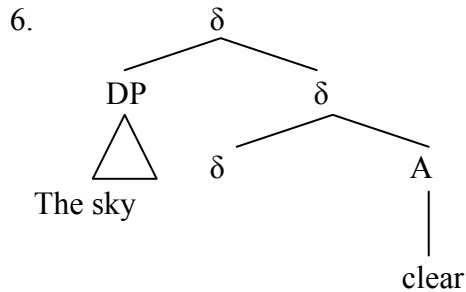
2. The syntax of [NP + adjective] structure

Let us begin with English examples given in (5) (taken from Hale and Keyser 2002).

5. a. The sky cleared.
 b. We found [the sky clear].
 c. We found [the sky so clear that it hurt our eyes].
 d. With [the sky clearer than glass], we can fly.
 e. We found [the sky as clear as glass].

¹ Recently, Huang (1997, 2003) has proposed a semantic account for the bare adjectives in Chinese. Regarding to the semantic account, the present theory can be considered an alternative analysis.

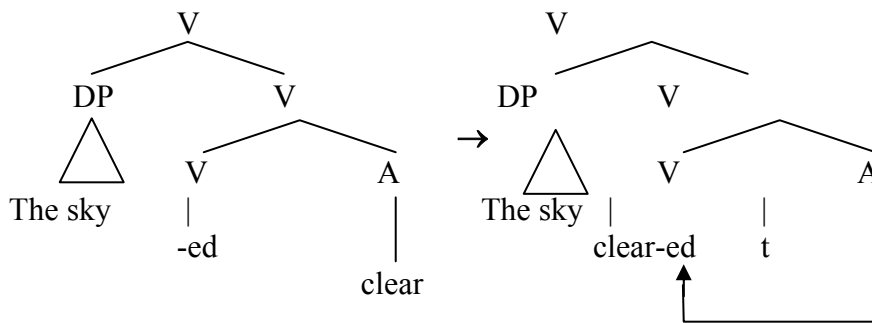
There are two questions regarding the adjectives used in (5). First, *clear* is an adjective, but in (5a) it is used as a verb. The question is: how can adjectives be verbalized? Second, in (5b-e) the adjective *clear* is used in a small clause without a linking verb 'to be'. This begs the question: How can adjectives be used without a verb (like 'to be')? Together with other theoretical considerations, Hale and Keyser propose the following structure for adjectival structures (see Hale and Keyser 2002:207):



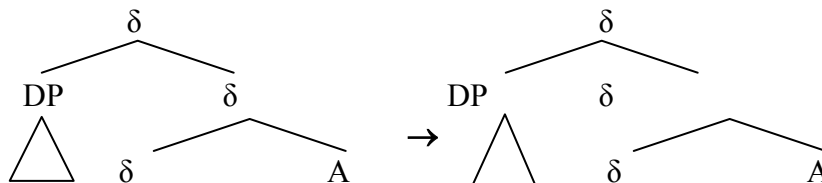
- a. δ is the head of this structure;
- b. DP is the subject (specifier) of δ ;
- c. A(djective) is the complement of δ

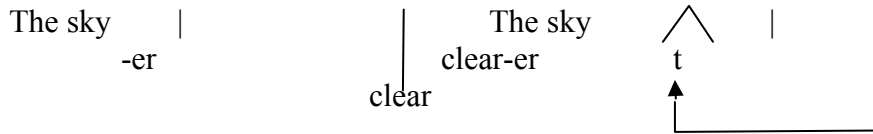
Given this structure, different elements that occur in the head position δ can be accounted for straightforwardly:

7. a. **Empty Verb** A nonovert verb functions as the head of the structure.
(5a). The sky cleared.

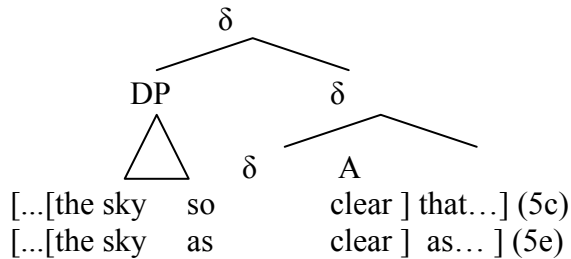


- b. **Zero (\emptyset)** A nonovert (copular) head of absolute degree projects the structure.
(5b). We found [the sky [\emptyset clear]]
- c. **-er** An affixal head of comparative degree heads this structure.
(5d). With [the sky clearer than glass], we can fly.





- d. **Others** The head δ position can also be filled by some other relevant elements, such as *so*, *too* and *very*... etc., for example:



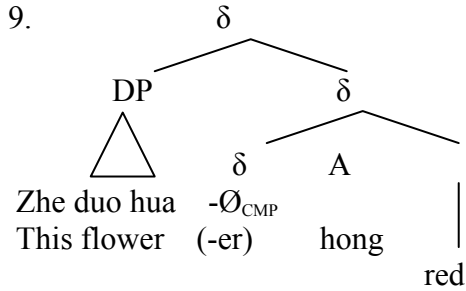
Given the light verb analysis in lexical syntax proposed by Hale and Keyser (2002) (see Huang J. 1997 for another type of empty verb in Chinese), the questions we have asked in the beginning of this section can now be answered straightforwardly. First, adjectives like *clear* are verbalized through a process of conflation ---- the adjective conflates with an empty active verb and this is why *clear* functions as a verb. Second, it is not the case that the adjectives in (5b) are used without a verb, because there is an empty head functioning just like a (linking) verb.

3. Deriving the Comparative Effect in Chinese

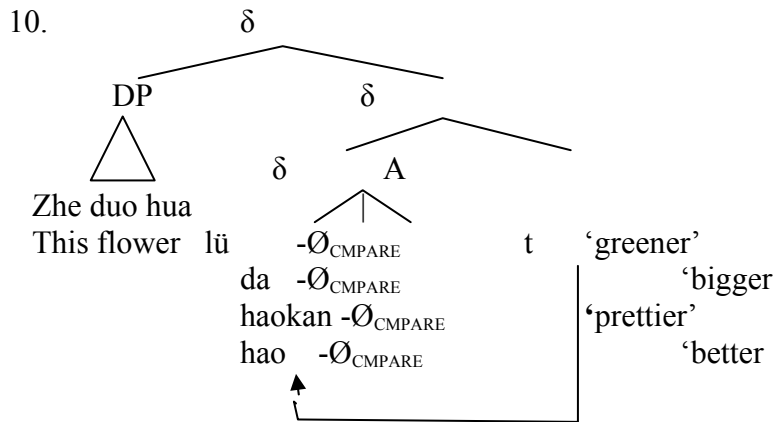
Given the theory outlined above, we are now able to derive the comparative effect of adjectives in Chinese quite nicely. First, as seen above, the comparative degree sentences in Chinese can be formed without a comparative degree morpheme like *-er* in English.

8. a. Zhei zhang zhuozi da.
 This CL. table big
 ‘This table is bigger.’
- b. Zhei duo hua hong
 This CL. flower red
 ‘This flower is redder.’

Given the fact in (8) and the *-er* position in English, it is reasonable to assume that the comparative degree morpheme in Chinese is a zero (i.e. \emptyset) in the head position δ , as illustrated in (9) ($\emptyset_{\text{COMPARE}}$ stands for an empty affixal head of the comparative degree):



As in English, the adjective *hong* must conflate with the $-\emptyset_{\text{CMPARE}}$ in order to eliminate the empty phonological matrices. This explains why in ordinary situations the system always generates sentences like the following:



Given the conflation process in lexical syntax, the syntactic structure enables us to answer all questions we have asked in the beginning of the paper: Why must the B-Adjectives be interpreted with a comparative degree reading when they occur in the [NP A] structure? The answers can be summarized as follows. First, assuming that the [NP A] sentences in both English and Chinese have the same structure projected by an empty head (or linking verb), and the empty head position can be occupied by either a phonetically realized comparative suffix like *-er* in English, or a nonovert one as in Chinese (in case of comparative degree adjectives). Secondly, if the comparative morpheme in the head position δ is a nonovert one, conflation takes place to eliminate the empty matrices. This is why all the [NP A] sentences require a comparative reading in Chinese, simply because in Chinese there is an empty comparative degree morpheme that attracts the A, forcing it to conflate.

3.1. Evidence for $-\emptyset_{\text{CMPARE}}$ analysis

This analysis can be supported by the fact that when the empty head position δ is occupied by other elements relevant to that structure, the comparative degree reading is gone. This is so because the $-\emptyset_{\text{CMPARE}}$ is filled up by a phonologically realized element appearing in that structure, hence no interpretation of a comparative degree is available.

First, as seen in (7d), adverbs like *so*, *very*, *too*... can appear in the head position δ in English. Notice that these elements have prevented the adjectives from conflating with the empty head because the head position is occupied by such elements. Similar to English, adverbs like *hen* 'very', *tai* 'too' and *zenme* 'so' in Chinese also prevent the adjectives

from conflating with the empty head $\emptyset_{\text{COMPARE}}$. The result, as expected, is an expression of adjectives in an absolute rather than a comparative degree because the $-\emptyset_{\text{COMPARE}}$ does not function there. The ungrammatical form **very bigger* in English indicates clearly that the affixal *-er* is blocked by adverbs like *very* when they occupy the empty head position. The same is also true in Chinese as seen in (11).

11. a. Zhe zhang zhuozi hen da.
 this CL. table very big
 ‘This table is (very) big.’ (*‘This table is (very) bigger.’)
- b. Zhe zhang zhuozi tai da.
 this CL. table too big
 ‘This table is too big.’ (*‘This table is too bigger.’)
- c. Zhe ge ren zhen houdao.
 This CL person really honest/kind
 *‘This person is really honest and kind.’
 *‘This person is really more honest and kind.’
- e. Nide wuzi duo hao a!
 Your room how nice Prt.
 ‘How nice your room is!’
 *‘How nicer your room is!’
- e. Wo mei xiangdao daxue shenghuo name wuliao.
 I not realize university life such boring.
 ‘I did not expect that University life would be so boring.’
 *‘I did not expect that University life would be so more boring.’

In Chinese *hen* literally means ‘very’, but it has two usages depending on whether it is stressed or not. When stressed, it means ‘[NP be very Adjective]’ and when not, it means nothing, but the sentences formed with *hen* must be interpreted as ‘NP is adjective.’ This has been the common practice taught in the elementary Chinese classroom for ordinary [NP be Adjective] without a comparison. Put differently, the unstressed *hen* does not have much semantic content in that environment; it functions merely as a place-holder that takes away the comparative meaning. Other adverbs such as *tai*, *zhen*, *duo*, *name* all function the same way in the sense that no comparison is observed in the [NP be Adjective] structure where they occur. The appearance of a cluster of adverbs with the disappearance of the comparative meaning as well as the existence of the semantically dummy adverb *hen* with its grammatical function (taking off the comparison from the bare adjectives) both suggest strongly that there must be a position where the semantically dummy *hen* (and other adverbs) could appear and simultaneously eliminate the otherwise licensed comparative meanings from the bare adjectives. Obviously, the $\emptyset_{\text{COMPARE}}$ hypothesis provides a straightforward answer for the syntactic position that allows both a comparative meaning when the head is occupied by adjectives and a non-comparative meaning when it is occupied by adverbs. Most importantly, this analysis explains why there is a dummy adverb *hen* in the language only for eliminating the comparative meanings from adjectives. The *hen* is necessary because only when $\emptyset_{\text{COMPARE}}$ is occupied by a phonetically realized element can the conflation of the adjective with the $\emptyset_{\text{COMPARE}}$ be blocked. Thus, a dummy

adverb is an ideal candidate for this purpose (whether by adopting an existing one or creating a new one). As a result, the dummy *hen* can be viewed as a conflation-blocker, created by the syntax of $\emptyset_{\text{COMPARE}}$.

The second evidence for the Empty-Comparative-Morpheme analysis comes from the use of negation. As is well-known, even though an [NP A] sentence generally conveys a comparison, negative sentences do not have the comparative meaning that their positive counterparts do. That is, there are no sentences formed by [NP *bu* A] meaning ‘NP/s be-not Adjective-er’ in Mandarin Chinese. For example,

12. a. Zhei zhang zhuozi bu da
 this AN table not big
 This table is not big. (*This table is not bigger.)
- b. Zhei zhang zhuozi bu haokan.
 this AN table not good-looking
 This table is not pretty. (*This table is not prettier.)

The [Neg A] expression *bu da* means ‘not big’ rather than ‘not bigger,’ similarly, *bu haokan* means ‘not pretty’ rather than ‘not prettier.’ A traditional question with these examples is this: Why does the [NP [Neg A]] structure, unlike the [NP A] sentences, lack a comparative reading? In other words, why is it that the comparative meaning cannot be maintained in a ‘*bu-Adjective*’ sentence? Given the analysis proposed here, this result is expected because. That is, if the $-\emptyset_{\text{COMPARE}}$ head position in the [NP A] structure is replaced by some other elements (the negator in this case), then, the adjective cannot be conflated with the $-\emptyset_{\text{COMPARE}}$, and there is no way for the comparative effect to take place in these sentences. Consequently, the complementary distribution between the presence of *bu* and the absence of comparative connotation in [NP A] sentences provides further evidence for the argument in favor of an Empty-Comparative-Morpheme in Chinese.

4. The Prosodic Effect in [NP A] structure

So far, we have explained why [NP A] must have a comparative reading and why the [NP *so/very/too/not...A*] does not. However, one of the strange behaviors mentioned before has not been explained. That is, why does the comparative reading disappear in parallel sentences, even without adverbs like *so/too/very/not* to fill up the empty head position? For example (repeated from (3)).

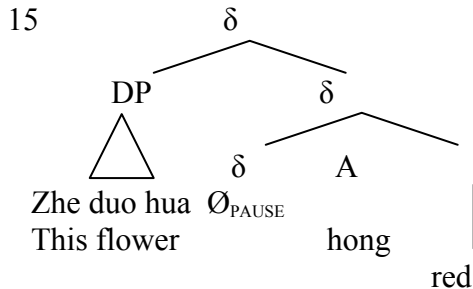
13. Xuesheng duo, laoshi hao, ke.shi ni jue.de hai bu gou hao.
 student many, teacher good, but you feel still not enough good
 ‘It has lots of students and has good teachers. But that's not enough for you.’

Given the $-\emptyset_{\text{COMPARE}}$ hypothesis above, there is no reason why the adjectives *duo* and *hao* in (13) do not conflate with the empty head $-\emptyset_{\text{COMPARE}}$ and hence there is no reason why these adjectives express an absolute rather than a comparative degree. However, the contrast between a comparative degree and an absolute degree of the identical forms indicate that the same surface form ([NP A]) must have two different structures. Given this assumption, I propose that the [NP A] structure in (13) is projected by an empty head of not an affixal type, but a $\emptyset_{\text{LINKING}}$ that functions as a linking verb. To see this, let us compare the following two sentences we have seen before:

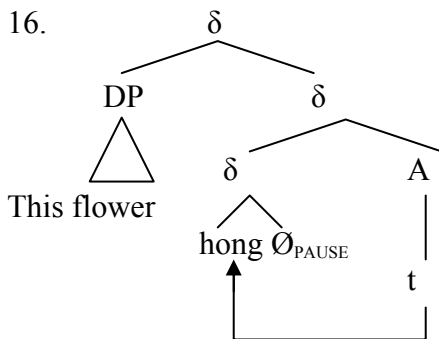
14. a. We found [the sky clear].
 b. With [the sky clearer than glass], we can fly.

If (14a) contains a nonovert head of the absolute degree and (14b) an affixal head of the comparative degree, as proposed in Hale and Keyser (2002), it is reasonable to assume that the heads in the Chinese counterparts of (14a) and (14b) are all covert in both the absolute and the comparative degree structures. Since the absolute and the comparative degrees of adjectives are projected by different heads, there must be two different nonovert heads in Chinese.

The hypothesis of two different nonovert empty heads (i.e., a $\emptyset_{\text{COMPARE}}$ and a $\emptyset_{\text{LINKING}}$) is a corollary of structural reasoning based on the facts given here. However, it still does not explain why the $\emptyset_{\text{LINKING}}$ can only occur in parallel sentences while the $\emptyset_{\text{COMPARE}}$ could be elsewhere. In other words, why are the two empty heads in complementary distribution? This, I suggest, is due to the possibility that the $\emptyset_{\text{LINKING}}$ is a prosodically licensed empty head. That is to say, the $\emptyset_{\text{LINKING}}$ cannot manifest itself without a prosodically licensed pause in the head position. To put it differently, the $\emptyset_{\text{LINKING}}$ may simply be considered as an empty pause, projecting a structure which links the specifier DP and the complement A together, as in (15).



After conflation we have:



This prosodic pause, though phonologically empty, is perceivable and prosodically attainable. A crucial question then is how to guarantee the pause structurally. As seen before, the empty pause is structurally constructible (by parallelism) and it is exactly what happens as shown in the following examples. To compare ('#' stands for a pause):

17. a. Xuesheng [duo #] laoshi [hao #] ke.shi ni jue.de hai bu gou hao.
student many, teacher good but you feel still not enough good

‘(The students are many and the teachers are nice, but you still don’t think that is good enough.’

- b. Zhei ge xuexiao de laoshi hao, suoyi....
this CL school ’s teacher good, therefore...
 ‘This school’s teachers are better, so....’

Obviously, the conflation of *hao* with \emptyset_{PAUSE} is phonetically realized differently from that of *hao* with $-\emptyset_{\text{COMPARE}}$. That is, *hao* in the former case (17a) is pronounced with a longer duration (making use of the final lengthening) followed by a sudden break, whereas in the latter case (17b), *hao* is articulated with a much shorter duration and there is no sudden pause following it. The contrast in pronunciation between *laoshi hao* in (17a) and that in (17b) shows clearly that the identical [NP A] surface forms are phonologically different. According to the present theory, the different phonological behavior of *hao* in (17a) from that in (17b) is licensed by the structural parallelism. It follows that only by a structurally licensed prosodic position, can a phonological pause be realizable for the conflation of an adjective with the \emptyset_{PAUSE} .

This analysis can be further confirmed by the fact that adjectives with an absolute degree connotation are all licensed by a prosodic structure where a phonological pause is guaranteed. This can be seen from the following examples.

18. Contrastive

- a. Yi tou **da**, yi tou **xiao**; yi tou **zhong** yi tou **qing**.
 one side big, one side small; one end heavy one end light
 ‘One side is big and the other is small; one end is heavy while the other is light.’
- b. Ta juede youshihou **leng**, youshihou **re**.
 he feel sometime cold, sometime hot.
 ‘He feels sometimes cold and sometimes hot.’

According to the Focus Prosody Correspondence Principle (FPCP, Zubizarreta 1998),² the contrastive constituents (with boldface) in (18) are all assigned a focal stress which provides a perfect prosodic environment in where the \emptyset_{PAUSE} is realized. As a result, all of the [NP A] sentences in (18) are headed by a \emptyset_{PAUSE} . Now, look at the coordination environment in (19).

19. Coordination

- a. Zhe zhang zhuozi [you gao] [you da].
this CL table both tall and big
 ‘This table is both tall and big.’
 *‘This table is both taller and bigger.’
- b. Zhe zhong binggan [you su] [you cui].
 this type biscuits both short and crispy
 ‘This type of crackers is both short and crispy.’
 *‘This type of crackers is both shorter and crispier.’

² The FPCP says that “the focused constituent of a phrase must contain the international nucleus of that phrase.” (Zubizarreta 1998:38)

- c. Zhe zhang zhuozhi [budan gao] [erqie da].
this CL table not-only tall but-also big
 'This table is not only tall but also big.'
 *'This table is not only taller but also bigger.'
- d. Zhangsan zhe ge ren [qinlao, pusu; qianxu, kejing].
 Zhangsan this CI person, diligent, sincere; modest, respectful
 'As a person, Zhangsan is diligent, sincere, modest and respectful.'
 *'As a person, Zhangsan is more diligent, sincere, modest and respectful.'

Coordination structure also provides an ideal context for parallelism, hence no comparative reading is observed in the [NP A] sentences exemplified in (19).

Note that, examples given in (18) and (19) challenge not only semantic but also syntactic accounts that make no reference to the prosodic parallelism. Since identical sentences are interpreted differently according to different prosodic environments, it is difficult for purely semantic or syntactic analyses to derive two interpretations from the identical structures. The correlation of non-comparative meanings within parallelisms can best be explained only in a system by which the grammatical properties of the parallelism are properly captured not only syntactically but also prosodically. Obviously, the proposed empty head (\emptyset_{PAUSE}) in the present study serves well for this purpose because the \emptyset_{PAUSE} is a syntactically licensed prosodic entity, functioning as the head in [NP A] structure. Thus, so long as the syntactically licensed prosodic structure is met, the \emptyset_{PAUSE} will take place over the $-\emptyset_{\text{COMPARE}}$, which is exactly the case as we have seen above.

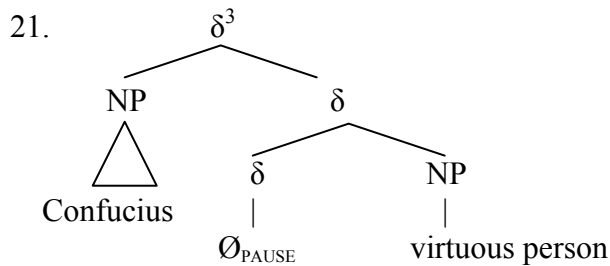
5. Some Empirical Implications

The above analysis implies that pauses could play an important role in the grammar of human languages. Although a pause has no phonological matrices, it is audibly perceivable and thus merits consideration. Given the phonological properties of pauses, it is also possible to see that the pause-head ($\emptyset_{\text{LINKING}}$) may have also played a crucial role in classical Chinese equational sentences. For example:

20. 仲尼，日月也。《論語·子張》
 Zhongni # ri yue ye. (Lunyu. Zizhang)
 Zhongni sun moon Prt.
 'Zhongni (is) the sun and the moon.'

孔子，賢人也。《戰國策·趙策》
 Kongzi # xian ren ye. (Zhaoce)
 Confucius virtuous person Prt.
 Confucius (is) an able and virtuous person.'

There was no overt copular in Archaic Chinese but only a pause between the two NPs as pointed out in Feng (1993). This pause functions just like a linking verb between the subject and the NP predicate (Feng 1993). Given the $\emptyset_{\text{LINKING}}$ proposed here for Modern Chinese, it is reasonable to assume that the linking-pause in Archaic Chinese is also an empty head $\emptyset_{\text{LINKING}}$ in the equation sentences (20); hence, we have the following structure:



The pause could remain in the original position, thus the predicate noun can be NP (which cannot be legitimately moved into the head δ position). Given this analysis, we can now explain the historical mystery of why adverbs such as *nai, ji, shi...* were used as a copular (traditionally called the semi-copular). For example:

22. a. 是乃仁術也。《孟子·梁惠王》
 Shi nai ren shu ye.
 This just benevolent trickery prt.
 ‘This is just benevolent trickery. (*Mengzi. Liang huiwang*)’
- b. 梁父即楚將項燕。《史記·項羽本紀》
 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*)

These adverbs, like the adverbs *so, very...* in (5) and (11), occupied the head position of \emptyset_{PAUSE} . Thus, there is no surprise that they have semi-copular function in sentences like that above.

Overall, given the hypothesis that pauses function like an empty verb, it becomes possible to account for, systematically, the synchronic facts like (2) and (3) as well as the diachronic mysteries like (20) and (22). While the present hypothesis has brought up some new insights regarding the bare adjectives in Mandarin and equation sentences in Classical Chinese, it is merely a preliminary step toward a full-fledged account of empty-verb syntax in Chinese. Thus, future research is definitely warranted.

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³ .It is possible that the linking-pause could also trigger incorporations. For example, *Jintian Xingquwu*. ‘Today (is) Friday’ in Modern Chinese, no pause is observed between the two NPs.

Zubizarreta, Maria Luisa. 1998. *Prosody, Focus, and Word Order*. MIT Press.