

Two Notes on the Chinese *bi* Comparatives*

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Instead of jumping into the debate on whether the Chinese *bi* comparative is a clausal or a phrasal comparative, I argue for the following two points concerning this construction. First, the marker *bi* is not a degree word; instead, it functions to introduce the standard and forms a pair of correlative words with a degree adverb with the meaning of comparison. Second, the standard introduced by *bi* cannot be elements that can be modified by a degree adverb; otherwise, a conflict between two dimensions of comparison will occur.

Key words: *bi*, correlative word, degree word, dimension conflict

1. Introduction

Kennedy (2005:1) suggests that languages may differ from each other in two potential parameters in expressing comparison. One is the parameter of explicit versus implicit comparison and the other is the parameter of individual versus degree comparison, as shown by (1a-b), respectively.

(1) a. The Parameter of Explicit versus Implicit Comparison

Does comparison involve specialized morphology that expresses arbitrary ordering relations (explicit comparison), or does comparison involve taking advantage of the inherent context sensitivity of the positive (unmarked) form (implicit comparison)?¹

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¹ Explicit comparison in English, for example, can be illustrated by (i), which involves the specialized morphology *-er* to express the arbitrary ordering relation between the two compared items, *John* and *Bill* along the dimension of height, and implicit comparison by (ii), where the positive form *tall* is used.

(i) John is taller than Bill.

(ii) John is tall compared to Bill.

These two different modes of comparison, as Kennedy (2007) argues, differ from each other in that explicit comparison allows fine-grained distinctions in degree but implicit comparison does not. So, (i) is grammatically perfect but (ii) is marginally acceptable under the following context.

(iii) Context: John is 5'6" tall and Bill is 5'5 $\frac{3}{4}$ " tall.

b. The Parameter of Individual versus Degree Comparison

Do comparatives express orderings between arbitrary individuals (individual comparison), or do they (also) express orderings between individuals and arbitrary (linguistically explicit) degrees?²

For the individual versus degree comparison distinction, he further suggests the following two parameters:

- (2) The Degree Abstraction Parameter (i.e., DAP) (Beck et al. 2004:325)

A language {does, does not} have binding of degree variables in the syntax.

- (3) The Standard Type Parameter

Languages may differ in whether the comparative morphology selects a standard of type *d* (degree comparison) or of type *e* (individual comparison)

Along the line developed by Beck et al. (2004) that only [+DAP] languages allow the comparative subdeletion, Erlewine (2007), Kennedy (2007), and Xiang (2005) assume that standards in the Chinese *bi* comparatives cannot be degree abstraction structures because the comparative subdeletion is impossible in the Chinese *bi* comparative, as shown by the ungrammaticality of (4), taken from Erlewine (2007:2).³

- (4) *Wo-de yizi bi ni-de zhuozi kuan gao.
 I-DE chair than you-DE desk wide tall
 ‘My chair is taller than your desk is wide.’

² The parameter of individual versus degree comparison can be, respectively, exemplified by (i), which contains two individual compared items (i.e., *John* and *Bill*), and (ii), which has two degrees (i.e., the degree of width and the degree of tallness) as the compared items.

(i) John is taller than Bill.

(ii) The door is wider than the window is tall.

³ Note that this is not a semantic restriction: (4) as well as example (i) could in principle mean something like ‘the height of my chair is greater than the width of your desk’.

(i) Wo-de yizi de gaodu bi ni-de zhuozi de kuandu da.
 I-DE chair DE height than you-DE desk DE width great

‘The height of my chair is greater than the width of your desk.’

According to Bresnan (1977), in comparative subdeletion structures like the English example (ii), an amount or degree term must be omitted from the constituent, i.e., the compared constituent (e.g., *long* in (ii) that provides the point of comparison with the morphologically marked phrase in the main clause (e.g., *wider* in (ii)).

(ii) This desk is wider than that table is (*two inches) long.

In this paper, the term ‘standard’ means the compared constituent introduced by the marker *bi*, for example *Lisi* in (iii), and the term ‘correlate’ means the constituent compared with the standard such as *Zhangsan* in (iii).

(iii) Zhangsan bi Lisi gao.
 Zhangsan than Lisi tall
 ‘Zhangsan is taller than Lisi.’

Though agreeing with Beck et al. (2004) and Kennedy (2007) in that the Chinese *bi* comparative does not involve degree comparison in syntax, and nor can it be analyzed as a clausal comparative, Lin (2009) argues that, in addition to the parameters suggested by Kennedy (2007), two independent parameters are still needed.⁴ First, as Lin (2009) points out, the standards (of comparison) in the Chinese *bi* comparatives can be normal individuals, times, locations and even propositions, as long as they are arguments of the predicate of comparison (see the parameter of argument versus non-argument dependent comparison in (7)).^{5, 6}

- (5) a. Zhangsan bi Lisi kaixin.
 Zhangsan than Lisi happy
 ‘Zhangsan is happier than Lisi.’
 b. Zhangsan jintian bi zuotian kaixin.
 Zhangsan today than yesterday happy
 ‘Today Zhangsan is happier than yesterday.’

⁴ A clausal comparative, for example the English *than*-clausal comparative, is defined as one where the marker *than* selects as complement a clause that obligatorily involves the comparative (sub-)deletion. So, there is no reason to believe that examples like (5d) can only be analyzed as a clausal comparative.

⁵ As Lin (2009) argues, there are syntactic reasons to believe that times and locations are more like arguments than adjuncts with respect to *wh*-extraction (see Tsai (1994) for discussions on *wh*-extraction). Semantically, it is also often assumed, especially in works on tense and aspect, that time is an argument of a predicate (Lin 2003, 2006). Some linguists even lump time and location together as one single argument. For example, Kratzer (1988), when discussing the distinction between stage-level and individual-level predicates, has suggested that stage-level predicates have a spatial-temporal argument in their argument structure, though these arguments only optionally appear in overt syntax.

⁶ Following Liu (1996:220), Lin (2009:25) suggests that the marker *bi* and the standard(s) introduced by it form an adjunct constituent adjoined to the left of the predicate of comparison because of the following evidence. First, a ‘*bi* standard’ sequence, as (i) illustrates, can be connected with another one by coordinators like *huozhe* ‘or’.

- (i) Zhangsan bi Lisi huozhe (bi) Wangwu dou haiyao gao.
 Zhangsan than Lisi or than Wangwu all even tall
 ‘Zhangsan is taller than either Lisi or Wangwu.’

Second, a ‘*bi* standard’ sequence, as (ii) shows, can occur as an independent fragment.

- (ii) Ta-de shengao bi wo haiyao ai, bi Yaoming na geng shi
 he-DE height than I even short than Yaoming then even.more is
 tian cha di yuan le.
 heaven differ ground far SFP
 ‘He is much shorter than I am. If compared with Yaoming, his height is even like the distance between the heaven and the ground.’

Third, as the contrast between (iii) and (iv) indicates, the ‘*bi* standard’ sequence can only be ‘adjoined’ to the left of the predicate of comparison.

- (iii) Zhangsan [bi Lisi] gao.
 Zhangsan than Lisi tall
 ‘Zhangsan is taller than Lisi.’
 (iv) *Zhangsan gao [bi Lisi].
 Zhangsan tall than Lisi

- c. Zhangsan zai jiali bi zai xuexiao kaixin.
 Zhangsan at home.inside than at school happy
 ‘Zhangsan is happier at home than he is in school.’
- d. Zhangsan qu bi Lisi lai geng heshi.
 Zhangsan to than Lisi come even.more appropriate
 ‘It is more appropriate for Zhangsan to go there than Lisi to come here.’

This assumption, as Lin (2009) argues, correctly predicts that a manner adverb and a reason clause cannot occur as the standard because they are not arguments, as the ungrammaticality of (6a-b) shows.

- (6) a. *Zhangsan zhenxinde bi zhengchengde guanxin ni.
 Zhangsan sincerely than honestly care.about you
- b. *Zhangsan yinwei ni ma ta bi yinwei ni
 Zhangsan because you scold he than because you
 da ta haiyao shengqi.
 beat he even.more angry.
- (7) The Parameter of Argument versus Non-argument Dependent Comparison
 Comparatives in a language can be argument-dependent or non-argument
 dependent comparison.⁷

So, individual comparison of type *e*, as Lin (2009) suggests, is just a special case of argument-dependent comparison.

Second, the number of standards in the Chinese *bi* comparative, as Lin (2009) points out, can be one or more than one, as illustrated by examples in (8).

- (8) a. Zhangsan bi Lisi kaixin. (one standard)
 Zhangsan than Lisi happy
 ‘Zhangsan is happier than Lisi.’

⁷ According to Lin (2009), arguments include individuals, times, locations as well as instruments, but reasons and manners are adjuncts. So, example (i) with two individual compared items (i.e., *Zhangsan* and *Lisi*) is a case with argument comparison while (ii) is an example with non-argument comparison because the compared items are manner adverbs.

(i) Zhangsan bi Lisi gao.
 Zhangsan than Lisi tall
 ‘Zhangsan is taller than Lisi.’

(ii) He signs, but more happily than sadly.

- b. Zhangsan jintian zai jiali bi Lisi zuotian zai
 Zhangsan today at home.inside than Lisi yesterday at
 xuexiao kaixin. (three standards)
 school happy
 ‘Zhangsan is happier at home than Lisi was in school yesterday.’

Given this, Lin (2009) suggests that the marker *bi* is a dyadic comparative degree word that might take one or more than one argument, either individuals, times, locations, instruments, or even propositions, as long as they are arguments of the predicate of comparison. This characteristic of the degree word *bi* leads Lin (2009) to propose his second parameter.

(9) The Parameter of Dyadic versus Monoadic Comparison

If a language has phrasal comparatives, the construction may allow only one phrase (monoadic comparison) or more than one phrase (dyadic comparison) to be compared.⁸

Assuming these, Lin (2009) gives example (10a) a syntactic structure like (10b), in which the degree word *bi* ‘than’ taking three arguments (i.e., the individual argument *Lisi*, the time argument *jintian* ‘today’, and the location argument *zai jiali* ‘at home’) must be flanked by constituents of the same type (i.e., the correlate *Zhangsan*, *zuotian* ‘yesterday’ and *zai xuexiao* ‘at school’). Thus, the whole DegP-shell headed by the degree word *bi* ‘than’ occurs as an adjunct degree phrase adjoined to the predicate of comparison (Tsao 1990).

- (10) a. Zhangsan zuotian zai xuexiao [bi [Lisi jintian zai
 Zhangsan yesterday at school than Lisi today at
jiali]] kaixin.
 home.inside happy
 ‘Zhangsan was happier yesterday at school than Lisi is at home today.’

⁸ Example (i) is a case with monoadic comparison because it contains only one pair of compared items, but (ii) is one with dyadic comparison because three pairs of compared items (i.e., *Zhangsan* versus *Lisi*, *jintian* ‘today’ versus *zuotian* ‘yesterday’ and *zai jiali* ‘at home’ versus *zai xuexiao* ‘at school’) are found inside.

- (i) Zhangsan jintian bi zuotian kaixin.
 Zhangsan today than yesterday happy
 ‘Today Zhangsan is happier than Lisi was yesterday.’
 (ii) Zhangsan jintian zai jiali bi Lisi zuotian zai xuexiao kaixin.
 Zhangsan today at home.inside than Lisi yesterday at school happy
 ‘Today Zhangsan is happier at home than Lisi was at school yesterday.’

- b. [_S Zhangsan [_{AP} [_{NP} zuotian] [_{AP} [_{PP} zai xuexiao] [_{AP} [_{DegP} bi_i [_{DegP} [_{NP} Lisi] [_{Deg'} [_{Deg} t_i] [_{DegP} [_{NP} jintian] [_{Deg'} [_{Deg} t_i] [_{PP} zai jiali] [_{AP} kaixin]]]]]]]]]]]]].

Semantically, the degree word *bi* ‘than’ with a denotation like (11), as Lin (2009) suggests, has a semantic function similar to what Heim (1985) has for the English comparative morpheme *-er* in her direct analysis.⁹

$$(11) \|bi\| = (\lambda l)^i(\lambda i)^j(\lambda w)^k \lambda x \lambda P_{\langle d, \langle l \rangle, \langle i \rangle, \langle e \rangle, \langle e, t \rangle \rangle} \langle \lambda l' \rangle^i \langle \lambda i' \rangle^j \langle \lambda z \rangle^k \lambda y [\iota_{\max} d [P(d)(l')(i')(z)(y)] > \iota_{\max} d [P(d)(l)(i)(w)(x)]]$$

Highly influential though it is, Lin (2009) still encounters some problems which are not easy to cope with. First, assuming that Chinese is a dyadic argument comparison language and only arguments of the predicate of comparison can be the standards, Lin (2009) would expect (12a-b), where two reason clauses are compared with each other, to be ungrammatical, but the fact does not bear out this expectation.¹⁰

⁹ As one anonymous reviewer informed me, it was in Xiang (2005), not Lin (2009), who first proposed that the word *bi* heads DegP. Hence, it is better to show the readers how Lin (2009) is similar to and different from Xiang (2005) with respect to this particular issue. Xiang (2005) proposes a revised DegP-shell structure for Chinese comparatives by postulating two degree heads in syntactic structure: one lower than AP and the other above AP, as represented in (i).

- (i) [_{Deg1P} [_{Deg1} bi] [_{AP} standard_j [_{A'} [_A exceed_k + predicate] [_{Deg2P} standard_j [_{Deg2'} [_{Deg2} exceed_k] [(differential)]]]]]]]]

Her analysis has two important features. First, it can generate the transitive comparative by head-movement of the [_A exceed_k + predicate] to Deg1 when the degree word *bi* does not appear, as (ii) illustrates.

- (ii) Zhangsan [_{Deg1P} [_{Deg1} exceed_k- gao_i] [_{AP} wo_j [_{A'} [_A exceed_k + gao_i] Zhangsan tall I tall [_{Deg2P} wo_j [_{Deg2'} [_{Deg2} exceed_k] [wu gongfen]]]]]]] I five centimeter
‘Zhangsan is five centimeters taller than me.’

The other is that the degree morpheme *bi* and the standard do not form a constituent. Although Lin (2009) is similar to Xiang (2005) in analyzing the marker *bi* as a degree word, they still differ from each other in the following ways. First, according to Xiang (2005), the degree word *bi* can take only one complement. Second, the complement, as she suggests, is an adjective phrase which further dominates a degree phrase. Third, Xiang (2005) does not treat the *bi*-standard sequence as a syntactic constituent. See Erlwine (2007) and Lin (2009) for further discussion on Xiang (2005).

¹⁰ Among the twenty-three native speakers with whom I have checked on (12a-b), all of them accept (12a) as a natural, understandable and grammatical sentence, and (12b) sounds marginal to nine of them and grammatical to others. However, as one anonymous reviewer points out to me, “Lin (2009) assumes traditional adjuncts such as temporal and locative phrases to be arguments; however, the author didn’t question this assumption. As long as Lin gives an appropriate semantic type to reason clauses, he can incorporate the apparent ‘counterexamples’ offered by the author into his system without causing any problem. So, the existence of reason clauses in comparative constructions does not really stand as a fatal problem to Lin”. Logically, there are three ways to evaluate Lin’s (2009) argument vs. non-argument parameter. One is to point out his (2009) definition of arguments is incorrect; another is to point out that the argument vs. non-argument parameter based on his definition of arguments makes wrong predictions empirically; and the other is to point out that Lin’s (2009) definition of arguments and his argument vs. non-argument parameter are both wrong. Hence, it is not obligatory for me to question Lin’s (2009) definition of arguments. Thus the comment raised by the reviewer (i.e., intriguingly, the current author didn’t question this assumption) cannot stand.

- (12) a. Mama yinwei Xiaoming_i shuo huang bi baba
 mother because Xiaoming say lie than father
yinwei ta_i tou dongxi haiyao shengqi.
 because he steal thing even.more angry
 ‘Mother gets angry more because Xiaoming lies than father gets angry
 because Xiaoming steals things.’
- b. Laoban yinwei ta jingchang chidao bi yinwei ta
 boss because he often late than because he
ouer fan cuo hai geng shengqi.
 sometimes make mistake even more angry
 ‘The boss is even more angry because he is often late than because he
 sometimes makes mistakes.’

Second, even though all the standards in (13) are arguments of the predicate of comparison *xihuan* ‘like’, example (13), which takes the preposed postverbal object NP of the verb *xihuan* ‘like’ (i.e., *wuli* ‘physics’) as one of the standards, is unexpectedly ill-formed.¹¹

- (13) * Zhangsan shuxue bi Lisi wuli xihuan.
 Zhangsan mathematics than Lisi physics like
 ‘Zhangsan likes mathematics more than Lisi likes physics.’

Third, Lin (2009:23) requires the comparative degree word *bi* not only to be flanked by standards and their correspondents but also to be of the same type (Tsao

Instead, I simply follow Lin’s (2009) definition of arguments, which regards reasons and manners as adjunct, and provide grammatical examples where reason clauses occur as compared items to show that Lin’s (2009) analysis is empirically challenged. Thus, what I have to challenge here is the already-made proposal in Lin (2009), not what the reviewer says “as long as Lin gives an appropriate semantic type to reason clauses, he can incorporate the apparent ‘counterexamples’ offered by the author into his system, without causing any problem”.

¹¹ One anonymous reviewer is curious about the origin of the ungrammaticality of (13) and wonders how its intended meaning can ever be expressed in Chinese. The intended meaning of (13) is something like ‘the degree that *Zhangsan* likes mathematics is greater than the degree that *Lisi* likes physics’, which can be expressed by examples like (i).

- (i) Zhangsan xihuan shuxue de chengdu bi Lisi xihuan wuli de
 Zhangsan like mathematics DE degree than Lisi like physics DE
 chengdu da.
 degree great
 ‘The degree that Zhangsan likes mathematics is greater than the degree that Lisi likes
 physics.’

Since the origin of the ungrammaticality of (13) is beyond the scope of this paper, I will not discuss it here.

1990). However, it is not necessary for the degree word *bi* to be flanked by the standards and their correlates, as illustrated by (14a-b).^{12, 13}

- (14) a. Xianzai wo erzi bi yiqian guaiduo le.
 now I son than before well.behaved.more SFP
 ‘Now my son is more well-behaved than before.’
- b. Zai xuexiao xuesheng zongshi bi zai jiali
 at school student always than at home.inside
 tinghua.
 well.behaved
 ‘Students are more well-behaved in school than at home.’

Moreover, in a Chinese pivotal construction like (15a), the pivotal verb *rang* ‘let’, as Tang (2010:184-187) suggests, selects a VP as complement. Hence, it is very difficult to analyze (15a) as one with a syntactic structure like (15b), where the predicate *zhu san tian* ‘live for three days’ takes the string *wo rang ni* ‘I let you’ as the sentential subject.

- (15) a. Wo [VP [V rang [VP ni [V zhu san tian]]]].
 I let you live three day
 ‘I let you live here for three days.’
- b. [s [s wo rang ni] [VP zhu san tian]].
 I let you live three day

Given this, Lin’s (2009) analysis will be challenged by (16a), which has a syntactic structure like (16b) under his analysis, because the degree word *bi* will take the non-argumental pivotal verb *rang* ‘let’ as argument.

¹² Among the twenty-three native speakers I have checked on (14a-b), all of them accept (14a-b) as grammatical sentences.

¹³ One might say Lin (2009) can avoid this problem by assuming that the temporal adverb *xianzai* ‘now’ in (14a) is moved from the position adjacent to the *bi* phrase *bi yiqian* ‘than before’ to the sentence-initial position, as (i) shows.

(i) Xianzai_i wo erzi t_i bi yiqian guaiduo le.
 now I son than before well.behaved.much SFP
 ‘Now my son is more well-behaved than before.’

However, this will bring us the question of why (ii), in which the NP *gou* ‘dog’ is moved from the position adjacent to the *bi* phrase *bi mao* ‘than cat’, is ungrammatical.

(ii) *Gou_i Zhangsan t_i bi mao xihuan.
 dog Zhangsan than cat like
 ‘Zhangsan likes dogs more than cats.’

- (16) a. Wo rang ni [bi ni rang ta] duo zhu-le san tian.
 I let you than you let he many live-ASP three day
 ‘I let you live here for three more days than you let me.’
- b. Wo rang ni [_{VP} [_{DegP} bi_i [_{DegP} [_{NP} ni] [_{Deg'} [_{Deg} t_i] [_{DegP} [_V rang]
 I let you than you let
 [_{Deg'} [_{Deg} t_i] [_{NP} ta]]]]] [_{VP} duo zhu-le san tian]].
 he many live-ASP three day

Although Lin’s (2009) analysis is challenged, I shall not jump into the debate on whether the Chinese *bi* comparative is a phrasal or a clausal comparative here (Cheng 1966, Erlewine 2007, Fu 1978, Hashimoto 1966, Kennedy 2007, Liu 1996, Lin 2009, Paul 1993, Shi 2001, and Xiang 2005). Instead, the purpose of this paper is modest and straightforward. I want to argue for the following two points in Sections 2 and 3, respectively. First, the marker *bi* cannot be analyzed as a degree word; instead, it simply functions to introduce the standard and forms a pair of correlative words with a degree adverb with the meaning of comparison. Second, the standard introduced by the marker *bi* cannot be elements that can be modified by a degree adverb; otherwise, a conflict between two dimensions of comparison will occur. It is this conflict that makes a manner adverb unable to occur as the standard in the *bi* comparative.

However, as one anonymous reviewer comments, “the overall scope of the paper is too narrow, and the author should at least comment on the broad theoretical and/or empirical consequences of the two ‘notes’ made here. Besides, the overall organization is somewhat unbalanced since the paper puts too much emphasis on the sort-of side remarks while fails to elaborate on the presumably major proposal.” Actually, a comprehensive study on the Chinese *bi* comparative by the author just came out as Liu (2011), where the space spent on some of the theoretical and/or empirical consequences of these two notes is not enough. So, this short paper is written as supplement to that article.

2. The function of *bi*

According to Lin (2009:19-23), the meaning of comparison of the Chinese *bi* comparatives is provided by the word *bi*, which not only functions to introduce the standard(s) but also has a function similar to that of the English comparative morpheme *-er*. So, the marker *bi* is analyzed as a comparative degree word and the phrase headed by it is a degree phrase. This analysis, however, will encounter the following empirical and theoretical problems. First, in Chinese, an adjunct degree

modifier must precede and be adjacent to the gradable constituent modified by it, as illustrated by the contrast below.¹⁴

- (17) a. Wo dui ni hen keqi.
 I to you very courteous
 ‘I am very courteous to you.’
 b. *Wo hen dui ni keqi.
 I very to you courteous

Suppose the marker *bi* is a comparative degree word, the degree phrase headed by it and the gradable constituent modified by it should not be intervened by any syntactic constituent. However, as the grammaticality of (18) shows, the fact does not bear out this prediction.

- (18) Zhangsan bi Lisi dui wo keqi.
 Zhangsan than Lisi to I courteous
 ‘Zhangsan is more courteous to me than Lisi is.’

Second, a degree phrase cannot occur in a position hierarchically higher than a locative phrase, as the contrast below illustrates.

- (19) a. Zhangsan zai meiguo geng chidekai.
 Zhangsan at America even.more influential
 ‘Zhangsan is even more influential in America.’
 b. *Zhangsan geng zai meiguo chidekai.
 Zhangsan even.more at America influential

Thus, it is expected that a *bi* phrase, if being analyzed as a degree phrase, cannot occur in a position hierarchically higher than a locative phrase. However, this expectation is not borne out, as (20) shows.

¹⁴ One might challenge this analysis by pointing out that a negation marker like *bu* ‘not’ may be inserted between a degree modifier and the gradable predicate modified, as shown below.

- (i) Ni zheyang zuo tai bu yinggai.
 you this.way do too not should
 ‘It is too inappropriate for you to do in this way.’

However, this claim can hold only if the negation marker *bu* ‘not’ in (i) cannot be analyzed as a lexical negation marker. Indeed, it is very difficult to exclude this possibility.

- (20) Zhangsan bi Lisi zai meiguo chidekai.
 Zhangsan than Lisi at America influential
 ‘In America, Zhangsan is more influential than Lisi.’

These points lead us to propose the following alternative analysis: The word *bi* simply functions to introduce the standard(s) and the meaning of comparison in the *bi* comparative is provided by the comparative degree adverb like *geng* ‘even more’ or the covert comparative morpheme (i.e., *geng*), as shown by (21a-b), respectively.^{15, 16}

- (21) a. Zhangsan bi Lisi geng gao.
 Zhangsan than Lisi even.more tall
 ‘Zhangsan is even taller than Lisi.’
 b. Zhangsan bi Lisi *geng* gao.
 Zhangsan than Lisi GENG tall
 ‘Zhangsan is taller than Lisi.’

The supporting evidence for the existence of the covert comparative morpheme comes from the fact that a Chinese gradable adjective can occur as predicate only if it co-occurs with a degree term (Liu 2010). So, the impossibility of treating the marker *bi* as a degree word leads us to suggest that, in the Chinese *bi* comparatives with an adjectival predicate, a comparative morpheme, either the overt *geng* ‘even more’ or the covert *geng*, is obligatorily required. Furthermore, a Chinese *bi* comparative with

¹⁵ To get the meaning of comparison for examples like (21b), one might resort to the suggestion made by Sybesma (1999:26-27) and Xiandai Hanyu Xuci Lishi (1982:243-244); that is, Chinese adjectives differ from their European counterparts in that the latter choose the unmarked option for the positive degree but the former the unmarked option for the comparative. Namely, in European languages the comparative is morphologically marked whereas in Chinese the positive degree is marked by the most neutral ‘positive degree marker *hen*’, as shown by the contrast below.

- (i) a. John is taller.
 b. John is tall.
 (ii) a. (Zhangsan han Lisi, shei gao?) Zhangsan gao.
 Zhangsan and Lisi who tall Zhangsan tall
 ‘(As for Zhangsan and Lisi, who is taller?) Zhangsan is taller.
 b. Zhangsan *(hen) gao.
 Zhangsan HEN tall
 ‘Zhangsan is tall.’

However, this suggestion is not without problems because the language fact is more complex than what Sybesma (1999) and Xiandai Hanyu Xuci Lishi (1982) indicate. As Zhu (1982) and Liu et al. (2004) point out, in Chinese it is possible for a positive-degree-denoting ‘unmarked’ gradable adjective to occur as predicate, for example, in the *bu* ‘not’ negation sentence, the contrastive focus construction, the *ma* particle question, the epistemic adjectival small clause, and the conditional. Please see Liu (2010) for further discussion.

¹⁶ One anonymous reviewer reminds me that it might be methodologically problematic to say that it is the only possibility left that the marker *bi* simply functions to introduce the standard and forms a pair of correlative words with a degree adverb with the meaning of comparison. Actually, I have no intension of making such a strong claim; therefore, I use ‘the following alternative analysis’ to replace my original wording ‘the suggestion’ to avoid confusion.

- d. Zhangsan yong chazi bi yong kuaizi shoulian. (instrument)
 Zhangsan use fork than use chopstick skilled
 ‘Zhangsan is more skilled in using forks than using chopsticks.’
- e. Laoban yinwei ta jingchang chidao bi yinwei ta
 boss because he often late than because he
ouer fan cuo hai geng shengqi. (reason)
 sometimes make mistake even more angry
 ‘The boss is even more angry because he is often late than because he
 sometimes makes mistakes.’
- f. Ni qu bi wo qu heshi. (proposition)
 you go than I go appropriate
 ‘It is more appropriate for you to go than for me to go.’

Importantly here, the fact that adjuncts like reason clauses, as (23e) shows, can occur as the standard in the Chinese *bi* comparative makes Lin’s (2009) parameter of argument versus non-argument dependent comparison questionable. To answer the question of why a manner adverb cannot occur as the standard, I shall argue that the occurrence of a ‘manner adverb’ standard in the *bi* comparative will arouse a conflict between two dimensions of comparison, which makes a *bi* comparative ungrammatical.

Here, I simply follow Lin’s (2009) analysis on the *bi* comparative that involves one standard. The semantics of the *bi* phrasal comparative, as Lin (2009) suggests, can be generated by Heim’s (1985) direct analysis of phrasal comparatives. As Heim (1985) suggests, the general meaning of *-er* can be specified as (24) and what are compared in the phrasal comparative, for example, can be two individuals.

(24) “*-er* <a, b>*f*” is true iff $f(a) > f(b)$.

So, a function from individuals to degrees which can be represented by a lambda-iota expression “ $\lambda x \iota y [\dots x \dots y \dots]$ ” (i.e., *f* in (24)) is needed. This implies that what are compared in the phrasal comparatives are preferred to be elements without carrying degrees along some dimension by themselves; otherwise, the function of *f* in (24) would be nullified.

Crucially here, in the *bi* comparatives, the dimension of comparison is provided by the predicate modified by the degree adverbs with the comparison meaning such as *geng* ‘even more’ (or, more precisely, the predicate that occurs after the adverb with

the comparison meaning in the linear order).¹⁷ Furthermore, this predicate, as illustrated in (25a-b), cannot contain the standard.

- (25) a. Zhangsan [[bi Lisi] [geng [gao]]].
 Zhangsan than Lisi even.more tall
 ‘Zhangsan is even taller than Lisi.’
- b. Zhangsan [[feidan [bi Lisi]] [erqie [bi Wangwu]]]
 Zhangsan not.only than Lisi but.also than Wangwu
 [[geng [[chang] lai kan ni]]].
 even.more often come visit you
 ‘Zhangsan visits you more often than Lisi and Wangwu.’

Given this, if the standard is gradable by itself, the dimension provided by it and that provided by the predicate of comparison will conflict with each other. Therefore, we would expect example (26a-c) to be ungrammatical, and the fact bears out this expectation.

- (26) a. *Zhangsan [jingchangde [[bi ouerde] [geng guanxin
 Zhangsan often than sometimes even.more care.about
 ta]]].
 he
- b. *Zhangsan[gongkaide [[bi sidixiade]] [geng hui shuo ren
 Zhangsan in.public than in.private more able say people
 huai hua]]].
 bad word
- c. *Zhangsan [zhenxinde [[bi zhenchengde] [geng guanxin
 Zhangsan sincerely than genuinely even.more care.for
 ni]]].
 you

As (27a-c) show, the temporal adverb *jingchangde* ‘often’ and manner adverbs like *gongkaide* ‘publicly’ and *zhenxinde* ‘sincerely’ are all gradable because they can be modified by a degree adverb.

¹⁷ The dimension of comparison might be provided by the head of the predicate, for example *gao* ‘tall’ in (25a) or a gradable adverbial modifier contained in the predicate like *chang* ‘often’ in (25b).

- (27) a. Zhangsan hui geng jingchangde lai tanwang ni.
 Zhangsan will even.more often come visit you
 ‘Zhangsan will even more often visit you.’
- b. Zhangsan geng gongkaide piping ni.
 Zhangsan even.more in.public criticize you
 ‘Zhangsan even more publicly criticizes you.’
- c. Zhangsan geng zhenxinde guanhuai ni.
 Zhangsan even.more sincerely care.about you
 ‘Zhangsan even more sincerely cares about you.’

Thus, the question of why manner adverbs and temporal adverbs like *jingchangde* ‘often’ cannot occur as standards is naturally explained.¹⁸

In other words, the crucial factor that makes a manner adverb and adverbs like *jingchangde* ‘often’ unable to occur as the standard in the Chinese *bi* comparative is that the standard introduced by the marker *bi* cannot be gradable (i.e., elements that can be modified by a degree adverb) and the dimension of comparison can only be provided by the predicate occurring behind the degree adverb with comparison meaning like *geng* ‘even more’ in the linear order (e.g., *guanxin ta* ‘care about him’ in (26a)). However, this restriction, as illustrated by (28a-c) taken from Lin (2009:17), does not exist in the English comparatives.

- (28) a. Although there may be a \$100 million picture out there, I think that its day will [[come more slowly] [than quickly]], so that the market will be allowed a chance to [[grow more slowly] [than swiftly]].
- b. In this sense, cultural organizations – for the most part public or at least dependent on public funding – take part, more reluctantly than willingly, in this process of
- c. He signs, but more happily than sadly.

That is, the English comparatives allow the correlate to be gradable and to take the comparative morpheme *more/-er*. Since the dimension of comparison is provided by

¹⁸ One anonymous reviewer points out to me that (26b) is perfectly fine as long as *de* is removed from the adverbs, as shown below.

(i) Zhangsan[gongkai [[bi sidixia]] geng hui shuo ren huai hua]].
 Zhangsan in.public than in.private even.more able say people bad word
 ‘Zhangsan maliciously makes more remarks on people on a public occasion than on a private occasion.’

I have checked nine native speakers on (i), and they all say (i) is acceptable only if *gongkai* ‘public’ and *sidixia* ‘private’ are, respectively, understood as *zai gongkai de changhe* ‘on a public occasion’ and *zai sidixia de changhe* ‘on a private occasion’. In other words, (i) is acceptable only if *gongkai* ‘public’ and *sidixia* ‘private’ are understood as locations rather than manner adverbs.

the syntactic element modified by the comparative morpheme (e.g., *slowly* in (28a)) in the English comparatives, no conflict between dimensions of comparison occurs in (28a), where the standard *swiftly* has *slowly* as correlate. This analysis is further supported by correctly ruling out examples like (29).

(29) *John is more concerned about you sincerely than kindly.

In (29), both the standard (i.e., *kindly*) and its correlate (i.e., *sincerely*) are gradable, but the comparative morpheme *more* is attached to the adjectival predicate *concerned*. As a result, a conflict between two dimensions of comparison occurs. So, (29) is ungrammatical.

However, one anonymous reviewer questions my assumption that the standard introduced by *bi* cannot be an element that can be modified by a degree adverb by pointing out that the standard introduced by the marker *bi* can be gradable, as (30) illustrates (i.e., *yonggan* ‘brave’).

(30) Qinlao bi yonggan geng zhongyao.
 diligent than brave even.more important
 ‘Diligence is even more important than bravery.’

This example, though at first glance it seems like a counterexample, actually provides supporting evidence for my assumption. Since the morphological difference between *brave* and *bravery* in English does not overtly show up in Chinese, it is not implausible for us to say that in Chinese the adjective *yonggan* with the meaning of *brave* and the noun *yonggan* with the meaning of *bravery* are homophones. So, the word *yonggan* in (30) can be analyzed as the noun *yonggan* ‘bravery’.¹⁹ Since a noun like *yonggan* ‘bravery’ cannot be modified by a degree adverb, (30), as predicted, is grammatical. Supporting evidence for this account comes from the following two facts. First, as (31a-b) show, *yonggan* ‘bravery’, when occurring as subject, can be replaced by the pronominal *zhe* ‘this’.

(31) a. Yonggan shi yizhong rengen tezhi.
 bravery is one.kind personal characteristic
 ‘Bravery is a kind of personal characteristics.’

¹⁹ More precisely, here I treat *yonggan* ‘bravery’ as a noun rather than a process nominal to deal with the question of why it cannot occur with an adverb (Fu et al. 2001).

- b. Zhe shi yizhong rengen tezhi.
 this is one.kind personal characteristic
 ‘This is a kind of personal characteristics.’

Second, example (30) can be rewritten as (32) without any significant change in meaning.

- (32) Zhe bi na geng zhongyao.
 this than that even.more important
 ‘This is even more important than that.’

However, as the reviewer also points out, treating *yonggan* in (30) as a noun might be challenged by examples like (33a-c), in which *shaotangshang* ‘scald’, *shaoshang* ‘burn’, *jusang* ‘depressed’, *beishang* ‘sad’, *jueshi* ‘hunger strike’ and *jieshi* ‘diet’ are all nominalized elements and occur with a degree adverb. (Among the seven native speakers I consulted, five of them consider (33c) as being marginal and the other two consider it as being ungrammatical.)

- (33) a. Qingdu shaotangshang bi yanzhong shaoshang
 mild scald than serious burn
 xingyun duo le.
 lucky more SFP
 ‘It is more lucky for one to be mildly scalded than to be seriously burned.’
- b. Jidu jusang bi jidu beishang hao duo le.
 extremely depressed than extremely sad good more SFP
 ‘It is better for one to be extremely depressed than to be extremely sad.’
- c. Jueshi bi shaowei jieshi kepa.
 hunger.strike than slight diet terrible
 ‘A hunger strike is more terrible than a mild diet.’

The reviewer’s further comments can be briefly summarized as the following three points: (i) degree words include *feichang* ‘extremely’, *yanzhong* ‘seriously’, *qingdu* ‘mildly’, *jidu* ‘extremely’, *shaowei* ‘slightly’ and *tebie* ‘especially’; (ii) a nominalized element can be modified by a degree adverb; and (iii) Chinese does not allow multiple degree adverbs in a row.

Unfortunately, the reviewer’s comments are self-contradictory. Following the reviewer’s comment (ii) (i.e., “a nominalized element can be modified by a degree

adverb), if words like *qingdu* ‘mild’, *yanzhong* ‘serious’, *jidu* ‘extreme’ and *shaowei* ‘slightly’ in (33a-c), as the reviewer suggests in comment (i), are all degree adverbs, then example (34a-c) will be incorrectly ruled out by the reviewer’s comment (iii) (i.e., Chinese does not allow multiple degree adverbs in a row) because, as (35) shows, it is extremely difficult for the reviewer to say that words like *feichang* ‘extremely’, *jiwei* ‘extremely’ and *youdian* ‘slightly’ are not degree adverbs.²⁰

- (34) a. Buguan zenmeyang, feichang yanzhongde shaoshang haishi
no.matter how extremely serious burn still
bi feichang yanzhongde cashang nan zhiliao.
than extremely serious scrape difficult treat
‘No matter what it is, an extremely serious burn is more
difficult to treat than an extremely serious scrape is.’
- b. Buguan zenmeyang, jiwei jidude tangshang haishi
no.matter how extremely extreme scald still
bi jiwei qingdude cashang nan zhiliao.
than extremely mild scrape difficult treat
‘No matter what it is, an extremely serious scald is more
difficult to treat than an extremely mild scrape is.’
- c. Buguan zenmeyang, shaowei youdian beishang haishi bi
no.matter how slight slight sad still than
shaowei youdian youyu hao.
slight slight depressed good
‘No matter what it is, a little bit slight sadness is better than a
little bit slight depression is.’
- (35) Zhangsan feichang/jiwei/youdian beishang.
Zhangsan extremely/extremely/slightly sad
‘Zhangsan is extremely/extremely/slightly sad.’

Although I agree with the reviewer that “a nominalized element can occur with an adverb”, this does not mean we can say that all types of nouns (or nominal elements) can occur with an adverb or all types of adverbs can occur with a noun (or a nominal element) (Fu et al. 2001). Thus, the fact that “a nominalized element can occur with

²⁰ Perhaps, the reviewer might say in (34a-c) the first degree adverb occurs as a modifier for the second degree adverb; for example, in (34a) what is modified by the degree adverb *feichang* ‘extremely’ is the degree adverb *yanzhongde* ‘seriously’ rather than the expression *yanzhongde shaoshang* ‘serious burn’. This assumption, however, is immediately challenged by the ungrammaticality of the reviewer’s examples like (i).

(i) *Zhangsan feichang tebie gao.
Zhangsan extremely especially tall

an adverb” does not guarantee that the nominalized element that follows the marker *bi* can be modified by a degree adverb. Consider the following examples.

- (36) a. *qingdu(-de)* *taifeng*
 mild(-DE) typhoon
 ‘a mild typhoon’
 b. *yanzhong(-de)* *bingzheng*
 serious(-DE) disease
 ‘a serious disease’
 c. *jidu(-de)* *qingyu*
 extreme(-DE) lust
 ‘the extreme lust’

There is no way to exclude the possibility of analyzing *qingdu* ‘slight’, *yanzhong* ‘serious’ and *jidu* ‘extreme’ in (36a-c) as an attributive adjectival modifier. If the word *yanzhong* ‘serious’, *qingdu* ‘mild’ and *jidu* ‘extreme’ in (33a-b) and (34a-b) are treated as an attributive adjectival modifier, then the grammaticality of (34a-b) are expected.

Also, it is not so certain to say that the word *shaowei* ‘slightly’ in (33c) can only be analyzed as a degree adverb. When being used as a degree adverb, *shaowei* ‘slightly’, which must syntactically co-occur with the measure phrase *yidian* ‘a little bit’, can only express the explicit comparison, while *youdian* ‘a little bit’ the implicit comparison, as the contrast between (37a-b) and (38a-b) illustrates (Kennedy 2007).²¹

- (37) a. *Zhangsan bi Lisi shaowei gao *(yidian)*.
 Zhangsan than Lisi slightly tall a.little.bit
 ‘Zhangsan is a little bit taller than Lisi.’
 b. *Zhangsan shaowei gao *(yidian)*.
 Zhangsan slightly tall a.little.bit
 ‘Zhangsan is a little bit taller.’
 (38) a. **Zhangsan bi Lisi youdian gao (yidian)*.
 Zhangsan than Lisi a.little.bit tall a.little.bit
 ‘Zhangsan is a little bit taller than Lisi.’
 b. *Zhangsan youdian gao *(yidian)*.
 Zhangsan a.little.bit tall a.little.bit
 ‘Zhangsan is a little bit tall.’

²¹ The co-occurrence restriction between the degree adverb *shaowei* ‘slightly’ and the measure phrase *yidian* ‘a little bit’ explains why (33c) sounds marginal to five of my seven informants and ungrammatical to the other two.

Here relevant to the contrast above is the grammaticality of example (39a), in which the adverb *shaowei* ‘slightly’ co-occurs with *youdian* ‘a little bit’.

- (39) a. Zhangsan shaowei youdian qiong.
 Zhangsan slightly a.little.bit poor
 ‘Zhangsan is a little bit poor.’
- b. *Zhangsan bi Lisi shaowei youdian qiong.
 Zhangsan than Lisi slightly a.little.bit poor

Since an implicit-comparison-denoting adverb cannot co-occur with an explicit-comparison-denoting adverb, we would expect (39a) to be ungrammatical if both *shaowei* ‘slightly’ and *youdian* ‘a little bit’ can only be used as degree adverbs; however, the fact does not bear out this expectation. Moreover, as the meaning of (39a) shows, the word *shaowei* ‘slightly’ in (34c) should not be analyzed as a degree adverb.

4. Concluding remarks

Since the syntax and semantics of the Chinese *bi* comparative is extremely complicated, my aim in this paper is modest. I tentatively conclude that the marker *bi* is not a degree word with the meaning of comparison; instead, it functions to introduce the standard(s) and forms a pair of correlative words with the adverb with the comparison meaning like *geng* ‘even more’ in the Chinese *bi* comparative. The standard introduced by the marker *bi* cannot be elements that can be modified by a degree adverb. Otherwise, a conflict between two dimensions of comparison would occur.

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有關漢語「比字比較句」的兩個註記

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本文在不涉入「比字比較句」應否分析為「子句比較句」或是「詞組比較句」的前提下，論證此一結構具有下列兩個語法及語意特性：第一、「比」字不是一個程度詞；它的句法作用在引介「比較標準項」並與之組成一個加接於比較謂語左側的附加語詞組；在語意上「比」字會和句中表「比較」語意的程度副詞組成一對關聯詞。第二、「比」字所引介的「比較標準項」不能是一個可以受程度副詞修飾的詞組，否則會引發「向度衝突」，從而造成句子的不合語法。

關鍵詞：「比」、關聯詞、程度詞、向度衝突