

## The Light Verb *lai* in the Chinese Comparative Correlative\*

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The Chinese *yue lai yue* ‘more come more’ construction is a subtype of the Chinese comparative correlative rather than an analogue of the English *more and more* (or *-er and -er*) construction. The verb *lai* ‘come’ inside is the overt realization of the light verb BECOME, which selects as complement a state. Through an internet search of large Chinese corpora, we further argue that the *yue lai yue* ‘more come more’ sequence is on the way to being lexicalized as a degree adverb with some properties that provide indirect evidence for the light verb analysis made here.

Key words: comparative correlative, *yue lai yue*, light verb

### 1. Introduction

Chao (1968:121) suggests that, in the Chinese *yue ... yue* ‘more’ ... ‘more’ correlative construction, each correlative degree adverb *yue* ‘more’ must co-occur with a predicate. If no specific action can be ascribed to the first verb (or predicate), the dummy verb *lai* ‘come’, *bian* ‘change’, or *guo* ‘as (one) lives’ or ‘as (time) passes’ is used to complete the formula, for example (1) (henceforth the *yue lai yue* ‘more come more’ construction).

- (1) a. Zhangsan yue lai/bian/guo yue hutu le.  
Zhangsan more come/change/pass more muddle-headed SFP  
‘Zhangsan is getting more and more muddle-headed.’  
b. Zhangsan yue lai/?bian yue xihuan ni le.  
Zhangsan more come/change more like you SFP  
‘Zhangsan likes you more and more.’

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\* In the past four years, I have almost fully devoted myself to the writing of papers about Chinese comparative correlatives in the hope of getting closer to the dream that I have been chasing after since 1997. This paper is one part of my NSC project no. 93-2411-H009-014, the other part of which comes out as Liu (to appear), which I adopt as preliminary here. Thank NSC for giving me the financial support and the anonymous reviewers for helpful advice. Any errors or inconsistencies that have persisted, of course, are my responsibility.

However, Chao (1968) does not notice that the *yue lai yue* ‘more come more’ construction differs from the typical Chinese comparative correlative, for example (2a), in that the predicate modified by the adverb *yue* ‘more’ in the latter can be an activity verb while the predicate modified by the second *yue* ‘more’ in the *yue lai yue* ‘more come more’ construction must be a stative one, as shown by the contrast below.<sup>1</sup>

- (2) a. Ni yue zui (ta), ta yue pao.  
 You more chase s/he s/he more run  
 ‘The more cumulative the reference property of your chasing her/him event is, the more cumulative the reference property of her/his running event is.’  
 b. \*Zhangsan yue lai yue pao le.  
 Zhangsan more come more run SFP

Instead of analyzing the *yue lai yue* ‘more come more’ construction as a subtype of the Chinese comparative correlative, McCawley (1988:187) claims that the *yue lai yue* ‘more come more’ construction is an analogue of the English *more and more* (or *-er and -er*) construction, in which the ‘complex’ morpheme *more and more* (or *-er and -er*), according to Quirk et al. (1985), functions as a degree (or comparative) morpheme attached to a gradable term such as adjectives, adverbs, pre-nominal quantifiers, or gradable pronominals, as illustrated by (3a-f), respectively.

- (3) a. John is getting taller and taller. (adjective)  
 b. Mary is getting more and more beautiful. (adjective)  
 c. John runs faster and faster. (adverb)  
 d. John walks more and more slowly. (adverb)  
 e. John eats more and more cheese. (pre-nominal quantifier)  
 f. John eats more and more. (pronominal)

Morphologically, the ‘complex’ comparative morpheme *more and more* (or *-er and -er*) consists of two comparative morphemes conjoined by the coordinator *and*. Since there is no overt comparative morpheme in Chinese, it is hard for us to have the ‘complex’ morpheme *more and more* (or *-er and -er*) as the English correspondent of the *yue lai yue* ‘more come more’ sequence in the *yue lai yue* ‘more come more’ construction.

The purpose of this paper is to argue that the Chinese *yue lai yue* ‘more come

<sup>1</sup> For the interpretation of (2a), please see §4.1 and Liu (to appear) for details. Abbreviations used in this paper include: ASP: aspect markers; CL: classifiers; and DE: verbal suffix or marker for modifying phrases like genitive phrases, relative clauses, and noun complement clauses; SFP: sentence final particle.

more’ construction is a subtype of the Chinese comparative correlative. The verb *lai* ‘come’ in the *yue lai yue* ‘more come more’ construction in fact is the overt realization of the light verb (or eventuality predicate) BECOME, which selects as complement a state. Dependent on an internet search of large Chinese corpora with the key word *yue lai yue* ‘more come more’ as well as based on the judgment of native speakers, we further point out the *yue lai yue* ‘more come more’ sequence is on the way to being lexicalized as a degree adverb. More importantly, the characteristics of this ‘non-full-fledged’ adverb provide indirect evidence for the light verb (or eventuality predicate) analysis of the *yue lai yue* ‘more come more’ construction.

The organization of this paper is as follows. In §2, we shall discuss the syntactic and semantic properties of the *yue lai yue* ‘more come more’ construction. Based on this, previous analyses of this construction will be reviewed first, and then the questions that theories about the *yue lai yue* ‘more come more’ construction have to account for will be crystallized in §3. Section 4 begins by briefly introducing Liu’s (to appear) analysis of the Chinese comparative correlative as preliminary, and then the light verb (or eventuality predicate) analysis of the *yue lai yue* ‘more come more’ construction will be proposed. Then, issues about the lexicalization of the *yue lai yue* ‘more come more’ sequence as a degree adverb are discussed in §5; and finally the conclusion will be reached in §6.

## 2. Characteristics of the *yue lai yue* construction

We shall start this section by pointing out the properties of the *yue lai yue* ‘more come more’ construction one by one, and then, based on this, previous analyses of this construction such as McCawley (1988) and Tsao & Hsiao (2002) will be evaluated.

First of all, since the dummy verb *lai* ‘come’, which in many cases can be replaced by the verb *bian* ‘change’ or *guo* ‘as (time) pass’ or ‘as (one) lives’ without much loss of meaning, semantically is so bleached that no selectional restriction between it and the matrix subject NP exists, it is impossible for each of the two parts of this construction (e.g., the *Zhangsan yue lai* ‘Zhangsan more come’ and the *yue hutu le* ‘more muddle-headed SFP’ part of *Zhangsan yue lai yue hutu le* ‘Zhangsan is getting more and more muddle-headed’) to have its own subject, no matter whether the subject of the second part refers to that of the first part or not, as the ungrammaticality of (4a-c) indicates.

- (4) a. \*Zhangsan yue lai, ta yue hutu le.  
       Zhangsan more come he more muddle-headed SFP  
       b. \*Zhangsan yue bian, ta yue xihuan ni le.  
       Zhangsan more change he more like you SFP

- c. \*Zhangsan yue guo, ta yue hutu le.  
Zhangsan more pass he more muddle-headed SFP

Second, insertion of the adverb *jiu* ‘then’ (used to introduce the consequent part (or clause) of a conditional) into a position between *yue lai* ‘more come’ and the second *yue* ‘more’ is not allowed, as the ill-formedness of (5) shows (cf. McCawley 1988).

- (5) \*Zhangsan yue lai, jiu yue pang le.  
Zhangsan more come then more fat SFP

Third, along the line of McCawley (1988), Zhao (1999:164-165), having the *yue lai yue* ‘more come more’ sequence in the *yue lai yue* ‘more come more’ construction as the Chinese counterpart of the English ‘complex’ morpheme *more and more* (or *-er and -er*), points out the *yue lai yue* ‘more come more’ sequence always functions to modify a predicate, including the predicate-complement of the *V-de* construction (cf. Huang 1988).

- (6) a. Zhangsan yue lai yue gao le.  
Zhangsan more come more tall SFP  
‘Zhangsan is getting taller and taller.’  
b. Zhangsan pao-de yue lai yue kuai le.  
Zhangsan run-DE more come more fast SFP  
‘Zhangsan runs faster and faster.’

However, Zhao’s (1999) observation is immediately challenged by examples like (7a-b), where what is modified by the *yue lai yue* ‘more come more’ sequence looks like a manner adverb.<sup>2</sup>

<sup>2</sup> Unlike the adverb *yue* ‘more’, which can modify an activity verb, the *yue lai yue* ‘more come more’ sequence, if being analyzed as a degree adverb, cannot modify an activity verb, as the contrast below illustrates.

- (i) Ni yue zui (ta), ta yue pao.  
You more chase s/he s/he more run  
‘The more cumulative the reference property of your chasing her/him event is, the more cumulative the reference property his/her running event is.’  
(ii) \*Zhangsan yue lai yue pao.  
Zhangsan more come more run

The contrast above provides indirect evidence for us to say that in (7a-b) what is modified by the *yue lai yue* ‘more come more’ sequence is the manner adverb rather than the ‘complex’ predicate (e.g., *zixi-de jiancha lüke-de xingli* ‘carefully inspect the visitor’s baggage’).

- (7) a. Zhangsan yue lai yue \*(kuai-de) xiang zhongdian pao guo qu.  
Zhangsan more come more fast-DE toward finish run pass go  
'Zhangsan is approaching to the finish in a faster and faster manner.'
- b. Haiguan yue lai yue \*(zixi-de) jiancha lüke-de xingli le.  
Custom more come more carefully-DE inspect visitor-DE baggage SFP  
'The custom inspects the visitor's baggage in a more and more careful manner.'

Fourth, as (7a-b) further indicate, if we take away the manner adverb and have the *yue lai yue* 'more come more' sequence modify the activity verb directly, the sentence will be ungrammatical. So, we would expect the situation type of predicate that can be modified by the *yue lai yue* 'more come more' sequence is not without restriction. More precisely, the predicate modified must be stative: either an adjective or a stative verb, as the contrast between (8a-b) and (9a-d) illustrates.

- (8) a. Zhangsan yue lai yue gao le. (adjective)  
Zhangsan more come more tall SFP  
'Zhangsan is getting taller and taller.'
- b. Zhangsan yue lai yue xihuan Fawen le. (stative verb)  
Zhangsan more come more like French SFP  
'Zhangsan likes French more and more.'
- (9) a. \*Zhangsan yue lai yue pao le. (activity)  
Zhangsan more come more run SFP
- b. \*Zhangsan yue lai yue si le. (achievement)  
Zhangsan more come more die SFP
- c. \*Zhangsan yue lai yue chi-wan le. (accomplishment)  
Zhangsan more come more eat-finish SFP
- d. \*Zhangsan yue lai yue qiao le. (semelfactive)  
Zhangsan more come more knock SFP

In addition, the contrast above further implies that the *yue lai yue* 'more come more' construction shows the unboundedness effect, and this effect indeed is exemplified by the ungrammaticality of (10a-b), in which a durational temporal adjunct occurs.

- (10) a. \*Zhangsan(zai) san fenzhong nei hui yue lai yue gaoxing le.  
Zhangsan at three minute within will more come more happy SFP
- b. \*Zhangsan zai yi nian nei hui yue lai yue xihuan ni le.  
Zhangsan at one year within will more come more like you SFP

Fifth, the semantic interpretation of the bare (plural) NP *nühaizi* ‘girl’ in (11a-d) brings us to suggest that the *yue lai yue* ‘more come more’ construction involves adverb of quantification.

- (11) a. Nühaizi zongshi yue lai yue piaoliang.  
Girl always more come more beautiful  
‘A girl is always getting more and more beautiful.’  
b. Nühaizi daduo yue lai yue piaoliang.  
Girl mostly more come more beautiful  
‘In most cases, a girl is getting more and more beautiful.’  
c. Nühaizi you shihou hui yue lai yue piaoliang.  
Girl sometimes will more come more beautiful  
‘Sometimes, a girl is getting more and more beautiful.’  
d. Nühaizi hen shao hui yue lai yue piaoliang.  
Girl seldom will more come more beautiful  
‘A girl is seldom getting more and more beautiful.’

Sixth, as the semantic interpretation of (12a) (i.e., (12b)) indicates, in the *yue lai yue* ‘more come more’ construction, what are compared with each other along the scale denoted by the predicate modified by the second *yue* ‘more’ (or the *yue lai yue* ‘more come more’ sequence) are the two different temporal regions of the subject NP (or two different time variables related to the subject NP).

- (12) a. Zhangsan yue lai yue pang le.  
Zhangsan more come more fat SFP  
‘Zhangsan is getting fatter and fatter.’  
b.  $\forall t_1, t_2$  [ $t_1$  precedes  $t_2$  along the time axis]  $\rightarrow$  [Zhangsan is fatter at  $t_2$  than at  $t_1$ ].

Thus, (12a) is always interpreted as ‘As time goes on, Zhangsan is getting fatter and fatter.’ This characteristic (i.e., the temporal progression effect) shown by the *yue lai yue* ‘more come more’ construction, plus the unboundedness effect, makes the *yue lai yue* ‘more come more’ construction convey an inchoative sense.

Seventh, a temporal adverb, denoting either past or future time, can appear in the *yue lai yue* construction without making the sentence ungrammatical, as (13a-b) show.

- (13) a. Zhangsan yiqian shuohua zongshi/you shihou/hen shao  
 Zhangsan before say always/sometimes/seldom  
 yue lai yue kuai.  
 more come more fast  
 ‘Zhangsan always/sometimes/seldom spoke faster and faster.’  
 b. Zhangsan yihou hui yue lai yue youqian.  
 Zhangsan later will more come more rich  
 ‘Zhangsan will be getting richer and richer.’

Example (13a) describes a (habitual) state in the past while (13b) a possible state in the future. So, neither of them violates the unboundedness requirement shown by the *yue lai yue* ‘more come more’ construction. Hence, they are well-formed.

### 3. Previous analyses

In this section, we shall evaluate some representative previous analyses of the Chinese *yue lai yue* ‘more come more’ construction, as in McCawley (1988) and Tsao & Hsiao (2002) by using the properties of the *yue lai yue* ‘more come more’ construction which we pointed out in §2. By way of doing so, the questions that any theory about the *yue lai yue* ‘more come more’ construction has to account for will be highlighted.

#### 3.1 McCawley (1988)

McCawley (1988:187) considers the Chinese *yue lai yue* ‘more come more’ sequence the analogue of the English ‘complex’ comparative morpheme *more and more* (or *-er and -er*) based on the following reasons. First, it is not possible for each of the two parts of the *yue lai yue* ‘more come more’ construction (e.g., the *ta yue lai* ‘he more come’ and the *yue gao le* ‘more tall SFP’ part of *ta yue lai yue gao le* ‘he is getting taller and taller’) to have its own subject but it is possible in Chinese comparative correlatives.

- (14) a. Ta yue lai, (\*ta) yue gao le.  
 S/He more come s/he more tall SFP  
 ‘S/He becomes taller and taller.’  
 b. Ta yue lai, (\*ta) yue xihuan ni le.  
 S/He more come s/he more like you SFP  
 ‘S/He like you more and more.’

- (15) Ni yue duo-zhe ta, ta yue huaiyi ni.  
You more hide-ASP her/him s/he more suspect you  
'The more cumulative the reference property of your hiding-yourself-from-her/him event is, the more s/he suspects on you.'

In other words, under McCawley's (1988) analysis, the *yue lai yue* 'more come more' construction is analyzed as a mono-clausal rather than a bi-clausal construction (cf. Chao 1968:121).

Second, as (16a-b) show, the adverb *jiu* 'then', which functions to introduce the consequent part of a conditional, cannot occur in-between the *yue lai* 'more come' and the second *yue* 'more' in the *yue lai yue* 'more come more' construction.

- (16) a. Ta yue lai (\*jiu) yue gao le.  
S/He more come then more all SFP  
'S/He becomes taller and taller.'  
b. Ta yue lai (\*jiu) yue xihuan ni le.  
S/He more come then more like you SFP  
'S/He likes you more and more.'

Hence, McCawley (1988) argues that, unlike the Chinese comparative conditional (i.e., the *yue ... yue* 'more' ... 'more' correlative), the *yue lai yue* 'more come more' construction is not a type of conditional.

Third, the relationship between the first predicate and the second *yue* 'more' in the Chinese comparative correlative is not so agglutinative as that between the verb *lai* 'come' and the second *yue* 'more' in the *yue lai yue* 'more come more' construction. For example, it is possible only to a limited extent to get anything intervening between *lai* 'come' and the second *yue* 'more', as the contrast below illustrates.

- (17) a. Zhangsan yue lai a! yue gao le.  
Zhangsan more come SFP more tall SFP  
'Zhangsan becomes taller and taller.'  
b. \*Zhangsan yue lai zongshi yue xihuan ni le.  
Zhangsan more come always more like you SFP  
'Zhangsan likes you more and more.'
- (18) Nühaizi yue da, wangwang jiu hui yue piaoliang.  
Girl more big usually then will more beautiful  
'The older a girl is, the more beautiful she is.'



However insightful it is, McCawley (1988) is not without problems. First, McCawley (1988) does not spend any space in discussing the situation type of the predicate modified by the *yue lai yue* ‘more come more’ sequence; that is, why does the situation type of the predicate modified by the *yue lai yue* ‘more come more’ sequence have to be stative, either an adjective or a stative verb (cf. (8a-b)-(9a-d))?

The second question that McCawley (1988) fails to account for is why it is the case that, in the *yue lai yue* ‘more come more’ construction, what are compared with each other along the scale denoted by the predicate modified by the *yue lai yue* ‘more come more’ sequence are two different time variables that can be further understood as two different spatio-temporal regions (or sausages) of the entity denoted by the subject NP.

Third, as we have pointed out in §1, no overt comparative morpheme is found in Chinese; therefore, it is hard for us to have the ‘complex’ morpheme *more and more* (or *-er and -er*) as the English correspondent of the *yue lai yue* ‘more come more’ sequence in the *yue lai yue* ‘more come more’ construction.

### 3.2 Tsao & Hsiao (2002)

Against McCawley (1988), Tsao & Hsiao (2002) analyze the *yue lai yue* ‘more come more’ construction as a subtype of the Chinese comparative correlative rather than a serial verb construction, and have the verb *lai* ‘come’ inside as a 0-place predicate.

As Tsao & Hsiao (2002) point out, although in a serial verb construction like (19a-b) the first and the second verb share the same subject NP, it is not necessary for the first verb of a serial verb construction to be some specific verb, for example, the verb *lai* ‘come’.

- (19) a. Zhangsan zhu fan chi.  
           Zhangsan cook rice eat  
           ‘Zhangsan cooks and eats rice.’  
       b. Tamen gao geming jiu guo.  
           They make revolution save country  
           ‘They make revolution in order to save their country.’

Furthermore, as (20a-b) indicate, there does not exist any selectional restriction between the (matrix) subject NP and the verb *lai* ‘come’ in the *yue lai yue* ‘more come more’ construction.

- (20) a. Zhangsan yue lai yue pang le.  
 Zhangsan more come more fat SFP  
 ‘Zhangsan becomes fatter and fatter.’  
 b. Zhangsan yue lai yue xiangxin wo le.  
 Zhangsan more come more believe I SFP  
 ‘Zhangsan becomes more and more trusted on me.’

So, Tsao & Hsiao (2002) suggest that the *yue lai yue* ‘more come more’ construction should not be analyzed as a serial verb construction even though a serial verb construction analysis provides a good way to explain why the verb *lai* ‘come’ and the second predicate have to ‘share’ the same subject in the *yue lai yue* ‘more come more’ construction.

Tsao & Hsiao (2002:819-820) instead analyze the *yue lai* ‘more come’ sequence in the *yue lai yue* ‘more come more’ construction as an ‘idiomaticalized’ temporal adjunct clause, in which the verb *lai* ‘come’ is a 0-place predicate, adjoined to the matrix clause, and consider the *yue lai yue* ‘more come more’ sequence to be a fixed expression. So, under their analysis example (21a) has a syntactic structure like (21b).

- (21) a. Ta yue lai yue bu xihuan qu Zhangsan jia le.  
 S/He more come more not like go Zhangsan home SFP  
 ‘S/He becomes more and more reluctant to visit Zhangsan.’  
 b. [Ta [VP [Temporal Adjunct Clause yue lai] [VP yue bu xihuan qu Zhangsan jia le]]].

The ‘idiomaticalized’ temporal adjunct clause analysis, as Tsao & Hsiao (2002) argue, not only explains why a particle like *a* can be inserted between the verb *lai* ‘come’ and the second *yue* ‘more’, but also explains why the variables quantified in the *yue lai yue* ‘more come more’ construction are time variables.

However, Tsao & Hsiao (2002) still encounter the following difficulties. First, Tsao & Hsiao (2002) fail to explain why the second predicate in the *yue lai yue* ‘more come more’ construction must be stative, for example an adjective or a stative verb.

Second, if the *yue lai* ‘more come’ sequence of the *yue lai yue* ‘more come more’ construction is a temporal adjunct clause, we would expect this temporal adjunct clause to be deletable, contrary to fact, as the contrast below indicates.

- (22) a. [Zhangsan [[Adjunct Clause yue lai] [AP yue pang]] le].  
 Zhangsan more come more fat SFP  
 ‘Zhangsan becomes fatter and fatter.’

- b. \*[Zhangsan [<sub>AP</sub> yue pang] le].  
       Zhangsan      more fat      SFP

To get around this problem, Tsao & Hsiao (2002:820) resort to the *ad hoc* assumption that the *yue lai yue* ‘more come more’ sequence is a fixed expression and no part(s) of it can be deleted.

Thus far, we can have all the questions that any analysis of the *yue lai yue* ‘more come more’ construction needs to account for highlighted in the following two ways: On the one hand, if the *yue lai yue* ‘more come more’ sequence is considered a lexicalized degree adverb, we shall encounter the following questions. First, why does the predicate modified have to be stative?

Second, since no overt comparative morpheme is found in Chinese, the analysis of having the *yue lai yue* ‘more come more’ sequence as the Chinese counterpart of the English ‘complex’ morpheme *more and more* (or *-er and -er*) needs evidence from aspects other than morphology. What are they?

Third, how can we derive the temporal progression effect shown by the *yue lai yue* ‘more come more’ construction?

Fourth, why do we allow insertion of particles like *a* rather than adverbs like *jiu* ‘then’ in-between the *yue lai* ‘more come’ and the second *yue* ‘more’ in the *yue lai yue* ‘more come more’ construction?

Fifth, why is it the case that what are compared with each other are two different spatio-temporal sausages of the same entity?

On the other hand, if the *yue lai yue* ‘more come more’ sequence is not analyzed as a lexicalized degree adverb, the following questions immediately come out. First, what is the syntactic and semantic nature of the verb *lai* ‘come’? Or why is the matrix subject NP semantically selected (or determined) by the second predicate?

Second, why does the second predicate have to be a stative one?

Third, why is the insertion of the adverb *jiu* ‘then’ in-between the *yue lai* ‘more come’ and the second *yue* ‘more’ prohibited?

Fourth, how can the temporal progression effect be derived naturally?

Fifth, why is it the case that what are compared with each other are two different spatio-temporal sausages of the same entity?

#### 4. The light verb analysis

Assuming Liu (to appear), we shall propose that the *yue lai yue* ‘more come more’ construction is a subtype of the Chinese comparative correlative. The verb *lai* ‘come’, whose semantic content is bleached to an extent that only the ‘verbal aspect’ (aktionsart)

is retained, is the overt realization of the light verb (or eventuality predicate) BECOME, which selects as complement a state (cf. Huang 1997, T.-H. Lin 2001).

In the following, we shall briefly introduce Liu's (to appear) analysis of the Chinese comparative correlative as preliminary, and then a light verb (or eventuality predicate) analysis of the *yue lai yue* 'more come more' construction, which implies that the *yue lai yue* 'more come more' construction is a subtype of Chinese comparative correlative, will be proposed.

#### 4.1 Preliminary: Liu (to appear)

According to Liu (to appear), the Chinese comparative correlative, which should not be considered a genuine conditional because it may describe an on-going situation or a past event, contains an (implicit) adverb of quantification and involves a quantificational tripartite (i.e., the restrictive domain-nuclear scope) structure (cf. Xing 2001:379-380). The mapping between its syntactic tree structure and the corresponding quantificational tripartite structure is subject to the Revised Extended Mapping Hypothesis (cf. Diesing 1992, Tsai 2001:132).

(23) Revised Extended Mapping Hypothesis

- a. The first clause (i.e., CP) immediately dominated by the top CP is mapped into the restriction while the second the nuclear scope; otherwise,
- b.
  - i. Material from a syntactic predicate is mapped into the nuclear scope.
  - ii. Material from XP immediately dominating the subject chain of a syntactic predicate (excluding that predicate) is mapped outside the nuclear scope in a Chinese comparative correlative. A subject chain is an A-chain with its tail in a subject position.
- c. Given the correlative nature of the adverb *yue* 'more', at least one occurrence of the adverb *yue* 'more' must be found in the restriction and the nuclear scope of the quantificational tripartite structure to ensure that a comparison is made in either domain. ((23c) in fact can be derived from the semantics of the adverb *yue* 'more'.)

Semantically, the correlative adverb *yue* 'more' functions to regulate a relation between a pair of degree/quantity variables related to the predicate modified by the adverb *yue* 'more' (e.g.,  $x_1$  and  $x_2$ ) and a comparison relation.<sup>3</sup> The relationship between

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<sup>3</sup> According to Doetjes (1997:115): There are two different scalar argument positions: the scalar *q*-position (quantity) and the *g*-position (grade). The *q*-position is associated to the *r*-position (reference) in the grid of an NP to reflect the reference properties of the noun, or to the

these two degree/quantity variables, as Liu (to appear) argues, is further subject to the condition below.

- (24) For every  $x_1$ , there must exist an  $x_2$ ; the degree value of  $x_2$  on the scale denoted by the predicate modified by the adverb *yue* ‘more’ must be larger than that of  $x_1$  on the same scale, and vice versa.

It is these two degree/quantity variables that are ‘directly’ compared with each other along the scale denoted by the predicate modified by the adverb *yue* ‘more’. Each of these two variables is then associated with a ‘corresponding’ variable (syntactically or semantically) predicated by the predicate modified by the adverb *yue* ‘more’, and it is these two ‘corresponding’ variables that are ‘indirectly’ compared with each other in the Chinese comparative correlative. For the nature of the ‘indirect’ variables, the type of predicate modified by the adverb *yue* ‘more’ (e.g., stage- or individual-level) provides information to help identify it.

For the correlative nature of the adverb *yue* ‘more’, Liu (to appear) suggests that a relation denoted by the adverb *yue* ‘more’ must be identified either as the restrictive domain or the nuclear scope of a quantification tripartite structure. For the correlative nature of the adverb *yue* ‘more’, a ‘restrictive-domain-expressing’ relation denoted by one adverb *yue* ‘more’ (or more than one adverb *yue*’s ‘more’) must co-occur with a ‘nuclear-scope-expressing’ relation denoted by one adverb *yue* ‘more’ (or more than one adverb *yue*’s ‘more’), and vice versa.

Under such an analysis, example (25a-b) will have (26a-b) as their corresponding structure, in which the part mapped into the restriction and that into the nuclear scope are clearly shown, respectively.<sup>4</sup>

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*e*-position (event) in the grid of a VP to express the reference properties of the event (e.g., *They ran a lot* does not imply that there are many people who ran, but that there was a lot of running taking place) (cf. Higginbotham 1985, Zwarts 1992). The *g*-position is found in scalar adjectives, and  $\theta$ -bound by elements such as *so*, *as*, and *how*. Stage-level VPs contain a *q*-position and in some cases also a *g*-position, while individual VPs only contain a *g*-position. For ease of exposition, we shall use the degree argument and the quantity argument to represent the *g*-position and the *q*-position, respectively.

<sup>4</sup> The quantification tripartite structure of (25b) is derived in a way as follows. The material from VP (i.e., *yue haochi* ‘more delicious’) is mapped into the nuclear scope and material from IP (excluding VP) into the restrictive domain (i.e., *yue tian de pingguo* ‘more sweet DE apple’). The Revised Extended Mapping Hypothesis also explains why (i) is grammatical but (ii) is not.

(i) Ni yue xiang xie-de yue kuai, ni jiu hui juede ziji xie-de yue man.  
You more want write-DE more fast you then will think self write-DE more slowly  
‘The faster you wish to write, the more slowly you would find you write.’

- (25) a. Pingguo yue tian, (jiu) yue haochi.  
 Apple more sweet then more delicious  
 ‘The sweeter an apple is, the more delicious it is.’  
 b. Yue xiang de pingguo (jiu) yue haochi.  
 More fragrant DE apple then more delicious  
 ‘The more fragrant an apple is, the more delicious it is.’
- (26) a. [CP [CP/Restriction Pingguo yue tian], [CP/Nuclear jiu yue haochi]].  
 Apple more sweet then more delicious  
 ‘The sweeter an apple is, the more delicious it is.’  
 b. [S [NP/Restriction [S Yue xiang de] pingguo]] [VP/Nuclear jiu yue haochi]].  
 More fragrant DE apple then more delicious  
 ‘The more fragrant an apple is, then the more delicious it is.’

What the adverb *yue* ‘more’ modifies in (25a) is a gradable individual-level predicate (i.e., *tian* ‘sweet’); therefore, the adverb *yue* ‘more’ inside interacts with the degree argument of it (cf. von Stechow 1984, Heim 1985, Kennedy & McNally 2005). Since occurrence of the adverb *yue* ‘more’ induces a comparison relation, two degree arguments related to the gradable individual-level predicate *tian* ‘sweet’ will be induced. Given that an individual-level predicate does not change spatio-temporally, these two degree variables can only be considered two degree arguments, each belonging to a different entity predicated by the individual-level predicate. In other words, what are ‘directly’ compared with each other in (25a-b) are the two degree variables, each associated with a different entity, and it is these two different entities that are ‘indirectly’ compared with each other. Hence, the semantic tripartite representation of (25a-b) can be roughly formulated as (27a-b), respectively.<sup>5</sup>

- (27) a.  $\forall x, y$  [apple(x) & apple(y) & x is sweeter than y]  $\rightarrow$   
 [x is more delicious than y].  
 b.  $\forall x, y$  [apple(x) & apple(y) & x is more fragrant than y]  $\rightarrow$   
 [x is more delicious than y].

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(ii) \*[<sub>IP/Restriction</sub> Zhangsan [<sub>VP/Nuclear</sub> yue xihuan mai [<sub>NP</sub> [<sub>CP</sub> yue gui de] dongxi]]].  
 Zhangsan more like buy more expensive DE thing

Example (ii) is ruled out because no adverb *yue* ‘more’ occurs in the restrictive domain.

<sup>5</sup> One implication of Liu’s (to appear) analysis is that what are ‘indirectly’ compared with each other in cases which contain an individual-level predicate must be two different entities, as the ungrammaticality of (i) shows.

(i) \*Zhe-ke pingguo yue tian, yue haochi.  
 This-CL apple more sweet more delicious

In contrast, whenever the predicate modified by the adverb *yue* ‘more’ is a stage-level predicate, what interacts with the adverb *yue* ‘more’ can be the quantity or the degree argument of the predicate. For example, in (28a), the adverb *yue* ‘more’ modifies a stage-level predicate (i.e., *re* ‘hot’) so that two degree variables, each belonging to a different spatio-temporal region of ‘the weather’, are induced.<sup>6</sup> These two spatio-temporal regions can further be understood as two different time variables. So, what are ‘indirectly’ compared with each other in (28a) are two different time variables bound by the unselective operator, as (28b) illustrates.

- (28) 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  $t_2$ ]  $\rightarrow$  [the more water is consumed at  $t_1$  than at  $t_2$ ].

In cases like (29a), the adverb *yue* ‘more’ interacts with the gradable adjective *hao* ‘good’; therefore, two degree arguments are induced. Since the subject NP *Zhangsan*, though being a single entity, is predicated of by the stage-level predicate *zhunbei-de* ... ‘prepare-DE ...’, it is possible for us to get two different spatio-temporal regions of the individual *Zhangsan* (i.e., two ‘duplicates’ of *Zhangsan* in two different possible worlds). Each possible world is associated with a different degree argument of *hao* ‘good’. So, what are ‘indirectly’ compared with each other in (29a) are two different worlds.<sup>7</sup>

<sup>6</sup> In example (i), it is the quantity argument of the stage-level predicate *pao* ‘run’ that interacts with the adverb *yue* ‘more’.

- (i) Zhangsan yue pao, yue kuai.  
 Zhangsan more run more fast  
 ‘The more cumulative the reference property of Zhangsan’s running event is, the faster he is.’

Since the property of a stage-level predicate might change along the spatio-temporal axis, the two quantity variables induced by the adverb *yue* ‘more’ might each belong to a different spatio-temporal region of the entity *Zhangsan*. So, the most prominent reading of (i) is the one in which two different spatio-temporal sausages of the same entity *Zhangsan* are compared with each other (cf. footnote 7).

<sup>7</sup> Although almost all speakers tend to have a preference for the reading in which two spatio-temporal regions of the same entity are compared with each other along some scale in cases involving a stage-level predicate, another reading in which two different degree/quantity variables, each belonging to a different entity, are compared is still acceptable to them. For instance, the (b) reading is intuitively possible for (i) under the following scenario: Suppose Zhangsan is the chair of Department of Linguistics while Lisi is Dean of Academic Affairs at the same university. Every day, Lisi is much more busy than Zhangsan, and Lisi, as busy as a

- (29) a. Zhangsan zhunbei-de yue hao, ke jiu jiao-de yue hao.  
 Zhangsan prepare-DE more good lecture then teach-DE more good  
 ‘The better Zhangsan is prepared, the better his lecture is.’  
 b.  $\forall w_1, w_2$  [Zhangsan is better prepared in  $w_1$  than in  $w_2$ ]  $\rightarrow$   
 [Zhangsan lectures better in  $w_1$  than in  $w_2$ ].

So, as (27a-b)-(29a-b) show, the ‘corresponding’ variables compared (i.e., what are ‘indirectly’ compared with each other) can be individuals, times or possible worlds.

This analysis, as Liu (to appear) argues, provides an explanation for the following properties shown by the Chinese comparative correlative. First, since a relation denoted by the adverb *yue* ‘more’ must be identified either as the restriction or the nuclear scope, the correlative nature of the adverb *yue* ‘more’ is derived because a ‘restrictive-domain-expression’ relation denoted by one adverb *yue* ‘more’ must co-occur with a ‘nuclear-scope-expression’ relation denoted by one adverb *yue* ‘more’, and vice versa. Moreover, since there is no overt subordinator to introduce the restriction part in the Chinese comparative correlative, the mapping between the syntactic tree structure and the corresponding quantificational tripartite structure can be viewed as an instance of isomorphism: the restrictive domain precedes the nuclear scope. Hence, the adverb *yue* ‘more’ which denotes ‘restrictive-domain-expression’ relation must overtly precede the one that denotes the ‘nuclear-scope-expression’ relation in linear order.

Second, the unboundedness effect shown by the Chinese comparative correlative is naturally derived if Condition (24) is considered one of the intrinsic semantic features of the adverb *yue* ‘more’. In (30), the accomplishment predicate *chi-wan* ‘eat-finish’ implies a ‘bounded’ quantity of the event.

- (30) \*Ni yue chi-wan, duzi yue bao. (accomplishment)  
 You more eat-finish stomach more full

Existence of such a bounded quantity causes violation of Condition (24) because there does not exist another quantity ‘larger’ than it.<sup>8</sup>

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bee, is always a person more forgetful than Zhangsan.

- (i) Ren yue mang, jiu yue rongyi wang-dong-wang-xi.  
 People more busy then more easy forget-east-forget-west  
 a. ‘The more busy a person gets, the easier for him to get forgetful it is.’  
 b. ‘If a person is more busy, then it is easier for him/her to be forgetful.’

<sup>8</sup> The unboundedness effect brings us to expect the predicate modified by the adverb *yue* not to occur with an aspect marker expressing perfectivity, for example *-le* and *-guo* (cf. Liu 1988, J.-W. Lin 2003a, b, Bohnemeyer & Swift 2001). The fact indeed bears out this expectation, as the contrast between (ia-b) and (ic) illustrates.



Third, according to J.-W. Lin (2003a), the negation marker *bu* ‘not’ aspectually selects as complement a stative situation while the negation marker *mei* ‘not’ a dynamic and bounded event as complement. So, we would expect that the negation marker *bu* ‘not’ can appear in Chinese comparative correlatives while the negation marker *mei* ‘not’ cannot, and the fact bears out this expectation, as the contrast between (31a) and (31b) illustrates.

- (31) a. Xiaohaizi yue bu tinghua, (jiu) yue bu gai li ta.  
 Child more not well-behaved then 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

#### 4.2 The verb *lai* as the light verb BECOME

Following Hale & Keyser (1993), Huang (1997) proposes a lexical decompositional approach to Chinese syntax, meaning that each verb in a language has an underlying syntactic representation that correlates with its event structure. However, Huang (1997), taking a stand different from Hale & Keyser’s (1993) configurational approach to event structure, assumes that the lexical representational structure (i.e., LRS) of a verb is composed of eventuality predicates, and suggests that “A possibility remains that such structures as those in (32a-f) may be directly projected as D-Structure and that head movement operates as a normal process, in the mapping between D-Structure and S-Structure” (cf. Huang 1997:54).

- |      |    |         |             |                                     |            |
|------|----|---------|-------------|-------------------------------------|------------|
| (32) | a. | ku      | ‘cry’       | [x DO [x ku]]                       | activity   |
|      | b. | kan shu | ‘read book’ | [x DO [x kan shu]]                  | activity   |
|      | c. | pang    | ‘get fat’   | [BECOME [x pang]]                   | inchoative |
|      | d. | pang    | ‘fat’       | [HOLD [x pang]]                     | stative    |
|      | e. | xihuan  | ‘like’      | [HOLD [x xihuan]]                   | stative    |
|      | f. | qi-si   | ‘anger-die’ | [x DO [x CAUSE [BECOME [y qi-si]]]] | causation  |

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- (i) a. \*Ni yue chufa-le ta, ta yue tiaopi.  
 You more punish-ASP her/him, s/he more naughty  
 b. \*Ni yue chufa-guo ta, ta yue tiaopi.  
 You more punish-ASP her/him s/he more naughty  
 c. Ni yue duo-zhe ta, ta yue huaiyi ni.  
 You more hide-ASP him/her he/she more suspect you  
 ‘The more cumulative the reference property of your chasing-him event is, the more he/she will suspect on you.’

That is to say, (32a-f) are not only “logical/semantic” representations for the verbs, but are also syntactic structures. Or put it another way, Chinese exhibits syntactic effects by doing L-Syntax in S-Syntax. In such a view, the D-Structure to S-Structure derivational process of (33a) is shown by (33b), in which the adjectival head *pang* ‘fat’ undergoes head movement from the head position of AP to that of the light verb phrase (i.e., BECOME), and the subject NP *Zhangsan* undergoes NP movement from Spec-AP to Spec-IP by way of Spec-vP.

- (33) a. Zhangsan pang le.  
           Zhangsan fat SFP  
           ‘Zhangsan is getting fat.’  
       b. [IP Zhangsan<sub>i</sub> ... [vP t<sub>i</sub> [v' [v/BECOME pang<sub>j</sub>] [AP t<sub>i</sub> [A' [a t<sub>j</sub>]]]]] le].

Here relevant to the *yue lai yue* ‘more come more’ construction is the aspectual meaning of the light verb BECOME (i.e., begin/come to be ...). The aspectual meaning (i.e., aktionsart) of the covert inchoative light verb BECOME (i.e., begin/come to be ...) is reminiscent of Chao’s (1968:121) observation; that is, in the Chinese *yue ... yue* ‘more’ ... ‘more’ correlative construction, each correlative adverb *yue* ‘more’, being a degree adverb, must co-occur with a predicate. If no specific action can be ascribed to the first verb, the dummy verb *lai* ‘come’, *bian* ‘change’, or *guo* ‘as (one) lives’ or ‘as (time) passes’ is used to complete the formula. Since the semantic content of the dummy verb *lai* ‘come’, *bian* ‘change’ or *guo* ‘pass’ is so bleached that no selectional restriction between it and the matrix subject NP exists, the matrix subject NP of the *yue lai yue* ‘more come more’ construction in fact is semantically selected by the second predicate, as (34a-b) illustrate.

- (34) a. Zhangsan yue lai/bian yue pang le.  
           Zhangsan more come/become more fat SFP  
           ‘Zhangsan is getting fatter and fatter.’  
       b. Zhangsan yue lai/guo yue hutu le.  
           Zhangsan more come/pass more muddle-headed SFP  
           ‘Zhangsan is getting more and more muddle-headed.’

So, we can say that the verb *lai* ‘come’ in the *yue lai yue* ‘more come more’ construction loses its primary meaning involving arguments and only has its aspectual meaning ‘begin/come to be ...’ retained.

In addition, as we have pointed out in §1, the second predicate of the *yue lai yue* ‘more come more’ construction must be a stative one, either an adjective or a stative verb, as the contrast between (35a-b) and (36a-d) shows.

- (35) a. Zhangsan yue lai yue gao le. (adjective)  
Zhangsan more come more tall SFP  
‘Zhangsan is getting taller and taller.’  
b. Zhangsan yue lai yue xihuan Fawen le. (stative verb)  
Zhangsan more come more like French SFP  
‘Zhangsan likes French more and more.’
- (36) a. \*Zhangsan yue lai yue pao le. (activity)  
Zhangsan more come more run SFP  
b. \*Zhangsan yue lai yue si le. (achievement)  
Zhangsan more come more die SFP  
c. \*Zhangsan yue lai yue chi-wan le. (accomplishment)  
Zhangsan more come more eat-finish SFP  
d. \*Zhangsan yue lai yue qiao le. (semelfactive)  
Zhangsan more come more knock SFP

These two characteristics of the *yue lai yue* ‘more come more’ construction work together to remind of us the possibility of considering the verb *lai* ‘come’ the overt realization of the light verb (or eventuality predicate) BECOME (cf. Huang 1997, T.-H. Lin 2001). Or in terms of T.-H. Lin (2001:77), the ‘verb’ *lai* ‘come’ in the *yue lai yue* ‘more come more’ structure is a predicate of aspects of eventualities. Syntactically, it is a verb with phonetic realization; semantically, it is a predicate of aspects that compose eventualities. Assuming this, we suggest that examples (34a-b) have their D-Structure overtly realized as (37a-b), respectively (cf. (32c)).

- (37) a. [ ... [<sub>VP</sub> yue [<sub>v'</sub> [<sub>v/BECOME</sub> lai] [<sub>AP</sub> Zhangsan yue pang]]] le].  
More come Zhangsan more fat SFP  
b. [ ... [<sub>VP</sub> yue [<sub>v'</sub> [<sub>v/BECOME</sub> lai] [<sub>AP</sub> Zhangsan yue hutu]]] le].  
More come Zhangsan more muddle-headed SFP

Probably due to the EPP feature of the light verb *lai* ‘come’ or some higher functional head, the subject NP *Zhangsan* undergoes NP movement (or subject-to-subject movement) to Spec-IP via Spec-vP, and the S-Structure (38a-b) are derived (cf. Chomsky 2001, Tang 2006).<sup>9</sup>

<sup>9</sup> As one of the reviewers points out, in the *yue lai yue* ‘more come more’ construction we can always use the verb *bian* ‘change’ as alternate for *lai* ‘come’. If so, why is the occurrence frequency of *lai* ‘come’ much higher than that of *bian* ‘change’ in this construction? Given that a light verb only has its aspectual meaning and the primary meaning of the predicate containing the light verb comes from the ‘argument’ of the light verb, the verb *bian* ‘change’, compared

- (38) a. [IP Zhangsan<sub>i</sub>...[<sub>VP</sub> yue [<sub>V'</sub> [<sub>V/BECOME</sub> lai] [<sub>AP</sub> t<sub>i</sub> yue pang]]] le].  
           Zhangsan           more                   come    more fat       SFP
- b. [IP Zhangsan<sub>i</sub>...[<sub>VP</sub> yue [<sub>V'</sub> [<sub>V/BECOME</sub> lai] [<sub>AP</sub> t<sub>i</sub> yue hutu]]] le].  
           Zhangsan           more                   come    more muddle-headed SFP

As we have argued, the *yue lai yue* ‘more come more’ construction is a subtype of the Chinese comparative correlative, and the verb *lai* ‘come’ in the *yue lai yue* ‘more come more’ construction is the overt realization of the light verb (or eventuality predicate) BECOME, which selects as complement a state. This analysis not only accounts for why the semantic content of the verb *lai* ‘come’ is so bleached that it loses its primary meaning involving arguments and only has its aspectual meaning (i.e., begin/come to be ...) retained, but also has the phenomenon that the matrix subject NP of the *yue lai yue* ‘more come more’ construction is semantically selected by the second predicate naturally derived.

Furthermore, the light verb analysis of the *yue lai yue* ‘more come more’ construction provides natural explanation for the following two properties shown by the *yue lai yue* ‘more come more’ construction, and makes them become further support for the analysis. First, as we have pointed out, the second predicate in the *yue lai yue* ‘more come more’ construction must be stative (either an adjective or a stative verb). Since the light verb (or event predicate) BECOME selects as complement a state, the fact that the second predicate in the *yue lai yue* ‘more come more’ construction must be stative is explained naturally because a state is always realized as an adjective or a stative verb.

Second, the light verb analysis implies that there exists a close syntactic and semantic relationship between the light verb *lai* ‘come’ (i.e., BECOME) and the second predicate in the *yue lai yue* ‘more come more’ construction. Syntactically, this relation is overtly realized as one that the light verb *lai* ‘come’ (i.e., BECOME) takes the second

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with the light verb *lai* ‘come’ (not the deictic verb *lai* ‘come’), is a more full-fledged lexical verb because it can occur as predicate independently, as shown by the contrast below.

- (i) Zhangsan   bian    le.  
       Zhangsan   change SFP  
       ‘Zhangsan changed.’
- (ii) \*Zhangsan   lai    le.   (Here *lai* ‘come’ is in the light verb use.)  
       Zhangsan   come   SFP

So, we suggest that it is the more light-verb-like property of the light verb *lai* ‘come’ that makes it much more popular than the verb *bian* ‘change’ in the *yue lai yue* ‘more come more’ construction. As opposed to Hale & Keyser (1993), in which BECOME is not treated as an independent light verb, the light verb analysis proposed here, in the manner of Huang (1997), T.-H. Lin (2001) and Tang (2006), treats BECOME as an independent functional category (i.e., a member of the family of light verbs (or eventuality predicates)).

predicate as complement. This head-complement structure is the real predicate of the *yue lai yue* ‘more come more’ construction. This characteristic explains why the adverb *jiu* ‘then’, as McCawley (1988) points out, cannot occur in-between the *yue lai* ‘more come’ and the second *yue* ‘more’ because the adverb *jiu* ‘then’ always occurs in a position between the subject and the predicate, as (39a-b) illustrate.

- (39) a. [IP[NP[CP Yue you qian de] ren] [Predicate jiu yue xihuan mai dongxi]].  
 More have money DE person then more like buy thing  
 ‘The more money a person has, the more interested in buying things s/he is.’  
 b. Ni<sub>i</sub> yaoshi chuqu, Pro<sub>i</sub> jiu bu yao huilai.  
 You if go-out then not want return  
 ‘If you dare to go, don’t come back again.’

However, as (40) shows, the adverb *jiu* ‘then’ appears in a position in-between the *yue lai* ‘more come’ and the second *yue* ‘more’ rather than one behind the subject but before the predicate.

- (40) \*[IP Zhangsan<sub>i</sub>... [yP yue [v' [v lai] [AP jiu t<sub>i</sub> yue hutu]]] le].  
 Zhangsan more come then more muddle-headed SFP

Hence, (40) is ungrammatical.

One implication of the light verb analysis to the *yue lai yue* ‘more come more’ construction is that the *yue lai yue* ‘more come more’ construction is a subtype of Chinese comparative correlatives. Since the syntactic tree structure of Chinese comparative correlatives, as Liu (to appear) argues, must be mapped into a quantificational tripartite structure, one issue crucial to the light verb analysis of the *yue lai yue* ‘more come more’ construction is how to derive the quantificational tripartite structure for the *yue lai yue* ‘more come more’ construction. We suggest that Liu’s (to appear) Revised Extended Mapping Hypothesis provides a good way to deal with this problem (cf. Tsai 2001:132).

- (41) Revised Extended Mapping Hypothesis  
 a. The first clause (i.e., CP) immediately dominated by the top CP is mapped into the restriction while the second the nuclear scope; otherwise,  
 b. i. Material from a syntactic predicate is mapped into the nuclear scope.  
 ii. Material from XP immediately dominating the subject chain of a syntactic predicate (excluding that predicate) is mapped outside the

nuclear scope in a Chinese comparative correlative. A subject chain is an A-chain with its tail in a subject position.

- c. Given the correlative nature of the adverb *yue* ‘more’, at least one occurrence of the adverb *yue* ‘more’ must be found in the restriction and the nuclear scope of the quantificational tripartite structure to ensure that a comparison is made in either domain. ((41c) in fact can be derived from the semantics of the adverb *yue* ‘more’.)

Since the *yue lai yue* ‘more come more’ construction does not consist of two CP clauses, the mapping between the syntactic tree structure and the quantificational tripartite structure, therefore, is subject to (41bi-ii) and (41c). Given this, the domain of the syntactic predicate in the *yue lai yue* ‘more come more’ construction involved becomes really crucial here.

Tsai (2001:139) points out that there is a typological correlation between the lack of V-to-I movement and the lack of nonspecific subject interpretation, and proposes a dynamic mechanism to explain this phenomenon. Namely, verb movement extends the domain of a syntactic predicate, and hence the nuclear scope. Thus, in a V-to-I language such as English the domain of a primary predicate, as well as that of the corresponding nuclear scope, is extended from V’ to I’ in LF. Given the VP-internal subject hypothesis, a subject chain typically has its head above the nuclear scope of the current mapping cycle, as illustrated below.

(42) A man came yesterday.

- a.  $[IP/mapping\ cycle\ a\ man_k\ (\exists)[I'/nuclear\ scope\ [I\ came_i + I]\ [VP\ a\ man_k\ [V'\ [V\ t_i]]]]]$   
‘A certain man came yesterday.’
- b.  $[IP/mapping\ cycle\ \emptyset\ (\exists)[I'/nuclear\ scope\ [I\ came_i + I]\ [VP\ a\ man\ (x)\ [V'\ [V\ t_i]]]]]$   
‘One man (rather than two) came yesterday.’

Following Chomsky’s (1993) Copy Theory, where chain-formation leaves a copy rather than a trace, Tsai (2001:139) suggests that, on the one hand, if the lower copy in the Spec-VP is deleted, the upper copy in Spec-IP must get strongly quantified, either by its own determiner or by a sentential operator such as an adverb of quantification (cf. (42a)). On the other hand, if the upper copy is deleted, the tail of the chain  $\langle a\ man_k, a\ man_k \rangle$ , however, is ‘submerged’ under the local nuclear scope, hence is subject to existential closure according to Tsai’s (2001) Extended Mapping Hypothesis (cf. (42b)).<sup>10</sup>

<sup>10</sup> Extended Mapping Hypothesis (Tsai 2001:132)

- 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.

In contrast, Chinese-type languages lack agreement morphology, and do not license V-to-I raising. As a result, a subject chain is typically outside of nuclear scope, and cannot be rescued by existential closure, as illustrated by (43a-b).

(43) \*Wu-ge ren lai le.

Five-CL man come SFP

a. [IP/mapping cycle wu-ge ren<sub>k</sub> [I' [I I] [VP/nuclear scope wu-ge ren<sub>k</sub> (∃) [V' [V lai]]]] le]

b. [IP/mapping cycle wu-ge ren<sub>k</sub> [I' [I I] [VP/nuclear scope ∅ (∃) [V' [V lai]]]] le]

(43) thus is ruled out due to vacuous quantification. This explains why Chinese (plural) numeral indefinites cannot appear as subjects without being licensed by *you* 'have/exist', as existential modal verb triggering a specific reading, as exemplified by the contrast between (43) and (44).

(44) You wu-ge ren lai le.

Exist five-CL person come SFP

'There are five people who came.'

However, the observation above, as Tsai (2001:146) points out, is not entirely true because (Chinese) modality sentences as well as some non-root clauses do allow numeral indefinites to appear without the escort of *you* 'have/exist', expressing cardinality or quantity.

(45) a. San-ge bubing keyi/neng/yinggai/bixu dai jiu-fen kouliang.

Three-CL foot-soldier may/can/should/must carry nine-CL ration

'Three foot soldiers may/can/should/must carry nine rations.'

b. Wu-ge ren chi-de-wan/chi-bu-wan shi-wan fan.

Five-CL person eat-can-finish/eat-not-finish ten-CL rice

'Five people can/cannot finish ten bowls of rice.'

c. Liu-ge ren shui liang-zhang chuang.

Six-CL person sleep two-CL bed

'Six people should/may sleep in two beds.'

d. Liang-zhang chuang gou shui liu-ge ren.

Two-CL bed enough sleep-in six-CL person

'Two beds are enough for six people to sleep in.'

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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.

Tsai (2001:146) suggests that all the four types of modality constructions involve V-to-Mod raising, overtly or not, and this syntactic process creates a construction which licenses cardinal subjects, as shown by (46).

- (46)  $[_{\text{ModP}} \text{Subject}_k [_{\text{Mod}'} [_{\text{Mod}} V_i + \text{Mod}] [_{\text{VP}} \text{Subject}_k [_{V'} t_i \dots]]]]$ .

Take (45a) as example. The covert V-to-Mod raising makes extension of the primary syntactic predicate from V' to Mod' possible, as (45a-b) illustrate.<sup>11</sup>

- (47) a.  $[_{\text{ModP}} \text{San-ge} \text{ bubing}_k [_{\text{Mod}'} [_{\text{Mod}} \text{dai}_i + \text{Mod}] [_{\text{VP}} \text{san-ge} \text{ bubing}_k$   
           Three-CL foot-soldier       carry-Mod       three-CL foot-soldier  
            $[_{V'} t_i \text{ jiu-fen kouliang}]]]]$ .  
           nine-CL ration  
   b.  $[_{\text{ModP}/\text{mapping cycle}} \emptyset (\exists) [_{\text{Mod}'/\text{nuclear scope}} [_{\text{Mod}} \text{dai}_i + \text{Mod}] [_{\text{VP}} \text{san-ge} \text{ bubing}$   
           (x)  $[_{V'} t_i \text{ jiu-fen kouliang}]]]]$ .

At LF, if the upper copy is deleted and the lower copy is mapped into the nuclear scope, the subject variable in Spec-VP is licensed by existential closure, as in (47b). The non-specific reading of (45a) is thus accounted for. In contrast, if the lower copy is deleted at LF, the upper copy is mapped outside of the nuclear scope with respect to the Extended Mapping Hypothesis, where the licensing from existential closure is unavailable. Since the numeral specifier *wu-ge* 'five-CL', as Tsai (2001) suggests, is [-strong], the subject variable in Spec-ModP cannot be bound within the local mapping cycle. And this results in vacuous quantification.

Since a covert head-to-head movement might extend the domain of a syntactic predicate, it would matter a lot in the mapping between the syntactic tree structure and the quantificational tripartite structure of the *yue lai yue* 'more come more' construction whether the *yue lai yue* 'more come more' construction involves the covert V-to-v movement. As the contrast between (48a) and (48b) indicates, a (plural) numeral indefinite subject in the *yue lai yue* 'more come more' construction must be licensed by the existential modal verb *you* 'have/exist'.

- (48) a. You san-ge ren yue lai yue pang le.  
           Have three-CL person more come more fat SFP  
           'There are three persons, and they are getting fatter and fatter.'  
   b. \*San-gen ren yue lai yue pang le.  
           Three-CL person more come more fat SFP

<sup>11</sup> At PF, the lower subject copy is deleted under identity, and the surface form (45a) is derived.



This contrast implies that the covert V-to-*v* movement does not apply in the *yue lai yue* ‘more come more’ construction; therefore, the domain of the syntactic predicate does not extend from *A’/V’* to *a’/v’* at LF. Given this, the syntactic tree structure of the *yue lai yue* ‘more come more’ construction like (49a) has (49b) as its corresponding structure, in which the part mapped into the restriction and that into the nuclear scope are clearly shown.

- (49) a. [Zhangsan<sub>i</sub> ... [<sub>vP</sub> yue [<sub>v’</sub> [<sub>v/BECOME</sub> lai] [<sub>AP</sub> t<sub>i</sub> yue pang]]] le].  
Zhangsan more come more fat SFP  
‘Zhangsan is getting fatter and fatter.’  
b. [<sub>IP/Restriction</sub> Zhangsan<sub>i</sub> ... [<sub>vP</sub> yue [<sub>v’</sub> [<sub>v</sub> lai] [<sub>AP</sub> t<sub>i</sub> [<sub>A’/Nuclear</sub> yue pang]]]] le].  
Zhangsan more come more fat SFP  
‘The more cumulative the reference property of Zhangsan’s coming to be fat is, the fatter he is.’

Since the aspectual meaning of the light verb *lai* ‘come’ can be roughly interpreted as ‘begin/come to be’, the meaning of (49a) can be roughly interpreted as follows: The more cumulative the reference property of Zhangsan’s coming to be ... is, the fatter he is. In other words, what are ‘directly’ compared with each other in the restrictive domain of (49a) are two quantity variables related to Zhangsan’s beginning/coming to be ... event (cf. Doetjes 1997, Liu, to appear). The stage-level status of ‘begin/come to be ...’ further makes it possible for *Zhangsan* to be viewed as two different spatio-temporal regions, each associated with a quantity variable related to the light verb *begin/come to be* ... (cf. Carlson 1977, Hinrichs 1985). Furthermore, the two distinct spatio-temporal sausages of the entity *Zhangsan* can be somewhat considered the different ‘duplicates’ of *Zhangsan* at two different time points on the temporal axis. So, what are ‘indirectly’ compared with each in the restrictive domain of (49b) can be understood as one between two time variables, each associated with a corresponding ‘quantity’ of the *beginning/coming to be* ... event. As the same reasoning, what are ‘indirectly’ compared with each other in the nuclear scope of (49b) can be considered one between two time variables, each associated with a corresponding ‘degree’ variable of the adjective *pang* ‘fat’. So, based on (49b), the semantic tripartite structure can be roughly derived as (49c), in which the variables bound are time variables.

- (50)  $\forall t_1, t_2$  [The time variable  $t_1$  precedes  $t_2$  along the time axis]  $\rightarrow$  [Zhangsan is fatter at  $t_2$  than at  $t_1$ ].

Representation (50) explains why the *yue lai yue* ‘more come more’ construction shows

the temporal progression effect. This effect works together with the inchoative sense implied by the light verb *lai* ‘come’ (i.e., BECOME) and the unboundedness effect as well as the comparison relation implied by the adverb *yue* ‘more’ to make the *yue lai yue* ‘more come more’ construction convey the sense of dynamic comparison.

## 5. The residual and lexicalization

Before reaching the conclusion of this study, we want to point out that the *yue lai yue* ‘more come more’ sequence in the *yue lai yue* ‘more come more’ construction in fact is on the way to being lexicalized as a degree adverb. Significantly here, some properties shown by this ‘non-full-fledged’ degree adverb provide indirect evidence for the light verb (or eventuality predicate) analysis of the *yue lai yue* ‘more come more’ construction.

Although our internet search of large Chinese corpora with the key word *yue lai yue* ‘more come more’ at website <http://tw.search.yahoo.com> shows that, among 622 entries of the *yue lai yue* ‘more come more’ sequence, only 7 cases in which what is modified by the *yue lai yue* ‘more come more’ sequence looks like an adverb are found, five out of my thirteen informants have found examples like (51a-b) acceptable.

- (51) a. Zhangsan yue lai yue kuai-de xiang zhongdian pao guo qu.  
Zhangsan more come more fast-DE toward finish run pass go  
‘Zhangsan is approaching to the finish in a faster and faster manner.’  
b. Haiguan yue lai yue zixi-de jiancha lüke-de xingli le.  
Custom more come more carefully-DE inspect visitor-DE baggage SFP  
‘The custom inspects the visitor’s baggage in a more and more careful manner.’

The best way to describe this phenomenon is to say the *yue lai yue* ‘more come more’ sequence is on the way to being lexicalized as a degree adverb.

One of the gists of the light verb analysis of the *yue lai yue* ‘more come more’ construction is that the verb *lai* ‘come’ is the overt realization of the light verb (or eventuality predicate) BECOME, which selects as complement a state. Syntactically, a state is always realized as an adjective or a stative verb. So, what interact with the second *yue* ‘more’ are two degree variables related to the predicate modified. Given this, we would expect the ‘non-full-fledged’ degree adverb *yue lai yue* ‘more come more’ to inherit the semantic properties of its phrasal counterpart. This expectation indeed is borne out; for example, what interacts with the ‘non-full-fledged’ degree adverb *yue lai*

*yue* ‘more come more’ is the degree variable rather than the quantity variable, as shown by the contrast below.

- (52) a. \*Zhangsan yue lai yue pao.  
           Zhangsan more come more run  
       b. Zhangsan yue lai yue yonggong nian shu le.  
           Zhangsan more come more diligently read book SFP  
           ‘Zhangsan studies more and more diligently.’

The predicate *pao* ‘run’ is an activity verb (i.e., a stage-level predicate). If the *yue lai yue* ‘more come more’ sequence is considered a lexicalized degree adverb, what interacts with the degree adverb *yue lai yue* ‘more come more’ will be two quantity variables rather than two degree variables (cf. Doetjes 1997). Thus, (52a) is ungrammatical. In contrast, what is modified by the ‘non-full-fledged’ degree adverb *yue lai yue* ‘more come more’ in (52b) is the manner adverb *yonggong* ‘diligently’, and two degree variables are induced. So, (52b) is grammatical.

Furthermore, it is this characteristic (i.e., the degree adverb *yue lai yue* ‘more come more’ only interacts with degree variables) that distinguishes the adverb *yue lai yue* ‘more come more’ from the adverb *yue* ‘more’ in that only the latter can modify an activity verb that is associated with a quantity argument (or variable), as the contrast below illustrates.

- (53) a. Ni yue zui (ta), ta yue pao.  
           You more chase s/he s/he more run  
           ‘The more cumulative the reference property of your chasing her/him event is, the more cumulative the reference property of his running event is.’  
       b. \*Zhangsan yue lai yue pao.  
           Zhangsan more come more run

So, apparently looking like the residual to the light verb analysis of the *yue lai yue* ‘more come more’ construction, examples in which the *yue lai yue* ‘more come more’ can be considered a lexicalized degree adverb indeed provide indirect evidence for the light verb analysis proposed.

## 6. Concluding remarks

The Chinese *yue lai yue* ‘more come more’ construction is a subtype of the Chinese comparative correlative rather than an analogue of the English *more and more* (or *-er and -er*) construction. The verb *lai* ‘come’ inside is the overt realization of the light verb (or eventuality predicate) BECOME, which selects as complement a state. Through an internet search of large Chinese corpora with the key word *yue lai yue* ‘more come more’, we further argue that the *yue lai yue* ‘more come more’ sequence is on the way to being lexicalized as a degree adverb. More importantly, the characteristics of this ‘non-full-fledged’ adverb provide indirect evidence for the light verb (or eventuality predicate) analysis of the *yue lai yue* ‘more come more’ construction.

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## 漢語比較式關聯句式中的輕動詞「來」

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漢語的「越來越」句式是「越……越」比較式關聯句式的一種。句式中的「來」是以狀態謂語為補語的輕動詞 BECOME 的顯性形式。藉由網路對大量漢語文字資料的搜尋，我們進一步論證「越來越」這個字串正處於詞彙化為一個程度副詞的進程中；「越來越」這個尚未完成詞彙化的語法單位所顯現出來的語法和語意特性為本文針對「越來越」句式所提出的輕動詞分析提供了進一步的佐證。

關鍵詞：比較式關聯句式，越來越，輕動詞「來」

