

## The Weak Comparative Morpheme in Mandarin Chinese\*

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The X A (Y) D comparative contains a covert weak comparative morpheme (i.e. the covert verbal suffix *-guo2*) that is grammaticalized from the verbal suffix *-guo1*, meaning 'exceed' or 'surpass', in the X A-*guo1* Y (D) comparative. The "weak" nature of *-guo2* is the "virus" that makes the X A (Y) D comparative differ from the X *bi* Y A D comparative not only in obligatoriness of the measure phrase but also in further modification by degree adverbs. And most of the properties specific to the X A (Y) D comparative in fact originate from the weak nature of the covert verbal suffix *-guo2*.

Key words: weak comparative morpheme, differential measure phrase, interval argument

### 1. Introduction

Almost all the previous studies on Chinese comparatives concentrate on examples like (1a) (henceforth the X *bi* Y A D comparative), in which either the *bi*-phrase or the measure phrase that denotes the differential between the two compared degree values is optional but both of them cannot be deleted simultaneously, as (1b-c) illustrate (cf. Chao 1968, Fu 1978, Li and Thompson 1981, Tsao 1989, Hong 1991, Paul 1993, Liu 1996, Hsing 2003, and many others).<sup>1</sup>

- (1) a. Zhangsan *bi* Lisi *gao* san *gongfen*.  
Zhangsan compare Lisi tall three centimeter  
'Zhangsan is three centimeters taller than Lisi.'

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<sup>1</sup> Since the X *bi* Y A D comparative is not the focus of this study, we shall not discuss it unless it is necessary. Even so, we will not go into the details of this construction anyhow. Abbreviations used in this paper include: A in the X *bi* Y A D comparative, the X A (Y) D comparative, and the X A-*guo1* Y (D) comparative: adjective, ASP: aspect marker, CL: classifier, D in the X *bi* Y A D comparative, the X A (Y) D comparative, and the X A-*guo1* Y (D) comparative: differential, DE: verbal suffix or marker for modifying phrases like genitive phrases, relative clauses, and noun complement clauses, *-guo1*: the overt verbal suffix with the meaning of *exceeding*, *-guo2*: the covert counterpart of the verbal suffix *-guo1*, and SFP: sentence final particle.

- b. Zhangsan bi Lisi gao.  
 Zhangsan compare Lisi tall  
 ‘Zhangsan is taller than Lisi.’
- c. Zhangsan gao san gongfen.  
 Zhangsan tall three centimeter  
 ‘Zhangsan is three centimeters taller (than somebody).’
- d. \*Zhangsan gao.  
 Zhangsan tall

However, in Chinese there exists another type of comparative like (2a), which is seldom studied by scholars (henceforth the X A (Y) D comparative).

- (2) a. Zhangsan gao Lisi san gongfen.  
 Zhangsan tall Lisi three centimeter  
 ‘Zhangsan is three centimeters taller (than Lisi).’
- b. Zhangsan gao san gongfen.  
 Zhangsan tall three centimeter  
 ‘Zhangsan is three centimeters taller (than Lisi).’
- c. \*Zhangsan gao Lisi.  
 Zhangsan tall Lisi

This type of comparative contains two post-adjectival nominal expressions: One is a referential NP functioning as the target of comparison while the other is a non-referential measure phrase denoting the differential. Differing from the X *bi* Y A D comparative, the measure phrase in the X A (Y) D comparative is obligatorily required (see the contrast between (1a-d) and (2a-c)).

The purpose of this paper is to study the syntax and semantics of the X A (Y) D comparative. We shall argue that the X A (Y) D comparative contains a covert weak comparative morpheme that is grammaticalized from the verbal suffix *-guo1*, meaning ‘exceed’, in the X A-*guo1* Y (D) comparative, and most of the construction-specific properties shown by this type of comparative actually originate from the weak nature of this morpheme.

The organization of this paper is as follows. In Section 2, we shall discuss the syntactic and semantic characteristics of the X A (Y) D comparative, and then point out the questions that any theory on this construction has to account for. We then undertake

a literature review in Section 3. In Section 4, we introduce, as preliminaries, the semantics of gradable adjectives and Schwarzcild and Wilkinson's (2002) interval-based analysis to the semantics of comparatives. Section 5 begins with our proposal, which is followed by a comparison between the X A (Y) D and the X *bi* Y A D comparative. Finally, the conclusion will be stated in Section 6.

## 2. The syntactic and semantic properties of the X A (Y) D comparative

The X A (Y) D comparative has the following syntactic and semantic characteristics. First, as Chao (1968:314, 690-691) points out, the predicative adjective (or predicative stative quality verb) in this type of comparative takes two complements: an indirect-object-like referential NP complement (e.g. *Lisi* in (3a)), and a quantity-/extent-denoting cognate object (henceforth the measure phrase), for example *san gongfen* 'three centimeters' in (3a).

- (3) a. Zhangsan gao/ai Lisi san gongfen.  
Zhangsan tall/short Lisi three centimeter  
'Zhangsan is three centimeters taller/shorter than Lisi.'
- b. Zhangsan pang/shou Lisi san gongjin.  
Zhangsan fat/thin Lisi three kilogram  
'Zhangsan is three kilograms fatter/thinner than Lisi.'

Semantically, the indirect-object-like NP complement functions to provide the target of comparison while the measure phrase shows the differential between the two compared degree values along the scale denoted by the adjectival predicate. Syntactically, the referential NP complement must precede the non-referential measure phrase; otherwise, the sentence will be ungrammatical, as the contrast below illustrates.

- (4) a. Zhangsan gao Lisi san gongfen.  
Zhangsan tall Lisi three centimeter  
'Zhangsan is three centimeters taller than Lisi.'
- b. \*Zhangsan gao san gongfen Lisi.  
Zhangsan tall three centimeter Lisi

Second, Y. Liu (2004:26), based on the contrast between (5a) and (5b), suggests that

the adjective in the X A (Y) D comparative must be mono-syllabic and the differential measure phrase is obligatory.

- (5) a. Zhagnsan da/xiao Lisi \*(san sui).  
 Zhagnsan old/young Lisi three year  
 ‘Zhagnsan is three years older/younger than Lisi.’
- b. Zhe-shan men zhai/\*xiazhai na-shan men shi gongfen.  
 this-CL door narrow/narrow that-CL door ten centimeter  
 ‘This door is ten centimeters narrower than that one.’

However, the claim that the adjective inside must be mono-syllabic is immediately challenged by examples in (6).

- (6) a. Zhe-ben shu pianyi na-ben yi-bai-kuai qian.  
 this-CL book cheap that-CL one-hundred-CL dollar  
 ‘This book is one hundred dollars cheaper than that one.’
- b. Shi-nei anjing shi-wai er-shi-fenbei.  
 indoor quiet outdoor two-ten-decibels  
 ‘The indoor is twenty decibels quieter than the outdoor.’

Furthermore, Liu (2004) does not provide any explanation for why the differential measure phrase is obligatory in the X A (Y) D comparative.

Third, generally speaking, the differential measure phrase in most cases occurs in the numeral-measure-unit pattern, as examples in (7) indicate.

- (7) a. Zhe-tiao shenzi chang/duan na-tiao yi gongchi.  
 this-CL rope long/short that-CL one meter  
 ‘This rope is one meter longer/shorter than that one.’
- b. Zhe-zhong putao zai tian-du shang/zai suan-du shang tian/suan  
 this-CL grape at saccharinity up/at acerbity up sweet/sour  
 na-zhong putao san du.  
 that-CL grape three degree  
 ‘This kind of grape is three degrees higher than that kind in saccharinity/ acerbity.’

- c. Zhangsan duo/shao Lisi shi fen.  
 Zhangsan more/less Lisi ten point  
 ‘Zhangsan’s grade is ten more/less points than Lisi’s.’
- d. Zhe-kuai shitou zhong/qing na-kuai liang gongjin.  
 this-CL stone heavy/light that-CL two kilogram  
 ‘This stone is two kilograms heavier/lighter than that one.’
- e. Zhangsan pang/shou Lisi shi gongjin.  
 Zhangsan fat/thin Lisi ten kilogram  
 ‘Zhangsan is ten kilograms fatter/thinner than Lisi.’
- f. Zhangsan kuai/man Lisi wu fenzhong.  
 Zhangsan fast/slow Lisi five minute  
 ‘Zhangsan is five minutes faster/slower than Lisi.’
- g. Zhe-ben shu gui/pianyi na-ben yi-bai-kuai qian.  
 this-CL book expensive/cheap that-CL one-hundred-CL dollar  
 ‘This book is one more hundred dollars expensive/one hundred dollars cheaper than that one.’
- h. Zher qiya gao/di pingdi shi haoba.  
 here air.pressure high/low level.ground ten millibar  
 ‘The air pressure here is ten millibars higher/lower than the level ground.’

The measure unit occurring in such a pattern must be conventionalized and fixed as a rule for measuring the scale denoted by the adjective, for example *gongfen* ‘centimeter’, *gongchi* ‘meter’, *gongli* ‘kilometer’, *gongke* ‘gramme’, *gongjin* ‘kilogram’, *gongsheng* ‘liter’, *yingchi* ‘inch’, *bang* ‘pound’, *fenbei* ‘decibel’, *haoba* ‘millibar’ etc. So, we suggest that adjectives allowed in the X A (Y) D comparative at least must be those with a scale that can be measured by a standardized measure unit. Assuming this, the contrast between (8a) and (8b) is explained naturally.<sup>2</sup>

<sup>2</sup> One implication of this claim is that adjectives can be divided into two types: the measurable and the non-measurable adjective. Here the notion “measurable” means the scale denoted by the adjective can be measured by a conventionalized measure unit. If the scale denoted by an adjective conforms to the requirement: the measure unit must be conventionalized and fixed as a rule for measuring the scale denoted by the adjective, then the measure phrase of the X A (Y) D comparative might be replaced by one like *hen duo* ‘very many’ or *bu shao* ‘not little’, as shown by examples below.

- (i) Zhangsan gao Lisi hen duo.  
 Zhangsan tall Lisi very many  
 ‘Zhangsan is much taller than Lisi.’
- (ii) Zhe-ben shu pianyi na-ben bu shao.  
 this-CL book cheap that-CL not little  
 ‘This book is much cheaper than that one.’

- (8) a. Zhe-ben shu pianyi na-ben shu yi-bai-kuai qian.  
 this-CL book cheap that-CL book one-hundred-CL money  
 ‘This book is one hundred dollars cheaper than that one.’
- b. \*Zhe-ge nuhai piaoliang na-ge nuhai san du.  
 this-CL girl beautiful that-CL girl three degree  
 ‘This girl is three more degrees beautiful than that one.’

There does not exist a conventionalized measure unit that is fixed as a rule for measuring the scale of beautifulness; therefore, the adjective *piaoliang* ‘beautiful’ can never occur as the adjective in the X A (Y) D comparative. However, we always use *kuai* ‘monetary unit’ as a conventionalized measure unit that is fixed as a gauge to measure the expense-scale denoted by *pianyi* ‘cheap’; hence, (8a) is well-formed. So, we propose that the factors that make the X A (Y) D comparative not so productive at least include one that most Chinese adjectives are not of a type that can be measured by a conventionalized measure unit.<sup>3</sup> However, at this point, we immediately encounter the question of why the measure phrase functioning to provide the differential between the two compared degree values is obligatory in the X A (Y) D comparative.

Fourth, the adjective which occurs in the X A (Y) D comparative might be a [+pole] or [-pole] dimensional one, as examples in (9) illustrate (cf. Bierwisch 1989).

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Most importantly here is that examples like (iii) should not be considered the X A (Y) D comparative because occurrence of the target of comparison is not allowed.

- (iii) Zhangsan congming (\*Lisi) hen duo.  
 Zhangsan smart Lisi very many  
 ‘Zhangsan is much smarter than Lisi.’

Instead of regarding (iii) as an X A (Y) D comparative, we would like to say that (iii) is a reduced form of (iv).

- (iv) Zhangsan bi Lisi congming hen duo.  
 Zhangsan than Lisi smart very many  
 ‘Zhangsan is much taller than Lisi.’

<sup>3</sup> Nevertheless, we believe that there still exist some (other) factor(s) that make(s) the X A (Y) D comparative not so popular as the X bi Y A D comparative is. For example, although the adjective *chao* ‘noisy’ denotes a scale that can be measured by the conventionalized measure unit *fenbei* ‘decibel’, the ungrammaticality of (i) indicates that *chao* ‘noisy’ is not allowed to occur in the X A (Y) D comparative.

- (i) \*Shi-wai chao shi-nei er-shi fenbei.  
 outdoor noisy indoor two-ten decibel  
 ‘The outdoor is twenty more decibels noisy than the indoor.’

So far, we do not know what those other factors might be, nor will we discuss this issue in the rest of this paper.

(9) a. Zhangsan pang Lisi shi gongjin. [+pole]

Zhangsan fat Lisi ten kilogram

‘Zhangsan is ten kilograms fatter than Lisi.’

b. Zhangsan shou Lisi shi gongjin. [-pole]

Zhangsan thin Lisi ten kilogram

‘Zhangsan is ten kilograms thinner than Lisi.’

Fifth, the adjective in the X A (Y) D comparative is incompatible with a degree adverb, but the adjective occurring in the X *bi* Y A D comparative can be further modified by a degree adverb, for example *geng* ‘more’, as the contrast between (10a-b) and (11a-b) illustrates.<sup>4</sup>

(10) a. \*Zhangsan geng gao Lisi san gongfen.

Zhangsan more tall Lisi three centimeter

b. \*Zhangsan hen/feichang gao Lisi san gongfen.

Zhangsan very/extremely tall Lisi three centimeter

(11) a. Zhangsan bi Lisi gao (san gongfen).

Zhangsan compare Lisi tall three centimeter

‘Zhangsan is (three centimeters) taller than Lisi.’

b. Zhangsan bi Lisi geng gao.

Zhangsan compare Lisi more tall

‘Zhangsan is much taller than Lisi.’

The contrast between (10a-b) and (11a-b) further raises the question: How does the X A (Y) D comparative differ from the X *bi* Y A D comparative in syntax and semantics?<sup>5</sup>

<sup>4</sup> Examples like (i) might lead one to say that the adjective in the X A (Y) D comparative can be modified by a degree adverb.

(i) Zhangsan shaowei gao Lisi yi-dianer.

Zhangsan a.little.bit tall Lisi a-little.bit

‘Zhangsan is a little bit taller than Lisi.’

Significant here is the fact that the adverb *shaowei* ‘a little bit’ must co-occur with a differential measure phrase denoting the sense of *a little bit* (cf. Lu and Ma 1999 and Zhang 2002). So, it is not unreasonable for us to say that *shaowei* ‘a little bit’ is a ‘degree adverb’ for the differential measure phrase rather than the adjective. In other words, what is modified in (i) is the differential measure phrase *yi-dianer* ‘a little bit’ rather than the adjective *gao* ‘tall.’

<sup>5</sup> One reviewer points out the adjective in the X A (Y) D comparative might allow further degree modification by providing examples like (i), in which s/he regards *zhi* ‘only’ a degree adverb. If *zhi* ‘only’ is a degree adverb, we would expect it to be compatible with a gradable adjective; however, the fact does not bear out his expectation.

Sixth, after having the adjective further modified by the degree adverb *geng* ‘more’, the X *bi* Y A D comparative, for example (12a), should be understood with the presupposition that the height of the two participants in the comparing event (i.e. *Zhangsan* and *Lisi*) must belong to the high-tone range of the height scale; namely, both of them must be higher than the average height of human beings. However, for the X A (Y) D comparative, take (12b) as example; it is not necessary for the height of the two participants in the comparing event to be within the high-tone range of the height scale simultaneously even if the differential is quite large (cf. (12c)).

- (12) a. *Zhangsan bi Lisi geng gao.*  
*Zhangsan compare Lisi more tall*  
 ‘Zhangsan is much taller than Lisi.’
- b. *Zhangsan (\*geng) gao Lisi san gongfen.*  
*Zhangsan more tall Lisi three centimeter*  
 ‘Zhangsan is three centimeters taller than Lisi.’
- c. *Zhangsan (\*geng) gao Lisi wu-shi gongfen.*  
*Zhangsan more tall Lisi five-ten centimeter*  
 ‘Zhangsan is fifty centimeters taller than Lisi.’

Thus far, the questions raised by the X A (Y) D comparative that any analysis on this construction has to deal with can be summarized as follows: First, why does the referential NP complement that denotes the target of comparison have to precede the non-referential measure phrase in the X A (Y) D comparative? Second, why is the differential measure phrase obligatorily required in the X A (Y) D comparative? Third, why can the adjective in the X A (Y) D comparative not be further modified by a degree adverb? Fourth, how does the X A (Y) D comparative differ from the X *bi* Y A D comparative in syntax and semantics?

### 3. Previous analyses

The Chinese X A (Y) D comparative has examples like (13a) as its Cantonese

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- (i) *\*Zhangsan zhi gao/congming/qinfen.*  
*Zhangsan only tall/smart/diligent*  
 ‘\*Zhangsan is only tall/smart/diligent.’

Instead of regarding *zhi* ‘only’ as a degree adverb, we, following Zhu (1982:196), consider *zhi* ‘only’ a scopal adverb with the focus sense.

counterpart (henceforth the obligatory measuring comparative). According to Mok (1998), the Cantonese obligatory measuring comparative like (13a), being a type of Cantonese non-coordinative exceed comparative, has the following properties: First, the adjectival verb selects only a measure phrase that denotes a difference in comparison, as the contrast between (13a) and (13b) shows.<sup>6</sup>

- (13) a. Keoi gou Aa Can loeng cyun.  
he tall Aa Can two inch  
'He is two inches taller than Aa Can.'
- b. \*Keoi gou Aa Can loeng nin.  
he tall Aa Can two year  
'\*He is two years taller than Aa Can.'

Second, the adjectival verb and the measure phrase forms a V' constituent both on the surface and in the underlying structure, as the coordinated structure below illustrates.

- (14) Keoi gou loeng cyun daanhai heng ng bong.  
he tall two inch but light five pound  
'He is two inches taller, but five pounds lighter.'

Third, the target of comparison in the obligatory measuring comparative cannot be a non-specific indefinite, as shown by the contrast below.

- (15) a. Keoi gou Aa Can hou do.  
he tall Aa Can good many  
'He is much taller than Aa Can.'
- b. \*Keoi gou luik cek hou do.  
he tall six foot very many  
'He is much taller than six feet.'

That is to say, the VP structure of the obligatory measuring comparative is of the pattern V NP1 NP2, where NP1 is the specific/definite target of comparison and NP2 is the

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<sup>6</sup> Mok (1998), following Chao (1968), considers Cantonese adjectives a subtype of verbs.

postverbal non-referential measure phrase. Since the definiteness effect shown by the target of comparison in the obligatory measuring comparative is also found in sentences with the pattern V NP1 NP2 where NP2 is a duration or frequency phrase. Mok (1998:113), following Huang's (1991:492) assumption that there are two structural object positions in the base where the referential object occupies [Spec, VP] but the non-referential one occurs inside V', characterizing the Cantonese obligatory measuring comparative in terms of the VP structure like (16) (cf. Mahajian 1990).<sup>7</sup>

(16) [<sub>VP</sub> NP [<sub>V'</sub> [<sub>V</sub> V] [<sub>VP</sub> Target of Comparison [<sub>V'</sub> [<sub>V</sub> Adjectival Verb] [Measure Phrase]]]]]]

More precisely, the adjectival verb and the selected quasi-argumental measure phrase form a V' constituent underlyingly, and this constituent further licenses (or assigns a  $\theta$ -role to) the target of comparison that occurs in [Spec, VP]. In order to derive the surface structure, the adjectival verb, as Mok (1998) assumes, is compelled to raise to a higher position, which he assumes to be a V following Larson's (1988a) VP-shell analysis, when the surface structure is derived.<sup>8</sup>

However insightful Mok's (1998) VP-shell analysis on the Cantonese obligatory measuring comparative is, there still exist some problems that his analysis fails to account for. First, Mok (1998) does not explain why the quasi-argumental (or non-referential) measure phrase is obligatorily required in the obligatory measuring comparative.

Second, why does the adjectival verb in the (Cantonese) obligatory measuring comparative not allow further modification by a degree adverb such as *hou* 'very' or *gang* 'more', as the contrast below shows?

(17) a. \*Keoi hou gou Aa Can loeng cyun.  
           he very tall Aa Can two inch  
           '\*He is two inches very taller than Aa Can.'

<sup>7</sup> Mok (1998:174) regards the difference-denoting measure phrase as the comparative marker of them obligatory measuring comparative.

<sup>8</sup> C.-P. Chao (2005) proposes a DegP analysis for the Mandarin Chinese X A (Y) D comparative by assuming that the head Deg selects as complement AP in which the NP denoting the target of comparison occurs in [Spec, AP] while the differential-denoting measure phrase occurs inside A', as (i) illustrates.

(i) [<sub>Deg</sub> [<sub>Deg'</sub> [<sub>Deg</sub> Deg] [<sub>AP</sub> NP [<sub>A'</sub> [<sub>A</sub> A] [Measure Phrase]]]]]]

Later, it will be clear to the reader that Chao (2005) also fails to account for the questions that we shall point in relation to Mok's (1998) shell-VP analysis.

b. \*Zoengsaam gang gou Leisei loeng cyun.

Zoengsaam more tall Leisei two inch

‘\*Zoengsaam is two inches more taller than Leisei.’

Third, as we have pointed out, only adjectives with a scale that can be measured by a conventionalized measure unit are allowed in the obligatory measuring comparative. However, Mok (1998) does not spend any space in explaining why it has to be so.

Fourth, what does the higher verb of the shell-VP structure proposed by Mok (1998) contribute to the syntax and semantics of the Cantonese obligatory measuring comparative?

#### 4. Preliminary: The semantics of adjectives and comparatives

Before proceeding to our proposal, we shall briefly introduce as preliminaries the semantics of (gradable) adjectives and Schwarzcild and Wilkinson’s (2002) analysis of the semantics of comparatives.

##### 4.1 The semantics of adjectives

We follow a well-established tradition and analyze gradable adjectives as relations between individuals and degrees (cf. Seuren 1973, Cresswell 1977, Hellan 1981, von Stechow 1984, Heim 1985, Bierwisch 1989, Klein 1991, and Kennedy and McNally 2005). For example, the gradable adjective *expensive* has the denotation in (18), where **expensive** represents a measure function that takes an entity and returns its cost, a degree on the scale associated with the adjective.

$$(18) \text{ [[expensive]]} = \lambda d \lambda x. \mathbf{expensive}(x) = d$$

The adjective *expensive* thus denotes a relation between degrees of cost  $d$  and objects  $x$  such that the cost of  $x$  equals  $d$ . Under such an approach, the value of the degree argument is determined by degree morphology—in English, comparatives, degree modifiers, and measure phrases—that saturates and imposes restrictions on the degree argument. The comparative morphology *more/-er ... than*, for example, requires the degree argument of a gradable adjective to exceed some other degree (introduced by the *than* phrase). Hence, a natural question to ask at this point is how the degree argument

of *fat* in (19a), in which neither comparative morphology, degree modifiers, nor measure phrases are found, gets restricted. For a sentence like (19a), von Stechow (1984:59-60) suggests that the simplest way of representing it is to leave the degree variable open, as (19b) illustrates.

- (19) a. Ede is fat.  
 b. Ede is d-fat.

Although we can say that it is the task of context to specify the degree of fatness which Ede really has; in other words, the context had to specify the *d*-variable. Since everyone is fat in some sense, the meaning of (19a) cannot be satisfied by just any degree. So, von Stechow (1984) points out that this approach would not be satisfactory. The meaning of (19a), as von Stechow (1984) argues, is something resembling ‘Ede is positively fat’. The operator *positive* (henceforth the *pos* morpheme) is invisible, and the semantics of it, as Kennedy and McNally (2005:350) suggest, is something like (20).

$$(20) \quad [[pos]] = \lambda G \lambda x. \exists d[\mathbf{standard}(d)(G)(\mathbf{C}) \wedge G(d)(x)]$$

Namely, the *pos* morpheme encodes the relation **standard**, which holds a degree *d* just in case it meets a standard of comparison for an adjective *G* with respect to a comparison class determined by **C**, a variable over properties of individuals whose value is determined contextually. Furthermore, restrictions imposed by the standard relation, as Kennedy and McNally (2005:350) argue, must vary depending on lexical features of the adjective. Seen in this way, the predicate *fat* in (19a) has a denotation like (21).

$$(21) \quad [[pos]]([[fat]]) = \lambda x. \exists d[\mathbf{standard}(d)(fat)(\mathbf{C}) \wedge [[fat]](d)(x)]$$

So, it is the *pos* morpheme that saturates and imposes restrictions on the degree argument of the adjectival predicate *fat* in (19a) (cf. von Stechow 1984). At this point, we are immediately reminded of the contrast between (22a) and (22b) in grammaticality.

- (22) a. Zhe-ge nuhai \*(hen) piaoliang.  
this-CL girl very beautiful  
'This girl is very beautiful.'  
b. This girl is (very) beautiful.

Behind this contrast is the intuition that there is no *pos* morpheme in Chinese examples like (23a); therefore, the degree adverb *hen* 'very' is obligatorily required to license and impose restrictions on the degree argument of the adjective *piaoliang* 'beautiful'.

#### 4.1.1 Degree terms and Chinese adjectives

Although examples like (23a-b) might show that it is possible for Chinese to have the *pos* morpheme in some specific contexts, in the rest of this paper we shall not discuss whether this possibility can be retained or not because it is beyond the scope of this paper.

- (23) a. Zhangsan gao, Lisi ai.  
Zhangsan tall Lisi short  
'Zhangsan is tall, but Lisi is short.'  
b. Q: Zhangsan gao ma?  
Zhangsan tall SFP  
'Is Zhangsan tall?'  
A: Zhangsan gao a.  
Zhangsan tall SFP  
'Zhangsan is tall.'

Instead, we shall point out some possible strategies that Chinese adopts to license and impose restrictions on the degree argument of an adjectival predicate, and then discuss how they license and restrict the degree argument of the adjectival predicate.<sup>9</sup>

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<sup>9</sup> In fact, the degree argument of Chinese gradable adjectives at least can be restricted by degree adverbs, measure phrases, reduplication morphology, (contrastive) focus, or the sentence final particle *le*, as examples below illustrate.

- (i) Zhe-duo hua hong, na-duo huang.  
this-CL flower red that-CL yellow  
'This flower is red, but that one is yellow.'  
(ii) Zhe-duo hua hen/feichang hong.  
this-CL flower very/extremely red  
'This flower is very/extremely red.'

### 4.1.2 Degree adverbs

According to Kennedy and McNally (2005:367) and many others, degree adverbs denote functions from (gradable) adjective meanings to properties of individuals (they are  $\langle\langle d, \langle e, t \rangle \rangle, \langle e, t \rangle \rangle$ ) whose role is to saturate the degree argument of adjectives, and the meanings of degree morphemes can be characterized in terms of the template in (24), where **R** is some restriction on the degree argument of the adjective.

$$(24) \quad [[\text{Deg}(\text{P})]] = \lambda G \lambda x. \exists d[\mathbf{R}(d) \wedge G(d)(x)]$$

What distinguishes different degree adverbs from each other is the value of **R**—the specific restrictions they impose on the adjective’s degree argument. The distribution of degree modifiers, as Kennedy and McNally (2005) argue, is sensitive to the scale structure (open versus closed) and standard value (relative versus absolute standard value) of gradable adjectives; that is, proportional degree modifiers are only compatible with closed-scale (or absolute limit) gradable adjectives that map their arguments onto scales with maximal and minimal elements, while non-proportional ones with open-scale (or relative) gradable adjectives. For example, the proportional modifier *half* has a denotation like (25a), where  $S_G$  represents the scale associated with a gradable adjective  $G$  and **diff** is a function that returns the difference between two degrees, so that the modifier *half* is only compatible with adjectives that map their arguments onto scales with maximal and minimal elements, for example the adjective *full* in (25b).

$$(25) \quad \text{a. } [[\text{half}]] = \lambda G \lambda x. \exists d[\mathbf{diff}(\mathbf{max}(S_G))(d) = \mathbf{diff}(d)(\mathbf{min}(S_G)) \wedge G(d)(x)]$$

b. The glass is half full.

- 
- (iii) Zhe-duo hua    hong-hong-de.  
           this-CL flower red-red-DE  
           ‘This flower is really red.’
  - (iv) Zhe-duo hua    hong-le yi-dianer.  
           this-CL flower red-ASP a-little.bit  
           ‘This flower is a little bit redder than before/the standard value of redness assumed by people for the flower/some specific flower.’
  - (v) Zhe-duo hua    hong le.  
           this-CL flower red SFP  
           ‘This flower has gotten red. (The speaker announces a new “discovery” of the redness of the flower.)’

Given space limit, in the following we shall not discuss all of them, except cases containing degree adverbs and measure phrases.

Likewise, in Chinese the (closed-scale) gradable adjective such as *touming* ‘transparent’ and *shou* ‘cooked’ is only compatible with the proportional degree adverbs like *ban* ‘half’, as (26a-b) show.<sup>10 11</sup>

(26) a. Zhe-shan boli    chuang ban    touming.

    this-CL    glass window half transparent

    ‘The glass of this window is half transparent.’

b.  $[[\text{ban}]]([\text{touming}]) = \lambda G \lambda x. \exists d[\text{diff}(\text{max}(S_{\text{touming}})(d) = \text{diff}(d)(\text{min}(S_{\text{touming}})) \wedge \text{touming}(d)(x)]$

In contrast, a predicate of the form *very Adj*, according to Klein (1980), is essentially the same as its simple, unmodified counterpart, with one important difference: Although the regular contextual standard is a degree that exceeds a norm or average of the relevant property calculated on the basis of an arbitrary, contextually determined comparison class, the *very* standard is a norm or average calculated in the same way but just on the basis of those objects to which the unmodified predicate truthfully applies (cf. von Stechow 1984 and Kennedy and McNally 2005:369). For example, in a context where the standard of comparison for the adjective (phrase) *tall* is the average degree of height for the comparison class *basketball players*, the standard

<sup>10</sup> The adjective *shou* ‘cooked’ and *touming* ‘transparent’ are gradable adjectives with a totally closed-scale structure because they are only compatible with proportional modifiers like *wu-fen* ‘half’, as the contrast between (i)-(ii) and (iii)-(iv) shows.

(i) Zhe-kuai niupai wu-fen shou.

    this-CL steak half cooked

    ‘This steak is medium.’

(ii) Zhe-pian boli ban touming.

    this-CL glass half transparent

    ‘This piece of glass is half transparent.’

(iii) \*Zhe-kuai niupai hen shou.

    this-CL steak very cooked

(iv) \*Zhe-pian boli hen touming.

    this-CL glass very transparent

<sup>11</sup> However, Chao (1968:678) points out that as common and acceptable usage goes, one does say sentences like (i), in which the predicate is an absolute (or non-gradable) (quality) adjective.

(i) Zhe-ge yuanguan hen yuan.

    this-CL circle very round

    ‘How round this circle is.’

Nevertheless, it is not unreasonable for us to say that (i) is a case in which the imprecise use of *yuan* ‘round’ reflects a semantic shift away from the “default” absolute quality meaning to a purely relative one. Following Kennedy and McNally (2005), we suggest that the simplest strategy to handle examples like (i) is to claim that the propositions conveyed by sentences like (i) are strictly speaking false; their felicity and informativity can be explained in terms of Lasnik’s (1999) theory of pragmatic halos, which provides a framework for determining how much deviation from what is actually true still counts as “close enough to the truth”.

of comparison for the adjective phrase *very tall* is an average height for just *the tall basketball players*. As a result, some basketball players who count as *tall* will not count as *very tall*; in other words, the standard is efficiently raised. So, Kennedy and McNally (2005:370) implement Klein's (1980) analysis directly and suggest: In a case containing the non-proportional degree modifier *very*, the comparison class is lexically specified, and it is those objects that have the property *G* in the context of utterance.<sup>12</sup> Their implementation is made explicit in (27a), which specifies the denotation of *very* relative to a context *c*. For example, if we have NBA basketball players as the comparison class in the context of utterance, then (27b) is felicitous.

- (27) a.  $[[\text{very}]]^c = \lambda G \lambda x. \exists d[\text{standard}(d)(G)(\lambda y. [[\text{pos}(G)(y)]]^c) \wedge G(d)(x)]$   
 b. Ming Yao is very tall.

The Chinese degree adverb *hen* 'very' also shows this characteristic. For instance, the Chinese adjective *ganzao* 'dry' can be used to describe a permanent, stable property such as the average of moisture in the atmosphere. Now let us have *Huangtu gaoyuan* 'Yellow-ocher plateau' and *Taklimakan shamo* 'Taklimakan desert' as the comparison class in the context of utterance. Example (28) still makes sense though both *Huangtu gaoyuan* 'Yellow-ocher plateau' and *Taklimakan shamo* 'Taklimakan desert' are dry.

- (28) Taklimakan shamo hen ganzao, danshi Huangtu gaoyuan ye bu  
 Taklimakan desert very dry but yellow.ocher plateau also not  
 chaoshi.  
 wet  
 'Taklimakan desert is very dry, but Yellow-ocher plateau is not wet either.'

Namely, the standard of comparison for the adjective phrase *hen ganzao* 'very dry' in (28) is an average of moisture only for *Huangtu gaoyuan* 'Yellow-ocher plateau' and *Taklimakan shamo* 'Taklimakan desert'. Under such a context, the standard is effectively raised.<sup>13</sup>

<sup>12</sup> See the denotation of the *pos* morpheme in (20) to distinguish the degree modifier *very* from the *pos* morpheme.

<sup>13</sup> One reviewer wonders whether the degree adverb *hen* 'very' is the overt realization of the positive (i.e. *pos*) morpheme. This kind of idea in fact is suggested by *Xiandai Hanyu Xuci Lishi* (1982:243-244), Sybesma (1999:27), and Kennedy (2005). Since this issue is not directly related to the theme of this paper, we shall not discuss it in the rest of this paper.

### 4.1.3 Measure phrases

Chinese and English also use measure phrases to describe the interval argument of adjectives.<sup>14</sup> Like English, the ability of an adjective to combine directly with a measure phrase for forming a “measure phrase adjective” pattern turns out to be lexically idiosyncratic because only adjectives like *gao* ‘tall/high’, *kuan* ‘wide’, *shen* ‘deep’, *hou* ‘thick’, *da* ‘old’, *chang* ‘long’ and *zhong* ‘heavy’ form such patterns, as (29a-g) illustrate (cf. Schwarzschild 2005).<sup>15</sup>

- (29) a. Zhe-ke shu liang mi gao.  
this-CL tree two meters tall  
‘This tree is two meters tall.’
- b. Zhe-shan men ba-shi gongfen kuan.  
this-CL door eight-ten centimeter wide  
‘This door is eighty centimeters wide.’
- c. Zhe-tiao he liang mi shen.  
this-CL river two meters deep  
‘This river is two meters deep.’
- d. Zhe-ben shu wu gongfen hou.  
this-CL book five centimeter thick  
‘This book is five centimeters thick.’
- e. Zhe-ge xiaohai shi sui da.  
this-CL child ten year old  
‘This child is ten years old.’
- f. Zhe-tiao shengzi san gongchi chang.  
this-CL rope three meters long  
‘This rope is three meters long.’
- g. Zhangsan qi-shi gongjin zhong.  
Zhangsan seven-ten kilograms heavy  
‘Zhangsan’s weight is seventy kilograms.’

<sup>14</sup> In this paper, we shall adopt Schwarzschild and Wilkinson’s (2002) interval-based analysis to the semantics of comparative. So, we shall use “the interval argument” to represent “the degree argument” of a scalar predicate in the rest of this paper, and the term “the degree argument” is used only when a distinction between “the degree argument” and “the interval argument” is necessary.

<sup>15</sup> Actually, English still differs from Chinese in not allowing adjective *heavy* to directly combine with a measure phrase to form a “measure phrase adjective” pattern.

Following Schwarzchild (2005), we have the lexical idiosyncrasy shown by Chinese adjectives that allows for measure phrase modification resort to the Homonym Rule: Adjectives that allow for measure phrase modification must undergo the Homonym Rule that produces homonyms and these homonyms must have interval arguments (i.e. sets of degrees) in place of degree arguments.

(30) Homonym Rule: from degrees to intervals

If A has meaning A' (i.e. A<sub>1</sub>') that relates individuals to degrees, then A has a secondary meaning (i.e. A<sub>2</sub>') relating individuals to sets of degrees (intervals).

The secondary meaning is given by:  $\lambda I. \lambda x. I = \{d: A'(x, d)\}$

Homonym Rule applies to *tall, wide, deep, thick, old, long* and *high*.

So, example (29a), repeated as (31a), has a semantic structure like (31b), which is equivalent to (31c).

- (31) a. Zhe-ke shu liang mi gao  
       this-CL tree two meters tall  
       ‘This tree is two meters tall.’  
       b.  $\exists I [gao_2'(\text{zhe-ke shu}, I) \ \& \ \text{liang mi}'(I)]$   
       c.  $\text{liang mi}'(\{d: gao_1'(x, d)\})$

Namely, *gao<sub>2</sub>'* in (31b) relates the individual *zhe-ke shu* ‘this-CL tree’ to the interval I, and this interval is the set of all points on the scale that *gao<sub>1</sub>'* relates *zhe-ke shu* ‘this-CL tree’ to (cf. (31c)). So, like English, Chinese uses measure phrases to “restrict” the interval argument of adjectives, and there also exist lexically idiosyncratic restrictions on the use of measure phrases in Chinese.<sup>16</sup>

<sup>16</sup> Interestingly, it is possible to have the measure phrase in (29a-g) in the post-adjectival position, as (i) shows.

(i) Zhe-ke shu gao liang mi.  
       this-CL tree tall two meters  
       ‘This tree is two meters tall/This tree exceeds some specific tree in height by two meters.’

However, examples like (i) still have another meaning (i.e. the comparison reading). One possible way around this problem is to suppose that (i) happens to be the phonetic form of two different constructions, as illustrated by (ii) and (iii), respectively (In (ii) the morpheme *-guo2* represents the covert verbal suffix *exceed* and Arg the deleted internal comparison item) (see Section 4.2 for discussion).

(ii) Zhe-ke shu [<sub>Guo2P</sub> [<sub>Guo2'</sub> [<sub>Guo2</sub> gao<sub>i</sub>-guo2] [<sub>AP</sub> Arg [<sub>A'</sub> [<sub>A</sub> t<sub>i</sub>] [<sub>liang mi</sub>]]]]]  
       this-CL tree tall-guo2 two meters  
       ‘ $\exists I \exists k [gao_2'(\text{zhe-ke shu}, I) \ \& \ gao_2'(\text{Arg}, K) \ \& \ \text{liang mi}'(I-K)]$ ’

Having the semantics of gradable adjectives proposed by von Stechow (1984), Kennedy and McNally (2005), and many others as preliminary, we shall introduce as another preliminary Schwarzcild and Wilkinson's (2002) interval-based analysis of the semantics of comparatives.

#### 4.2 The semantics of comparatives

Recent theories about the semantics of comparatives can be simply classified as two major types: (A) the point-based (or degree-based) analysis, and (B) the interval-based approach. The first type in fact can be further divided into two sub-types: (A) the quantificational approach, and (B) the maximal degree approach. Despite existence of debates between the two different point-based analyses to the semantics of comparatives, there seems to be agreement on some points (cf. von Stechow 1984, Heim 1985, Larson 1988b, Klein 1991, Moltmann 1992, Rullmann 1995, Beck 1997, and many others). First, adjectives have got an additional argument that denotes a degree. Second, degrees are considered as entities and are ordered (i.e. form a scale). Third, a comparison is made between two degrees; in other words, the comparative denotes some sort of operation on degrees. The intuition behind these agreements is that example (32a) means something like this: There is degree  $d_2$  to which John is tall, and  $d_2$  is greater than any  $d_1$  to which Bill is tall (cf. (32b-c)).

- (32) a. John is taller than Bill.  
 b. -er' ( $d_1$  [tall ( $d_1$ , Bill)]) ( $d_2$  [tall ( $d_2$ , John)])  
 c. the max  $d_2$  [tall ( $d_2$ , John)] > the max  $d_1$  [tall ( $d_1$ , Bill)]  
 d. Ede is at least six inches taller than Otto is.

However, this way of representing the meaning of (32a), as von Stechow (1984) points out, is not adequate for examples like (32d) because of the occurrence of the differential measure phrase *six inches* (cf. Heim 1985 and Beck 1997).

Given this, agreeing with a number of authors in interpreting gradable adjectives as

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(iii) Zhe-ke shu [<sub>AP</sub> [<sub>A'</sub> [<sub>A</sub> gao] [liang mi]]].  
 this-CL tree tall two meter  
 '∃I [gao<sub>2</sub>' (zhe-ke shu, I) & liang mi' (I)']

Namely, example (ii) is a comparative with the internal comparison item deleted while example (iii) is a non-comparative construction with an adjectival predicate. In (iii), the interval argument of the adjective *gao* 'tall' is predicated by the measure phrase *liang mi* 'two meters'. Assuming this, we suggest that Chinese adjectives can directly combine with a post-adjectival measure phrase.

relations between degrees and individuals as well as interpreting comparative clauses, for example *than Otto is* in (33a), as sets of (or properties) of degrees, von Stechow (1984:53-57) gives the comparative a maximal degree analysis by suggesting that the proposition denoted by the logical structure of (33a) (i.e. (33b)) is true in a world *w* iff (34) holds good.

- (33) a. Ede is at least six inches taller *than Otto is*.  
 b.  $[_S [_S \text{ than how tall Otto is}]_i [_S [_{NP_j} \text{ at least 6 inches}] [_S \text{ Ede is } e_j \text{ more tall } e_i]]]$
- (34)  $(\exists d_1) [d_1 \geq \text{six inches} \ \& \ \text{Ede is } d_1 + d_2\text{-tall in } w \ \& \ d_2 = \text{the maximal degree such that Otto is } d\text{-tall in } w]$

However, the point-based (or degree-based) analysis of the semantics of comparatives, either the quantificational or the maximal degree approach, is seriously challenged by comparatives containing quantifiers. The challenge of such kinds of comparatives, for example (35), presents to the point-based approach, as Schwarzchild and Wilkinson (2002:8-11) argue, is: The standard point-based analysis overlooks the intuition that “we do not look for a point corresponding to *everyone else*, but rather we scan the scale to check everyone’s height” in comparatives like (35).

- (35) Frank is taller than everyone else is (*t* tall).

Context: Frank 5 feet 8 inches  
 Jill 5 feet 7 inches  
 Larry 5 feet 5 inches  
 Molly 5 feet 3 inches  
 Nancy 5 feet

Let us illustrate Schwarzchild and Wilkinson’s (2002) analysis with (36).

- (36) John is [one inch] taller **than** Bill is.

Example (36) is true if there is a one-inch interval on a height scale between an interval containing John’s height and an interval containing Bill’s height. To measure a difference between intervals, a subtraction operation is defined in (37): assuming *I* is above *K*, [*I* – *K*] picks out a part of the scale that is below *I* and above *K*.

(37) For intervals I and K.

If  $K < I$ , then:  $\forall J: (J < I \ \& \ K < J) \leftrightarrow J \subseteq [I - K]$

Otherwise  $[I - K] = 0$

As Schwarzcchild and Wilkinson (2002) claim, measure phrases in comparatives are predicates of parts of scales, differential measure phrases thereby are predicates that apply to the gaps obtained with the subtraction operation (cf. (38)).

(38)  $[[\text{one inch}]] = 1\text{-inch}(I)$  (Here ‘I’ represents ‘interval’.)

So, in (36) the differential measure phrase *one inch* tells us that the gap between an interval I such that John is I-tall and an interval K such that Bill is K-tall has the property  $[[\text{one inch}]]$  (i.e.  $1\text{-inch}([I - K])$ ). Thus, Schwarzcchild and Wilkinson (2002:19) suggest that the denotation of the *-er* comparative construction with a differential measure phrase is schematized as in (39): A main clause (Mn) and a subordinate clause (Sub) are predicates of intervals I and K, respectively, and a differential measure phrase (Diff) is predicated on the gap between the two intervals.

(39)  $\exists I \exists K [Mn(I) \ \& \ Sub(K) \ \& \ Diff([I - K])]$ .

When there is no overt differential measure phrase in the comparative, Diff in (39) is realized as SOME in (40), which says that an interval is equal to or greater than some contextually specified minimum (e.g. there is an interval on the height scale such that John is I-tall, there is another interval K such that Bill is K-tall, and I differs from K by some contextually specified minimum) (cf. Schwarzcchild and Wilkinson 2002:16).<sup>17</sup>

(40) SOME(J) is true iff the size of J equals or exceeds  $\delta$ , where  $\delta$  is determined by context.

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<sup>17</sup> Schwarzcchild and Wilkinson (2002) claim that the condition in (39) is a necessary but not a sufficient condition for the truth of the comparative. Since determining a sufficient condition is required for the analysis of comparatives with quantifiers (e.g. John is taller than everyone else), the condition in (39), as Schwarzcchild and Wilkinson (2002:23) argue, should be further rewritten as (i), in which  $\mu K' [\varphi]$  picks the largest interval all of whose parts are below I by the amount given by the differential:

(i)  $\exists I [Mn(I) \ \& \ Sub(\mu K' [Diff(I - K')])]$   
 $\mu K' [\varphi] = K$  iff:  $\forall K' [(K' \neq 0 \ \& \ K' \subset K) \rightarrow \varphi(K')]$   
 $\ \& \ \forall K'' [K \subset K'' \rightarrow (\exists K' [K' \subset K'' \ \& \ \sim \varphi(K')])]$

Since we do not deal with such complicated examples, we simply adopt (39) as a denotation of comparatives.

Under such analysis the semantics of comparative, (36) can be rewritten as the logical structure (41).

(41)  $\exists I \exists K$  [tall' (John, I) & tall' (Bill, K) & one-inch([I – K])].

‘There is an interval I on the height scale such that John is I-tall, there is another interval K such that Bill is K-tall, and I differs from K by one inch.’

Having the semantics of gradable adjectives and the interval-based analysis of the semantics of comparatives as preliminaries, in the following section we shall make a proposal for the X A (Y) D comparative, which is then followed by some derived consequences.

## 5. Proposal and implications

In a nutshell, our proposal is as follows: The X A (Y) D comparative contains a weak covert comparative morpheme that is grammaticalized from the verbal suffix *-guo1*, meaning ‘exceed’ or ‘surpass’, in the X A-*guo1* Y (D) comparative. The “weak” nature of this morpheme (i.e. the covert verbal suffix *-guo2*) is the “virus” that makes the X A (Y) D comparative differ from the X *bi* Y A D comparative not only in obligatoriness of the measure phrase but also in further modification by degree adverbs.

### 5.1 Proposal

To show the X A (Y) D comparative is a construction grammaticalized from the X A-*guo1* Y (D) comparative, we shall first highlight the affinity between these two types of comparatives, as shown by (42a-b) respectively, in syntax and semantics by having each property of the X A-*guo1* Y (D) comparative compared with its counterpart in the X A (Y) D comparative in a one-by-one manner as the discussion proceeds.

(42) a. Zhangsan gao-*guo1* Lisi (san gongfen).

Zhangsan tall-*guo1* Lisi three centimeter

‘Zhangsan’s height exceeds Lisi’s by three centimeters.’

b. Zhangsan gao (Lisi) san gongfen.

Zhangsan tall Lisi three centimeter

‘Zhangsan’s height exceeds Lisi’s by three centimeters.’

An analysis on the X A-*guo1* Y (D) comparative then will be made, which leads us to the idea that the X A (Y) D comparative is grammaticalized from the X A-*guo1* Y (D) comparative. First, in the X A-*guo1* Y (D) comparative, the verbal suffix *-guo1* with the lexical meaning ‘exceed’, ‘surpass’, or ‘pass’ is transitive in nature. Semantically, the verb *exceed* denotes a four-place relation: A relation between two comparison items, a dimension and a differential measure phrase; therefore, the two referential noun phrases (i.e. X and Y of the X A-*guo1* Y (D) comparative) each denoting a comparison item, and the differential measure phrase (or the quantity-/extent-denoting cognate object in Chao’s (1968:314) term) somewhat can be considered the arguments of the verbal suffix *-guo1* ‘exceed’. Although no verbal suffix *-guo1* ‘exceed’ is found in the X A (Y) D comparative, semantically this type of comparative also expresses the meaning of ‘X exceeds/surpasses Y by D in the dimension denoted by A’.

Second, the adjective in the X A-*guo1* Y (D) comparative must be a [+pole] dimension adjective or a positive value adjective, for example *chang* ‘long’ or *piaoliang* ‘beautiful’, because the *exceeding* or *surpassing* meaning of the verbal suffix *-guo1* ‘exceed’ implies the “upward ordering” along the scale, as the contrast below illustrates (cf. Bierwisch 1989).<sup>18</sup>

- (43) a. Zhe-tiao shengzi chang-guo1 na-tiao liang yingchi.  
       this-CL rope long-guo1 that-CL two inch  
       ‘The length of this rope exceeds that of that rope by two inches.’  
       b. Zhe-ge nuhaizi piaoliang-guo1 na-ge nuhaizi hen duo.  
       this-CL girl beautiful-guo1 that-CL girl very much  
       ‘This girl’s beauty exceeds that girl’s a lot.’
- (44) a. \*Zhe-tiao shengzi duan-guo1 na-tiao liang yingchi.  
       this-CL rope short-guo1 that-CL two inch  
       b. \*Zhe-ge nuhaizi chou-guo1 na-ge nuhaizi hen duo.  
       this-CL girl ugly-guo1 that-CL girl very much

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<sup>18</sup> We want to point out example (i), in which the [-pole] dimensional adjective *leng* ‘cold’ co-occurs with the verbal suffix *-guo1* ‘exceed’. Actually this is an apparent counterexample to our claim.

(i) Jintian leng-guo1 zuotian.

Today cold-guo1 yesterday

‘The degree of coldness of today exceeds that of yesterday.’

So, the speaker always says sentence (i) with the pragmatic presupposition: both yesterday and today are quite cold and today is much colder than yesterday. We can say that in example (i) the speaker pragmatically uses a [-pole] dimensional adjective as a [+pole] one.

However, the adjective in the X A (Y) D comparative must be one with a dimension measurable by a standardized measure unit fixed as a gauge for measuring the scale, for example *gongfen* ‘centimeter’, *gongchi* ‘meter’, *gongli* ‘kilometer’, *gongke* ‘gramme’, *gongjin* ‘kilogram’, *gongsheng* ‘liter’, *yingchi* ‘inch’, *bang* ‘pound’, *fenbei* ‘decibel’, *haoba* ‘millibar’ etc, as examples in (45) illustrate.

- (45) a. Zhe-tiao shenzi chang/duan na-tiao yi gongchi.  
 this-CL rope long/short that-CL one meter  
 ‘This rope is one meter longer/shorter than that one.’
- b. Zhe-zhong putao zai tian-du shang/zai suan-du shang tian/suan  
 this-CL grape at saccharinity up/at acerbity up sweet/sour  
 na-zhong putao san du.  
 that-CL grape three degree  
 ‘This kind of grape is three degrees higher than that kind in  
 saccharinity/acerbity’
- c. Zhangan duo/shao Lisi shi fen.  
 Zhangan more/less Lisi ten point  
 ‘Zhangan’s grade is ten points more/less than Lisi’s.’
- d. Zhe-kuai shitou zhong/qing na-kuai liang gongjin.  
 this-CL stone heavy/light that-CL two kilogram  
 ‘This stone is two kilograms heavier/lighter than that one.’
- e. Zhangan pang/shou Lisi shi gongjin.  
 Zhangan fat/thin Lisi ten kilogram  
 ‘Zhangan is ten kilograms fatter/thinner than Lisi.’
- f. Zhangan kuai/man Lisi wu fenzhong.  
 Zhangan fast/slow Lisi five minute  
 ‘Zhangan is five minutes faster/slower than Lisi.’
- g. Zhe-ben shu gui/pianyi na-ben yi-bai-kuai qian.  
 this-CL book expensive/cheap that-CL one-hundred-CL dollar  
 ‘This book is one more hundred dollars expensive/one hundred dollars  
 cheaper than that one.’
- h. Zhe qiya gao/di pingdi shi haoba.  
 here air.pressure high/low level.ground ten millibar  
 ‘The air pressure here is ten millibars higher/lower than the level ground.’

In other words, the adjective in the X A (Y) D comparative must be a dimension adjective, either [+pole] or [-pole] (cf. Bierwisch 1989). This observation gets further supporting evidence from the contrast below.<sup>19</sup>

- (46) a. Zhe-ben shu pianyī nà-ben shu yī-bǎi kuài qián.  
           this-CL book cheap that-CL book one-hundred-CL money  
           ‘This book is one hundred dollars cheaper than that one.’
- b. \*Zhe-ge nǚhái piàoliáng nà-ge nǚhái sān dù.  
           this-CL girl beautiful that-CL girl three degree  
           ‘This girl is three more degrees beautiful than that one.’

Since there does not exist a standardized measure unit fixed as a gauge for measuring the beauty-scale, the adjective *piàoliáng* ‘beautiful’ is not allowed in the X A (Y) D comparative. So, the factors that make the X A (Y) D comparative not so productive at least include one that most Chinese adjectives are not of a type that can be measured by a standardized measure unit.

Third, in the X A-*guo*l Y (D) comparative, the comparison item must be a definite/specific (or referential) noun phrase while the differential measure phrase, for example *shí gōngfēn* ‘ten centimeters’ in (47a), must be non-referential, as shown by the contrast below.

- (47) a. Zhāngsān gāo-guó1 Lǐsì shí gōngfēn.  
           Zhāngsān tall-guo1 Lǐsì ten centimeter  
           ‘Zhāngsān is ten centimeters taller than Lǐsì.’

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<sup>19</sup> The requirement that the scale denoted by the adjective must be measurable by a standardized measure unit, however, does not require the differential measure in the X A (Y) D comparative to be in the “numeral measure unit” pattern obligatorily, as examples below show.

- (i) Zhāngsān gāo Lǐsì hěn duō.  
       Zhāngsān tall Lǐsì very many  
       ‘Zhāngsān’s height exceeds Lǐsì’s a lot.’
- (ii) Zhe-ben shu pianyī nà-ben bù shǎo.  
       this-CL book cheap that-CL not little  
       ‘This book is much cheaper than that one.’

Most importantly here is that examples like (iii) should not be considered the X A (Y) D comparative because occurrence of the internal comparison item (i.e. *Lǐsì*) is not allowed.

- (iii) Zhāngsān cōngmíng (\*Lǐsì) hěn duō.  
       Zhāngsān smart Lǐsì very many  
       ‘Zhāngsān is much smarter than Lǐsì.’

Sentence (iii) in fact is a reduced form of (iv).

- (iv) Zhāngsān (bǐ Lǐsì) cōngmíng hěn duō.  
       Zhāngsān than Lǐsì smart very many  
       ‘Zhāngsān is much taller than Lǐsì.’

- b. \*Zhangasn gao-guo1 liang mi shi gongfen.  
 Zhangan tall-guo1 two meter ten centimeter
- c. \*Zhangsan gao shi gongfen Lisi.  
 Zhangsan tall ten centimeter Lisi

Besides, the referential comparison item must precede the non-referential measure phrase in the linear order.

Fourth, in the X A-*guo1* Y (D) comparative, the referential comparison item is obligatory while the differential measure phrase is optional; however, the referential comparison item is optional but the differential measure phrase is obligatory in the X A (Y) D comparative, as illustrated by the contrast below.

- (48) a. Zhangsan gao-guo1 Lisi (shi gongfen).  
 Zhangsan tall-guo1 Lisi ten centimeter  
 ‘Zhangsan’s height exceeds Lisi’s by ten centimeters.’
- b. Zhangan gao-guo1 \*(Lisi) shi gongfen.  
 Zhagnsan tall-guo1 Lisi ten centimeters  
 ‘Zhangsan’s height exceeds Lisi’s by ten centimeters.’
- (49) a. Zhangsan gao (Lisi) shi gongfen.  
 Zhangsan tall Lisi ten centimeter  
 ‘Zhangsan’s height exceeds Lisi’s by ten centimeters.’
- b. Zhangan gao Lisi \*(shi gongfen).  
 Zhagnsan tall Lisi ten centimeter  
 ‘Zhangsan’s height exceeds Lisi’s by ten centimeters.’

Since the transitivity nature of the A-*guo1* predicate in the X A-*guo1* Y (D) comparative comes from the verbal suffix -*guo1* ‘exceed’, we suggest that the verbal suffix -*guo1* ‘exceed’ is the key element that introduces the internal comparison item (i.e. Y in the X A-*guo1* Y (D) comparative) and makes it required.

Fifth, in the X A-*guo1* Y (D) comparative, the adjective cannot be modified by a degree adverb, and the same obtains in the X A (Y) D comparative.

- (50) a. \*Zhangsan hen/geng gao-guo1 Lisi san gongfen.  
 Zhangsan very/more tall-guo1 Lisi three centimeter

- b. \*Zhangsan hen/geng gao Lisi san gongfen.  
 Zhangsan very/extremely tall Lisi three centimeter

Sixth, neither the X A-*guo1* Y (D) nor the X A (Y) D comparative is acceptable if they have a quantifier (or a plural NP) as the internal argument that denotes the comparing item, as shown below, unless some specific context where all elements denoted by the quantifier (or the plural NP) share the same degree value.

- (51) a. \*Zhangsan gao-*guo1* qita/zhexie ren san gongfen.  
 Zhangsan tall-*guo1* other/these person three centimeter  
 ‘??Zhangsan is three centimeters taller than everyone else/these persons.’
- b. \*Zhangsan gao qita/zhexie ren san gongfen.  
 Zhangsan tall other/these person three centimeter  
 ‘??Zhangsan is three centimeters taller than everyone else/these persons.’

This characteristic shared by the X A-*guo1* Y (D) and the X A (Y) D comparative seems to incline us to adopt Schwarzchild and Wilkinson’s (2002) interval-based analysis of the semantics of comparatives.

Based on our discussion of the syntax and semantics of the X A-*guo1* Y (D) and the X A (Y) D comparative, along a line similar to Schwarzchild and Wilkinson’s (2002) interval-based analysis of the English comparative construction, we suggest that the verbal suffix -*guo1* ‘exceed’, being a three-place predicate syntactically, denotes a four-place relation semantically.

- (52) The verbal suffix -*guo1* ‘exceed’ in the X A-*guo1* Y (D) comparative  
 Let I, K be any intervals (or parts) of the scale denoted by A, A a scalar predicate,  
 Diff the differential measure phrase (i.e. D). The verbal suffix -*guo1* ‘exceed’  
 denotes a four-place relation between I, K, A and Diff:  
 $\exists I \exists K [A'(X, I) \& A'(Y, K) \& \text{Diff}([I - K])].$

To put it another way, the interval I covers the degree (or interval) value of X on the scale, the interval K covers the degree (or interval) value of Y on the scale, and the interval I is above K. The differential measure phrase Diff is the predicate that applies to the gap that is below I and above K (i.e. [I – K]).

We further suggest that the verbal suffix -*guo1* ‘exceed’, projecting as *Guo1P*, takes

an adjective phrase as ‘complement’, as (53) shows.

- (53) Zhangsan [<sub>Guo1P</sub> [<sub>Guo1'</sub> [<sub>Guo1</sub> gao<sub>i</sub>-guo1] [<sub>AP</sub> Lisi [<sub>A'</sub> [<sub>A</sub> t<sub>i</sub>] [<sub>san</sub> gongfen]]]]]]  
 Zhangsan tall-guo1 Lisi three centimeters  
 ‘Zhangsan is three centimeters taller than Lisi.’

The internal referential NP argument denoting the comparison item (e.g. *Lisi* in (53)) occurs in [Spec, AP] while the non-referential differential measure phrase is inside A' (cf. Mahajan 1990 and Huang 1991: 492). The adjectival head overtly moves to the *guo* head (i.e. *-guo1*) position due to the affixal feature of the verbal suffix *-guo1* ‘exceed’. The verbal suffix *-guo1*, with the full-fledged lexical meaning ‘exceed’, not only requires the internal referential NP argument denoting the comparison item is obligatory, but also functions as a predicate “strong” enough to describe (or restrict) the interval argument of the adjective (cf. Schwarzchild and Wilkinson 2002).<sup>20</sup> So, (53) can be rewritten as the logical structure (54) under our interval-based analysis of the semantics of the X A-*guo1* Y (D) comparative (cf. McConnell-Ginet 1973:135, Kennedy 2001, and Schwarzchild and Wilkinson 2002).

- (54)  $\exists I \exists K$  [*gao'* (Zhangsan, I) & *gao'* (Lisi, K) & *san gongfen'* ([I-K])]  
 ‘There is an interval I on the height scale such that Zhangsan is I-tall, there is another interval K such that Lisi is K-tall, and I differs from K by three centimeters.’

As (54) indicates, the measure phrase *san gongfen* ‘three centimeters’ predicates the gap (i.e. the interval [I – K]) spanning from Lisi’s height up to Zhangsan’s, which tells us the size of that gap. In other words, the measure phrase *san gongfen* ‘three centimeters’ indirectly describes (or restricts) the interval argument of the adjective *gao* ‘tall’. Since the interval argument of the adjective has already been predicated (or restricted) by the verbal suffix *-guo1* ‘exceed’, the differential measure phrase is optionally required in the X A-*guo1* Y (D) comparative.

The syntactic and semantic affinity between the X A-*guo1* Y (D) and the X A (Y) D

<sup>20</sup> This immediately excludes example (i) from being a grammatical sentence because the comparing item in (i) occurs as a PP adjunct (i.e. *bi Lisi* ‘than Lisi’) rather than an internal argument.

(i) \*Zhangsan bi Lisi gao-guo1.  
 Zhangsan than Lisi tall-guo1

comparative, as we have pointed out above, further lead us to suggest that the X A (Y) D comparative such as (49a) has a syntactic structure like (55a), in which the covert verbal suffix (i.e. *-guo2*) with the meaning of *exceeding* or *surpassing* is derived from the verbal suffix *-guo1* ‘exceed’ through grammaticalization.

- (55) a. Zhangsan [<sub>Guo2P</sub> [<sub>Guo2'</sub> [<sub>Guo2</sub> gao<sub>i</sub>-guo2] [<sub>AP</sub> Lisi [<sub>A'</sub> [<sub>A</sub> t<sub>i</sub>] [<sub>san</sub> gongfen]]]]]]  
           Zhangsan                                   tall-guo2           Lisi                   three centimeter  
           ‘Zhangsan is three centimeters taller than Lisi.’  
       b. ∃I ∃K [gao' (Zhangsan, I) & gao' (Lisi, K) & san gongfen' ([I-K])]

As (55a) indicates, the covert verbal suffix *-guo2*, being a three-place predicate syntactically, projects as *Guo2P* and takes an adjective phrase as “complement”. In [Spec, AP] there occurs an internal referential NP argument, namely *Lisi*, functioning as the comparison item, and the non-referential measure phrase occurs inside A' to denote the differential between the two comparison items (i.e. *Zhangsan* and *Lisi*) along the scale associated with the adjective. The affixal feature of the covert verbal head *-guo2* further motivates the adjective *gao* ‘tall’ to overtly raise to the head (i.e. *-guo2*) position of *Guo2P*.

Besides, grammaticalization makes the “semantic content” of the covert verbal suffix *-guo2* so bleached that *-guo2* differs from its overt counterpart *-guo1* ‘exceed’ in the following ways: First, although the covert verbal suffix *-guo2* still retains the semantic “four-place relation” property of the verbal suffix *-guo1* ‘exceed’, its semantic content (i.e. the *exceeding* or *surpassing* meaning) is bleached to an extent that the covert verbal suffix *-guo2* is not strong enough to function as predicate to describe the interval argument of adjectives. As the semantic representation of (55a) (i.e. (55b)) shows, the measure phrase *san gongfen* ‘three centimeters’ indirectly predicates (or restricts) the interval argument of the adjective *gao* ‘tall’. Moreover, since the internal comparison item (e.g. *Lisi* in (55a)) is not a degree term, the differential measure phrase, being the only possible candidate to restrict the interval argument of the adjectives, is required in the X A (Y) D comparative. The weak nature of the covert verbal suffix *-guo2* in restricting the interval argument of adjectives makes it differ from the English comparative morpheme *-er*, which can license the interval argument of adjectives independently, as the contrast below indicates.

- (56) a. John is taller.

- b. \*Zhangsan [<sub>Guo2P</sub> [<sub>Guo2'</sub> [<sub>Guo2</sub> gao<sub>i</sub>-guo2] [<sub>AP</sub> Lisi [<sub>A'</sub> [<sub>A</sub> t<sub>i</sub>]]]]]]  
 Zhangsan tall-guo2 Lisi  
 'Zhangsan is taller than Lisi.'

Second, the “weakness” of the covert verbal suffix *-guo2* in the lexical meaning makes its selection restriction on the adjective less strict than that of the overt verbal suffix *-guo1* ‘exceed’; therefore, the adjective compatible with the covert verbal suffix *-guo2* can be a [+/-pole] dimension adjective with a scale measurable by a standardized measure unit (cf. (43a-b)-(45a-h)).

Third, the “semantic content” of the covert verbal suffix *-guo2* is so bleached that its “transitivity” force becomes weaker than that of the overt verbal suffix *-guo1* ‘exceed’. This makes the internal referential NP argument that denotes a comparison item not necessary to be overtly realized.<sup>21</sup>

Thus far, we have provided a detailed analysis of the syntactic and semantic characteristics of the higher projection of AP (or VP in Mok’s (1998) term) in the X A (Y) D comparative, especially the nature of the covert verbal suffix *-guo2*, instead of simply assuming that the higher projection of AP (or VP in Mok’s (1998) term) is a shell-VP like Mok (1998) or a DegP, as Chao (2005) suggests. Our covert verbal suffix analysis of the X A (Y) D comparative has the following empirical and theoretical consequences: First, under our analysis, the relative order between the referential NP argument denoting the target of comparison and the non-referential measure phrase can be considered a reflection of the more general hierarchical relationship between the referential theme and the non-referential theme object. Namely, the non-referential theme occurs in V' whereas the referential theme is in a higher position (i.e. [Spec, VP]) (cf. Mahajan 1990 and Huang 1991: 492). So, the ungrammaticality of (4b), repeated as (57), is well accounted for under our analysis.

- (57) \*Zhangsan gao san gongfen Lisi.  
 Zhangsan tall three centimeter Lisi

Second, the overt A-to-*guo2* head movement explains why the degree adverb *geng*

<sup>21</sup> For the ambiguity shown by examples like (i), please see footnote (16) for discussion.

(i) Zhe-ke shu gao liang mi.  
 this-CL tree tall two meter  
 a. ‘This tree exceeds some specific tree in height by two meters.’  
 b. ‘This tree is two meters tall.’

‘more’ cannot occur in the X A (Y) D comparative. After the adjectival head overtly raises to the *-guo1* position or the *-guo2* position, the agglutinated form (e.g. *gao-guo1* ‘tall-*guo1*’ or *gao-guo2* ‘tall-*guo2*’) in fact is a variant form of the dynamic verb *exceed*. Since a degree adverb like *hen* ‘very’ or *geng* ‘more’ cannot modify a dynamic verb, examples (50a-b), repeated as (58a-b)), are ungrammatical.<sup>22</sup>

- (58) a. \*Zhangsan hen/geng gao-guo1 Lisi san gongfen.  
           Zhangsan very/more tall-*guo1* Lisi three centimeter  
       b. \*Zhangsan hen/geng gao-guo2 Lisi san gongfen.  
           Zhangsan very/extremely tall-*guo2* Lisi three centimeter

## 5.2 Comparing with the X *bi* Y A (D) comparative

Assuming the covert verbal suffix analysis of the X A (Y) D comparative, let us go back to the question of how the X A (Y) D comparative differs from the X *bi* Y A comparative in syntax and semantics: First, in the X *bi* Y A D comparative the target of comparison is denoted by the *bi*-phrase while it is denoted by a referential NP argument in the X A (Y) D comparative.

- (59) a. Zhangsan bi Lisi gao san gongfen.  
           Zhangsan than Lisi tall three centimeter  
           ‘Zhangsan is three centimeters taller than Lisi.’

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<sup>22</sup> One might say that the ungrammaticality of (58a-b) results from the incompatibility between the degree adverb *geng* ‘more’ and the measure phrase because (i), if the measure phrase *san gongfen* ‘three centimeters’ is inserted, the utterance will become ungrammatical.

(i) \*Zhangsan bi Lisi geng gao san gongfen.  
       Zhangsan than Lisi more tall three centimeter

However, as (ii), which contains the measure phrase *yi-xie* ‘a little bit’, shows, the degree adverb *geng* ‘more’ is not always incompatible with the measure phrase.

(ii) Zhangsan bi Lisi geng gao yi-xie.  
       Zhangsan than Lisi more tall a-little.bit  
       ‘Zhangsan is a little bit taller than Lisi.’

The crucial point here is that even if we have *yi-xie* ‘a little bit’ as the measure phrase in the X A (Y) D comparative, the adjective inside still cannot be modified by the degree adverb *geng* ‘more’, as the ungrammaticality of (iii) shows.

(iii) \*Zhangsan geng gao Lisi yi-xie.  
       Zhangsan more tall Lisi a-little.bit

So, the assumption that the degree adverb *geng* ‘more’ is incompatible with the measure phrase cannot account for the ungrammaticality of (58a-b) well.

- b. Zhangsan gao Lisi \*(san gongfen).  
 Zhangsan tall Lisi three centimeter  
 ‘Zhangsan is three centimeters taller than Lisi.’

Second, since the covert weak comparative morpheme *-guo2* is not strong enough to license and restrict the interval argument of adjectives and the referential NP denoting the target of comparison is not a degree term, the differential measure phrase is required to take over the job of licensing and restricting the interval argument of gradable adjectives in the X A (Y) D comparative. This requires the adjective that occurs in the X A (Y) D comparative to be measured by a scale utilizing a standardized measure unit. In contrast, in the X *bi* Y A D comparative, both the *bi*-phrase and the differential measure phrase are degree terms; therefore, either of them has the capacity of licensing and restricting the degree argument of the adjective.<sup>23</sup>

Third, it is the affixal feature of the covert verbal suffix *-guo2* that forces the adjectival head to undergo *A-to-guo2* movement overtly. So, the X A (Y) D comparative differs from the X *bi* Y A D comparative in that, in the former, the adjective must precede and c-command the NP denoting the target of comparison while the comparing-target- denoting *bi*-phrase, being an adjunct, must precede the adjectival predicate in the X *bi* Y A (D) comparative (An adjunct always occurs in a pre-predicate position in Chinese).

Fourth, if the X A-*guo1* Y (D) comparative can be considered a dialectal variant (or a descendant) of the Archaic Chinese X A-*yu* Y comparative, for example (60a-b), then we might say that the X A (Y) D comparative is a further descendant of the Archaic Chinese X A-*yu* Y comparative (cf. (61), taken from Ohta 1957, 2003:166).

- (60) a. Jishi fu-yu Zhougong. (Lun Yu: Xian Jin)  
 Jishi rich-yu Duke.Zhou  
 季氏富于周公。(論語：先進)  
 ‘Jishi is richer than Duke Zhou.’

<sup>23</sup> Whether there exists a covert comparative morpheme (i.e. the covert *-er*) in the X *bi* Y A D comparative, as Beck et al. (2004) as well as Kennedy (2005) suggest, is beyond the scope of this paper. We shall leave it open for further research.

b. Ke zheng meng-yu hu. (Li Ji: Tan Gong)

rigid government fierce-yu tiger

苛政猛于虎。(禮記：檀弓)

‘An oppressive government is fiercer than a tiger.’

(61) Pin-yu Yangzi liang bei, lao-guo1 Ronggong liu qi nian. (Bai Ju-Yi)

poor-yu Yangzi two time old-guo1 Ronggong six seven year

貧于楊子兩倍，老過榮公六七年。(白居易)

‘He is two times poorer than Yangzi, and six or seven years older than Ronggong.’

Whereas, the *X bi Y A D* comparative, according to X.-H. Huang (1992) and P.-X. Shi (1993), has as origin the Archaic Chinese *bi X yu Y*, (P), or *X bi Y*, (P) comparative, as illustrated by (62a-b), respectively.

(62) a. Fu xi zhe, junzi bi de yu yu yan. (Li Ji: Ping Yi)

part past person gentleman compare virtue to jade SFP

夫昔者，君子比德于玉焉。(禮記：聘義)

‘Erstwhile, a person of noble character and integrity compared virtue to jade.’

b. Wu bi fuzi, you ru huanghu yu qin chong

I compare Confucius like as yellow.swan and fowl worm

ye. (Huai Nan Zi: Dao Ying Xun)

SFP

吾比夫子，猶如黃鵠與禽虫也。(淮南子：道應訓)

‘Comparing me with Confucius is parallel to comparing a yellow swan with a fowl or a worm.’

In Modern Chinese, the later developed *X bi Y A D* comparative has become much more popular than the *X A (Y) D* comparative because more types of adjectives are allowed in the *X bi Y A D* comparative than in the *X A (Y) D* comparative. And the weak nature of the covert verbal suffix (or the weak comparative morpheme) *-guo2* in the *X A (Y) D* comparative is one of the factors that make the *X A (Y) D* comparative not so popular in Modern Chinese.

## 6. Concluding remarks

The X A (Y) D comparative involves the covert verbal suffix *-guo2*, which is grammaticalized from the verbal suffix *-guo1*, meaning ‘exceed’, in the X A-*guo1* Y (D) comparative. Since *-guo2* has almost lost its verbal status and its semantic content (i.e. the *exceeding* or *surpassing* meaning) is bleached, it cannot ‘license’ the interval argument of adjectives independently. So, we consider it the covert weak comparative morpheme. The ‘weak’ nature of *-guo2* is the ‘virus’ that makes the X A (Y) D comparative differ from the X *bi* Y A D comparative not only in obligatoriness of the measure phrase but also in further modification by degree adverbs.

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## 漢語的隱性虛化比較詞素

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漢語的 X A (Y) D 比較句式帶有「-過 2」這個不具語音形式的比較詞素，這個後綴式的詞素虛化自 X A-過 Y (D) 比較句式中的動詞後綴「-過 1」。詞素「-過 2」的虛化本質是造成 X A (Y) D 比較句式中差值度量詞組 (D) 必需出現和此一句式中形容詞不得受程度副詞修飾的原因。而且 X A (Y) D 這種比較句式的特有語法和語意特性多半源自「-過 2」這個比較詞素的虛化本質。

關鍵詞：虛化的比較詞素、差值度量詞組、間距論元