

The *yú* Comparative Construction in Mandarin Chinese

Zhiguo Xie

This paper provides an empirical description and a syntactic-semantic analysis of the less-studied *yú* comparative construction in Mandarin Chinese, which is of the form *X G(radable predicate) yú Y*. In the discussion, the *yú* comparative is compared to other comparative constructions in Mandarin Chinese. Most notably, the *yú* comparative construction has two rather peculiar properties. First, it allows no differential expression measuring the difference between *X* and *Y*. I argue that an illegitimate, double Case assignment is responsible for the constraint. Second, it disallows maximum-standard adjectives from serving as *G*. To account for this constraint, I hypothesize that the semantics of comparative *yú* contains an evaluative component that requires *X*'s degree on the scale associated with *G* to exceed the standard for *G*. If on the right track, my analysis suggests yet another potential parametric variation among comparative constructions: comparative constructions may be evaluative or non-evaluative.

Keywords: comparative constructions, evaluativity, Case assignment, degree semantics, Mandarin Chinese

1 Introduction

The primary objective of this paper is to provide a detailed description of empirical morphosyntactic and semantic properties of what I call the *yú* comparative construction in Mandarin Chinese. In spite of the interesting peculiarities the construction carries, it has thus far received very little attention in current linguistics literature, far less than other Mandarin Chinese comparative constructions such as the *bǐ* and transitive comparative constructions. Thus, through this paper, I hope to bring a new comparative construction in Mandarin Chinese to the attention of the theoretical linguistics community. The secondary goal of the paper is to provide theoretical explanations of two peculiar properties observed with the *yú* comparative construction. I show that the affixal, preposition status of *yú* gives rise to the incompatibility of a differential expression in the *yú* comparative construction. This completes the pattern of the (non-)occurrence of differential expressions in comparative constructions in Mandarin Chinese. In addition, I hypothesize, albeit informally and tentatively, that the *yú* comparative construction involves an evaluative component in its semantics. The hypothesis, if correct, suggests a new potential parametric variation among comparative constructions, namely, whether they are evaluative or not.

I am indebted to Christopher Piñón and the anonymous EISS and CSSP 2013 reviewers for very helpful comments and suggestions. An earlier version of this paper was presented at the 25th North American Conference on Chinese Linguistics (NACCL) in June 2013 at the University of Michigan. I would like to thank Thomas Grano, Jo-wang Lin, Luther Liu, Ming Xiang, and the rest of the audience at NACCL-25 for their useful feedback. All remaining errors and inadequacies are my own, of course.

Several comparative constructions in Mandarin Chinese, with rather distinguished syntactic and semantic properties, have been observed and discussed in the literature of Chinese Linguistics. The most famous and commonly used one is the *bǐ* comparative construction, of the form $X \text{ bǐ } Y \text{ G } (D)$. This construction specifies that an individual X exceeds an individual Y with respect to the gradable property G , and the difference can be optionally specified by a differential expression D (Chao 1968, Erlewine 2007, Lin 2009, Xiang 2005, among many others), as illustrated in (1). At various points of this paper, for the sake of convenience I will refer to Y as the standard of comparison, and G as the predicate of comparison.¹

- (1) a. gēge bǐ mèimei gāo (sān límǐ).
 brother BI sister tall three centimeter
 ‘The brother is (three centimeters) taller than the sister.’
 b. zhè zhī bǐ nà zhī piányi (wǔ kuài).
 this CL pen BI that CL cheap five dollar
 ‘This pen is (five dollars) cheaper than that one.’

In certain circumstances, it is also possible to express comparison with a *bǐ*-less comparative construction. One such construction is the so-called transitive (or bare) comparative construction of the form $X \text{ G } Y \text{ D}$ (Erlewine 2007, Grano and Kennedy 2012, Xiang 2005). In this construction, the predicate of comparison G immediately precedes Y , and a differential expression D is obligatory, as illustrated by the sentence in (2).

- (2) a. gēge gāo mèimei *(sān límǐ).
 brother tall sister three centimeter
 ‘The brother is three centimeters taller than the sister.’
 b. dìèr míng zhǐ màn dìyī míng *(liǎng miǎo).
 second place only slow first place two second
 ‘The second-place winner is only two seconds slower than the first-place winner.’

The transitive comparative has a few *prima facie* “variants,”² in all of which a morpheme appears between G and Y , and the presence or absence of a differential expression D depends on the choice of morpheme. Such a morpheme can be *chū* or *guò*. In the former case, the presence of D is obligatory, as shown in (3). In the latter case, however, the presence of D is optional, as shown in (4), though native speakers of Mandarin Chinese may prefer the presence of such an expression (Grano and Kennedy 2012, C. Liu 2007, Lü 1980).

- (3) gēge gāo chū mèimei *(sān límǐ).
 brother tall CHU sister three centimeter
 ‘The brother is three centimeters taller than the sister.’
 (4) gēge gāo guò mèimei (sān límǐ).
 brother tall GUO sister three centimeter
 ‘The brother is (three centimeters) taller than the sister.’

The morpheme appearing between G and Y can be yet another morpheme *yú*, which is generally taken to be a versatile preposition in Mandarin Chinese. This construction, at least

¹The abbreviations used in this paper are as follows: BI = *bǐ*; CHU = *chū*; GUO = *guò*; YU = *yú*; CL = classifier; DET = determiner; DOU = universal quantifier *dōu*; MOD = modification marker.

²The use of the word “variants” is purely based on the surface similarity of the relevant comparative constructions. Whether these constructions are true variants to each other is a theoretical issue that may be subject to different analyses.

in its contemporary use, contrasts with the *bǐ*, *chū*, *guò*, and transitive comparative in that the differential expression *D* is *disallowed* in it (Lü 1980, C. Liu 2007).³ The sentences in (5) and (6) illustrate the *yú* comparative construction. It is obvious that the five comparative constructions⁴ mentioned above form a rather interesting, complete paradigm with regard to the optional/obligatory presence/absence of a differential expression. The paradigm is summarized in Table 1.

- (5) a. gēge (*sān límǐ) gāo yú mèimei (*sān límǐ).
brother three centimeter tall YU sister three centimeter
'The brother is (intended: three centimeters) taller than the sister.'
b. xīn kuǎn xiàngjī (*wǔ kè) qīng yú lǎo kuǎn (*wǔ kè).
new style camera five gram light YU old style five gram
'The new camera is (intended: five grams) lighter than the old version.'
- (6) xīn fángzi de jiàgé (*2000 kuài) gāo yú jiù fángzi de jiàgé (*2000 kuài).
new house MOD price 2000 dollar high YU old house MOD price 2000 dollar
'The price of new houses is (intended: 2000 dollars) higher than that of old houses.'

Table 1

Pattern of differential expressions in comparative constructions

| | optional | obligatory |
|----------|------------------------|--|
| presence | <i>bǐ</i> comparative | transitive comparative <i>chū</i> comparative |
| absence | <i>guò</i> comparative | <i>yú</i> comparative |

The rest of the paper is organized as follows. In the next section, I give a brief introduction to the historical development of the *yú* comparative construction. By doing this, I hope to put this comparative construction in a broader context, in terms of its status and use in modern Mandarin Chinese. In section 3, I discuss several important morphosyntactic and semantic properties of the *yú* comparative construction. Two of the properties are rather peculiar and worth special attention. In section 4, I turn to the task of giving the syntactic structure of the *yú* comparative construction, which explains one of the two peculiar properties discussed in section 3. In section 5, I discuss, albeit rather informally and tentatively, the semantic interpretation of the *yú* comparative construction, which constitutes the very first

³Jo-wang Lin (personal communication) pointed out to me that the sentence in (i) below, which contains the phrase *yī diǎndian* 'a bit' after the *Y* element *wǒ* 'I', is acceptable to him.

- i. tā zhǐ gāo yú wǒ yī diǎndian.
he only tall YU I a bit
'He is only a bit taller than me.'

Based on (i), Lin suspected that a phrase denoting a *small* degree is allowed to serve as *D* in the *yú* comparative construction. I disagree with this suggestion. Changing *yī diǎndian* in (i) to another phrase denoting a (contextually) small degree, say, (*xiǎo*) *bàn límǐ* '(less than) half a centimeter', does not yield a sentence of improved grammaticality. The sentence in (i) contains *yī diǎndian*, a vague degree term that is ambiguous between being interpreted as a true measure phrase and as a degree modifier (Grano and Kennedy 2012, Kennedy and McNally 2005). It seems that the sentence is only acceptable when *yī diǎndian* is interpreted as a degree modifier, not as a measure phrase specifying the difference between the heights of the two relevant persons.

⁴Various authors discussed other constructions in Mandarin Chinese that express comparison. Li (2009, 2013) and Xie (2011a, 2011b, 2014), for instance, discussed the so-called differential verbal comparative construction and the possessive degree construction, respectively. Such constructions are beyond the scope of the current paper, and hence are not included in the discussion.

attempt to explain its second peculiar property. In the discussion in sections 3–5, where relevant, I compare the *yú* comparative construction to the other comparative constructions given in Table 1 above. In section 6, I discuss some remaining issues and conclude the paper.

2 A Historical Flavor

The *yú* comparative construction was recorded in use as early as in the Late Archaic Chinese period (5th to 3rd c. BC) (Peyraube 1989, Huang 1992, Wei 2007). The sentence in (7) is an example from *Mozi*, an important Chinese philosophical text compiled during that period. The construction continued to be widely used in the Han dynasty (206 BC to 220 AD), as evident by the sentence in (8) from the history masterpiece *Shiji* completed during that dynasty. In fact, Peyraube (1989) even claimed that *yú* was the only overt morpheme for (superior) comparison in Late Archaic and Han Chinese, during which *bǐ*, though widely used for comparison in modern Mandarin Chinese, was used as a verb meaning “compare” and did not function like a true comparative morpheme.

- (7) yī shǎo yú èr, ér duō yú wǔ.
one less YU two but more YU five
‘One is less than two, but is (or more precisely, can be) greater than five.’

- (8) ráng hóu zhī fù, fù yú wáng shì.
rang marquis MOD wealth wealthy YU prince family
‘As for the wealth of Marquis Rang, he is wealthier than the family of the Prince.’

From the Medieval Chinese period (3rd to 13th c. AD) onward, the use of the *yú* comparative construction had been in gradual decline. This process, expedited in Late Medieval Chinese, was accompanied by the increasing use of several other comparative morphemes, some of which are not retained in modern Mandarin Chinese (Peyraube 1989, Huang 1992, Wei 2007). In particular, *bǐ* gradually lost “its full verbal meaning and became a preposition” (Peyraube 1989:611). Moreover, during the grammaticalization process, the gradable predicates of comparison to combine with *bǐ* extended from exclusively verb phrases in Early Medieval Chinese (3rd to 6th c. AD) to other types of gradable phrases starting from Late Medieval Chinese ((9) vs. (10)), most likely a direct result of imposition from the shrinking use of the *yú* comparative with adjective phrases (Huang 1992).⁵

- (9) zhōu yí bǐ chén yǒu guóshì mén fēng.
Zhou Yi BI me have statesman familial behavior
‘Zhou Yi, compared to me, has more familial tradition of a statesman.’
(Peyraube’s (65), from *shishuoxinyu* in the 5th c. AD)

- (10) bǐ lǐ gōngzuǒ děng suǒ shù yóu gèng xiángxì.
BI Li Gongzuo et al DET narrate even more detailed
‘(It) is even more detailed than the narrations of Li Gongzuo and the others.’
(Peyraube’s (65), from *sanchao beimeng huibian* in the 12th c. AD)

In modern Mandarin Chinese, the *bǐ* comparative construction is by far the most commonly used strategy to make comparison. The *yú* comparative construction, more or less a

⁵An anonymous reviewer correctly pointed out that knowledge about the historical development of the *yú* comparative construction (or any other language phenomenon, for that matter) plays no role in children’s acquisition of the construction. The purpose of including section 2 in this paper, however, is merely to keep the reader informed with regard to how the *yú* comparative came to its current status in modern Mandarin Chinese.

diachronic remnant, is less often used. When it is used, it is more common in writing than in daily conversations, presumably due to its “archaic” flavor. Nevertheless, the *yú* comparative construction remains a considerably productive comparative construction, and native speakers’ intuitions about *yú* comparative sentences are (still) clear.⁶ The relative dispreference of the *yú* comparative construction in actual use, therefore, does not prevent researchers of Chinese linguistics from studying the phenomenon from a contemporary syntactic and semantic perspective and drawing conclusions that may have wider theoretical implications.

3 Empirical Properties

In this section, I discuss some empirical morphosyntactic and semantic properties of the *yú* comparative construction, and when relevant and appropriate, compare it to other comparative constructions in Mandarin Chinese. First, the predicate of comparison *G* in the *yú* comparative construction, of the form *X G yú Y*, can only be a monosyllabic gradable predicate; multisyllabic gradable predicates cannot serve as *G* in the construction. This is illustrated by the minimal pair in (11). The two gradable adjectives, *liàng* and *míngliàng*, have an (almost) identical meaning (i.e. ‘bright’) and merely differ in the number of syllables contained in them. Only the former, however, can appear in a *yú* comparative sentence. By contrast, this monosyllabic constraint does not apply to many other prepositional uses of *yú*. For example, the acceptable sentences (12a) and (12b), illustrating the time and direction/goal uses of *yú* respectively, both contain disyllabic phrases before *yú*.

- (11) tàiyáng shēngqǐ le, chuāng wài yǐjīng liàng/*míngliàng yú shì nèi.
 sun rise PERF window outside already bright YU room inside
 ‘The sun has risen, and the outside is already brighter than the inside.’
- (12) a. nà jiā gōngsī chénglì yú liǎng nián qián.
 that CL company establish YU two year ago
 ‘That company was established two years ago.’
 b. tā yīzhí mǎnzú yú yǐ yǒu de chéngjì.
 he always satisfied YU already have MOD achievement
 ‘He is always satisfied with what he has already achieved.’

The transitive and *chū* comparative constructions, too, only allow certain monosyllabic gradable predicates (e.g. *gāo* ‘tall’ and *kuài* ‘fast’) to serve as the predicate of comparison (Y. Liu 2004). However, this requirement is a mere coincidental consequence of two independent constraints in Mandarin Chinese. One constraint is that the transitive and *chū* comparative constructions only allow for gradable predicates associated with conventional measurement systems (e.g. speed, linear extent, time interval, etc.) (Grano and Kennedy 2012, Xiang 2005). The other constraint is that such gradable predicates all happen to be monosyllabic in Mandarin Chinese. Both *gāo* ‘tall’ and *měi* ‘beautiful’ are monosyllabic, but only the former comes with a scale for which conventional measuring units exist (e.g. inch, meter). Hence the acceptability contrast between (13a) and (13b).

- (13) a. gēge gāo (chū) mèimei sān límǐ.
 brother tall CHU sister three centimeter
 ‘The brother is three centimeters taller than the sister.’

⁶Li and Thompson (1980) pointed out that the *yú* comparative construction is better retained in modern Cantonese than in modern Mandarin Chinese. For practical reasons, the discussion in this paper is limited to Mandarin Chinese.

- b. *tā měi (chū) diànyǐng zhōng de měi nǚ liǎng bèi.
 she beautiful CHU movie in MOD beautiful woman two fold
 Intended: ‘She is two times prettier than the beautiful woman in the movie.’

By contrast, the monosyllabic requirement observed with the *yú* comparative appears not to arise from any similar consideration. Whether a monosyllabic gradable predicate comes with a conventional measure system or not does not affect its ability to appear in the *yú* comparative construction. This claim is already evident from the acceptability of the sentence with *liàng* ‘bright’ in (11), which is not associated with a conventional measurement unit. It can be further seen in the contrast between the sentences in (13) and (14).

- (14) a. gēge gāo yú mèimei.
 brother tall YU sister
 ‘The brother is taller than the sister.’
 b. tā měi yú diànyǐng zhōng de měi nǚ.
 she beautiful YU movie in MOD beautiful woman
 ‘She is prettier than the beautiful woman in the movie.’

Second, comparative constructions can be divided based on several parameters of comparison (Kennedy 2007a, Lin 2009). One such classification is whether a comparative construction involves explicit or implicit comparison. Explicit comparison involves “specialized morphology that expresses arbitrary ordering relations,” and implicit comparison involves “taking advantage of the inherent context sensitivity of the positive (unmarked) form” (Kennedy 2007a:143). The *more...than* comparative construction in English is an example of explicit comparison, and comparative sentences involving the “unmarked,” positive form of gradable predicates and introduced by “compared to” belong to the implicit comparison strategy, as shown in (15).

- (15) a. John is taller than Mike. (explicit comparison)
 b. Compared to Mike, John is tall. (implicit comparison)

Naturally, one may wonder if *yú*, as a preposition, can be understood to mean “compared to” or “in comparison with” and to express implicit comparison. The answer is negative. Kennedy (2007a) pointed out that implicit comparison requires a contextually non-minimal difference between the compared objects in order for the comparison to make sense. Explicit comparison, however, does not carry such a requirement. The different behaviors give rise to the so-called “crisp judgment” test. Applying this test to the *yú* comparative construction suggests that it involves explicit, rather than implicit, comparison.

More specifically, imagine a scenario in which there are two essays. The first essay is 600 words long, and the second one is 300 words long. The *yú* comparative sentence in (16) would be felicitous in this scenario. Imagine another scenario in which the first essay remains 600 words long, but the second essay becomes 597 words long, only 3 words shorter than the first. The sentence in (16) would be still felicitous. This contrasts with the sentence in (17), with *gēn...xiāngbǐ* ‘compared to’, which clearly involves implicit comparison (Erlewine 2007) and which is only felicitous in the first, but not the second, scenario. This difference suggests that the *yú* comparative is an explicit comparison strategy.

- (16) dìyī piān wénzhāng cháng yú dìèr piān wénzhāng.
 first CL article long YU second CL article
 ‘The first article is longer than the second article.’

- (17) gēn diè piān wénzhāng xiāng bǐ, dìyī piān wénzhāng cháng.
 with second CL article with compare first CL article long
 ‘Compared to the second article, the first article is long.’

The third empirical property of the *yú* comparative construction is that the predicate of comparison *G* can be either of positive polarity (e.g. “tall” and “fast”) or of negative polarity (e.g. “short” and “slow”). This is evident from the acceptability of (18) regardless of *cháng* ‘long’ or *duǎn* ‘short’ serving as the predicate of comparison. This property puts the *yú* comparative construction in the same group as the *bǐ* and transitive comparative constructions (as in (19)), both of which allow negative polarity gradable predicates to serve as the predicate of comparison (Lin 2009, C. Liu 2007). In this regard, the *yú* comparative is different from the *chū* and *guò* comparatives, neither of which allows negative polarity gradable predicates to serve as the predicate of comparison, as shown in (20).⁷

- (18) liǎng jiǎo jiān de jùlí yào luè kuān/zhǎi yú shuāng jiān.
 two foot between MOD distance need a bit wide/narrow YU two shoulder
 ‘The two feet should be apart a bit wider/narrower than the two shoulders.’
- (19) a. tā jīntiān pǎo de bǐ zuótiān kuài/màn.
 he today run EXT BI yesterday fast/slow
 ‘He ran faster/slower today than yesterday.’
 b. gēge zhòng/qīng mèimei sān gōngjīn.
 brother heavy/light sister three kilogram
 ‘The brother is three kilograms heavier/lighter than the sister.’
- (20) zhè tiáo shéngzi cháng/*duǎn guò/chū nà tiáo liǎng yīngchǐ.
 this CL rope long/short GUO/CHU that CL two foot
 ‘This rope is two feet longer/(intended: shorter) than that rope.’

Fourth, it is a well-known observation that gradable predicates can further be classified based on the context-dependency of the standard of comparison. Kennedy and McNally (2005), for example, divided gradable adjectives into relative-standard adjectives (e.g. *tall*, *heavy*, *important*), minimum-standard adjectives (e.g. *dirty*, *wet*, *bent*), and maximum-standard adjectives (e.g. *full*, *flat*, *straight*). A relative-standard adjective comes with a context-dependent standard: what counts as tall or heavy varies from context to context. By contrast, the latter two types of gradable adjectives do not introduce a context-dependent standard. Rather, the argument of a minimum-standard adjective is required to possess any *non-zero* degree of the relevant property: a minimal bend on a rod would qualify the rod as being bent. The argument of a maximum-standard adjective is required to possess a *maximal* degree of the relevant property: a straight rod (strictly speaking) needs to be completely straight and have no bend at all.

The three types of gradable predicates manifest different properties. Only relative- and minimum-standard adjectives can serve as the predicate of comparison in the *yú* comparative construction, as shown by the acceptability of the sentences in (21). It is unacceptable to have a maximum-standard adjective as the predicate of comparison in a *yú* comparative sentence, as evident from the unacceptable sentences in (22).⁸

⁷In this paper, I will not address this difference between the *bǐ*, *yú*, and transitive comparatives, on the one hand, and the *guò* and *chū* comparatives, on the other hand.

⁸In her discussion of the *bǐ* comparative construction, Paul (1993) posited that a (cyclic) C-command relation holds between the two terms of comparison. One important piece of evidence she cited was the dependence

- (21) a. yìndù rénkǒu de zēngzhǎng sùdù kuài yú zhōngguó.
India population MOD grow speed fast YU China
'The population grows faster in India than in China.'
- b. lóu nèi shènzhì zāng yú lóu wài qiángtǐ.
building inside even dirty YU building outside wall.
'The inside of the building is even dirtier than the outside wall.'
- (22) a. *yībānshuōlái, gāosùgōnglù zhí yú xiāngjiān xiǎo lù.
generally speaking highway straight YU countryside small road
Intended: 'Generally speaking, highways are straighter than small rural roads.'
- b. *zhè ge xiāngzi míngxiǎn mǎn yú nà ge xiāngzi.
this CL suitcase obviously full YU that CL suitcase
Intended: 'Obviously, this suitcase is fuller than that suitcase.'

In this regard, the *yú* comparative is again different from the *bǐ* and *guò* comparatives.⁹ The latter two constructions are compatible with all three types of gradable predicates serving as the predicate of comparison. For the *guò* comparative, this claim is evident in the grammaticality of the sentences in (23). The sentences in (24) illustrate the *bǐ* comparative construction with all three types of gradable predicates.

- (23) a. zǎoshàng gāofēngqī, qí zìxíngchē huì kuài guò kāi chē.
morning rush hour ride bicycle should fast GUO driving car
'During the morning rush hour, riding a bicycle should be faster than driving a car.'
- b. yǒuxie kuài cān diàn de bīngkuài zāng guò mǎtǒng shuǐ.
some fast food restaurant MOD ice dirty GUO toilet water
'Ice in some fast food restaurants is dirtier than toilet water.'
- c. zhè ge xiāngzi míngxiǎn mǎn guò nà ge xiāngzi.
this CL suitcase obviously full GUO that CL suitcase
'Obviously, this suitcase is fuller than that suitcase.'
- (24) a. tāde chéngjì bǐ wǒde hǎo.
his performance BI my good
'His performance/grade is better than mine.'
- b. zhè jiàn yīfú gǎnjué bǐ nà jiàn yīfú shī.
this CL clothes feel BI that CL clothes wet
'This piece of clothing feels wetter than that one.'
- c. měi ge rén dōu zhàn de bǐ wǒ zhí.
every CL person DOU stand DE BI me straight
'Everyone stood straighter than I did.'

Fifth, certain comparative constructions can be conflated to occur in the same sentence. The sentence in (25), for example, combines *bǐ* and *chū* comparatives together, and the sen-

of the scope of comparison upon the standard of comparison. The same observation seems to apply to the *yú* comparative construction. The sentence in (21a), for example, can be understood either as comparing India and China with respect to the topic of population growth (among many other potential topics), or as directly comparing the population growth rates of the two countries.

⁹When it comes to compatibility with the different types of gradable predicates, native intuitions of Mandarin Chinese speakers, at times, could be unclear with the transitive and *chū* comparative constructions. Adding to the difficulty of judgment is the fact that the gradable predicates that can appear in the two constructions are rather limited (Xiang 2005, Grano and Kennedy 2012).

tence in (26) combines *chū* and *guò* comparative together.¹⁰ By contrast, the *yú* comparative is disallowed from combining with any other comparative construction, as illustrated by the sentences in (27).

- (25) zhāngsān bǐ lǐsì gāo chū liǎng cùn. (Grano and Kennedy's (53a))
 Zhangsan BI Lisi tall CHU two inch
 'Zhangsan is two inches taller than Lisi.'
- (26) zhāngsān gāo chū guò lǐsì liǎng cùn. (Grano and Kennedy's (56))
 Zhangsan tall CHU GUO Lisi two inch
 'Zhangsan is two inches taller than Lisi.'
- (27) a. zhāngsān (*bǐ) gāo yú lǐsì.
 Zhangsan BI tall YU Lisi
 'Zhangsan is taller than Lisi.'
- b. zhāngsān gāo chū (*yú) lǐsì sān límǐ.
 Zhangsan tall CHU YU Lisi three centimeter
 'Zhangsan is three centimeters taller than Lisi.'
- c. zhāngsān gāo (*yú) guò (*yú) lǐsì.
 Zhangsan tall YU GUO YU Lisi
 'Zhangsan is taller than Lisi.'

Sixth, as already mentioned in section 1, the *yú* comparative construction cannot take a differential expression after the standard of comparison, or elsewhere in the construction. This restriction applies not only to differential measure phrases (e.g. *sān límǐ* 'three centimeters', *liǎng xiǎoshí* 'two hours'), as illustrated in (5) and (6) repeated below, but also to differential factor phrases (e.g. *yī bàn* 'half', *liǎng bèi* 'twice, twofold'), as in (28).¹¹

- (5) a. gēge (*sān límǐ) gāo yú mèimei (*sān límǐ).
 brother three centimeter tall YU sister three centimeter
 'The brother is (intended: three centimeters) taller than the sister.'
- b. xīn kuǎn xiàngjī (*wǔ kè) qīng yú lǎo kuǎn (*wǔ kè).
 new style camera five gram light YU old style five gram
 'The new camera is (intended: five grams) lighter than the old version.'

¹⁰Grano and Kennedy (2012) took the co-occurrence of *chū* and *guò* to be natural, and provided an explanation of the co-occurrence. However, not every native speaker of Mandarin Chinese I consulted accepted such a co-occurrence. I leave to future research where this inter-speaker variation comes from.

¹¹I should note that the constraint against the *yú* comparative construction taking a differential expression only applies to its contemporary use. Ming Xiang (personal communication) pointed out that given the claim (in section 2) that the *yú* comparative construction was the only overt morpheme for (superior) comparison in Late Archaic and Han Chinese, it would be surprising if at that time the construction could not take a differential expression. For, if so, how would people at that time express difference between two entities under comparison with respect to a gradable property? In fact, Wei (2007) cited the following example from Han Chinese, which clearly illustrates compatibility of the *yú* comparative construction with a differential expression at that time. When and how the *yú* comparative construction lost its ability to combine with a differential expression is a topic that I have to leave for future research. The following discussion about the incompatibility of the *yú* comparative construction with a differential expression only applies to its contemporary use.

- i. cháng yú hé yī liǎng chǐ.
 long YU grain one two foot
 'one or two feet longer than the grain (plant)'
 (Wei 2007:(11), from *Lun Heng* in the 1st c. AD)

- (6) xīn fángzi de jiàgé (*2000 kuài) gāo yú jiù fángzi de jiàgé (*2000 kuài).
new house MOD price 2000 dollar high YU old house MOD price 2000 dollar
'The price of new houses is (intended: 2000 dollars) higher than that of old houses.'
- (28) chéngshì jūmín de shōurù (*sān bèi) gāo yú nóngcūn jūmín (*sān bèi).
city resident MOD income three time high YU rural resident three time
Intended: 'The income of urban residents is three times higher than that of rural ones.'

To summarize this section, the *yú* comparative construction shows several interesting properties. First, it is only compatible with monosyllabic predicates of comparison. I take this requirement to be idiosyncratic and do not attempt to provide an account of it. Second, when this monosyllabic requirement is met, the predicate of comparison can be of either positive or negative polarity. Third, maximum-standard adjectives, in contrast with relative- and minimum-standard adjectives, cannot serve as the predicate of comparison in the *yú* comparative construction. Fourth, the *yú* comparative involves explicit, rather than implicit, comparison. Fifth, the *yú* comparative cannot be conflated with any other comparative construction. Lastly, the *yú* comparative cannot take a differential expression, standing in sharp contrast to several other comparative constructions in Mandarin Chinese.

4 Syntactic Representation

In the remainder of this paper, I will primarily focus on addressing the question of why the *yú* comparative construction, in its contemporary use, does not allow a differential expression in it. In addition, I will, albeit rather informally and tentatively, tackle the question of why this comparative construction is not compatible with maximum-standard gradable predicates. With regard to the first question, of course, one can choose to define the semantics of *yú* in such a way that there is no slot for a difference between the two entities under comparison. This, however, is at best an ad hoc solution. There is no conceptual prohibition against any comparative construction specifying a difference between the two entities under comparison. Why should the *yú* comparative construction constitute an exception? Moreover, note the pattern observed in section 1 with respect to the presence/absence of differential expressions in several closely related comparative constructions in Mandarin Chinese. An account that can capture the overall pattern should be conceptually preferred over an analysis that is only able to take care of a subset of the pattern. Given these considerations, in this paper I take a syntactic approach to the first question, by arguing that the restriction against a differential expression in the *yú* comparative construction actually arises from an illegitimate, double Case assignment to the standard-of-comparison phrase.

First, let me reiterate that *yú* is a preposition across all of its uses (Lü 1980). Then, it is no surprise that *yú* has the ability to assign a Case. What makes the comparative use of this preposition interesting is that in this use, *yú* seems to have no independent status and must affix to the predicate of comparison right before it. This is suggested by the coordination test. Assume $X G yú Y$ to be the general form of the *yú* comparative construction. Two " $G yú$ " chunks can be coordinated by using such conjunction words as *bìngqiě* 'and' and *dànshì* 'but,' as in (29). By contrast, two " $yú Y$ " chunks cannot be similarly coordinated together, as in (30), which would be surprising if *yú* were a "regular" independent preposition.¹²

¹²An anonymous reviewer suggested that *yú* forms a morphological adjectival compound with the preceding predicate of comparison. His/her main argument resides in the fact that *yú* does not form a constituent with the NP following it. As such, the reviewer further suggested, *yú* is invisible to syntax and cannot assign a Case of its own. According to his/her postulation, the *yú* comparative construction is a special case of the transitive comparative construction, and the standard-of-comparison phrase receives a Case from a covert head associated

(29) gēge gāo yú, bìngqiě zhòng yú, mèimei.
 brother tall YU and heavy YU sister.
 ‘The brother is taller and heavier than the sister.’

(30) *tā gāo yú mèimei (bìngqiě) yú dìdi.
 he tall YU sister and YU brother.
 Intended: ‘He is taller than his brother and his sister.’

In this paper, I assume that the comparative constructions in Mandarin Chinese mentioned in section 2 all share the same basic underlying structure. This assumption has been adopted in previous works on comparative constructions in Mandarin Chinese and is not a novel move. For example, Xiang (2005:193) noted that “conceptually a unified analysis has obvious advantage because it reduces different patterns of comparatives to one single syntactic structure.” This assumption entails that the basic structure should allow for a substructure accommodating a differential expression. Otherwise, a differential expression would be impossible in all comparative constructions, contrary to fact (recall Table 1). Rather, it is due to independent factors that a certain comparative construction requires, allows, or forbids, the appearance of a differential expression. According to Grano and Kennedy (2012), the transitive comparative construction requires a differential measure phrase because measure phrases come with a covert Case assigner, which is required for the licensing of the standard-of-comparison phrase. The *chū* morpheme in the *chū* comparative may be taken to be a member of the same class as the covert Case assigner. I argue that the Case-based analysis by Grano and Kennedy, coupled with the affixal status of the preposition *yú*, can provide an explanation why the *yú* comparative construction does not allow a differential expression.

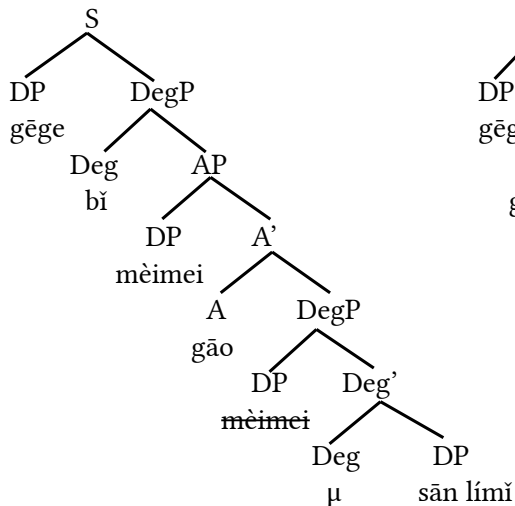
A recent attempt to offer a unified account of certain comparative constructions in Mandarin Chinese is the so-called “DegP-shell” analysis proposed by Xiang (2005), modeled after Larson’s (1988) VP-shell structure. Under Xiang’s analysis, there are two degree projections in the syntactic representation of certain comparative constructions. The head of the lower DegP selects for a differential expression as its complement. The standard-of-comparison phrase appears in the specifier position of the projection. The lower DegP serves as the complement of an adjective, whose projection, in turn, is the complement of the higher DegP structure. The standard-of-comparison phrase raises to the specifier position of the AP. The higher Deg head can be filled by *bǐ* (for *bǐ* comparative sentences) or an adjective of a certain class via head movement from the AP (for transitive, *chū*, and *guò* comparative sentences). (31a) and (31b) give the structural representations of (1a) and (2a), respectively.

(1) a. gēge bǐ mèimei gāo (sān límǐ).
 brother BI sister tall three centimeter
 ‘The brother is (three centimeters) taller than the sister.’

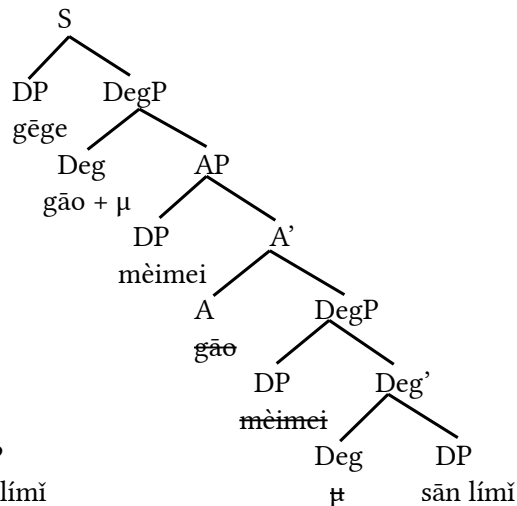
with the predicate of comparison. I see at least two problems with the reviewer’s suggestions. First, there is no a priori requirement that a Case assigner form a constituent with the element that checks the Case. There exist uses of *yú* as a preposition where it assigns a Case to an NP but does not form a constituent with the NP. For example, in the phrase *chénnì yú diànzǐ yóuxì* ‘addicted to electronic games’, *yú* and *diànzǐ yóuxì* do not form a constituent. However, without *yú* as a Case assigner, the phrase is degraded. Second, the reviewer treated the *yú* comparative as a special case of the transitive comparative. However, it is not clear to me whether and how the treatment can explain the fact that the *yú* comparative disallows, but the transitive comparative requires, a differential expression.

- (2) a. gēge gāo mèimei *(sān límǐ).
 brother tall sister three centimeter
 'The brother is three centimeters taller than the sister.'

(31) a. Structure of (1a)



b. Structure of (2a)



Regarding the lower Deg head, Xiang (2005) took it to be a phonologically silent degree morpheme *exceed*, which, along with the predicate of comparison, undergoes head movement to the higher Deg head when the head is not filled (by *bǐ*). Grano and Kennedy (2012:242), by drawing on Svenonius and Kennedy's (2006) insight on the distribution of measure phrases, suggested the possibility of the lower degree head being filled by a null degree morpheme μ , which "is projected only when a measure phrase is present." The representations in (31a) and (31b) above conflate Xiang's DegP-shell analysis with Grano and Kennedy's. From the representations, it is obvious that the transitive comparative has a structure very similar to the *bǐ* comparative. The only difference is that for the transitive comparative, the adjective, along with the μ morpheme, moves to the higher Deg head. According to Grano and Kennedy (2012), in the absence of *bǐ*, this movement is required by the need for a Case on the part of the standard-of-comparison phrase; μ moves to the higher Deg head for Case assignment and takes the adjective along with it, due to the affixal nature of the morpheme.

The transitive comparative construction requires the presence of a measure phrase because the morpheme μ , which "requires and is required by" the projection of a measure phrase (Grano and Kennedy 2012:244), is obligatory for assigning a Case to the standard-of-comparison phrase in the construction. The morpheme *chū* may be taken to be an overt counterpart of μ . By contrast, when *bǐ* serves as the head of the higher Deg phrase, it is able to assign a Case to the standard-of-comparison phrase, and there is no need for μ to raise to assign a Case.¹³ Under the assumption that *chū* is an overt counterpart of μ , the claim is supported by the grammaticality of the sentence in (32), in which both *bǐ* and *chū* appear and *chū* is separated from *bǐ* by the standard-of-comparison phrase and the gradable predicate.¹⁴

¹³Grano and Kennedy (2012) assumed that the Case-assigning capacity of μ is "suppressed" when μ does not raise. Exactly how the suppression comes about, I think, still remains an open question.

¹⁴An anonymous reviewer raised issues with the DegP-shell analysis proposed by Xiang (2005) and adapted by Grano and Kennedy (2012). More specifically, the reviewer pointed out that Xiang's analysis "wrongly rules out the well-known acceptability of adverbs preceding the adjectives" in the *bǐ* comparative construction (as in (i) below), because the standard-of-comparison phrase "occupies the specifier position of the AP." Grano and Kennedy (2012) actually entertained two possible ways of reconciling a similar objection raised by Lin (2009)

- (32) zhōngguó shēchǐ pǐn de xiāoshòu jiàgé bǐ měiguó gāo chū liǎngbèi.
 China luxury goods MOD sale price BI USA high CHU twice
 ‘The prices of luxury goods in China are twice more expensive than in USA.’

I adopt Xiang’s (2005) DegP-shell proposal to represent the syntactic structure of the *yú* comparative construction. *Yú* is comparable to *bǐ* in two regards. First, it is the head for the higher Deg phrase. Second, as a preposition, it has the ability to assign a Case. The syntactic structure of the *yú* comparative construction, therefore, is very similar to that of the *bǐ* comparative construction without an accompanying measure phrase. At the same time, there is a key difference between *yú* and *bǐ*: the former is not an independent morpheme and must affix to the predicate of comparison. Due to this morphological status of *yú*, the predicate of comparison raises in order to “host” *yú*. Illustrated with (14a) (repeated below), the structure of the *yú* comparative construction is represented in (33a) below, with the vacuous lower DegP omitted.

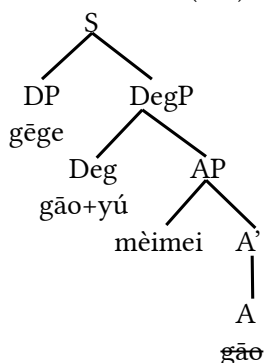
- (14) a. gēge gāo yú mèimei.
 brother tall YU sister
 ‘The brother is taller than the sister.’

We are now ready to explain why the *yú* comparative construction is not compatible with a differential expression. The degree morpheme *yú* is similar to the covert degree morpheme μ in certain aspects: both need to affix to the predicate of comparison, and both can assign a Case when appearing in an appropriate Case-assigning position. It is precisely these similarities that render the *yú* comparative construction unable to take a measure phrase in it. When a measure phrase is present in a *yú* comparative sentence, it introduces the covert degree morpheme μ , which in turn needs to affix to the predicate of comparison. The predicate of comparison further needs to raise to “host” *yú*. However, doing so would bring μ to a Case-assigning position, and this leads to an illegitimate, double Case assignment to the standard-of-comparison phrase. This analysis is illustrated in (33b), representing the example sentence in (14a) with the measure phrase *sān límǐ* ‘three centimeters’ added after the standard-of-comparison phrase *mèimei* ‘sister’.

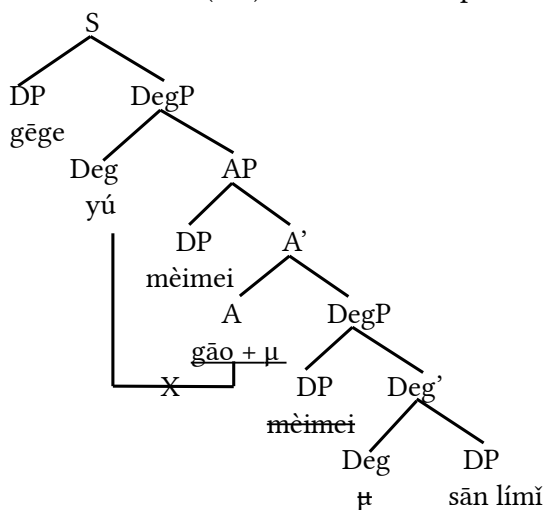
with the DegP-shell analysis. One especially plausible option is to claim that adverbs like *gèng* and *hái* (both meaning ‘even’) are adjuncts in the AP projection. As supporting evidence, *gèng* and *hái* can stack together. For instance, the sentence in (ii), from work by the Chinese philosopher and diplomat Hu Shih, contains both *hái* and *gèng* occurring side by side to modify the adjective *gāo*. I would like to thank Christopher Piñón for his helpful comments and guidance related to this footnote.

- i. gēge bǐ mèimei gèng/hái gāo.
 brother BI sister even tall
 ‘The brother is even taller than the sister.’
- ii. róngrèn bǐ zìyóu hái gèng zhòngyào.
 tolerance BI freedom even even important
 ‘Tolerance is even more important than freedom.’

(33) a. Structure of (14a)



b. Structure of (14a) with a measure phrase



Based on this analysis, I make the following prediction. If a *yú* comparative sentence containing a differential expression has two gradable predicates, one hosting μ and the other hosting *yú*, then there will be no double Case assignment, and the sentence should be acceptable. This prediction is borne out. The predicate of comparison in a *yú* comparative sentence can be reduplicated, as in (34).¹⁵ *Yú* affixes to the higher *gāo*, and μ affixes to the lower *gāo*. I assume that the lower *gāo* takes a null pronoun after it, to which a Case is assigned by μ .

- (34) ?gēge gāo yú mèimei gāo sān límǐ.
 brother tall YU sister tall three centimeter
 'The brother is three centimeters taller than the sister.'

The analysis also explains why the *yú* comparative cannot be incorporated into the transitive comparative. Essentially, this is because the former construction disallows, but the latter construction requires, the occurrence of a differential expression. In the previous section, it was also observed that the *yú* comparative construction cannot be incorporated into the *bǐ*, *chū*, or *guò* comparative constructions. The incompatibility of *yú* and *bǐ* is a direct consequence of the postulation that they are degree morphemes occupying the same degree head position. The incompatibility of *yú* with *chū* and *guò* can be easily accounted for if we assume that *chū* and *guò* are affixes as well. Recall Grano and Kennedy's (2012) claim that though *chū* and *guò* are different in certain respects (see Table 1), they both belong to the same class as μ . Therefore, when *yú* co-occurs with *chū* or *guò*, the predicate-of-comparison phrase takes two Case assigners for the standard-of-comparison phrase. Moreover, the two Case assigners eventually appear in the same Case-assigning position. This leads to an illegitimate, double Case assignment.

Before concluding this section, I would like to say a few words regarding the contrast between *bǐ* and *yú* with respect to their (in)compatibility of *chū* and *guò*. Again, an important difference between *bǐ* and *yú* is that the latter is affixal in nature. In a *yú* comparative sentence, the predicate of comparison has to raise to the Case-assigning *yú* degree head so as to "host" the affixal *yú*. This requirement disallows any other Case-assigning element such as *chū* and *guò* from combining with the predicate of comparison. By contrast, *bǐ* is an independent morpheme. In a *bǐ* comparative sentence, the predicate of comparison does not raise to

¹⁵Admittedly, the utterance in (34) is most natural with a pause before the second *gāo*. Without such a pause, it is still at least marginally acceptable.

the Case-assigning *bǐ* degree head, and can stay in situ to serve as a “host” for affixal *chū* and *guò* in a duly manner.

5 Evaluativity of the *yú* Comparative: A Preliminary Analysis

In this section, I provide some rather preliminary and informal remarks regarding another peculiar property of the *yú* comparative construction discussed in section 3, namely, that the construction allows minimum- and relative-standard gradable predicates, but not maximum-standard gradable predicates, to serve as the predicate of comparison. This observation has already been illustrated by the acceptability contrast in (21) and (22) (repeated below). No other comparative construction in Mandarin Chinese (or in any other language to the best of my knowledge) has such a restriction on the predicate of comparison.

- (21) a. yìndù rénkǒu de zēngzhǎng sùdù kuài yú zhōngguó.
 India population MOD grow speed fast YU China
 ‘The population grows faster in India than in China.’
 b. lóu nèi shènzhì zāng yú lóu wài qiángtǐ.
 building inside even dirty YU building outside wall.
 ‘The inside of the building is even dirtier than the outside wall.’
- (22) a. *yībānshuōlái, gāosùgōnglù zhí yú xiāngjiān xiǎo lù.
 generally speaking highway straight YU countryside small road
 Intended: ‘Generally speaking, highways are straighter than small rural roads.’
 b. *zhè ge xiāngzi míngxǐǎn mǎn yú nà ge xiāngzi.
 this CL suitcase obviously full YU that CL suitcase
 Intended: ‘Obviously, this suitcase is fuller than that suitcase.’

Most likely, it is something in the semantics of *yú* that is responsible for this restriction. Of course, one can choose to define *yú* with a presupposition specifying what types of gradable predicates can serve as the predicate of comparison in the *yú* comparative construction. Then, a natural question to ask would be what independent factors give rise to such a presupposition. In this paper, however, I take a different route by suggesting that the restriction arises from the evaluative property of the *yú* comparative construction. I base my suggestion on the observation that the pattern in (21) and (22) is strongly reminiscent of the (in)felicity pattern of gradable adjectives used in English sentences of the form *A, but could be A-er*. Both Kennedy (2007b) and Lassiter (2010) observed that minimum- and relative-standard gradable adjectives can appear in this modal construction, but maximum-standard gradable adjectives cannot. Obviously, the unacceptability of (35c) cannot be blamed on any prohibition of the comparative use of maximum-standard adjectives in comparative constructions, because such a use is indeed observed, as shown in (36). Rather, it is due to evaluativity present in the linguistic context.

- (35) a. The rod is bent, but it could be more bent.
 b. This basketball player is tall, but he could be taller.
 c. #The room is full, but it could be fuller.

(36) My glass could be fuller than it is now.

Here, I adopt Rett’s (2008) definition of evaluativity: a degree construction is evaluative when it makes reference to a degree which meets the standard for the predicate of comparison. In the sentences in (35), the first clauses say that in the actual world the rod’s degree of

being bent, the basketball player's height, and the fullness of the relevant room equal or exceed the respective (contextual) standard, and the second clauses say that in a hypothetical world the degree could be higher. However, a maximum-standard gradable predicate, by its very nature, is associated with a standard which corresponds to the maximum value/interval on the relevant scale. Thus, there cannot exist any degree exceeding the standard, which explains why a maximum-standard gradable predicate cannot appear in the construction.

I hypothesize that the semantics of the *yú* comparative construction, of the form *X G yú Y*, has a similar evaluative component: *Y*'s degree of being *G* meets the standard for *G*. At the same time, the semantics of the construction requires *X*'s degree of being *G* to exceed *Y*'s degree. By transitivity, this requires *X*'s degree of being *G* to exceed the standard for *G*. However, when *G* is a maximum-standard gradable predicate, there exists no degree of being *G* for *X* that can exceed the standard for *G*. Hence, the sentence does not have a viable semantics, and is unacceptable.¹⁶

However, there is an obvious issue with claiming that the *yú* comparative construction is evaluative: a *yú* comparative sentence containing a relative-standard gradable predicate of comparison seems not to require either of the two compared items to meet the standard for the predicate. The sentence in (14), for instance, does not require the brother or the sister to be tall in the context. They both can be short, but the sentence is still true as long as the brother is taller than the sister. Here is a (rather ugly) stipulation to cope with this issue. I hypothesize that the *yú* comparative construction sets up a local comparison class consisting of the two compared entities only, and this comparison class is "impermeable" to other individuals. For a *yú* comparative sentence whose predicate of comparison is a relative-standard gradable predicate *G*, its standard is identified with *Y*'s degree on the associated scale. Thus, it is trivially true that *Y*'s degree of being *G* equals or exceeds the standard for *G*. That is, the evaluative component holds vacuously, and makes no real contribution to the semantics of the sentence. However, when *G* is a minimum- or maximum-standard gradable predicate, the standard for *G* is lexically specified (Kennedy and McNally 2005) and cannot be identified with *Y*'s degree of being *G*. Hence, the evaluative component is not trivially true and cannot be done away with.

6. Concluding Remarks

In this paper, I provided an empirical description as well as a (preliminary) theoretical analysis of the less-studied *yú* comparative construction in Mandarin Chinese. The emphasis is on the following two rather peculiar properties. First, the construction, of the form *X G yú Y*, allows no differential expression to measure the difference between *X* and *Y*. The prohibition arises because the covert degree morpheme μ that comes with a measure phrase (Svenonius and Kennedy 2006) would affix to *G* and move to the same degree head position as *yú*. This leads to an illegitimate, double Case assignment to *Y*. Second, only relative- and minimum-standard gradable predicates, as opposed to maximum-standard gradable predicates, can serve as *G* in a *yú* comparative sentence. Tentatively, I hypothesized that this restriction arises from an evaluative component in the semantics of the *yú* comparative construction. If on the right track, my analysis may well suggest another potential parametric variation of

¹⁶Christopher Piñón (personal communication) pointed out that my hypothesis discussed in this paragraph would predict the negative counterparts of sentences like (22a) and (22b) to be acceptable. Moreover, for the negative versions of the two sentences, small rural roads and the second suitcase would be predicted to be straight and full, respectively. However, the negative counterparts of (22a) and (22b) are ungrammatical (or at best slightly improved in terms of acceptability), which makes it difficult to judge whether the second prediction holds or not. Whether the observations challenge my (tentative) hypothesis or can be explained away independently is a topic that I leave for future research.

comparative constructions, in addition to those already discussed by such researchers as Kennedy (2007a) and Lin (2009): comparative constructions may be evaluative or non-evaluative. The *yú* comparative construction in Mandarin Chinese is evaluative, while all of the other comparative constructions in the language are non-evaluative.

There remain some open questions that call for further research. One question has to do with the stipulation discussed at the end of the previous section: that when a *yú* comparative sentence has a relative-standard gradable predicate as *G*, the (contextual) standard for *G* is identified with *Y*'s degree of being *G*. This stipulation very likely invites learnability complications. How is the identification warranted? How can a child language learner acquire it? Second, *yú* can also occur after an equative phrase, as in *děng yú* 'equal, equivalent to' and *xiāngdāng yú* 'equivalent to, amount to'. Given the range of uses of *yú*, the relation between *yú* in the *yú* comparative construction and *yú* in such equative phrases is worth more investigation.

References

- Chao, Yuen-ren. 1968. *A grammar of spoken Chinese*. Berkeley, CA: University of California Press.
- Erlewine, Michael. 2007. *A new syntax-semantics for the Mandarin bi comparative*. M.A. thesis, University of Chicago, Chicago, IL.
- Grano, Thomas, and Christopher Kennedy. 2011. Mandarin transitive comparatives and the grammar of measurement. *Journal of East Asian Linguistics* 21:219–266.
- Huang, Xiaohui. 1992. Xiandai hanyu chabi geshi de lai yuan ji yanbian [On the origin and evolution of superiority comparatives in contemporary Chinese]. *Zhongguo Yuwen* [Chinese Linguistics] 3:213–224.
- Kennedy, Christopher. 2007a. Modes of comparison. In *Proceedings of 43rd Annual Meeting of the Chicago Linguistics Society*, 141–165. Chicago Linguistics Society, University of Chicago, Chicago, IL.
- Kennedy, Christopher. 2007b. Vagueness and grammar: the semantics of relative and absolute gradable adjectives. *Linguistics and Philosophy* 30:1–45.
- Kennedy, Christopher, and Louise McNally. 2005. Scale structure, degree modification and the semantic typology of gradable predicates. *Language* 81:345–381.
- Larson, Richard K. 1988. On the double object construction. *Linguistic Inquiry* 19:335–391.
- Lassiter, Daniel. 2010. Gradable epistemic modals, probability, and scale structure. In *Proceedings of the 20th Semantics and Linguistic Theory Conference*, 197–215. CLC Publications, Cornell University, Ithaca, N.Y.
- Li, Charles N., and Sandra A. Thompson. 1980. Synchrony and diachrony: The Mandarin comparative. *Folia Historica Linguistica* 1:231–250.
- Li, Xiao. 2009. Degreeless comparatives. Doctoral dissertation, Rutgers University, New Brunswick, NJ.
- Li, Xiao. 2013. Degreeless comparatives: The semantics of differential verbal comparatives in Mandarin Chinese. *Journal of Semantics*. In press.
- Lin, Jo-wang. 2009. Chinese comparatives and their implicational parameters. *Natural Language Semantics* 17:1–27.
- Liu, Luther C.S. 2007. The weak comparative morpheme in Mandarin Chinese. *Concentric: Studies in Linguistics* 33:53–89.
- Liu, Yan. 2004. *Xiandai hanyu bijiao fanchou de yuyi renzhi jichu* [The semantic-cognitive basis of comparatives in Modern Mandarin]. Shanghai: Xuelin Publishers.
- Lü, Shuxiang. 1980. *Xiandai hanyu babai ci* [800 words in Modern Chinese]. Beijing: Shangwu Yinshu Guan.
- Paul, Waltraud. 1993. A non-deletion account of the comparative construction in Mandarin Chinese. *Cahiers de Linguistique-Asie Orientale* 22:9–29.

- Peyraube, Alain. 1989. History of the comparative construction in Chinese from the 5th century B.C. to the 14th century A.D. In *Proceedings of the 2nd International Conference on Sinology*, 589–612. Academia Sinica, Taipei, Taiwan.
- Rett, Jessica. 2008. *Degree modification in natural language*. Doctoral dissertation, Rutgers University, New Brunswick, NJ.
- Svenonius, Peter, and Christopher Kennedy. 2006. Northern Norwegian degree questions and the syntax of measurement. In *Phases of interpretation*, ed. Mara Frascarelli, 133–161. Berlin: Mouton de Gruyter.
- Wei, Pei-chuan. 2007. Some observations on the development of Chinese comparative constructions. *Language and Linguistics* 8:603–637.
- Xiang, Ming 2005. *Some topics in comparative constructions*. Doctoral dissertation, Michigan State University, East Lansing, MI.
- Xie, Zhiguo. 2011a. Degree possession is a subset relation (as well). In *Proceedings of the 15th Sinn und Bedeutung Conference*, 661–676. Saarland University, Saarbrücken, Germany.
- Xie, Zhiguo. 2011b. *The relevance of gradability in natural language: Chinese and English*. Doctoral dissertation, Cornell University, Ithaca, NY.
- Xie, Zhiguo. 2014. The degree use of the possessive verb *yǒu* in Mandarin Chinese: A unified analysis and its theoretical implications. *Journal of East Asian Linguistics* 23:113–156.

The Ohio State University
xie.251@osu.edu,
http://u.osu.edu/xie.251/