

行政院國家科學委員會專題研究計畫 成果報告

漢語比較式條件句的句法和語意之研究

計畫類別：個別型計畫

計畫編號：NSC93-2411-H-009-014-

執行期間：93年08月01日至94年07月31日

執行單位：國立交通大學外國語文學系暨文化研究所

計畫主持人：劉辰生

報告類型：精簡報告

處理方式：本計畫可公開查詢

中 華 民 國 94 年 8 月 17 日

Polarity Items in Chinese Comparative Conditionals

1. Introduction

In Chinese, there are many pairs of correlative words serving to connect clauses together into compound or complex sentences. The *yue* ‘more’ ... *yue* ‘more’ pair is such a case that makes it impossible for the clauses to be independent sentences, as shown by examples in (1) (cf. Chao (1968, 121), Ding et al. (1979), Li and Thompson (1981), Xing (1985), McCawley (1988), Zhao (1999), and Hsiao and Tsao (2002)).

- (1) a. Pingguo yue tian, yue hao chi.
Apple more sweet more good eat
‘The sweeter an apple is, the more delicious it will be.’
- b. *Pingguo yue tian.
Apple more sweet
- c. *Yue hao chi.
More good eat

Interestingly, example (1a) can be rewritten as a conditional without much loss of meaning, as (2) illustrates.¹

- (2) Pingguo yaoshi yue tian, jiu yue hao chi.

Apple if more sweet then more good eat

‘If an apple is sweeter, then it will be more delicious.’

According to Cheng & Huang (1996, 121), Chinese exhibits two paradigms of conditionals with indefinite *wh*-words that have the semantics of donkey sentences, represented by bare conditionals on the one hand and *ruguo*-/*dou*-conditionals on the other hand, as illustrated by (3a-c), respectively.²

(3) a. Shei xian lai, shei xian chi.

Who first come who first eat

‘If x comes first, x eats first.’

b. □ Ruguo ni kandao shei, qing jiao ta/na-ge ren lai jian wo.

If you see who please tell him/her/that-CL person come see me

‘If you see someone, please ask him/her/that person to see me.’

c. Ni jiao shei jinlai, wo dou jian [e].

You ask who enter I all see

‘Whoever you ask to come in, I will see him/her.’

These two types of conditionals, as Cheng and Huang (1996) argue, differ from each other in many ways. For example, Chinese bare conditionals allow in the consequent clause an alternation between a donkey pronoun and an anaphoric *wh*-word which is identical to and refers back to the *wh*-word in the antecedent clause; however, the

ruguo-conditionals cannot host a *wh*-word in the consequent clause but allow a pronoun or a definite NP. These facts are shown by sentences in (4) (cf. Lin (1996, 166)).³

- (4) a. Shang ci shei mei jiang wan, jintian jiu you shei/ta/na-ge ren
 Last time who not talk-finish today then with who/him/that-CL person
 xian kaishi.
 first start
 ‘Today let’s begin with whoever did not finish his/her talk last time.’
- b. *Shei xian lai, [e] xian chi.
 Who first come first eat
- c. Ruguo ni kandao shei, qing jiao ta/na-ge ren/[e] lai jian wo.
 If you see who please tell him/her/that-CL person come see me
 ‘If you see someone, please ask him/her to come see me.’
- d. *Ruguo ni kandao shei, qing jia shei lai jian wo.
 If you see who please ask who come see me

The purpose of this paper is two-fold: First, we shall argue that the Chinese comparative conditional in fact is a type of bare conditionals and the correlative adverb *yue* ‘more’ inside is a polarity-like event variable bound by the necessity operator through unselective binding. The syntactic tree structure of Chinese comparative conditionals can be splitted into a tripartite representation by assuming Tsai’s (2001) Extended Mapping Hypothesis. This proposal explains well the following questions aroused by

Chinese comparative conditionals: (A) Why is it not necessary for *yue*'s 'more's' to occur in different clauses in Chinese comparative conditionals? (B) Why do Chinese comparative conditionals as well as bare conditionals show the anti-c-command effect? And (C) why does the situation type of predicate of Chinese comparative conditionals have to be unbounded? Second, we shall show how Chinese differs from English in forming comparative conditionals, and the typological distinction between Chinese and English in this aspect can be reduced to one of the most important and familiar features of Chinese *wh*-questions: Chinese *wh*-questions are formed by leaving *wh*-words in situ while English by moving *wh*-words to sentence-initial positions (cf. Huang (1982)).

This paper proceeds as follows: Section 2 begins with a general discussion on Chinese bare conditionals, *ruguo*-/*yaoshi*-conditionals and Chinese comparative conditionals, and then reaches our claim that the Chinese comparative conditional is a type of bare conditionals. Two preliminary concepts, Beck's (1997) analysis on English/German comparative conditionals and Cheng and Huang's (1996) proposal on Chinese bare conditionals, will be introduced in section 3, and some remarks on Beck (1997) will be addressed there. Based on these two concepts, the proposal will be made in section 4. In section 5, a typological study on how Chinese differs from English in constructing comparative conditionals will be provided, and finally the conclusion will be stated in section 6.

2. Chinese Comparative Conditionals as a Type of Bare Conditionals

In this section, we shall argue that the Chinese comparative conditional in fact is a type

of bare conditionals by showing that Chinese comparative conditionals behave similar to bare conditionals but different from *ruguo-/yaoshi*-conditionals in syntax and semantics. First, in Chinese comparative conditionals or bare conditionals, there must be at least one pair of (identical) correlative words, but the same does not always hold in *ruguo-/yaoshi*-conditionals. This is illustrated by the contrast between (5a-c) and (6a-c) (cf. Cheng and Huang (1996, 132) and Lin (1996, 166)).⁴

- (5) a. Pingguo yue tian, yue hao chi.
 Apple more sweet more good eat
 ‘The sweeter an apple is, the more delicious it will be.’
- b. Shei xian lai, shei xian chi.
 Who first come who first eat
 ‘If x comes first, then x eats first.’
- c. Shei pao-de yue kuai, shei yue you keneng de jiang.
 Who run-DE more fast who more have possible win prize
 ‘The faster x runs, the more likely it is for x to win the prize.’
- (6) a. *Pingguo yue tian, hao chi.
 Apple more sweet good eat
- b. *Shei xian lai, ta/na-ge ren/[] xian chi.
 Who first come he/that-CL person first eat
- c. Yaoshi/Ruguo shei xian lai, ta/na-ge ren/[] jiu xian chi.

If who first come he/that-CL person then first eat

‘If x comes first, then x eats first.’

Second, although *ruguo-/yaoshi*-conditionals allow the counterfactual reading, both Chinese comparative conditionals and bare conditionals do not, as the contrast between (7) and (8a-b) shows (See Culicover and Jackendoff (1999, 545) for the observation that in English *if*-clauses but not comparative conditionals may be counterfactual)).⁵

(7) Yaoshi/Ruguo ni zuotian qu-le Riben, jintian jiu bu hui zai zhe-er.

If you yesterday go-ASP Japan today then not will at here

‘If you had gone to Japan yesterday, you will not be here today.’

(8) a. ?*Ni zuotian yue zao chufa, jintian yue zao jiandao ni-de nuer.

You yesterday more early leave today more early see your daughter

‘The earlier you left yesterday, the earlier you can see your daughter today.’

b. Shei zuotian xian lai, shei jintian jiu keyi xian zuo.

Who yesterday first come who today then can first leave

‘If x came first yesterday, then x can leave first today.’

That is to say, example (7) is felicitous under the scenario: You did not go to Japan yesterday, and you are here today. However, (8a) is infelicitous under the scenario: You

did not leave earlier yesterday, and you do not see your daughter earlier today. Since example (8b) only has a multi-case reading which allows more than one individual to satisfy the restrictive clause, it is impossible for the donkey pronoun *shei* ‘who’ to pick out a unique reference (cf. Kadmon (1987) and Lin (1996, 191)). (8b) thereby can never get the counterfactual reading.

Third, as Cheng & Huang (1996) argue, bare conditionals and *ruguo/yaoshi*-conditionals differ from each other in that the former does not allow *you* ‘have’ to precede the first correlative *wh*-word while the latter does, as the contrast between (9a) and (9b) indicates.⁶

- (9) a. Yaoshi/Ruguo (you) shei qiao men, jiu jiao ta jinlai.
 If have who knock door then ask him/her come-in
 ‘If someone knocks at the door, you then ask him/her to come in.’
- b. *You shei xian lai, shei xian chi.
 Have who first come who first eat
 ‘If x comes first, x eats first.’

Similar to bare conditionals in this aspect, Chinese comparative conditionals do not allow *you* ‘have’ to precede the first correlative adverb *yue* ‘more’, as the ungrammaticality of (10) illustrates.

- (10) Zhangsan (*you) yue pao, yue kuai.

Zhangsan have more run more fast

Fourth, for *ruguo-/yaoshi*-conditionals, the word order between the antecedent and the consequent clause can be shifted without much loss of meaning, as (11a-b) illustrate (See Culicover and Jackendoff (1999) for a similar observation on English *if*-conditionals in this aspect).

- (11) a. Yaoshi/Ruguo ni bu qu de hua, wo jiu bu qu.
If you not go DE speech I then not go
'If you will not go, then I will not go.'
- b. Wo bu qu, yaoshi/ruguo ni bu qu de hua.
I not go if you not go DE speech
'I will not go if you will not.'

However, Chinese comparative conditionals as well as bare conditionals do not allow such kind of word order shift because word order shift will result in either meaning change or ungrammaticality, as examples in (12)-(13) show.

- (12) a. Tianqi yue re, shui he-de yue duo.
Weather more hot water drink-DE more more
'The hotter it is, the more water people will drink.'
- b. ?*Shui he-de yue duo, tianqi yue re.

Water drink-DE more more weather more hot

‘?*The more water people drink, the hotter it will be.’

(13) a. Shei xian lai, shei xian chi.

Who first come who first eat

‘If x comes first, then x eats first.’

b. Shei xian chi, shei xian lai.

Who first eat who first eat

‘If x eats first, x comes first.’

Fifth, a Chinese comparative conditional may consist of more than two clauses; for example, (14a), taken from Chao (1968, 121), consists of three clauses, and it can be interpreted as either by having the first two clauses as the antecedent part but the last one the consequent part, or by having the first one as the antecedent part while the last two the consequent part, as shown by (14b-c), respectively.⁷

(14) a. Sangzi yue da, hua yue duo, ren yue bu ting.

Voice more loud talk more long people more not listen-to

b. Sangzi yue da, hua yue duo, ren jiu yue bu ting.

Voice more loud talk more long people then more not listen-to

‘If the voice is louder and the talk is longer, then less people will listen.’

c. Sangzi yue da, hua jiu yue duo, erqie ren jiu yue bu ting.

Voice more loud talk then more long and people then more not listen-to
'If the voice is louder, then the talk will be longer and less people will
listen.'

Likewise, Chinese bare conditionals, for instance (15a), may consist of more than two
clauses, and allow ways of interpretation similar to those shown by (14a), too.

- (15) a. Shei xian lai, shei xian chi, shei xian zuo.
Who first come who first eat who first leave
- b. Shei xian lai, shei jiu xian chi, erqie shei jiu xian zuo.
Who first come who then first eat and who then first leave
'If x comes first, then x eats first and leaves first.'
- c. Shei xian lai, shei xian chi, shei jiu xian zuo.
Who first come who first eat who then first leave
'If x comes first and eats first, then x leaves first.'

However, *yaoshi-/ruguo*-conditionals do not have a counterpart of either (14a) or (15a)
that allows such a flexible range of interpretations, as the ungrammaticality of (16)
illustrates.

(16) *Yaoshi Zhangsan qu meiguo, Lisi qu Yingguo, Wangwu qu Deguo.

If Zhangsan go America Lisi go British Wangwu go Germany

Thus far, it is plausible for us to say that Chinese comparative conditionals should not be considered a type of *yaoshi-/ruguo*-conditionals. In the following, we shall point out that although Chinese comparative conditionals look like bare conditionals, actually the two are not totally identical to each other. First, as Lin (1996) argues, any *wh*-phrase but the reason adverb *weishenme* ‘why’ may enter the construction of bare conditionals; namely, the *wh* ... *wh* pair in bare conditionals can be the *shei* ‘who’ ... *shei* ‘who’, the *zenme* ‘how’ ... *zenme* ‘how’, ... the *duo* ‘how’ ... *duo* ‘how’ pair, and ... etc. Besides, more than one pairs of *wh*-words are allowed in bare conditionals (cf. Lin (1996, 176). These are illustrated by examples in (17)-(18).

(17) a. Shei xian lai, shei xian chi.

Who first come who first eat

‘If x comes first, x eats first.’

b. Ni zenme gen wo shuo de, wo jiu shi zenme gen ta shou de.

You how with me say SFP I then be how with him say SFP

‘I told him the same way you told me.’

c. Nimen dian-li you duo da hao de chenshan, jiu na duo da

You store-in have how big size DE shirt then take how big

hao de chenshan gei wo.

size DE shirt give me

‘Get me the biggest possible shirt that your store has.’

- d. *Ni weishenme mai zhe-ben shu de, wo jiu weishenme mai zhe-ben shu.
 You why buy this-CL book SFP I then why buy this-CL book

- (18) a. Ni xiang shei jie-le duoshao qian, ni jiu bixu huan gei
 You from who borrow-ASP how-much money you then must return give
 shei duoshao qian.

who how-much money

‘For all x, y, x a person, y an amount of money that you borrowed from x,
 you must return y to x.’

- b. Shei ma shei, shei jiude anwei shei.

Who scold who who must console who

‘If x scolds y, then x has to console y.’

Besides, Chinese bare conditionals not only allow an alternation between an anaphoric *wh*-word and a donkey pronoun in the consequent clause, but also shows the matching requirement: The number of *wh*-phrases in the left clause must match the number of *wh*-phrases or NPs anaphoric to it in the right clause (cf. Cheng and Huang (1996) and Lin (1996), and Jiang and Pan (2004)).⁸ Furthermore, *wh*-words and their anaphoric counterparts must appear in different clauses. Namely, the former in the antecedent clause while the latter in the consequent clause.

- (19) a. Shei xian lai, shei/*ta/*na-ge ren xian chi.

Who first come who/*he/*she/*that-CL person first eat

‘If x comes first, x eats first.’

- b. Ni xihuan shei, wo jiu piping shei/*ta/*na-ge ren.

You like who I then criticize who/*him/*her/*that-CL person

If you like x, then I will criticize x.’

- c. Shei xian lai, wo (jiu) xian da shei/*ta/*na-ge ren.

Who first come I (then) first hit who/*him/*her/*that-CL person

‘If x comes first, then I will hit x first.’

- d. Ni xihuan shei, shei (jiu) daomei.

You like who who (then) unlucky

‘Whoever you like will be unlucky.’

- e. Shang ci shei mei jiang wan, jintian jiu you shei/ta/na-ge ren

Last time who not talk-finish today then with who/him/that-CL person

xian kaishi.

first start

‘Today let’s begin with whoever did not finish his talk last time.’

Likewise, any *wh*-phrase but the reason adverb *weishenme* ‘why’ may enter the construction of Chinese comparative conditionals.⁹ Although more than one pairs of correlative words are allowed in Chinese comparative conditionals, only one *yue* ‘more’ ... *yue* ‘more’ pair is allowed. These are shown by sentences in (20).

- (20) a. *Ni yue pao-de yue kuai, jiu hui yue jue-de yue lei.
 You more run-DE more quickly then will more feel-DE more tired
- b. Shei yue zao dao, shei yue zao zou.
 Who more early arrive who more early leave
 ‘The earlier x arrives, the earlier x leaves.’
- c. Ni yue zenme duidai ta, wo (jiu) yue zenme duidai ni.
 You more how treat him I then more how treat you
 ‘The more x-way you treat him, the more x-way I will treat you.’
- d. *Ni yue weishenme lai, wo yue weishenme bu rang ni lai.
 You more why come I more why not let you come

In addition, since there is no donkey-pronoun correspondent for *yue* ‘more’, no alternation between an anaphoric *yue* ‘more’ and a donkey pronoun is found in the consequent clause of Chinese comparative conditionals.

- (21) *Zhangsan yue pao, ta kuai.

Zhangsan more run pronoun quickly

Moreover, it is not necessary for *yue*’s ‘more’s’ in Chinese comparative conditionals to occur in different clauses (i.e., the antecedent and the consequent clause). The *yue*’s ‘more’s’ can appear either in different clauses (i.e., the antecedent and the consequent clause), the same clause (more precisely one in the complex NP subject, and the other in

the predicate), or a topic-comment construction (one in the topic portion; the other in the comment portion), as illustrated by (22a-c), respectively (cf. Hsiao and Tsao (2002, 822)).

- (22) a. [CP Pingguo yue tian], [CP yue hao chi].
 Apple more sweet more good eat
 ‘The sweeter an apple is, the more delicious it will be.’
- b. [S [NP Yue tian de pingguo] [VP yue hao chi]].
 More sweet DE apple more good eat
 ‘lit: The sweeter an apple is, the more delicious it will be.’
- c. [Topic/NP Yue hao de shu], [Comment yue duo ren kan].
 More good DE book more more people read
 ‘The better a book is, the more people will read it.’

Hence, Chinese comparative conditionals do not show the matching requirement as bare conditionals do.

Second, although it is not necessary for *yue*’s ‘more’s’ in Chinese comparative conditionals to occur in different clauses, the *yue*’s ‘more’s’ inside a Chinese comparative conditional cannot c-command each other, as the ungrammaticality of (23a) shows (cf. Hsiao and Tsao (2002, 820-822)).

- (23) a. *Ta yue xihuan [yue gui de dongxi].

He more like more expensive DE things

b. Yue gui de dongxi, ta yue xihuan.

More expensive DE thing he/she more like

‘The more expensive it is, the more s/he likes it.’

Namely, Chinese comparative conditionals show the anti-c-command effect. The same also obtains in bare conditionals where *wh*-words and their anaphoric counterparts must appear in different clauses (cf. (19a-e)).

Third, although the contrast between (24a-b) and (25a-b) seems to indicate that the morpheme *jiu* ‘then’ is always deletable in Chinese comparative conditionals but not in bare conditionals, (26a-b) show that, in bare conditionals or comparative conditionals, the morpheme *jiu* ‘then’, when occurring in cases where long-distance dependence between *wh*-words/*yue*’s ‘more’s’ is found, cannot be deleted.¹⁰

(24) a. Ni xihuan shei, wo *(jiu) xihuan shei.

You like who I *(then) like who

‘If you like x, then I will like x.’

b. Shei xian lai, shei (jiu) xian chi.

Who first come who (then) first eat

‘If x comes first, then x eats first.’

(25) a. Pingguo yue tian, (jiu) yue hao chi.

Apple more sweet (then) more good eat

‘The sweeter an apple is, the more delicious it will be.’

b. Ni chi-de yue duo, (jiu) hui yue pang o!

You eat-DE more more then will more fat SFP

‘The more you eat, the fatter you get.’

(26) a. Shei yao zhe puo chang, wo *(jiu) xiangxin ni hui rang gei shei.

Who want this broken factory I then believe you will give to who

‘If x wants this broken factory, I believe you give it to x.’

b. Ni chi-de yue duo, wo *(jiu) xiangxin ni hui zhang-de yue gao.

You eat-DE more more I then believe you will grow-DE more tall

‘The more you eat, the taller I believe you will grow.’

Fourth, the situation type of predicate of bare conditionals can be a state, an activity, a semelfactive, an achievement, or an accomplishment, as shown by (27a-e), respectively.

(27) a. Shei bijiao piaoliang, shei jiu hui bei xuan shang. (state)

Who more beautiful who then will BEI select up

‘If x is more beautiful, then x will be selected.’

b. Shei xian pao, shei jiu hui daomei. (activity)

Who first run who then will unlucky

‘If x leaves first, x will be unlucky.’

- c. Shei xian qiao men, shei jiu hui daomei. (semelfactive)

Who first knock door who then will unlucky

‘Whoever knocked at the door first will be unlucky.’

- d. Shei-de chongwu xian si, shei jiu de pei qian. (achievement)

Whose pet first die who then must compensate money

If x’s pet dies first, then x has to compensate.’

- e. Shei xian chi-wan, shei jiu keyi xian zou. (accomplishment)

Who first eat-finish who then can first leave

‘If x finishes eating first, then x can leave first.’

In contrast, the situation type of predicate of Chinese comparative conditionals must be unbounded such as a state, an activity, or a derived multiple-event activity consisting of repeated achievement or semelfactive events, as the contrast between (28a-d) and (28e) illustrates (cf. Hsiao and Tsao (2002, 827)).¹¹

- (28) a. Nuhaizi yue da, (jiu) yue piaoliang. (state)

Girl more big (then) more beautiful

‘The older a girl is, the more beautiful she will be.’

- b. Ni yue zui (ta), ta yue pao. (activity)

You more chase he/she he/she more run

‘The longer you keep chasing him/her, the longer he/she keeps running.’

- c. Men yue qiao, yue xiang. (semelfactive)
 Door more knock more loud
 ‘The longer you keep knocking at the door, the louder it will be.’
- d. Shibing yue si, yue duo. (achievement)
 Soldier more die more more
 ‘lit: In a series of battles, the later it occurs, the more soldiers will die.’
- e. *Ni yue chi-wan, duzi yue bao. (accomplishment)
 You more eat-finish stomach more full

Given the unboundedness requirement shown by the predicate of Chinese comparative conditionals, we would expect the aspect marker *-le* and *-guo* not to occur in Chinese comparative conditionals, and the fact bears out this expectation.¹²

- (29) a. *Pingguo, ni yue chi-le yi-kou, ni yue xihuan.
 Apple you more eat-ASP one-CL you more like
- b. *Pingguo, ni yue chi-guo, yue xihuan.
 Apple you more eat-ASP more like
- c. Ni yue duo-zhe ta, ta yue huaiyi ni.
 You more hide-ASP him/her he/she more suspect you
 ‘The longer you keep hiding yourself from him/her, the more he/she will suspect on you.’

Another consequence of the unboundedness requirement shown by Chinese comparative conditionals is that, unlike bare conditionals in which both the negation marker *bu* ‘not’ and *mei* ‘not’ can occur, it is the negation marker *bu* ‘not’ but the negation marker *mei* ‘not’ that can appear in Chinese comparative conditionals, as the contrast between (30a-b) and (31a-b) shows.¹³

(30) a. Shei bu lai, shei daomei.

Who not come who unlucky

‘If x does not come, x will be unlucky.’

b. Zuotian shei mei lai, jintian shei jiu hui daomei.

Yesterday who not come today who then will unlucky

‘If x did not come yesterday, x will be unlucky today.’

(31) a. Xiaohaizi yue bu tinghua, yue bu gai li ta.

Child more not well-behaved more not should care him/her

‘The worse a child behaves, the less we should care about him/her.’

b. *Zhangsan yue mei chouyan, ni yue bu gai mai yan song ta.

Zhangsan more not smoke you more not should buy cigarette give him

According to Lin (2003), the distribution of the Chinese negation marker *bu* ‘not’ and *mei* ‘not’ is aspectually sensitive. The negation marker *bu* ‘not’ aspectually selects as its complement a stative situation that requires no input of energy in order to obtain that

situation while the negation marker *mei* ‘not’ aspectually selects a dynamic and bounded event as its complement. So, the ungrammaticality of (31b) can be reduced to violation of the unboundedness requirement shown by Chinese comparative conditionals.

Fifth, Lin (1996, 191) points out that bare conditionals show the one-case vs multi-case distinction, as the contrast between (32a) and (32b) shows (cf. Kadmon (1987)).

(32) a. Shei xian lai, shei xian chi.

Who first come who first eat

‘If x comes first, then x eats first.’

b. Shang ci shei mei jiang-wan, jintian jiu you ta xian kaishi.

Last time who not talk-finish today then with him first begin

‘Today let us begin with whoever did not finish his talk last time.’

(32a) only has a multi-case reading which in principle allows more than one individual to satisfy the restrictive clause. So, it is impossible for the donkey pronouns in (32a) to pick out a unique referent. This is in contrast with (32b). Examples like (32b) can be true in a situation where a unique individual satisfies the restrictive clause.¹⁴ Likewise, the contrast between (33a) and (33b) indicates that Chinese comparative conditionals also show the one-case vs. multi-case reading distinction.

- (33) a. Zuijin Zhangsan yue pao, yue man.
 Recently Zhangsan more run more slow
 ‘Recently, the more Zhangsan runs, the slower he is.’
- b. Zhangsan shang ci yue pao, yue man.
 Zhangsan last time more run more slow
 ‘Last time, the longer Zhangsan kept running, the slower he was.’

(33a) allows more than one (unbounded) running activity to satisfy the antecedent clause; however, (33b) is true only in a situation where a unique (unbounded) running activity satisfies the antecedent clause. The contrast between (33a) and (33b) is due to the time adverbial *shang ci* ‘last time’. Given this time adverbial, the antecedent clause in (33b) describes an actual event rather than mere possibilities as the antecedent clause in (33a) does.¹⁵

In sum, although Chinese comparative conditionals look like a type of bare conditionals, they still differ from each other in the following ways: (A) Although more than one pair of correlative words is allowed in Chinese comparative conditionals, only one *yue* ‘more’ ... *yue* ‘more’ pair is allowed, and the anaphoric *yue* ‘more’ must be identical to the *yue* ‘more’ in the antecedent clause, (B) no alternation between *yue* ‘more’ and the donkey-pronoun/definite description/[] is allowed, (C) in Chinese comparative conditionals it is not necessary for the *yue*’s ‘more’s’ involved to appear in different clauses so that Chinese comparative conditionals do not show the matching requirement as bare conditionals do, and (D) the predicate co-occurring with *yue* ‘more’

must be unbounded. Interestingly, the first two characteristics shown by Chinese comparative conditionals are reminiscent of the properties of bare conditionals listed in Cheng and Huang (1996, 132):

- (34) a. The donkey anaphor must take the form of a *wh*-word.
b. The donkey *wh*-word must be identical to the *wh*-word in the antecedent clause.
c. There must be an element in the consequent clause referring back to the *wh*-word in the antecedent clause.

Since the Chinese comparative conditional looks like a bare conditional, in section 3 some basic concepts related to comparative conditionals and bare conditionals will be introduced as preliminaries for the proposal that we will make in section 4.¹⁶

3. Preliminary Concepts for the Proposal

Before proposing our analysis for Chinese comparative conditionals, we shall introduce Beck's (1997) semantic analysis on English/German comparative conditionals, especially the semantics of the German comparative conditional morpheme *je*, and Cheng and Huang's (1996) proposal on Chinese bare conditionals as basic concepts relevant to our discussion here.

3.1. Beck (1997)

Beck (1997, 234) follows von Stechow (1994) in analyzing comparative conditionals as in (35a) as correlative constructions. So, (35a) has a syntactic structure as in (35b), in which the *je*-clause (when the sentence starts with it) is in the same position as a left-dislocated element, presumably adjoined to CP.

- (35) a. Je schneller Hans rennt, umso schneller wird er müde.
 The faster Hans runs, the faster gets he tired
 ‘Hans will get tired faster, the faster he runs.’
- b. [CP [CP [DegP *je* [Deg’ schneller]] [C’ Hans rennt]] [CP [DegP *umso* [Deg’ schneller]] [C’ wird er müde]]]

In other words, the subordinate clause and the main clause are sentential projections, presumably CPs, and semantically each of them contains a comparative. Their specifier positions (i.e., [Spec, CP]) contain the *je*-phrase and the *umso/desto*-phrase, respectively.¹⁷ And Beck (1997, 234) suggests that the same presumably holds for English *the*-phrases (cf. Thiersch (1982)).

Furthermore, as Beck (1997, 236-237) argues, the semantic interpretations of (36a-c) can be roughly formulated as (37a-c), in which we always have universal quantification over pairs and parts of the pair can be worlds as in (37a), individuals as in (37b), or times as in (37c).

- (36) a. Je besser Otto vorbereitet ist, desto besser wird sein Referat werden.

The better Otto prepared is the better will his talk become

‘The better Otto is prepared, the better his talk will be.’

- b. Je schleimiger ein Anwalt aussieht, desto ergolgreicher ist er.

The slimy-er an attorney look the successful-er is he

‘The slimier an attorney looks, the more successful he is.

- c. Uli war umso müder, je heißer es war.

Uli was the tired-er the hotter it was

‘The hotter it was, the more tired Uli was.’

- (37) a. $\forall w_1, w_2$ [Otto is better prepared in w_1 than in w_2] \rightarrow [Otto’s talk is better in w_1 than in w_2].
- b. $\forall x, y$ [attorney(x) & attorney(y) & x looks slimier than y] \rightarrow [x is more successful than y].
- c. $\forall t_1, t_2$ [it was hotter at t_1 than at t_2] \rightarrow [Uli was more tired at t_1 than at t_2].

(37a-c) imply that the global structure of these interpretations is that of a conditional. The subordinate clause always enters into the restriction, similarly to the *if*-clause in conditionals; the nuclear scope is provided by the matrix clause. More interestingly, in comparative conditionals as in other conditional sentences, universal quantification seems to be a default because universal quantification can be overwritten by an overt adverb of quantification (cf. Beck (1997, 238)).

- (38) a. Meistens ist ein Kletterer umso besser, je starker er ist.
 Mostly is a climber the better the stronger he is
 ‘The stronger a climber is, the better he usually is.’
- b. Otto ist ein Mathebuch umso langweiliger, je dicker es ist.
 Often is a math book the boring-er the fatter it is
 ‘A math book is frequently the more boring, the fatter it is.’
- c. Meistens war Otto umso müder, je heißer es war.
 Mostly was Otto the tired –er the hotter it was
 ‘The hotter it was, the more tired Otto usually was.’

So, Beck (1997, 239) suggests that the quantificational force comes from an implicit or overt adverb of quantification, which takes the subordinate clause as its first argument, and the matrix clause as its second argument. Since the comparison in the subordinate clause of (36a) (repeated as (39a)), for instance, is between Otto’s preparedness in two different worlds, the meaning of (39a), under Beck’s (1997) analysis, is given in (39b).¹⁸

- (39) a. je besser Otto vorbereitet ist,
 ‘The better Otto is prepared,’
- b. $\exists d[d > 0 \ \& \ \text{the max } d_1[\text{well}(d_1, \lambda x[\text{prepared}_{w_1}(x)])(\text{Otto})] = d + \text{the max } d_2[\text{well}(d_2, \lambda x[\text{prepared}_{w_2}(x)])(\text{Otto})]]$

Beck (1997, 248) further suggests that the comparative conditional morpheme *je* in (39a) denotes a relation between a pair of possible worlds, the comparative morpheme *-er* and a relation between worlds and degrees, as shown by (40).

$$(40) \quad [[je']](w_1, w_2) ([[er']]) (D_{\langle s, d, t \rangle}) \text{ iff } \exists d[d > 0 \ \& \ [[er']](D(w_1))(d)(D(w_2))]$$

Namely, the *je*-relation holds just in case there is a difference degree *d* such that the relation denoted by the comparative morpheme holds between the relational argument applied to the first world in the pair, the difference degree *d* and the relational argument applied to the second world. So, the transparent LF of (39a) is like (41).

$$(41) \quad [_{CP} [_{DegP} je + -er]_i [C: Otto \text{ ist } t_i \text{ gut vorbereitet}]] \\ \text{'je'}(w_1, w_2)(-er')(\lambda w \lambda d[\text{well}(d, \lambda x[\text{prepared}_w(x)])(Otto)])'$$

Hence, Beck (1997, 249) gives the complete LF for (36a) in (42a), and its interpretation in (42b).

$$(42) \quad \text{a. } [_{CP} \forall [_{CP} [_{DegP} je'(w_1, w_2) + -er']_i [C: Otto \text{ ist } t_i \text{ gut vorbereitet}]] [_{CP} [_{DegP} \\ je'(w_1, w_2) + -er]_i [C: Otto's \text{ Referat wird } t_i \text{ gut werden}]]] \\ \text{'}\forall (\lambda w_1, w_2[je'(w_1, w_2)(-er')(\lambda w \lambda d[\text{well}(d, \lambda x[\text{prepared}_w(x)])(Otto)])]) \\ (\lambda w_1, w_2[je'(w_1, w_2)(-er')(\lambda w \lambda d[\text{good}_w(d, Otto's_talk)])])\text{'}$$

$$\text{b. } \forall w_1, w_2 [\exists d[d > 0 \ \& \ \text{the max } d_2[\text{well}(d_2, \lambda x[\text{prepared}_{w_2}(x)])(Otto)] = d +$$

the max d_1 [well(d_1 , λx [prepared_{w1}(x)])(Otto)]]] \rightarrow

$\exists d'$ [$d' > 0$ & [[the max d_2 [good_{w2}(d_2 , Otto's_talk)] = d' + the max
 d_1 [good_{w1}(d_1 , Otto's_talk)]]]]

Beck's (1977) proposal not only accounts for English/German comparative conditionals well but also provides a very convincing analysis for the semantics of comparative conditionals, especially that of the comparative conditional morpheme *je*. However, insightful Beck's (1997) analysis is, we cannot directly apply her analysis to Chinese comparative conditionals because it is not necessary for Chinese comparative conditionals to consist of two clauses, for example (22b-c), repeated as (43a-b).

(43) a. [S [NP Yue tian de pingguo] [VP yue hao chi]].

More sweet DE apple more good eat

'The sweeter an apple is, the more delicious it is.'

b. [Topic/NP Yue hao de shu], [Comment/IP yue duo ren kan].

More good DE book more more people read

'The better a book is, the more people will read it.'

Since there is no [Spec, CP] position available for *yue* 'more' in *yue tian de pingguo* 'more sweet DE apple' as in (43a) or *yue hao de shu* 'more good DE book' as in (43b), examples like (43a-b) can never be dealt with in a way the same as that Beck (1997) does for (36a) (cf. (42a-b)).¹⁹ So, if Beck's (1997) analysis is on the right track for

English/German comparative conditionals, an analysis for Chinese comparative conditionals, in addition to being able to give an interpretation for examples like (1a) in a way similar to that Beck (1997) does for (36a), must be able to account for cases like (43a-b).

Given that Chinese comparative conditionals look like bare conditionals, in the following we shall briefly introduce Cheng and Huang's (1996) analysis on Chinese bare conditionals as preliminary for the proposal we shall make in section 4.

3.2. Cheng and Huang (1996)

Assuming Cheng's (1991, 1995) proposal that *wh*-words in Chinese are polarity items – indefinite NPs which do not have inherent quantificational force but instead acquire their quantificational force in context, through the external element(s) that license and/or bind them, Cheng & Huang (1996, 132-133) unifyingly analyze antecedent and anaphoric *wh*-phrases in bare conditionals like (44a) as indefinite or polarity items introducing free variables (cf. Heim (1982), Nishigauchi (1990), Li (1992), and Tsai (1994)). These *wh*-phrases, as they suggest, are licensed and unselectively bound by an implicit necessity operator. The left *wh*-clause of bare conditionals is considered the restriction of an operator, and the right *wh*-clause the nuclear scope. Hence, (44a) is interpreted as in (44b), in which the default universal operator binds not only the individual variables introduced by the *wh*-phrases but also the situation variables in the restriction and the nuclear scope.

- (44) a. Shei xian lai, shei xian chi.
 Who first come who first eat
 ‘If x comes first, x eats first.’
- b. $\forall_{x,s} [x \text{ comes first in } s] \rightarrow [x \text{ eats first in } s]$

Simply put, Chinese bare conditionals with *wh*-words are interpreted by universal quantification involving an unselective binder that has scope over both the antecedent and consequent clauses. As Cheng and Huang (1996) argue, this explains why the *wh*-words must appear in pairs in Chinese bare conditionals – if there is one *wh*-word in the antecedent clause, there must be another *wh*-word of the same kind in the consequent clause. Namely, the number of *wh*-words in the antecedent clause must match the number of *wh*-words anaphoric to them. This matching requirement, as Cheng & Huang (1996) suggest, in fact follows from the following two assumptions from DRT:²⁰

- (45) a. Quantificational elements create tripartite structures of the form $Q [A] [B]$, where A is the restriction of Q (or its left argument) and B is the (nuclear) scope of Q (or its right argument) (cf. Heim (1982)).
- b. *If*- and *when*-clauses form the restriction of a (possibly null) adverb of quantification (see Kratzer (1986)).

(46) Prohibition Against Vacuous Quantification (cf. Kratzer (1989, 155))

In a tripartite structure of quantification $Q [A] [B], [X_1, X_2, \dots, X_n]$ (where $n \geq 1$) are variables in A. For every variable in A, there must be an identical variable in B.

Assuming Cheng and Huang's (1996) analysis on Chinese bare conditionals, we will immediately encounter the following questions if we consider Chinese comparative conditionals a type of bare conditionals: First, in bare conditionals, *wh*-phrases introduce variables bound by the default operator through unselective binding. So, what introduces the variables bound by the default operator in Chinese comparative conditionals? Moreover, what is the operator?

Second, why is it not necessary for *yue*'s 'more' to occur in different clauses in a Chinese comparative conditional (cf. (43a-b))?

Third, why do Chinese comparative conditionals as well as bare conditionals show the anti-c-commanding effect?

Fourth, why does the situation type of predicate of Chinese comparative conditionals have to be unbounded (cf. See the contrast between (27a-e) and (28a-e))?

4. Analysis: *Yue* 'more' as a Polarity-like Item

In a nutshell, my proposal is that the Chinese comparative conditional is a type of bare conditionals whose syntactic tree structure can be splitted into a tripartite representation, and the comparative conditional morpheme *yue* 'more', categorically being an adverb, is a polarity-like event variable bound by the necessity operator through unselective

binding (cf. Kamp (1981), Heim (1982), Nishigauchi (1990), Diesing (1992), Li (1992), Cheng (1995), Cheng and Huang (1996), Lin (1996, 1998), Beck (1997), and Tsai (2001)). This hypothesis is inspired by the following facts shown by Chinese comparative conditionals. First, like English comparative conditionals, the semantic interpretations of Chinese comparative conditional (47a-c) can be roughly formulated as (48a-c), in which we always have universal quantification over pairs and parts of the pair can be world as in (46a), individual as in (54b), or times as in (47c) (cf. (37a-c) and Beck (1997, 236-237)).²¹

- (47) a. Zhangsan yue kao, yue hao. (world)
 Zhangsan more test more good
 ‘The more Zhangsan was tested, the better his grade will be.’
- b. Nuhaizi yue da, yue piaoliang. (individual)
 Girl more big more beautiful
 ‘The older a girl is, the more beautiful she is.’
- c. Tianqi yue re, shui he-de yue duo. (time)
 Weather more hot water drink-DE more more
 ‘The hotter it is, the more water people will drink.’
- (48) a. $\forall w_1, w_2$ [Zhangsan is tested later in w_1 than in w_2] \rightarrow [Zhangsan is tested better in w_1 than in w_2].
- b. $\forall x, y$ [girl(x) & girl(y) & x is older than y] \rightarrow [x is more beautiful than y].

- c. $\forall t_1, t_2$ [It was hotter at t_1 than at t_2] \rightarrow [People drink more water at t_1 than at x_2].

As (48a-c) illustrate, the subordinate clause always enters into the restriction in a way the same as that the *if*-clause in conditionals does, and the nuclear scope is provided by the matrix clause. These semantic characteristics lead us to say that, in Chinese comparative conditionals, universal quantification seems to be a default. The following two facts further work in concert to suggest that Chinese comparative conditionals involve unselective binding: (A) Since universal quantification in Chinese comparative conditionals can be overwritten by an overt adverb of quantification, it is plausible for us to suggest that the quantificational force of Chinese comparative conditionals in fact comes from an adverb of quantification which takes the subordinate clause as its first argument and the matrix clause as its second argument, and (B) the number of variables quantified may be different. These facts are exemplified by (49a-c)-(50a-b), respectively.

- (49) a. Nuhaizi tongchang yue da, yue piaoliang.

Girl always more old more beautiful

‘The older a girl is, the more beautiful she usually is.’

- b. Nuhaizi daduo yue da, yue piaoliang.

Girl mostly more old more beautiful

‘In most cases, the older a girl is, the more beautiful she will be.’

c. Nuhaizi youshihou yue da, yue piaoliang.

Girl sometimes more old more beautiful

‘Sometimes, the older a girl is, the more beautiful she will be.’

(50) a. Nuhaizi yue gao, yue piaoliang, (jiu) yue rongyi bei xuanshang.

Girl more tall more beautiful then more easy BEI select

‘If a girl is taller and more beautiful, then it is more easy for her to be selected.’

b. $\forall x, y$ [girl(x) & girl(y) & x is taller than y & x is more beautiful than y] \rightarrow [x is more easy to be selected than y is].

Based on the facts above, it is reasonable to assume that Chinese comparative conditionals involve unselective binding and the necessity operator is the default (or natural) operator in cases without any adverb of quantification. According to Cheng and Huang (1996), in bare conditionals *wh*-words introduce variables bound by the necessity operator through unselective binding. So, if we assume that the Chinese comparative conditional is a type of bare conditional, there must be some elements that introduce variables bound by the default operator in Chinese comparative conditionals. We would like to suggest that the Chinese comparative conditional morpheme *yue* ‘more’ is such an element. Along the line of Beck (1997, 247-249), we suggest that the Chinese comparative conditional morpheme *yue* ‘more’ denotes a relation between a pair of variables, the comparative morpheme and a relation between variables and

degrees, as shown in (51) (cf. (40)).

$$(51) \quad [[yue']] (x_1, x_2) ([[er']]) (D_{\langle s, d, t \rangle}) \text{ iff } \exists d [d > 0 \ \& \ [[er']] (D(x_1))(d)(D(x_2))]$$

Seen in this way, the relation denoted by the comparative conditional morpheme *yue* ‘more’ as in the first clause of (52a) (i.e., a relation between a pair of time variables, the comparative morpheme and a relation between time variables and degrees) can be compared to a comparing event: a comparison between the degree of temperature at t_1 and that at t_2 . Since the proposition denoted by the first clause of (52a), in which *yue* ‘more’ appears, does not entail existence of a referent satisfying the description of the time variables t_1 and t_2 , the two degree variables derived by mapping these two time variables (i.e., t_1 and t_2) into the scale associated with the adjective *re* ‘hot’ (i.e., temperature) cannot be identified, either (cf. (52b)).

- (52) a. Tianqi yue re, shui he-de yue duo.
 Weather more hot water drink-DE more more
 ‘The hotter it is, the more water people will drink.’
- b. $\forall t_1, t_2$ [It was hotter at t_1 than at t_2] \rightarrow [People drink more water at t_1 than at t_2].

Given this semantic characteristic, we suggest that *yue* ‘more’, which, as we suggest, denotes a comparing event, behaves like a polarity-like event variable whose use is

felicitous if and only if the local proposition in which *yue* ‘more’ appears does not entail existence of a referent satisfying the description of the comparing event (cf. Lin (1998, 230)). In other words, we consider the Chinese comparative conditional morpheme *yue* ‘more’ a polarity-like event variable bound by the necessity operator through unselective binding. Assuming this, we would have the semantic representation (53a) simplified as (53b), in which the comparing event (or the relation denoted by the comparative conditional morpheme *yue* ‘more’) is represented by the polarity-like event variable *e* (In spite of this, at some semantic level, (53b) still has the semantic representation as in (53a)).

- (53) a. $\forall t_1, t_2 [\exists d [d > 0 \ \& \ \text{the max } d_2 [\text{hot}(d_2, \lambda x [\text{hot}_{t_2}(x)])(\text{weather})] = d + \text{the max } d_1 [\text{hot}_{t_1}(x)](\text{weather})] \rightarrow$
 $[\exists d' [d' > 0 \ \& \ \text{the max } d_2 [\text{more}(d_2, \lambda x [\text{more}_{t_2}(x)])(\text{amount of water consumed by people})] = d' + \text{the max } d_1 [\text{more}_{t_1}(x)](\text{amount of water consumed by people})]]$
- b. $\forall_e [\text{the weather is } e \text{ hot}] \rightarrow [\text{people drink } e \text{ more water}]$

Second, one of the most important distinctions between Chinese and English in forming comparative conditionals is shown by the contrast between (54a) and (54b) (cf. footnote (17)).²²

- (54) a. Tianqi yue re, Zhangsan jiu juede yue lei.

Weather more hot Zhangsan then feel more tired

‘The hotter it is, the more tired Zhangsan feels.’

- b. [CP [AP The hotter]_i [C' it is t_i]], [CP [AP the more tired]_j [C' John feels t_j]].

As (54b) shows, the adjective *hot* is overtly pied-piped along with the comparative conditional morpheme *the ... -er* to [Spec, CP], but in Chinese comparative conditionals the adjective *re* ‘hot’ stays in situ along with the comparative conditional morpheme *yue* ‘more’.²³ The distinction between Chinese and English comparative conditionals in whether the adjective is overtly pied-piped to [Spec, CP] along with the comparative conditional morpheme is reminiscent of the most important and familiar typological distinction between Chinese and English: Chinese *wh*-questions are formed by leaving *wh*-words in situ while English by moving *wh*-words to [Spec, CP] (cf. Huang (1982)). According to Cheng (1991, 1995), Li (1992), and Tsai (1994), *wh*-words in Chinese are polarity items – indefinite NPs which do not have inherent quantificational force but acquire their quantificational force in context, through the external element(s) that license and/or bind them. Hence, it is not implausible for us to say that behind the contrast between (54a) and (54b) is the inspiration: The comparative conditional morpheme *yue* ‘have’ is a polarity-like element unselectively bound by the default operator that is always available in conditionals if the Chinese comparative conditional is a type of bare conditionals.

Simply put, the distinction between Chinese and English in forming comparative conditionals, under our analysis, in fact can be reduced as a case of the parametric

variation between Chinese and English in forming *wh*-questions. This way of distinction between Chinese and English in forming comparative conditionals gets further support from the following fact: As Culicover and Jackendoff (1999, 554-556) point out, English comparative conditionals appear to have an internal structure involving a long-distance dependence between the comparative phrases at the front and a gap within the CP, and the gaps in the two clauses (i.e., CPs) indeed show the typical constraints (i.e., island constraints) on long-distance dependence, as shown by (55a-c), taken from Culicover and Jackendoff (1999, 555), respectively.

- (55) a. [The more counterexamples]_i Mary says that Bill has helped Fred to discover *t_i*, the less I believe her. (long-distance dependence)
- b. *[The more food]_i Mary knows a man that eats *t_i*, the poorer she gets. (CNPC)
- c. *[The fatter]_i he goes to a doctor when he gets *t_i*, the more he eats. (CED)

In contrast, the Chinese counterparts of (55a-c) are all grammatical, as (56a-c) illustrate (Example (56b) is provided by one of the reviewers).

- (56) a. Ni chi-de yue duo, wo jiu xiangxin ni hui zhang-de yue pang.
 You eat-DE more more I then believe you will grow-DE more fat
 ‘The more you eat, the fatter I believe you will grow.’

b. [CP [NP [CP Yue ai piaoliang de] nuhaizi] [VP chi-de yue shao]]. (CNPC)

More love beautiful DE girl eat-DE more less

‘The more a girl cares about her beautifulness, the less she eats.’

c. Ren yue jianjue, [[zai yue jiankun de shihou], [yue neng kefu

People more constant at more difficult DE moment more can overcome

kunnan]] (CED)

difficulty

‘If people are more constant, they are more likely to overcome difficulties

when they are under more difficult situations.’

As we have argued, in Chinese comparative conditionals, the adjective/adverb/verb along with the comparative conditional morpheme *yue* ‘more’ stays in situ and the comparative conditional morpheme *yue* ‘more’ is a polarity-like event variable bound by the necessity operator through unselective binding. Since unselective binding which does not involve movement is insensitive to island constraints, the contrast between (55a-c) and (56a-c) in grammaticality thereby is expected.

So far, we have assumed that, like bare conditionals in which *wh*-words and their anaphoric counterparts must appear in different clauses, Chinese comparative conditionals can have their syntactic tree structure splitted into a tripartite representation. This assumption, however, is immediately challenged by the fact that it is not necessary for Chinese comparative conditional morphemes (i.e., *yue*’s ‘more’) to appear in different clauses. For example, in (22b-c) (repeated as in (57a-b)), the two *yue*’s

‘more’s’ do not appear in different clauses. We shall argue that the syntactic tree structure of cases like (57a-b) can be splitted into a tripartite representation by assuming Tsai’s (2001, 132) Extended Mapping Hypothesis (cf. Kamp (1980), Heim (1982), and Diesing (19992)) (cf. (58a-d)).²⁴

(57) a. [IP [NP Yue tian de pingguo] [VP yue hao chi]].

More sweet DE apple more good eat

‘The sweeter an apple is, the more delicious it will be.’

d. [Topic/NP Yue hao de shu], [Comment/IP yue duo ren kan].

More good DE book more more people read

‘The better a book is, the more people will read it.’

(58) Extended Mapping Hypothesis:

- a. Mapping applies cyclically, and vacuous quantification is checked derivationally.
- b. Material from a syntactic predicate is mapped into the nuclear scope of a mapping cycle.
- c. Material from XP immediately dominating the subject chain of a syntactic predicate (excluding that predicate) is mapped outside the nuclear scope of a mapping cycle. A subject chain is an A-chain with its tail in a subject position.
- d. Existential closure applies to the nuclear scope of a mapping cycle.

In (57a), material from VP (i.e., *yue hao chi* ‘more good eat’) is mapped into the nuclear scope and material from IP (excluding VP) into a restrictive clause (i.e., *yue tian de pingguo* ‘more sweet DE apple’). In a topic-comment construction like (57b), the whole IP counts a complex predicate with the null operator (semantically a lambda operator) as its open place. Thus, the tripartite representations of (57a-b) are as in (59a-b), respectively.

- (59) a. \forall_e [apples are *e* sweet] \rightarrow [apples are *e* delicious]
 b. \forall_e [books are *e* good] \rightarrow [people who read them are *e* more]

Our analysis has the following empirical and theoretical consequences. First, we provide a natural explanation for the anti-c-command effect shown by Chinese comparative conditionals like (60a), in which the first *yue* ‘more’ c-commands the second one. According to our analysis, (60a) has a tripartite representation as in (60b).

- (60) a. *[IP [NP Zhangsan] [VP yue xihuan [yue gui de dongxi]]].
 Zhangsan more like more expensive DE thing
 b. \forall_e [... ? ...] \rightarrow [Zhangsan *e* xihuan things are *e* expensive]

Since there is no variable in the restrictive domain bound by the necessity operator, (60b) violates Prohibition Against Vacuous Quantification proposed by Cheng and

Huang (1996, 139) (cf. Kratzer (1989, 155)).

(61) Prohibition Against Vacuous Quantification

In a tripartite structure of quantification $Q [A] [B], [X_1, X_2, \dots, X_n]$ (where $n \geq 1$) are variables in A. For every variable in A, there must be an identical variable in B.

So, (60a) is ungrammatical. In other words, the anti-c-command condition is not a language-/construction-specific condition but a part of properties of Universal Grammar.

Second, the proposal that the Chinese comparative conditional is a type of bare conditionals in which *yue* ‘more’ is a polarity-like event variable bound by the necessity operator through unselective binding provides a natural account for the unboundedness requirement shown by the predicate of Chinese comparative conditionals. According to Lin (1998, 230), a polarity-like item is felicitous iff the local proposition in which it appears does not entail existence of a referent satisfying the description of it. The polarity-like nature of *yue* ‘more’ as in (62a) thereby implies that the proposition denoted by the antecedent clause of (62a) fails to entail existence of a referent satisfying the spatio-temporal description of the event variable *e* (cf. (62c)).

- (62) a. Zhangsan yue kao, yue hao. (world)
 Zhangsan more test more good

‘The more Zhangsan is tested, the better his grade will be.’

- b. \forall_e [Zhangsan is tested e more] \rightarrow [Zhangsan is tested e better]
- c. \forall_{w_1, w_2} [Zhangsan is tested later in w_1 than in w_2] \rightarrow [Zhangsan is tested better in w_1 than in w_2].

Hence, the predicate of Chinese comparative conditionals cannot be bounded because the bounded point will provide a specific reference point that satisfies to identify the comparing event spatio-temporally. So, the predicate of Chinese comparative conditionals must be unbounded such as a state, an activity, or a derived multiple-event activity consisting of repeated achievement or semelfactive events.²⁵

5. A Typological Perspective on Comparative Conditionals

We have proposed that the Chinese comparative conditional is a type of bare conditionals whose syntactic tree structure can be splitted into a tripartite representation, and the comparative conditional morpheme *yue* ‘more’ inside is polarity-like event variable bound by the necessity operator through unselective binding. Based on this analysis, we shall show how Chinese differs from English in constructing comparative conditionals. First, the English comparative conditional morpheme has the following allomorphs: *the ... -er* suffixed to adjectives or adverbs as in (63a-b), the pronominal quantifier *the more* co-occurring with nominal expressions as in (61c), or the pronominal *the more* as in (63d).

- (63) a. The older I get, the happier I am. (adjective)
 b. The harder she worked, the more progress she made. (adverb)
 c. The more air there is inside the tyre, the harder it is pressed together.
 (prenominal quantifier)
 d. The more John smokes, the more inspiration he gets. (pronominal)

However, the Chinese comparative conditional morpheme *yue* ‘more’, categorically being a degree adverb without any allomorphs, only co-occurs with adjectives, adverbs or verbs.

Second, English comparative conditionals, as in (63a-d), involve overt syntactic operation: The adjective/adverb/noun is overtly pied-piped along with the comparative conditional morpheme *the ... -er* to [Spec, CP]. For example, the adjective *old* in (63a) is overtly pied-piped along with the comparative conditional morpheme *the ... -er* to [Spec, CP], as illustrated by (64) (cf. footnote (17)).

(64) [[_{CP} [_{AP} The older]_i [_{C'} [_{IP} I get *t_i]]]], [_{CP} [_{AP} the happier]_j [_{C'} [_{IP} I am *t_j]]]]].**

However, in Chinese comparative conditionals, the adjective/adverb/verb along with the comparative conditional morpheme *yue* ‘more’ stays in situ; in other words, no overt movement is involved in Chinese comparative conditionals. The Chinese counterpart of the operator-variable relation in (64) (e.g., [_{AP} *the older*]_i ... *t_i*) is established through the unselective binding between the necessity operator and the polarity-like event variable

yue ‘more’ (cf. (62b)). So, Chinese comparative conditionals differ from their English counterparts in not showing island effects. The distinction between Chinese and English in forming comparative conditionals, as we suggest, can be further reduced as a case of the more general parametric variation between Chinese and English in forming *wh*-questions.

Third, English comparative conditional morphemes must occur in different clauses but it is not necessary for the Chinese comparative conditional morpheme *yue*’s ‘more’ to occur in different clauses. The distribution of *yue*’s ‘more’s’ is quite free only if the antic-command condition is not violated. So, semantically a Chinese comparative conditional must be a conditional, but not necessary syntactically.

Fourth, as McCawley (1988, 183) points out, a Chinese comparative conditional of comparative is often acceptable but its English counterpart is not, as the contrast between (65a) and (65b) shows.

- (65) a. Ta yue bi wo qiang, wo yue gandao zihao.
He more than I strong I more feel proud
‘*The strong he is than me, the prouder I will feel.’
- b. *The stronger he is than me, the prouder I will feel.

This typological difference, as we shall argue, in fact results from the following syntactic differences between Chinese and English comparative conditionals. First, Chinese uses different morphemes as the marker for comparative conditionals (i.e., the

adverb *yue* ‘more’) and neutral comparatives (i.e., the empty degree adverb *deg*).²⁶

These two markers are in complementary distribution: The former must precede the *bi*-phrase ‘than-phrase’ while the latter after the *bi*-phrase ‘than-phrase’, as (66a-b) illustrate.²⁷

- (66) a. *Ta bi wo yue *deg* qiang, wo yue gandao zihao.
He than I more strong I more feel proud
- b. *Ta *deg* bi wo qiang.
He than I strong

So, it is possible for them to co-occur in comparative conditionals; (65a) therefore is grammatical. However, in English the comparative conditional morpheme *the ... -er* and the ordinary comparative marker *-er* happen to appear in the same position (cf. (63a-d)). Given this, an English comparative conditional of comparative like (65b) is not allowed.

6. Concluding Remarks

We have analyzed Chinese comparative conditionals as a type of bare conditionals. Both types of conditionals are subject to the anti-c-command condition, and neither of them has the counterfactual reading. They are quantified structures semantically, consisting of an element providing quantificational force, a restrictive and nuclear scope. The quantifier can either be the invisible quantifier or an overt adverb of quantification.

The quantifier is unselective, meaning that it can bind different types of variables and a different number of variables. However, Chinese comparative conditionals differ from bare conditionals in the following ways: Syntactically, it is not necessary for the Chinese comparative conditional morpheme *yue*'s 'more's' to occur in different clauses (i.e., the antecedent and the consequent clause), but it is necessary for the correlative words in bare conditionals to occur in different clauses. Although more than one pairs of correlative words are allowed in Chinese comparative conditionals, only one *yue* 'more' ... *yue* 'more' pair is allowed. Since there is no donkey-pronoun/definite description correspondent for *yue* 'more', no alternation between *yue* 'more' and a donkey pronoun/definite description is allowed.

Assuming Beck's (1997) proposal that the comparative conditional morpheme denotes a relation between a pair of variables, the comparative morpheme and a relation between variables and degrees, we further argue that the Chinese comparative conditional morpheme *yue* 'more' is a polarity-like event variable (i.e., a comparing event) bound by the default operator through unselective binding. Consequently, we suggest that, differing from English comparative conditionals in which the adjective/adverb/noun is overtly pied-piped along the comparative morpheme to [Spec, CP], Chinese comparative conditionals do not involve any overt movement. This typological difference between Chinese and English in forming comparative conditionals in fact can be reduced as a case of the more important and familiar parametric variation between Chinese and English: Chinese *wh*-questions are formed by leaving *wh*-words in situ while English by moving *wh*-words to the sentence-initial

position. The syntactic tree structure of Chinese comparative conditionals can be splitted into a tripartite representation by assuming Tsai's (2001) Extended Mapping Hypothesis. So, the anti-c-command condition and the unboundedness effect shown by the predicate of Chinese comparative conditionals get explained naturally.

Reference

- Beck, Sigrid (1997) "On the Semantics of Comparative Conditionals", *Linguistics and Philosophy* 20: 229-271.
- Chao, Yuen-Ren (1968) *A Grammar of Spoken Chinese*, University of California Press, Berkeley.
- Cheng, Lai-Shen Lisa (1991) *On the Typology of Wh-Questions*, Ph.D. dissertation, MIT.
- Cheng, Lai-Shen Lisa (1995) "On *Dou*-Quantification", *Journal of East Asian Linguistics* 4: 197-234.
- Cheng, Lai-Shen Lisa, and Cheng-Teh James Huang (1996) "Two Types of Donkey Sentences", *Natural Language Semantics* 4: 121-163.
- Chomsky, Noam (1986) *Barriers*, MIT Press, Cambridge, Massachusetts.
- Culicover, Peter W. and Ray Jackendoff (1999) "The View from the Periphery: The English Comparative Correlatives", *Linguistic Inquiry* 30: 543-571.
- Diesing, Moly (1992) *Indefinites*, MIT Press, Cambridge, Massachusetts.
- Ding, Sheng-Shu, Shu-Xiang Lu, Rong Li, De-Xuan Sun, Xie-Chu Guan, and Jing Fu (1979) *Xiandai Hanyu Yufa Jianghua [Lectures on the Syntax of Contemporary Chinese]*, Shangwu Yinshuguan, Beijing.
- Heim, Irene (1982) *The Semantics of Definite and Indefinite Noun Phrases*, Ph.D. dissertation, University of Massachusetts, Amherst.
- Heim, Irene (1985) *Notes on Comparatives and Ellipsis*, Ms., University of Texas, Austin.

- Hsiao Su-Ying and Feng-Fu Tsao (2002) “Lun Hanyu Liang-Zhong Guanlian Jushi de Yufa yu Yuyi [On the Syntax and Semantics of Two Correlative Constructions in Mandarin Chinese]”, *Language and Linguistics* 3: 811-838.
- Hornstein, Norbert (1995) *Logical Form: From GB to Minimalism*, Blackwell Publishers, Cambridge, Massachusetts.
- Huang, Cheng-Teh. James (1982) *Logical Relations in Chinese and the Theory of Grammar*, Ph.D. dissertation, MIT.
- Jiang, Yan and Hai-Hua Pan (2004) *NP Interpretation and Donkey Sentences in Chinese*, Ms., Hong Kong Polytechnic University and City University of Hong Kong.
- Kadmon, Nirit (1987) *On Unique and Non-Unique Reference and Asymmetric Quantification*, Ph.D. dissertation, University of Massachusetts, Amherst.
- Kamp, Hans (1981) “A Theory of Truth and Semantic Representation”, in J. Groenendijk, T. Janssen, and M. Stokhof (eds.), *Formal Methods in the Study of Language*: 277-322, Mathematical Centre Tracts, Amsterdam.
- Kratzer, Angelika (1986) “Conditionals”, in A. M. Farley, P. Farley, and K. E. McCullough (eds.) *Papers from the Parasession on Pragmatics and Grammatical Theory*: 1-15, Chicago Linguistic Society, University of Chicago.
- Kratzer, Angelika (1989) “Individual-level vs. Stage-level Predicates”, in E. Bach, A. Kratzer, and B. Partee (eds.) *Papers on Quantification*, University of Massachusetts, Amherst.
- Li, Charles N. and Sandra Thompson (1981) *Mandarin Chinese: A Functional*

- Reference Grammar*, University of California Press, Berkeley.
- Li, Yen-Hui Audrey (1992) “Indefinite *Wh* in Mandarin Chinese”, *Journal of East Asian Linguistics* 1: 125-155.
- Lin, Jo-Wang (1996) *Polarity Licensing and Wh-phrase Quantification in Chinese*, Ph.D. dissertation, University of Massachusetts, Amherst.
- Lin, Jo-Wang (1998) “On Existential Polarity *Wh*-phrases in Chinese”, *Journal of East Asian Linguistics* 7: 219-255.
- Lin, Jo-Wang (2003) “Aspectual Selection and Negation in Mandarin Chinese”, *Linguistics* 41-3: 425-459.
- Lu, Jian-Ming and Zhen Ma (1985) *Xiandai Hanyu Xuci Sanlun [Studies on Contemporary Chinese Functional Words]*, Yuwen Chubanshe, Beijing.
- Lu, Shu-Xiang et al. (1980) *Xiandai Hanyu Ba Bai Ci [Eight Hundred Words of Contemporary Chinese]*, Shangwu Yinshuguan, Beijing.
- Nishgauchi, Taisuke (1990) *Quantification in the Theory of Grammar*, Kluwer Publications, Dordrecht.
- McCawley, James D. (1988) “The Comparative Conditional Construction in English, German and Chinese”, *Proceedings of the 14th Annual Meeting of the Berkeley Linguistics Society*: 176-187.
- Thiersch, Craig (1982) “*The harder they come, ...*: A Note on the Double Comparative Construction in English”, in Werner Welte (ed.), *Festschrift für Alfred Wollmann*: 47-65.
- Tsai, Wei-Tien Dylan (1994) *On Economizing the Theory of A-bar Dependencies*, Ph.D.

dissertation, MIT.

Tsai, Wei-Tien Dylan (2001) “On Subject Specificity and Theory of Syntax-Semantics Interface”, *Journal of East Asian Linguistics* 10: 129-168.

von, Fintel, Kai (1994) *Restrictions on Quantifier Domains*, Ph.D. dissertation, Universtiy of Massachusetts, Amherst.

von, Stechow, Arnim (1984) “Comparing Semantic Theories of Comparison”, *Journal of Semantics* 3: 1-77.

Xing, Fu-Yi (1985) “‘Yue X Yue Y’ Ju Xing [The Yue X Yue Y Sentence Pattern]”, *Zhongguo Yuwen* 1985-3: 178-185.

Zhao, Shi-Kai (1999) *Han Ying Duibi Yufa Lunji [Essays on the Contrastive Study of Chinese-English Syntax: A Cognitive-functional Approach]*, Shanghai Waiyu Jiaoyu Chubanshe.

Notes

¹ As the semantic interpretation of (1a) indicates, if there is a positive difference in the degree of sweetness between the two apples, then there must be a corresponding or resulting positive difference in the degree of deliciousness of the two apples. In other words, these two difference degrees (one in the antecedent and the other in the consequent clause) are related to each other. Hsiao and Tsao (2002, 812-813) suggest that the two difference degrees in Chinese comparative conditionals are proportional. However, example (i) is intuitively correct under the following scenario: Suppose that father B is 5 cm taller than father A and father B's kid is 2 cm taller than father A's; father C is 5 cm taller than father B and father C's kid is 3 cm taller than father B's. So, we take a stand against Hsiao and Tsao's (2002) claim, and suggest that for Chinese comparative conditionals the difference degree in the consequent clause is not functionally dependent on that in the antecedent clause. In addition, given space limit, cases containing *yue lai yue* 'more come more' will not be discussed in this paper. Please see Chao (1968, 121), McCawley (1988, 187) and Hsiao and Tsao (2002) for further discussion.

Abbreviations used in this paper include: ASP: aspect markers; BA: the disposal marker; BEI: the passive marker; CL: classifiers; and DE: verbal suffix or marker for modifying phrases like genitive phrases, relative clauses, and noun complement clauses.

² Since the *dou*-conditional is not directly related to the mainstream of this paper, we

shall not discuss this construction in the rest of this paper. Besides, since the conditional morpheme *ruguo* ‘if’ can always be replaced by another conditional morpheme *yaoshi* ‘if’, in the following we shall use *ruguo-/yaoshi*-conditionals to represent *ruguo*-conditionals.

³ Since Cheng and Huang (1996), the syntax and semantics of Chinese donkey sentences, including bare conditionals and *ruguo-/yaoshi*-conditionals, has aroused a lot of discussion among scholars either in empirical or theoretical aspects. Cheng and Huang (1996) is challenged by Lin (1996), which is further challenged by Jiang and Pan (2004). The debate among these works, as we shall show, does not significantly influence the mainstream of our study on Chinese comparative conditionals. So, in this paper discussion on Chinese bare conditionals and *ruguo-/yaoshi*-conditionals is mainly based on Cheng and Huang (1996) and Lin (1996); Jiang and Pan (2004) will be mentioned only if necessary.

⁴ However, Jiang and Pan (2004, 5) point out that a *wh*-phrase can appear in the consequent clause of bare conditionals, as (i) shows.

- (i) *Ruguo shei yao zhe puo-chang, *(jiu) rang shei dao bangongshi lai zhao wo.*
If we want this broken-factory then let who to office come find me
‘Whoever wants this broken factory, let him/her come to my office to see me.’

See Cheng and Huang (1996, 149-150) for discussion on examples like (i).

⁵ The acceptability of (8a) gets much improved if the morpheme *jiu* ‘then’ is inserted into the consequent clause, as (i) shows. (Ten out of my twelve informants say example (i) is acceptable even without the conditional morpheme *jiu* ‘then’.)

(i) Ni zuotian (yaoshi) yue zao chufa, jintian *(jiu) keyi yue zao jiandao

You yesterday if more early leave today then can more early see

ni-de nuer.

your daughter

‘If you had left earlier yesterday, today you will see your daughter earlier.’

And seven out of the ten informants say that example (i) allows the counterfactual reading. The obligatoriness of *jiu* ‘then’ in (i), as shown by the contrast between (8a) and (i) in grammaticality, however implies that example (i) might be considered a ‘reduced’ *yaoshi-/ruguo*-conditional (cf. Cheng and Huang (1996, 149-150)). So, we use (8a) here to show that Chinese comparative conditionals do not have the counterfactual reading. Given the structural ambiguity shown by cases like (i), it is possible for us to have (i) translated as *if you ran faster yesterday, you will be more tired today* rather than *the faster you ran yesterday, the more tired you will be today* (cf. McCawley (1988) and Culicover and Jackendoff (1999)).

⁶ However, Jiang and Pan (2004, 7) argue that it is not impossible to find a bare conditional that does not carry existential presupposition and is compatible with *you*

‘have’, as (i) illustrates.

(i) You shei neng gei qian, shei jiu shi qinnian.

Have who can provide money who then is real-mother

‘Whoever can provide money will be the real mother.’

As Cheng and Huang (1996) argue, given the ungrammaticality of (ii), example (i) might be considered a ‘reduced’ *ruguo-/yaoshi*-conditional. So, it is not so clear whether Jiang and Pan’s (2004) claim stands or not.

(ii) *You shei neng gei qian, shei shi qinnian.

Have who can provide money who is real-mother

Besides, all of my thirteen informants say (i) is unacceptable.

⁷ Chao (1968, 121) suggests that (14a), in which two coordinate *yue*’s ‘more’s’ are to be correlated with another, is a 2+1 structure because a suspended intonation or pause particle can be inserted between the first two and the third clause. However, (14a) can be understood as a 1+2 structure if an appropriate context is provided, for example one in which your loud voice is the cause that makes your talk becomes longer and less people listen.

⁸ Lin (1996, 189-191) argues that Cheng and Huang’s (1996) observation that in bare conditionals the donkey *wh*-word in the consequent clause must be identical to the *wh*-word in the antecedent clause is not without problems by providing examples like

(19e). Please see section 4 for further discussion on Cheng and Huang (1996) and Lin (1996).

⁹ Since the degree adverb *yue* ‘more’ modifies VPs or APs, the reason adverb *weishenme* ‘why’, which has either IP or CP as modifying domain, cannot appear in the modifying domain of *yue* ‘more’. (20d) therefore is ungrammatical.

¹⁰ We have to admit that it is not so clear whether the morpheme *jiu* ‘then’ is always deletable in Chinese comparative conditionals. Seven out of my thirteen informants accept sentences without *jiu* ‘then’ regardless of whether the dependence between *yue*’s ‘more’s’ is long-distance or not, but six of them do not accept the long-distance case without *jiu* ‘then’. This variation on judgment might result from dialectal variation. For ease of exposition, my claim that *jiu* ‘then’ is deletable in local cases but not in long-distance cases is simply based on my own dialect. McCawley (1988, 183) argues that Chinese comparative conditionals allow unbounded dependence between *yue*’s ‘more’s’ by providing examples like (i)-(ii).

- (i) Ta yue bu tinghua, fuqin yaoqiu xuexiao pai ren ba ta kan-de yue yan.
He more not behave father request school send person BA he look-DE more
strict

‘The more he does not behave, the more strictly his father requests the school to

send people to watch over him.’

(ii) Zhao taitai yue shuo, ziji jue de yue you li.

Zhao Mrs. more talk self feel more have reason

‘The more Mrs. Zhao talked, the more right she felt herself to be.’

However, one of the reviewers and six of my thirteen informants say (i)-(ii) are marginally acceptable. Interestingly, acceptability of example (i)-(ii), as my informants suggest, becomes much improved if we insert the morpheme *jiu* ‘then’ into the second clause, as (iii)-(iv) illustrate.

(iii) Ta yue bu tinghua, fuqin jiu yaoqiu xuexiao pai ren ba ta kan-de more

He more not behave father then request school send person BA he look-DE yue yan.

strict

‘The more he does not behave, the more strictly his father will request the school to send people to watch over him.’

(iv) Zhao taitai yue shuo, ziji jiu jue de yue you li.

Zhao Mrs. more talk self then feel more have reason

‘The more Mrs. Zhao talked, then the more right she will feel herself to be.’

The function of *jiu* ‘then’ in cases like (iii)-(iv) can be roughly described as follows: In correlative constructions like Chinese comparative conditionals, the pair of *yue*’s ‘more’s’ functions to bind the minimal clauses dominating each of them into the conditional. However, once if the minimal clause dominating the second *yue* ‘more’ is

further embedded inside another clause, the morpheme *jiu* ‘then’, which functions to introduce ‘consequence’, must be inserted into the complex clause (e.g., the second clause in (iii)-(iv)) to serve to bind the complex clause with the antecedent clause into the conditional (cf. Lu et al. (1980, 282-283)). In other words, the morpheme *jiu* ‘then’ is inserted whenever the causal relation between the ‘antecedent’ and the ‘consequent’ clause is not so clear. One reviewer further points out that there are two situations that may make long-distance dependence more acceptable. One situation is when the matrix verb is parenthetical, as (v) shows.

(v) Ni chi-de yue duo, Zhangsan shuo, ni hui zhang-de yue gao.

You eat-DE more more Zhangsan say you will grow-DE more tall

‘The more you eat, Zhangsan says, the taller you will grow.’

However, if we replace the verb *shuo* ‘say’ by *xiangxin* ‘believe’, the sentence sounds bad as in (vi).

(vi) *Ni chi-de yue duo, Zhangsan xiangxin ni hui zhang-de yue gao.

You eat-DE more more Zhangsan believe you will grow-DE more tall

‘*The more you eat, Zhangsan believes that the taller you will grow.’

Another situation that may make the embedded *yue* ‘more’ more acceptable is when the matrix verb is of the kind that can undergo restructuring (e.g., the control verb *yaoqiu* ‘ask’ as in (i) (cf. Hornstein (1995, 85-86))). That is why some speakers say example (i) sounds acceptable.

¹¹ The grammaticality of (28b) immediately questions Hsiao and Tsao's (2002, 821) claim that the first *yue* 'more' in Chinese comparative conditionals modifies quantifiable unbounded situations, including scalar states and quantifiable activities/semelfactives, but the second *yue* 'more' can only modify a scalar state. Besides, examples containing achievement and semelfactive verbs are not found in Hsiao and Tsao (2002).

¹² However, in contrast with progressive aspect marker *-zhe*, the progressive marker *zai* 'at' is incompatible with *yue* 'more'.

(i) **Pingguo, ni yue zai chi, yue xiang.*

Apple you more at eat more fragrant

As one reviewer suggests, *zai* 'at' and *yue* 'more' both operate on the event structure that they modify and compete the same adverbial position that is related to the event structure. So, the complementary distribution between *zai* 'at' and *yue* 'more' makes (i) ungrammatical.

¹³ Interestingly, if the focus verb *shi* 'is' is inserted in-between the correlative adverb *yue* 'more' and the *mei*-negated predicate, (31b) becomes acceptable, as (i) shows.

(i) *Zhangsan yue shi mei chouyan, ni yue bu gai mai yan song ta.*

Zhangsan more is not smoke you more not should buy cigarette give him

'The longer he stops smoking, the more prohibited to buy cigarette for him you

are.’

The same also obtains in cases containing the aspect marker *-le* and *-guo*, as (ii)-(iii) illustrate.

(ii) Fanren yue *(shi) he-le jiu, yue rongyi nao shi.

Criminal more is drink-ASP wine more possible make trouble

‘In a series of drinking events, the later it is done by the criminals, the more likely it is for them to make trouble.’

(iii) Yue *(shi) you-guo zhe-zhong jingyan de ren, yue heshi.

More is have-ASP this-CL experience DE person more appropriate

‘The more experience of this kind a person has, the more qualified s/he will be (for this job).’

Since the focus verb *shi* ‘is’ has a function of adjusting one’s attention or the camera lens to make something or some event into a clear image. An image is a picture formed in a mind, or a picture formed of an object in front of a mirror or lens such as picture formed on the film inside a camera or one’s reflection in a mirror. Hence, an image can be considered as a state. Seen in this light, we suggest that the focus verb *shi* ‘is’ functions to turn the *mei*-negated predicate in (i) into a state; therefore, (i) becomes acceptable. As the same reasoning, the grammaticality of (ii)-(iii) gets explained.

¹⁴ However, Jiang and Pan (2004, 22) argue that example (32b) in fact is perfectly compatible with the multi-case reading, as indicated by the possibility of using a

wh-word in the consequent clause in (i).

(i) Shang ci shei mei jiang-wan, jintian jiu you shei xian kaishi.

Last time who not talk-finish today then with who first begin

‘Today let us begin with whoever did not finish his talk last time.’

As Jiang and Pan (2004, 22) further argue, even if we have *ta* ‘him’ in the consequent clause, (32b) still can be used to describe the situation: There are three discussion groups in a class; although each group had some presentations yesterday, none of them finished, and it happened to be true that each group had one person who did not finish his/her presentation. Sentence (32b) therefore can be used to describe different groups. In this case, the groups will have a different referent for *ta* ‘him’ in the sentence.

¹⁵ Interpretation of (33b) in fact depends on the type of nominal expression co-occurring with the classifier *ci* ‘time’. If the nominal expression denotes a simple running event (e.g., *shang-ci caipao* ‘last time running-game’), then only the one-case reading is possible (Remember the unique event here is the unbound running event rather than the comparing event. See section 4 for the details). However, if the nominal expression denotes a multiple-event activity consisting of repeated events (e.g., a series of running games), then the multi-case reading is possible. Since the one-case vs. multi-case reading distinction is beyond the scope of this paper, we shall not go back to this issue in the rest of this paper.

¹⁶ Since Hsiao and Tsao (2002) as well as McCawley (1988) do not provide any analysis for the characteristics of Chinese comparative conditionals they point out, we shall not make any remarks on their paper here.

¹⁷ Although Beck (1997) claims that in English/German comparative conditionals the comparative conditional morpheme, for example *je*, is pied-piped along with the comparative morpheme *-er* at LF, she does not say it clearly that English/German comparative conditionals involve overt movement or not (cf. (41)).

¹⁸ Beck (1997, 242-243) has a maximal degree approach, similar to von Stechow (1984) and Heim (1985), to the semantics of comparatives as preliminary. For example, the meaning of (i) is as in (ii).

(i) John is 3 cm taller than Bill (is tall).

(ii) The max d_1 [tall(d_1 , John)] = 3cm + the max d_2 [tall(d_2 , Bill)]

¹⁹ See Culicover and Jackendoff (1999) for further comment on Beck (1997).

²⁰ Lin (1996, 189-191) questions Cheng & Huang's (1996) claim that in bare conditionals the donkey *wh*-word must be identical to the *wh*-word in the antecedent clause by providing examples like (ii), in which an alternation between an anaphoric *wh*-word and a donkey pronoun is allowed in the consequent clause.

(i) Shei xian lai, shei/*ta xian chi.

Who first come who/*he first eat

‘If x comes first, x eats first.’

(ii) Shang ci shei mei jiang-wan, jintian jiu you shei/ta xian kaishi.

Last time who not talk-finish today then with who/him first begin

‘Today let us begin with whoever did not finish his talk last time.’

So, Lin (1996, 191) proposes the following condition to govern the distribution of donkey pronouns in bare conditionals.

(iii) Condition on Donkey Pronouns in Bare Conditionals

A donkey pronoun in a bare conditional is felicitous only if it picks out a unique referent.

For examples like (ii), please see Jiang and Pan (2004, 22-23) for further discussion.

²¹ Example (47b) in fact is ambiguous between one in which *nulai* ‘girl’ is understood as different individuals and the other in which *nulai* ‘girl’ is understood generically.

Since the issue related to the generic reading is beyond the scope of this paper, we shall not discuss it in the remainder of this paper.

²² In English comparative conditionals, the adjective/adverb/noun is overtly pied-piped along with the comparative conditional morpheme *the ... -er* to [Spec, CP] unless in cases like (i). More precisely, in the consequent clause in (i) the comparative

conditional morpheme *the ... -er* occurs as a prenominal quantifier for the subject *people*.

(i) The more expensive a book is, the less people will buy it.

Likewise, when English interrogative pronouns like *who* as in (ii) occur as subject, they look like staying in situ (cf. Chomsky (1986, 48-52)).

(ii) Who bought this book?

²³ Interestingly, once if the word order between the antecedent and the consequent clause of English comparative conditionals is shifted, the comparative conditional morpheme *-er* together with the adjective, instead of moving to [Spec, CP], will stay in situ, as (i) illustrates (cf. Zhao (1999, 160)).

(i) They like the book *better*, the more it makes them cry.

This might be a case of stylistic transformation, and we shall leave it for further research.

²⁴ Diesing's (1992, 10) Mapping Hypothesis is as follows:

(i) Mapping Hypothesis

Material from VP is mapped into the nuclear scope.

Material from IP (excluding VP) is mapped into a restrictive clause.

²⁵ Our proposal that *yue* 'more' is a polarity-like event variable bound by the necessity

operator through unselective binding might encounter the following potential problem:

As Cheng and Huang (1996, 131) argue, *yaoshi-/ruguo*-conditionals cannot host a *wh*-word in the consequent clause but allow a pronoun or a definite NP, as (i) illustrates.

(i) Ruguo ni kandao shei, qing jiao ta/na-ge ren/[]/*shei lai jian wo.

If you see who please tell him/that-CL person/[]/*who come see me

‘If you see someone, please ask him/her to come see me.’

If Cheng and Huang’s (1996) observation is correct, we would expect (ii), in which the correlative adverb *yue* ‘more’ appears in the consequent clause, to be ungrammatical, contrary to fact (Twelve out of my fourteen informants accept example (ii)).

(ii) Yaoshi/Ruguo ni zuotian pao-de yue kuai, jintian jiu hui yue lei.

If you yesterday run-DE more fast today then will more tired

‘The faster you ran yesterday, the more tired you will be today.’

There are two possible ways out of this dilemma. First, as Jiang and Pan (2004, 5) argue, it is possible to have a *wh*-word in the consequent clause of *ruguo-/yaoshi*-conditionals, as exemplified by (iii).

(iii) Hai shuo: Xiangshan meiyou liangpian xiangtong de hongyue, ruguo shei

Aslo say Xiangshan not-have two same DE maple-leaf if who

zhaodao-le, shei jiu shi zui xingfu de ren.

find-ASP who then is most happy DE person

‘Also said: There are no two maple leaves in Xiangshan that are exactly the same.

If someone finds them, then s/he will be the happiest person.’

If Jiang and Pan's (2004) observation is correct, it will not be much surprised for us to have a sentence like (ii). Second, according to Chao (1968), Li and Thompson (1981), and many others, Chinese third person pronouns are rarely used to refer to inanimate entities; the third person pronoun *ta* 'he/she/it' therefore cannot be used to replace *yue* 'more'. Hence, no alternation between an anaphoric *yue* 'more' and a donkey pronoun is allowed in the consequent clause. However, to maintain the correlative structure of Chinese comparative conditionals, here comes out an optimality effect: The constraint that the correlative adverb *yue* 'more' cannot appear in the consequent clause is out-ranked by the constraint that Chinese third person pronouns are rarely used to refer to inanimate entities. So, examples like (ii) are acceptable.

²⁶ Chinese degree adverbs can be divided into two types: the strong type including degree adverbs like *geng* 'more', *gengjia* 'more and more', and *yuefa* 'more', and the weak type containing degree adverbs like *shaowei* 'rather', *duoshao* 'ratherish' and *lyuewei* 'slightly'. This semantic distinction is exemplified by how the following comparatives differ from each other in interpretation.

- (i) Zhangsan bi Lisi geng/gengjia/yuefa qiangzhuang.
 Zhangsan than Lisi more/more and more/more strong
 'Zhangsan is much stronger than Lisi is.'
- (ii) Zhangsan bi Lisi shaowei/duoshao/lyuewei qiangzhuang *(yi-dian).
 Zhangsan than Lisi rather/rather/slightly strong a little

‘Zhangsan is slightly stronger than Lisi is.’

Example (i) implies that Lisi is quite strong but (ii) implies that Lisi is not strong (cf. Lu and Ma (1985)). In contrast with (i)-(ii), (iii) does not have any implication about whether Lisi is strong or not.

(iii) Zhangsan bi Lisi qiangzhuang.

Zhangsan than Lisi strong

‘Zhangsan is stronger than Lisi is.’

So, we suggest that in (iii) there exists an empty degree adverb that has neither the strong nor the weak implication (i.e., *deg*), and call comparatives like (iii) the neutral comparative. Given the ungrammaticality of (iv)-(v), we further suggest that the comparative conditional morpheme *yue* ‘more’ can only appear in neutral comparatives.

(iv) *Zhangsan yue bi Lisi geng qiangzhuang.

Zhangsan more than Lisi more strong

(v) *Zhangsan yue bi Lisi shaowei qiangzhuang yi-dian.

Zhangsan more than Lisi rather strong a little

²⁷ Since the question of why the morpheme *yue* ‘more’ must precede the *bi*-phrase ‘than-phrase’ is beyond the scope of this paper, we shall leave it for further research.