

Encoding Unexpectedness by Aspect Inflection*

Niina Ning Zhang

National Chung Cheng University

In Mandarin Chinese, when the verbal perfect aspect marker *le* occurs with an individual-level predicate, it can denote unexpectedness, functioning as a mirative marker. The mirative *le* construction is syntactically different from a transitive comparative construction. The paper argues for a parallelism between counterfactual morphology and counter-expectedness morphology. It is shown that the feature [Exclusion] covers both the fake past tense in the former and the fake perfect aspect in the latter.

Key words: Mandarin Chinese, unexpected, aspect, perfect, mirative

1. Introduction

Mirativity is a grammatical category that denotes unexpectedness (e.g. DeLancey 2001). In this paper, I argue that the perfective aspect marker *le* in Mandarin Chinese can be used as a mirative marker, denoting unexpectedness from the viewpoint of a reference world. In Reading A of (1a), *le* encodes mirativity, and the reference world overlaps with the mental world of the speaker. (1b) shows that if *le* does not show up with the same string of words, no mirativity reading is available.

- (1) a. Zhe gen shengzi duan-le san gongfen.¹
this CL rope short-PRF three centimeter
A. ‘This rope is three centimeters shorter than expected.’
B. ‘This rope becomes three centimeters shorter than before.’
C. ‘This rope is three centimeters shorter (than the other or others in the context).’
- b. Zhe gen shengzi duan san gongfen.
this CL rope short three centimeter
only reading: = reading C above.

For a mirative reading, the measure expression such as *san gongfen* ‘three

* For comments on earlier versions of this paper, I thank the audiences of the Seventh Conference of the European Association of Chinese Linguistics (EACL-7), Venice, Italy, Sept. 13-15, 2011, and the Eighth Mediterranean Morphology Meeting (MMM 8), Cagliari, Italy, Sept. 14-17, 2011. I am especially grateful to the following people for their helpful suggestions and challenges: Michael Erlewine, Yuanlu Chen, Guglielmo Cinque, Davide Fanciullo, Daniel Hole, James Huang, James Myers, Victor Pan, Waltraud Paul, Martin Schäfer, and Hunter Wu, as well as two anonymous reviewers. I am responsible for all remaining errors.

¹ Abbreviations in the examples: PRF: perfect aspect; CL: classifier; DE: associative marker; BA: causative marker; PRT: sentence-final aspect or clause-type particle.

centimeters' is not obligatory. The examples in (2) have no measure expression, and they still have a mirative reading.² Note that all verbal *le* sentences may have a change-of-state (i.e. degree achievement; Kennedy & Levin 2008) reading. Thus Reading B is available for (1a). But I will discuss the mirative reading only.

The reference world of the mirativity can also be different from that of the speaker. It is Lulu's mental world in (3a), and an earlier mental stage of the speaker in (3b). In either case, the predicate where *le* occurs functions as an evaluative comment on the topic nominal, from the perspective of the reference world. According to Chang (2009:2243), this special use of *le* occurs in topic-comment constructions only. He calls the *le* 'comment LE'.

- (3) a. Lulu juede zhe gen shengzi chang-le yidian.
 Lulu feel this CL rope long-PRF a.little
 ‘Lulu feels that this rope is a little bit longer than expected.’

b. Wo cengjing yiwei zhe gen shengzi chang-le yidian (shiji-shang bu shi).
 I once think this CL rope long-PRF a.little fact-on not be
 ‘I once thought that this rope was a little bit longer than expected. (In fact it is not.)’

I will call the use of the aspect marker *le* in Reading A of (1a), (2), and (3) Mirative LE (M-LE), and the canonical perfect aspect use of *le*, as in Reading B of (1a), Temporal LE (T-LE). I will discuss the *le* in Reading C of (1a) in 4.2.

Chao (1968) states that this “use of *le* after adjectives is to express excess over some expected norm” (p. 692, also p. 89). A similar statement is found in Lü et al. (1999 [1980]:355) and Shi (1988:105-107). This use of *le* has also been mentioned in

² Mirative *le* constructions without a measure phrase, such as those in (2) and (7), are more frequently used in Mainland China than Taiwan.

Huang (1987), Ljungqvist (2003, 2007), Chang (2009), and Chen & Shirai (2010:26 fn. 9). Nevertheless, M-LE has received very little attention in the literature.

This paper attempts to answer the following questions:

- A. Why may the perfect aspect marker *le* bring about this special reading?
B. How is this reading represented syntactically?

I will argue for a parallelism between counterfactual (CF) morphology and counter-expectedness (CE) morphology. I will show that the feature [Exclusion] covers both the fake past tense in CF and the fake perfect aspect in CE.

Before moving on, I show the productivity of the M-LE construction. First, the subject of an M-LE construction can be any nominal that may occur as the subject of an individual level predicate in Mandarin Chinese, including a proper name, such as *London* ‘London’ in (4a), a definite nominal, such as *zhe ge jiage* ‘this CL price’ in (4b), the inner subject of the so-called double-subject constructions (Zhang 2009), such as *yanjing* ‘eye’ in (4c) and *pi* ‘skin’ in (4d), kind-denoting nominal phrase, such as *zhe zhong bu* ‘this kind cloth’ in (4e), and a quantity-denoting expression (Li 1998), such as *wu gongjin yan* ‘five kilo salt’ in (4f).

- (4) a. Lundun da-le. Zhao yi ge xiao yidian de chengshi! (proper name)
 London big-PRF seek one CL small a.bit DE city
 ‘London is too big. Look for a smaller city!’

b. Zhe ge jiage bianyi-le. Yinggai geng gui yidian.
 this CL price cheap-PRF should more expensive a.bit
 ‘This price is too cheap. It should be more expensive.’

c. Zhe haizi yanjing xiao-le. (inner subject: relational noun)
 this kid eye small-PRF
 ‘This kid, his eyes are too small.’

d. Zhe ge xigua pi hou-le. (inner subject: relational noun)
 this CL watermelon skin thick-PRF
 ‘This watermelon, its skin is too thick.’

e. Zhe zhong bu bo-le. (kind-denoting)
 this kind cloth thin-PRF
 ‘This kind of cloth is too thin.’

f. Wu gongjin yan duo-le. Wo zhi yao si gongjin. (quantity-denoting)
 five kilo salt much-PRF I only want four kilo
 ‘Five kilos of salt is too much. I want only four kilos.’

Moreover, M-LE occurs not only with a matrix predicate, as seen in the above examples, but also with predicates of other syntactic positions. In (5a), M-LE occurs

in the relative clause introduced by *de*; and in other examples in (5), M-LE occurs in the secondary predicate of a complex predicate (for V1V2 constructions where V1 is a verb of creation).

- (5) a. Ni ba chang-le san cun de shengzi tiao chulai!
 you BA long-PRF three inch DE rope pick out
 ‘Pick out the ropes that are three inches longer than the expected length!’
- b. Shufen ba mao-yi zhi-chang-le (yi cun).
 Shufen BA wool-sweater knit-long-PRF one inch
 ‘Shufen has knitted a wool-sweater, which is (one inch) too long.’
- c. Shufen ba zi xie-da-le (yidian).
 Shufen BA character write-big-PRF a.little
 ‘Shufen has written the characters (a little bit) too big.’
- d. Shufen ba keng wa-qian-le (shi gongfen).
 Shufen BA pit dig-shallow-PRF ten centimeter
 ‘Shufen has dug a pit, which is (ten centimeters) too shallow.’

In the examples in (5), the scope of the CE is the secondary predicate only, not including the matrix predicate. For instance, for (5b), the speaker has no evaluation of the activity *zhi* ‘knit’ conducted by Shufen. What is evaluated is the property of the product of the knitting.

Furthermore, M-LE may occur in either a realis or irrealis context, as shown by (6a) and (6b), respectively.

- (6) a. Lulu zuotian ba zi xie-xiao-le.
 Lulu yesterday BA character write-small-PRF
 ‘Lulu wrote the characters too small yesterday.’
- b. Ruguo ni ba zi xie-xiao-le, jiu cai-diao.
 If you BA character write-small-PRF then wipe-off
 ‘If you write characters too small, erase them.’

The paper is organized as follows. In Section 2, I introduce the basic properties of M-LE constructions. In Section 3, I review previous analyses of M-LE. Then in Section 4 M-LE is compared with other non-temporal uses of *le* in Mandarin Chinese. A further comparison between M-LE and T-LE is made in Section 5. In Section 6, linking to the use of past tense in CF constructions, I address the two questions above. Section 7 concludes the paper.

2. Basic properties of M-LE constructions

2.1 Individual-level predicates

As noted in Chen & Shirai (2010:26 fn. 9), M-LE occurs with “stative verbs” or “verb phrases or sentences describing nondynamic situations”. Precisely speaking, M-LE occurs with only individual-level predicates, such as *zhai* ‘narrow’ in (7a), *tian* ‘sweet’ in (7b), and *gui* ‘expensive’ in (7c).

- (7) a. Chuang zhai-le. Shui-bu-xia liang ge ren. (individual-level state)
 bed narrow-PRF sleep-not-down two CL person
 ‘The bed is too narrow. It is not big enough for two persons to sleep in.’

b. Nai-cha tian-le.
 milk-tea sweet-PRF
 ‘The milk-tea is too sweet.’

c. Zhe dongxi gui-le. (Chao 1968:692)
 this thing expensive-PRF
 ‘This thing is too expensive.’

If the predicate is a stage-level predicate, only T-LE may occur. In all of the examples in (8), the predicate is a stage-level one and thus the *le* is not an M-LE.

- (8) a. Shufen kan-le yi bu dianying. (transitive)
 Shufen see-PRF one CL movie
 ‘Shufen has seen a movie.’

b. Shufen lai-le. (unaccusative)
 Shufen come-PRF
 ‘Shufen has come.’

c. Shufen shui-le san tian. (unergative)
 Shufen sleep-PRF three day
 ‘Shufen has slept for three days.’

d. Wendu jiang-le shi du. (degree achievement)
 temperature fall-PRF ten degree
 ‘The temperature has fallen ten degrees.’

e. Shufen zui-le zhengzheng yi shangwu. (stage-level state)
 Shufen drunk-PRF whole one morning
 ‘Shufen has been drunk for the whole morning.’

- f. Lulu e-le (san tian). (stage-level state)
 Lulu hungry-PRF three day
 ‘Lulu has been hungry (for three days).’

Not only the predicate type, but also the context needs to be considered. M-LE may not occur in a bounded context. Specifically, it may not occur with a durative and frequency adverbial. The two contexts signal the so-called “provided temporal endpoint” of a situation (Yang 2011). In (8c), (8e), and (8f) above, the T-LE is compatible with a durative adverbial, but the intended M-LE in (9) is not compatible with such an adverbial. The repetitive adverbial *san ci* ‘three times’ is compatible with the T-LE in (10a), but not the M-LE in (10b).

- (9) *Zhe gen shengzi duan-le san nian.
 This CL rope short-PRF three year
 (10) a. Ta ke-le san ci.
 3SG cough-PRF three time
 ‘She/He coughed three times.’
 b. *Zhe gen shengzi duan-le san ci.
 This CL rope short-PRF three time

M-LE is thus different from T-LE, which must occur with a dynamic predicate (Shen 2004) and “is not compatible with [-telic] situations unless endpoints of other types are provided” (Yang 2011:396). M-LE is used in [-telic] situations only.

Accordingly, if a *le* sentence is ambiguous between a temporal and mirative reading, such as Reading A and Reading B of (11a), the occurrence of a stage-level predicate marker, such as *xialai* ‘down’ in (11b), excludes the latter reading:

- (11) a. Niunai leng-le.
 Milk cold-PRF
 A: ‘The milk has become cold.’ (Temporal)
 B: ‘The milk is too cold.’ (Non-temporal, mirative)
 b. Niunai leng-xialai-le.
 milk cold-down-PRF
 ‘The milk has become cold.’ (= Reading A above)

2.2 Gradable predicates and the optionality of a measure expression

A measure expression, such as *san gongfen* ‘three centimeters’ in (1a), may always

occur after M-LE, to encode the differential degree of the deviation from the expectation. However, examples like those in (2) show that such an expression is not obligatory in the construction (contra Zhu 1982:69, Liu 2007:779).

Since a measure phrase is always allowed in an M-LE construction, the predicate of the construction must be gradable. Non-gradable predicates may not occur with M-LE, as shown in (12).

- (12) a. *Mianbao fang-le.
bread square-PRF
- b. *Chuanghu tuoyuan-le.
window oval-PRF
- c. *Zhe fen dang'an jue-mi-le.
this CL file absolute-secret-PRF

2.3 The interactions between M-LE and excessive adverbs

For a mirative reading, if an evaluative excessive degree adverb (e.g. *tai* ‘too’, *guofen* ‘too much’, *guoyu* ‘too much’) occurs, M-LE is optional, as in (13).

- (13) a. Zhe gen shengzi tai duan (-le).
this CL rope too short PRF
'This rope is too short.'
- b. Lulu dui Mimi guofen keqi (-le).
Lulu to Mimi too polite PRF
'Lulu is too polite to Mimi.'

If a sentence has neither *le* nor an excessive adverb, it does not express CE, as seen in (14b) (also in (1b)), compared to (14a):

- (14) a. Zhe ge zhuozi da-**le** yi-dianr.
this CL table big-PRF a-little
'This table is a little bit too big.'
- b. Zhe ge zhuozi da yi-dianr.
this CL table big a-little
'This table is a little bit bigger (than the other or others in the context).'

My descriptive generalization is that M-LE and the excessive adverbs have the same semantic function, i.e. they both encode mirativity.

3. Previous analyses

The special role of M-LE in the aspect morphology has been briefly mentioned in the literature (e.g. Chao 1968:89, 692, Huang 1987:202, Shi 1988:102, Lü et al. 1999 [1980]:355; Ljungqvist 2007:209, Chang 2009:2243). However, the most extensive study of M-LE is Liu (2007). He makes the following claims for an M-LE construction:

- A. A measure expression is obligatory (Liu 2007:779).
- B. There is a *pro* to encode an individual for an implicit comparison.
- C. There is also a covert exceeding verb, called *ex*. This verb is selected from the lexicon in its inflected form, i.e. *ex-le*, before it is adjoined by an adjective (p. 789).
- D. The assumed *pro* must be licensed by a head element, and it is *le* that licenses the *pro*.
- E. The *pro* is hosted by the AP where the adjective is base-generated.

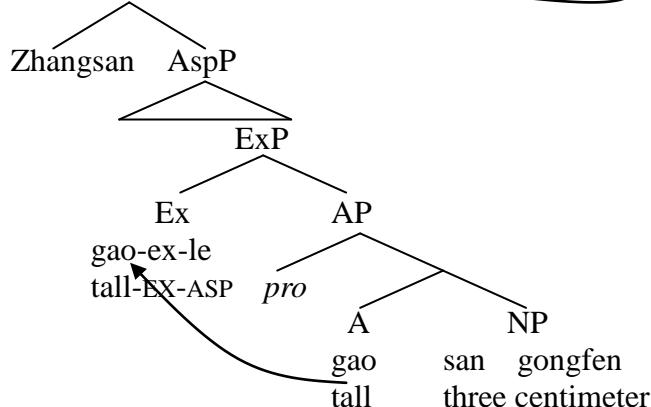
In Liu's approach, (15a) is claimed to have the structure in (15b) (Liu 2007:789):

- (15) a. Zhangsan gao-le san gongfen.

Zhangsan tall-ASP three centimeter

Intended: 'Zhangsan is three centimeters taller than expected.'

- b. [Zhangsan [_{ASP...}[_{EXP} [[_{EX} [[_A gao]_{i-ex}]-le][_{AP} pro [[_{A_i} t_i][_{NP} san gongfen]]]]]]]



In Liu's analysis, M-LE is the licensor of a *pro*, which represents an implicit compared individual. Let us call this approach *pro*-licensor (PL) approach. My comments on the claims of this PL approach are the following.

Taking Zhu (1982) for granted (see footnote 2 for alternative reason), Claim A asserts that a measure expression is obligatory for an M-LE construction. It thus wrongly rules out the acceptability of data like those in (2) and (7).

Generally, *pro* may be replaced by an overt pronoun, as shown in (16a); however, the assumed *pro* in the M-LE construction may not be replaced by a pronoun, as

shown in (16b). Therefore, Claim B is also problematic.

- (16) a. Lulu ting-le na ge xiaoxi yihou, {*pro*/ta} tebie gaoxing.
 Lulu hear-PRF that CL news after *pro*/3SG especially happy
 ‘After hearing the news, Lulu was especially happy.’
- b. Zhangsan gao-le (*ta) san gongfen.
 Zhangsan tall-asp 3SG three centimeter
 Intended: ‘Zhangsan is three centimeters taller than expected.’

If *pro* must be licensed by a head element, it is not clear why the assumed verb *ex* (Claim C) may not license the *pro*, and thus why *le* is necessary in the analysis. If a *pro* always needs an aspect marker in the containing clause, sentences like (16a), where *gaoxing* ‘happy’ has no aspect marker, will be unacceptable, contrary to the fact. I conclude that contra Claim D, the function of M-LE is not to license a *pro*.

Finally, the syntactic structure proposed in the PL approach (Liu 2007:789) misrepresents the semantics of the construction. In (15b), *san gongfen* is base-generated as the complement of *gao* ‘tall’ and *pro* is the Spec of the AP (Claim E). The three elements form a complete functional complex (CFC) (Chomsky 1986), which is a predication-denoting configuration. Thus, before the AP re-merges with *ex*, the AP, or CFC, encodes that *pro* is 3 centimeters tall. In other words, the individual that is compared with Zhangsan is 3 centimeters tall. This is not the meaning of (15a).

A similar analysis of the same construction in Cantonese is seen in Mok (1998: 113), where the positions of ExP and AP in (15b) are labeled as a higher and lower VP, respectively. Similar to (15b), the head of the lower VP moves to the head of the higher VP, and the Spec of the lower VP is an argument position, in Mok’s analysis.

A more plausible analysis in the PL perspective should be that the measure expression is the complement of *ex* or another relevant functional head (e.g. μ in Grano & Kennedy 2012:243), or the complement of the combination of the adjective and μ (Grano & Kennedy 2012:244, 259), rather than the complement of the adjective directly.

Mainly because of the problem of Claim D, I do not adopt this PL approach.

4. A comparison with other non-temporal uses of *le* in Mandarin Chinese

The goal of this section is to show how M-LE is different from other non-temporal uses of *le*.

4.1 A comparison with the non-temporal S-*le*

I first demonstrate that M-LE is syntactically different from the sentential *le* (S-*le*), which occurs at the end of a sentence. The M-LE in (1a) does not occur sentence-finally. The one in (2a) is also a verbal one, since it can be followed by a measure phrase such as *yi cun* ‘one inch’. The one in (2b) and (2c) can also be followed by *yidianr* ‘a little bit’. Obviously, M-LE is not S-*le*.

A further question is whether S-*le* may also express CE reading at all. On the one hand, if *le* occurs after a nominal predicate, which is not the syntactic position of a verbal *le*, no CE reading is attested. Instead, only a temporal reading is possible:

- (17) Xiao shu 50 gongfen le.
 small tree 50 centimeter PRT
 ‘The small tree has grown up to 50 centimeters.’

On the other hand, I find that in certain constructions, S-*le* does have a non-temporal reading, as seen in (18a), but the construction expresses an assertion of a situation, rather than CE.³

- (18) a. Wo zui xihuan Lulu le.
 I most like Lulu PRT
 ‘I like Lulu the most.’
- b. Wo zui xihuan Lulu la.
 I most like Lulu PRT
 ‘I like Lulu the most.’

The *le* in (18a), which is non-temporal, can be replaced with the sentence-final particle *la*, without a change of meaning, as seen in (18b). M-LE, which is a verbal suffix and thus never follows a nominal, may not be replaced by *la*, as seen in (19).

³ Soh (2009:627) claims that temporal CE is expressed if the sentential particle *le* occurs with a stage-level predicate, as in (i).

(i) Wo bu chi mugua le.
 I not eat papaya PRT
 ‘I don’t eat papaya (, which I did before/contrary to what one may expect).’

In order to get the CE reading, one needs to know that the agent of (i) did eat papaya before. Thus, this is a kind of pragmatically-induced CE reading. The default reading of (i) is not CE. Instead, it just expresses a new state. For data like (i) to have a CE reading independent of the discourse, an adverb such as *juran* ‘unexpectedly’ should occur. If the discourse or pragmatic context allows, any sentence can show CE. Since normally people do not eat dirt, (ii) might express a CE.

(ii) Ta chi tu le.
 he eat dirt PRT
 ‘He has eaten dirt.’

But the CE reading denoted by M-LE does not need any special pragmatic condition.

- (19) Zhe gen shengzi duan-{le/*la} 50 gongfen.
 this CL rope short-PRT/PRT 50 centimeter
 ‘This rope is 50 centimeters shorter than expected.’

La can be treated as a complementizer of root declarative clauses, patterning with other sentence-final particles such as *a* or *ya* (exclamatory), and *ne* (interrogative). One shared property of these clause-type particles is that they may not occur in an embedded sentence, as shown in (20a). However, M-LE may occur in an embedded clause, as in (20b). Therefore, M-LE is not a root-clause marker.⁴

- (20) a. Ruguo (ni renwei) [ta zui xihuan Xiaomei (*le)],
 if you think he most like Xiaomai PRT
 ‘If (you think) he likes Xiaomei most, ...’
 b. Ruguo ni renwei [zhe gen shengzi duan-le], qing gaosu wo.
 if you think this CL rope short-PRF please tell me
 ‘If you think this rope is too short, please tell me.’

Thus syntactically, M-LE behaves like the verbal *le*, rather than the sentential *le*.

4.2 A comparison with another non-temporal verbal *le*

M-LE has not been distinguished from another non-temporal use of verb *le*, which occurs in the so-called transitive comparative constructions. For instance, (21) has three readings, listed in A, B, and C.

- (21) Lulu gao-le san gongfen.
 Lulu tall-PRF three centimeter
 A. ‘Lulu has become three centimeters taller than before.’ (T-LE)
 B. ‘Lulu is three centimeters taller than another person or other persons identifiable in the discourse context.’ (non-T & non-M-LE)
 C. ‘Lulu is three centimeters taller than expected.’ (M-LE)

Reading A is a degree achievement reading. The adjective *gao* ‘high, tall’ denotes a change of state in this context (Grano 2012:529). The *le* is thus T-LE, a canonical

⁴ I assume that the *le* in the examples in (i) is also a variant of the particle *la*, which is an expressive marker. The expressive marker must occur with a degree adverb such as *ji* ‘extremely’ and *dai* ‘extremely’. This is different from M-LE (contra Shi 1988:102).

(i) a. Hao ji le! b. Hao-chi ji le! c. Shuai dai le!
 good extremely PRT good-eat extremely PRT handsome extremely PRT
 ‘Extremely good!’ ‘Extremely delicious!’ ‘Extremely handsome!’

perfect aspect marker.

(21) also has two non-temporal readings: B and C. Reading B is a transitive comparative reading (the term is from Erlewine 2007; also called Obligatory Measuring Comparatives in Mok 1998:110, and the Bare Comparative in Xiang 2005). The meaning that Lulu is three centimeters taller than another person or other persons identifiable in the discourse context is a pure narrative reading, without any evaluation from the speaker. The *le* is thus a non-temporal and non-mirative one.

Reading C is a mirative reading. The meaning that Lulu's height turns out to be three centimeters taller than expected can be found in the context that the speaker is selecting persons of a certain height to complete some special job. In this case, the *le* is M-LE.

I now discuss certain syntactic differences between the two non-temporal readings of the verbal *le* (i.e. reading B and C), leaving a comparison between readings A and C to Section 5.

In Liu's (2007) approach, the same syntax is given to Reading B and Reading C (i.e. M-LE). But the two readings are syntactically different, in five aspects.

First, the occurrence of a measure expression. A measure expression is obligatory for a transitive comparative construction (Xiang 2005), but not for an M-LE construction (see my comment on Liu's point A in Section 3).

This contrast may indicate that an implicit verb (similar to Liu's implicit *exceed*) occurs in the transitive comparative construction, and its argument is the measure phrase.

In Grano & Kennedy (2012), μ_{COMP} occurs in a transitive comparative construction. μ_{COMP} has double functions: it assigns Case to the standard nominal and it introduces a measure expression. Thus, the construction always has a measure expression.

Second, the syntactic presence of an internal argument. In reading B, the individual identifiable in the discourse context can be encoded by an explicit nominal, as seen in the following (23a). Therefore, an argument may occur between *le* and the measure expression in the transitive comparative construction (see Section 3 for my

comment on Liu's point B). But this is impossible for an M-LE construction, as seen in (23b) (We have seen the constraint in (16b)). The acceptability contrast between (23a) and (23b) shows that the M-LE construction is not a transitive comparative construction.

- (23) a. Lulu gao-le Mimi san gongfen. (Transitive Comparative)
 Lulu tall-PRF Mimi three centimeter
 ‘Lulu is three centimeters taller than Mimi.’
- b. *Lulu gao-le ta san gongfen. (intended M-LE construction)
 Lulu tall-PRF 3SG three centimeter
 Intended: ‘Lulu is three centimeters taller than the height that I want.’

Accordingly, a pronoun, which takes a nominal in the context as its antecedent, may occur between *le* and a measure expression in a transitive comparative construction, as in (24a), but not in an M-LE construction, as shown by the unacceptability of (24b):

- (24) a. Lulu bu xiang gen Mimi_i tiaowu, yinwei Lulu gao-le ta_i san gongfen.
 Lulu not want with Mimi dance because Lulu tall-PRF 3SG three cm
 ‘Lulu does not want to dance with Mimi, because she is three centimeters taller than him.’
- b. *Wo yao [170 gongfen de ren]_i. Lulu gao-le ta_i san gongfen.
 I want [170 centimeter DE person]_i, Lulu tall-PRF 3SG_i three centimeter
 Intended: ‘I want a person who is 170 centimeters tall. Lulu is taller than that.’

For a transitive comparative construction, the second argument can be either explicit, as in (23a), or implicit, *pro* (Grano & Kennedy 2012:260). In the latter case, the surface string is identical to an M-LE construction. Therefore, (21) is ambiguous. For an M-LE construction, however, there is simply no syntactic position for a standard-denoting element (or an element that denotes the desired quality). The alleged *pro* in Liu's analysis does not exist.

Pragmatically, the desired quality is identifiable in the context of an M-LE construction. But the identification of an entity in pragmatics does not ensure a syntactic position for the entity in the syntactic structure. This is similar to middles in English, where no agent position is syntactically available. For the reading of (25a), of course an agent must be available: the book must be read by someone. But there is no agent position in the syntactic structure. No agent-oriented adverb is allowed in

middles, as shown in (25b) and (25c). It has been assumed that only an agent can license an agent-oriented adverb, and the unacceptability of (25b) and (25c) indicates that middles have no agent in their syntactic structures (Stroik 1992). Note that the discussion of this paper is based on the theory of Distributed Morphology and Borer (2005), in which all computation operations are accomplished in syntax and there is no pre-syntax or lexical level of structure-building operation.

- (25) a. This book reads poorly.
 b. *The book sold deliberately.
 c. *Your books read intentionally.

Third, the occurrence of *le*. In a transitive comparative construction, *le* does not have to show up. However, in an M-LE construction, by definition, *le* must show up. I have claimed that it is *le* that brings about the mirative reading in an M-LE construction.

- (26) a. Lulu gao-(le) Mimi san gongfen. (Transitive Comparative)
 Lulu tall-PRF Mimi three centimeter
 ‘Lulu is three centimeters taller than Mimi.’
 b. Lulu gao-*(le) san gongfen. (M-LE)
 Lulu tall-PRF three centimeter
 Intended: ‘Lulu is three centimeters taller than expected.’

Fourth, the replacement of *le* by *chu*. The *le* in a transitive comparative construction can always be replaced with *chu* ‘exit, go beyond’, as seen in (27a), but M-LE may not be replaced by *chu*, as seen in (27b).

- (27) a. Lulu gao-{le/chu} Mimi san gongfen. (Transitive Comparative)
 Lulu tall-PRF/beyond Mimi three centimeter
 ‘Lulu is three centimeters taller than Mimi.’
 b. *Lulu gao-chu san gongfen. (M-LE)
 Lulu tall-beyond three centimeter
 Intended: ‘Lulu is three centimeters taller than expected.’

Both transitive comparatives and *bi* constructions can express an unexpected reading if the second argument denotes the expected standard overtly, as seen in (28).

- (28) a. Lulu gao-{chu/*le} wo yao de gaodu san gongfen. (Transitive Com.)
 Lulu tall-beyond/PRF I want DE height three centimeter
 Intended: ‘Lulu is three centimeters taller than the height that I want.’
- b. Lulu bi [wo yao de gaodu] gao-{chu/le} san gongfen. (*bi* const.)
 Lulu than I want DE height tall-beyond/PRF three centimeter
 ‘Lulu is three centimeters taller than the height that I want.’

In this case, *chu* is always possible. In (28a), *chu* may not be replaced with *le*; this is simply because in the transitive comparative construction, the second argument, *wo yao de gaodu* ‘the height that I want’ is licensed by *chu*, but not *le*. M-LE and *chu* are syntactically different, to be elaborated later. In (28b), the second argument is introduced by *bi* ‘than’, rather than *chu*. In this case, if *chu* occurs, it has a dependency with the measure phrase (see 4.3).

T-LE may not be replaced by *chu*, either.

- (29) Lulu mai-{le/*chu} hua.
 Lulu buy-{PRF/beyond} flower
 ‘Lulu bought flowers.’

This shows that M-LE patterns with T-LE, rather than the one in a transitive comparative construction.

Fifth, the requirement of a salient numeral scale. Certain predicates of transitive comparative constructions require the measure phrase to denote a salient numeral scale, as seen in the contrast between *gao* ‘tall’ in (30a) and *piaoliang* ‘pretty’ in (30b) (see Xiang 2005; also see Grano & Kennedy 2012:222).

- (30) a. Lulu gao-(le/chu) Lili {san gongfen/henduo}.
 Lulu tall-PRF/beyond Lili three centimeter/much
 ‘Lulu is (three centimeters/much) taller than Lili.’
- b. *Lulu piaoliang-(le/chu) Lili {henduo/yidian}.
 Lulu pretty-PRF/beyond Lili much/a.little

The constraint on the transitive comparative construction is not seen in either *bi*-comparative or M-LE constructions, as seen in (31a) and (31b), respectively.

- (31) a. Lulu bi Lili piaoliang (henduo/yidian).
 Lulu than Lili pretty much/a.little
 ‘Lulu is (much/a little) more pretty than Lili.’

- b. Lulu (tai) piaoliang-le yidian. Daoyan yao zhao xiangmao pingping de.
 Lulu too pretty-PRF a.little director want seek appearance plain DE
 ‘Lulu is a little too pretty. The director looks for a person with a plain appearance.’

In Grano & Kennedy (2012:253, 257), the contrast between (30a) and (30b) is accounted for by the selectional restrictions of μ . They claim that “*gao* but not *congming* uses a scale that supports measurement, and so is able to combine with μ ” (p. 257).

Based on the above five contrasts, I conclude that M-LE constructions are different from transitive comparative constructions. The *le* in the latter construction is in fact a variant of *chu* ‘go beyond’.

4.3 The syntactic structure of transitive comparatives

We have seen that the non-temporal *le* in a transitive comparative construction is systematically different from M-LE. In this section, I present my syntactic structure for transitive comparative constructions, leaving the structure of M-LE constructions to 5.3. The syntactic structure of the transitive comparative (32a) is (32b):⁵

(32b) is basically a structure of a complex predicate construction. The matrix subject is *Lisi*, and the matrix predicate is semantically headed by *gao* ‘tall’; the secondary predication is established by the verb *chu* ‘exit’, its theme argument *Zhangsan*, and its QuantP complement, *liang cun* ‘two inch’.

In this structure, both the VP and AP, as lexical projections, host arguments and thus get their theta-features licensed (cf. Liu 2012:280). *Chu* assigns Case to *Zhangsan* and takes the measure expression *liang cun* ‘two inch’ as its complement.

The measure expression *liang cun* is obligatory in the construction because *chu* takes a QuantP as its complement (cf. Liu 2012:280). The measure expression of the QuantP is c-commanded by μ , and gets licensed by the latter semantically (cf.

⁵ The syntactic integration of a DegP, headed by μ , into a gradable predicate in comparative constructions varies cross-linguistically. In English, a measure phrase c-commands the standard-denoting DP, and therefore, the Deg takes a comparative AP as its complement (Grano & Kennedy 2012: 235), whereas in Mandarin Chinese, as observed by Xiang (2005), the standard-denoting DP c-commands the measure phrase, and therefore, the adjective may c-command DegP at a certain step of the derivation (cf. Grano & Kennedy 2012:240, 242-243).

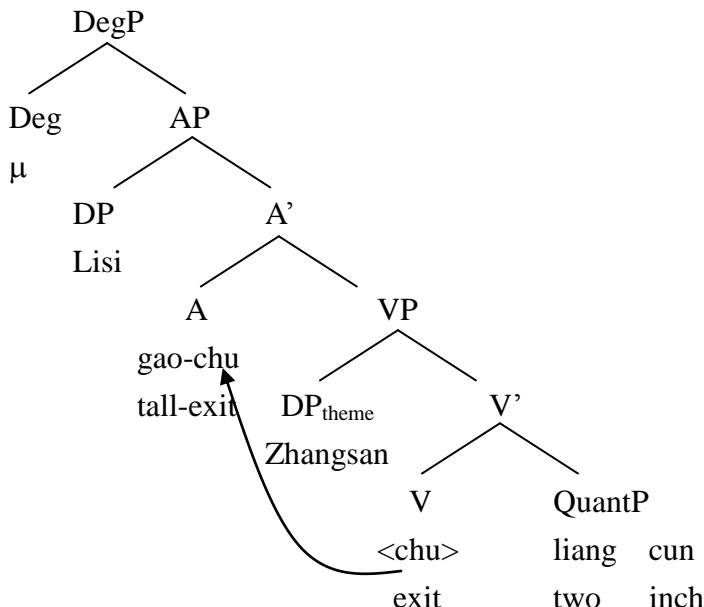
- (i) a. John is three centimeters taller than *Mary*.
- b. Mimi bi Lulu gao san gongfen
 Mimi than Lulu tall three centimeter
 ‘Mimi is three centimeters taller than Lulu.’
- c. Mimi gao Lulu san gongfen.
 Mimi tall Lulu three centimeter
 ‘Mimi is three centimeters taller than Lulu.’

Svenonius & Kennedy 2006, Grano & Kennedy 2012: Sec. 2.3). Note that a gradable adjective does not have to occur with a measure expression in other constructions, and thus it is *chu*, rather than μ , that is responsible for the obligatory presence of the measure expression in transitive comparative constructions.⁶

In (32b), *chu* moves to *gao*. This is similar to a complex predicate construction in Mandarin Chinese, where the head of a lower predicate moves to the right of the head of the higher predicate (See Zhang 2007, among others). For instance, in (33), *xing* ‘awake’ moves to the right of *ku* ‘cry’, forming a compound *ku-xing*.

- (32) a. Lisi gao-(chu/le) Zhangsan liang cun. (Transitive Comparative)
 Lisi tall-exit/PRF Zhangsan two inch
 ‘Lisi is two inches taller than Zhangsan.’

b.



- (33) Lulu ku-xing-le [Mimi <xing> haoji ci].
 Lulu cry-awake-PRF Mimi awake several time
 ‘Lulu cried such that Mimi was awakened several times.’

In a transitive comparative construction, since *le* may always be replaced by *chu*, they can be morphological variations of the same head element. This is similar to the replacement of *S-le* for *la* discussed above. Moreover, neither *chu* nor *le* has to be overt. Formal elements may occur in various functional head positions, and alternatively, a certain functional head may be realized by various forms. I thus adopt

⁶ The function of *chu* is similar to that of *duo-* ‘more’ in (i) (see Bhatt 2011). Both *chu* and *duo* require the presence of an expression to denote the excessive degree.

(i) Lulu duo-chi-le *(yi ge pingguo).
 Lulu more-eat-PRF one CL apple
 ‘Lulu ate one more apple than x.’ (x can be defined in the context)

a syntactic position-oriented approach rather than a lexical item-oriented approach (see Zhang 2012).

Although many details of this analysis are different from Grano & Kennedy (2012), the two analyses share the hypothesis that *chu* is responsible for licensing the Case of the second argument and the obligatory occurrence of the measure expression in a transitive comparative construction. However, Grano & Kennedy (2012) do not discuss *le*, and Liu (2007) does not mention *chu* of the construction.

Conclusion: M-LE is different from other non-temporal uses of *le*, either S-*le* or the *le* in a transitive comparative construction.

5. A comparison with T-LE

M-LE constructions and T-LE constructions share formal similarities, although they are obviously different semantically.

5.1 Similarities

First, like T-LE, M-LE may not occur with an element that cannot function as a predicate alone, e.g. a non-predicative adjective. (34a) has neither a temporal nor a mirative reading. Such an element is not compatible with an excessive or mirative adverb, either, as shown in (34b).

- (34) a. *{yiqian/benlai/lilai/so-wei}-le
 {past/original/always/so-called}-PRF
- b. *tai {yiqian/benlai/lilai/so-wei}
 too {past/original/always/so-called}

Second, like T-LE, M-LE may not be replaced by either *chu* or *la*, as shown previously in Section 4.1 and 4.2.

Third, if the linguistic context already encodes the relevant meaning, *le* does not have to occur; otherwise, *le* must show up. For T-LE, if the adverb *yijing* ‘already’ occurs, the aspect marker is optional.

- (35) a. Lulu yijing shuijiao, bu yao dasheng shuohua.
 Lulu already sleep not should loud speak
 ‘Lulu has already slept. You should not speak loudly.’

- b. Lulu shuijiao-le, bu yao dasheng shuohua.
Lulu sleep-PRF not should loud speak
'Lulu has slept. You should not speak loudly.'
- c. *Lulu shuijiao. (No perfect aspect reading)
Lulu sleep

For M-LE, if the excessive adverb *tai* 'too' occurs, the mirative marker is also optional.

- (36) a. Lulu tai gao.
Lulu too tall
'Lulu is too tall.'
- b. Lulu gao-le.
Lulu tall-le
'Lulu is too tall.'
- c. Lulu gao. (No CE reading)
Lulu tall
'Lulu is taller than others.'

Fourth, a measure phrase is optional in both cases.

- (37) a. Lulu shui-le (san tian).
Lulu sleep-PRF three day
'Lulu slept for three days.'
- b. Zhe gen shengzi duan-le (san gongfen).
this CL rope short-PRF three centimeter
'This rope is (three centimeters) shorter than expected.'

Fifth, if the semantic context is in conflict with the relevant reading, *le* may not occur. Specifically, if the semantic context is in conflict with the perfectiveness, T-LE may not occur:

- (38) a. Lisi xiang pang (*le) san gongjin. (Lin 2004:87)
Lisi want fat PRF three kilogram
'Lisi wants to gain three kilograms.'
- b. Lisi mei nian gao (*le) yi gongfen. (Lin 2004:87)
Lisi every year tall PRF one centimeter
'Lisi grows a centimeter every year.'

Similarly, if the semantic context is in conflict with the CE reading, M-LE may not occur:

- (39) a. Wo xiwang shengzi duan (*-le) yidian.
 I hope rope short-PRF a.little
 'I hope that the rope is a little shorter.'
 b. Wo xiwang shengzi (*tai) duan.
 I hope rope too short
 'I hope that the rope is short.'

5.2 Differences

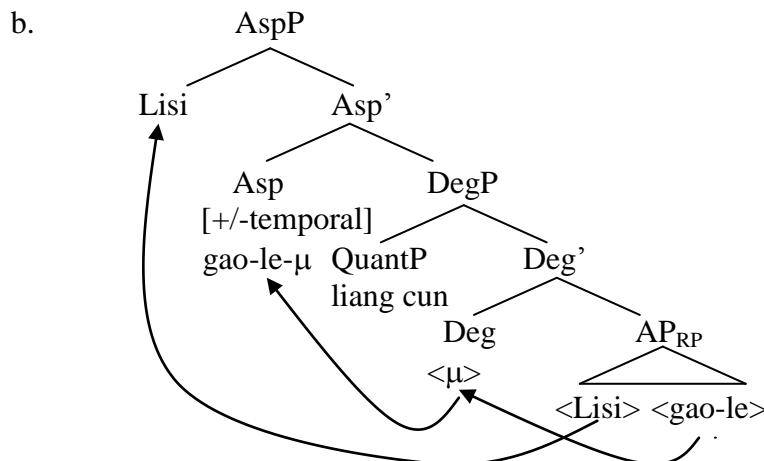
The first difference between M-LE and T-LE is in the semantic types of predicates: T-LE (perfect aspect marker), by definition, is for stage-level predicates, whereas M-LE is for individual-level predicates only (see Section 2.1).

Second, with respect to the semantic types of the predication, there is no constraint on T-LE; however, M-LE occurs in a topic-comment construction (Chang 2009:2243), which denotes a categorical judgment. One can see that M-LE occurs with an adjective, which has only one argument.

5.3 The syntactic position of the verbal *le*

T-LE and M-LE are both related to the functional head Asp. For both the temporal reading and the CE reading of (40a), the structure is the same, as in (40b).

- (40) a. Lisi gao-le liang cun.
 Lisi tall-PRF two inch
 Degree achievement reading: 'Lisi has grown two more inches.' [+temporal]
 CE reading: 'Lisi is two more inches taller than expected.' [-temporal]



In this structure, the complement of Deg is a predication-denoting projection (CFC, mentioned in Section 3, which can also be regarded as a realization of PrP in Bowers 1993 or RP in den Dikken 2006). Since the projection is realized as AP, I label it as AP_{RP} . In the projection, the Spec and the complement are the base-positions of the subject and the predicate, respectively. There might be further syntactic operations inside the AP_{RP} in (40b). Since the details of the projection do not affect the main claim made in this paper, I do not elaborate them any more.

One major property of the structure in (40b) is that a measure expression is always licensed by the functional element μ , which is base-generated at the head of a DegP (Svenonius & Kennedy 2006, Grano & Kennedy 2012: Sec. 2.3). In (40b), the dependency of *liang cun* ‘two inches’ on μ is represented as a Spec-Head relation.

Another major property of the structure in (40b) is that the AP selected by μ is gradable, since only gradable adjectives allow degree or measure expressions. From a different perspective, DegP is always integrated with a gradable AP, since the latter provides a dimension for the former.

The similarities between T-LE and M-LE constructions stated in 5.1 are captured by the unified functional head Asp in the structure in (40b). First, the AP_{RP} in (40b) hosts a predicate; therefore, non-predicative examples in (34) are all ruled out. Second, *le* is neither a verb nor a sentence-final particle; therefore, it may not be replaced by *chu* or *la* in either construction. Third, the conditions for the overtess of *le* are the same in the two constructions (see (35) and (36)). There is no configuration contrast in their syntactic structures in this respect. Fourth, μ does not have an EPP feature in either construction and thus a measure phrase is not obligatory (see (37)). Fifth, the elements in (40b) exhibit parallel semantic interactions with other elements in the two constructions (see (38) and (39)).

6. Temporal morphology and the feature Exclusion

Why may the perfect aspect marker *le* bring about this non-perfect reading in an M-LE construction? How is this reading represented syntactically? I address these two empirical issues in this section.

6.1 Perfect aspect morphology and CE

I will show that there is a parallelism between counter-expectation (CE) and counter-factual (CF) constructions: fake perfect aspect in the former and fake past tense in the latter.

Soh (2009) lists a few formal differences between the verbal *le* and the sentential

le, and shows that only the former must have a perfective or termination reading, in a temporal domain (Soh 2009:627, contra X. Liu 1988). In the last section, I have shown that M-LE patterns with T-LE, i.e. the verbal *le*, rather than the sentential *le*. It is clear that it is perfective morphology that may express the CE reading.

Past tense in English may have a counterfactual (CF) reading, encoding a modal of exclusion or remoteness (e.g. Iatridou 2000, Huddleston and Pullum 2002).

- (41) a. I wish you were here. (conveys ‘You are not here now’)
- b. I wish the rain would stop. (conveys ‘The rain does not stop now.’)

Using past tense to encode CF reading is also seen in many other tense languages (Iatridou 2000, among others), including Japanese (Nishiguchi 2007). The parallel CF reading is even found in the past tense of nominals (Lecarme 2008).

CF reading is also seen in the doubly remote interpretation of past perfect constructions. In this case, the reading is CF to the past (e.g. Iatridou 2000:232; also see Huddleston and Pullum 2002:151).

- (42) a. If he were smart, he would be rich. (conveys ‘he is not smart’ and ‘he is not rich’)
- b. If he had been smart, he would have been rich. (conveys ‘he was not smart’—in general or on one particular occasion—and ‘he was not rich’)

According to Iatridou (2000:235), in CF constructions, “we are dealing with past tense morphology that does not receive a past tense interpretation. I will refer to such occurrences of past morphology that do not receive a temporal past interpretation as *fake past* or *fake tense*.”

The data above show that the perfect aspect marker *le* may express CE, which is also a modal of exclusion from a certain anchor. Similar to fake past tense, in an M-LE construction, we are dealing with perfect morphology that does not receive a perfect interpretation: fake perfect or fake aspect.

Generally speaking, tense and aspect is a pair of closely related temporal notions. We can see that human language uses the non-temporal readings of tense and aspect morphology to represent the exclusion of a situation from a certain perspective consistently.

- (43) a. CF: exclusion from the real world
- b. CE: exclusion from the anchored mental world

Previous studies of M-LE (e.g. Shi 1988, Ljungqvist 2007, Liu 2007, Chang 2009) did not see this parallelism between tense and aspect morphology. I claim that M-LE reflects the parallelism.

6.2 The grammatical ingredients of CE

6.2.1 CF

According to Iatridou (2000:246), the representation of fake past in CF is (44) and (45) (C is probably a short-form for Comment, which is in construal with a topic, T).

- (44) $T(x)$ excludes $C(x)$.
- (45) a. $T(x)$ stands for “Topic(x)” (i.e. “the x that we are talking about”).
b. $C(x)$ stands for “the x that for all we know is the x of the speaker”

Iatridou uses the feature [Exclusion] in her analysis. The variable x can range over times or worlds. When x ranges over times, we get:

- (46) a. $T(t)$: the time interval (set of times) that we are talking about
b. $C(t)$: the time interval (set of times) that for all we know is the time of the speaker (i.e. utterance time)

We may thus derive (47) from (44), when the application range is in the time dimension. (47) means that the topic time is in the past with respect to the utterance time.

- (47) The topic time excludes the utterance time.

Note that following Klein (1994), Iatridou (2000:246) emphasizes that past tense is about the relation between the utterance time and the topic time, rather than that between the utterance time and the situation (or event) time.

Now when x ranges over worlds, we get:

- (48) a. $T(w)$: the worlds that we are talking about (topic worlds)
b. $C(w)$: the worlds that for all we know are the worlds of the speaker (actual world)

We may thus derive (49) from (44), when the application range is in the world dimension. (49) covers a CF reading.

(49) The topic world excludes the actual world.

Similarly, Arregui's (2008:17) semantic study of past tense of CF also makes an effort of “blurring the boundaries between times and worlds.”

6.2.2 CE

Let us now extend this theory of CF to CE. In addition to Iatridou's (44), I propose (50):

(50) $T(x)$ excludes $C_{ref}(x)$.

- (51) a. $T(x)$ stands for “Topic(x)” (i.e. “the x that we are talking about”). (= (45a))
- b. $C_{ref}(x)$ stands for “the x that for all we know is the x of the reference”

When x ranges over times, we get:

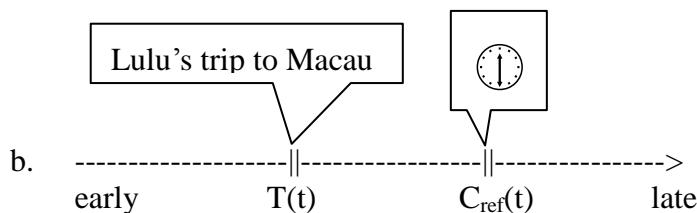
- (52) a. $T(t)$: the time interval (set of times) that we are talking about (= (46a))
- b. $C_{ref}(t)$: the time interval (set of times) that for all we know is the time of the reference

We may thus derive (53) from (50), when the application range is in the time dimension:

(53) The topic time excludes the reference time. (cf. (47))

(53) covers perfect aspect. I use (54) to illustrate this. The topic time of this example is the time of Lulu's trip to Macau and the reference time is six o'clock (of any day, either yesterday or tomorrow). The former time is earlier than the latter time, and therefore, the perfect marker **le** (T-LE) is used.

- (54) a. {Zuotian/Mingtian} liu dian de shihou, Lulu yijing qu-**le** Aomen.
yesterday/tomorrow six o'clock DE time Lulu already go-PRF Macau
'By six o'clock {yesterday/tomorrow}, Lulu {had/has} made his trip to Macau.'



When x ranges over worlds, we get:

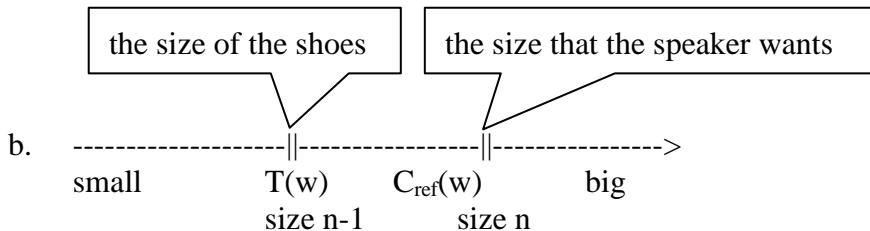
- (55) a. $T(w)$: the worlds that we are talking about (topic worlds) (= (48a))
 b. $C_{ref}(w)$: the worlds that for all we know are the worlds of the reference

We may thus derive (56) from (50), when the application range is in the world dimension:

- (56) The topic world excludes the reference world. (cf. (49))

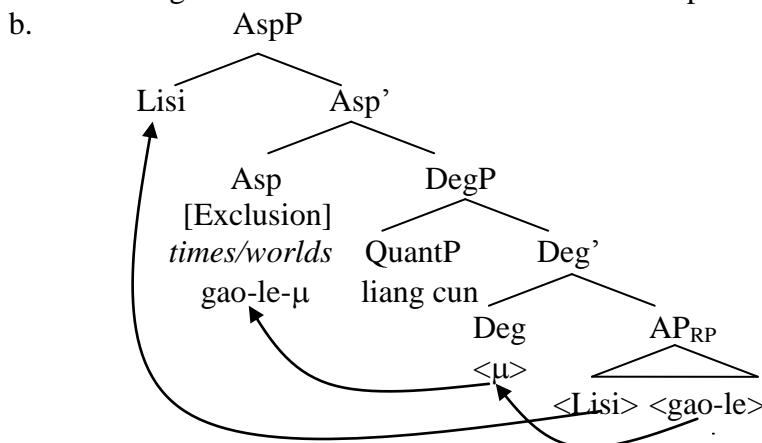
(56) covers a CE reading. For instance, in (57), the topic world is the size of the shoes and the reference world is the size that the speaker wants. The former is one number smaller than the latter. The size of the shoes was not what the speaker expected; therefore, M-LE is used to encode the mirativity.

- (57) a. Zhe shuang xie xiao-le yi hao.
 This pair shoe small-PRF one number
 ‘This pair of shoes is one number smaller than expected.’



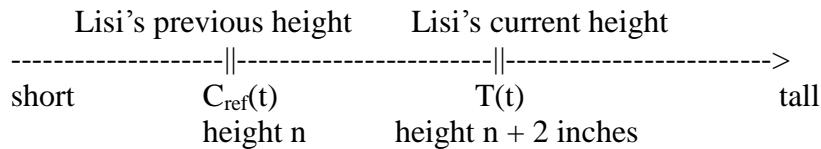
I now refine the structure in (40) into the following:

- (58) a. Lisi gao-le liang cun.
 Lisi tall-PRF two inch
 Degree achievement reading: ‘Lisi has grown two more inches.’ *Times*
 CE reading: ‘Lisi is two more inches taller than expected.’ *worlds*

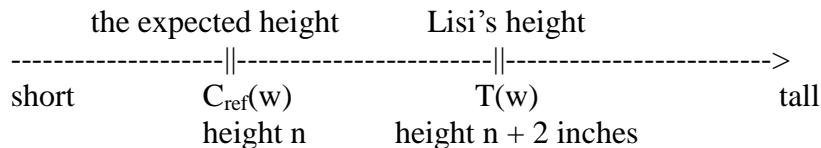


The two readings of (58a) are illustrated as follows.

- (59) a. Degree achievement reading: ‘Lisi has grown two more inches.’ *times*



- b. CE reading: ‘Lisi is two more inches taller than expected.’ *worlds*



6.2.3 A comparison of CE and CF

CF is anchored to the world of the utterance, whereas CE is anchored to the world of a reference. In both cases, it is a kind of displacement feature that encodes a mismatch between the topic world and an anchor.

The past tense morpheme in English has an [Exclusion] feature in the CF use. The perfect aspect morpheme *le* in Mandarin Chinese also has an [Exclusion] feature in the CE use.

With respect to their functions, neither the fake past tense nor M-LE is the unique way to express counter-X. As mentioned in Iatridou (2000), there are morphosyntactic ways other than past tense to express CF, cross-linguistically. In Mandarin Chinese, expressions such as *fouzedehua* ‘if it is not the case’, *burandehua* ‘if it is not the case’, and *yaobushi* ‘if it is not the case that’ are used to encode CF, rather than past tense. Likewise, there are other ways to express CE than perfect aspect in Mandarin Chinese, e.g. the use of mirative adverbs.

With respect to the syntactic conditions for the occurrence of the CF and CE markers, there are also some language-specific and idiosyncratic constraints. Fake past tense occurs in subordinate clauses only, either in conditional clauses or complement clauses of modal auxiliaries in English (Iatridou 2000, Huddleston and Pullum 2002:149). The distributions of the fake past are more restricted than the regular temporal past tense morpheme of the language. But fake past tense allows both individual-level and stage-level predicates, and both gradable and ungradable predicates, etc.

Fake perfect aspect occurs with individual-level predicates only (Section 2.1). The distributions of M-LE are different from T-LE. But like T-LE, it is found in both

matrix and subordinate clauses (also see Section 1).

6.2.4 The interactions between adverbs and CF/CE markers

The interactions between adverbs and CF/CE markers follow the language-specific rules (Iatridou 2000:249). Also, the optionality of the M-LE in the presence of a relevant adverb, as in (13), follows the properties of aspect markers in the language. In English, non-fake past tense is obligatory for a past reading. Accordingly, the fake past tense of remoteness is also obligatory for an exclusive CF reading. In Mandarin Chinese, perfect aspect is not obligatory, if an adverb expresses the relevant meaning. Accordingly, M-LE is not obligatory if an adverb expresses the relevant meaning (Section 2.3). If a mirative adverb occurs without M-LE, the Exclusion feature in the null Asp establishes a dependency with the adverb.⁷

6.3 Degree adverbs and measure expressions in M-LE constructions

Each gradable predicate allows only one measure expression such as *san cun* ‘three inches’. Each gradable predicate also allows one or two degree adverbs, such as *feichang* ‘very’, *tai* ‘too’, *xiangdang* ‘quite’, *jiqi* ‘very’, *tebie* ‘especially’, *gewai* ‘extremely’, and *guofen* ‘too’. In (60a) both *tai* and *guofen* occur, and in (60b), both *tebie* and *gewai* occur (note that all excessive adverbs belong to degree adverbs).

- (60) a. Ni zhe ge ren tai guofen jiangjiu mianzi.
you this CL person too too care face
'You care about your face too much.'
- b. Lulu tebie gewai guanxin qixiang yubao.
Lulu especially especially concern weather forecast
'Lulu especially concerns weather forecast.'

However, between a measure expression and a degree adverb, only one of them may occur, with the same predicate in Mandarin Chinese. In the two examples in (61), either the adverb *feichang* ‘very’, or the measure expression *190 gongfen* ‘190 centimeters’ occurs, but the two may not show up together. In the two M-LE constructions in (62), either the adverb *tai* ‘too’, or the measure expression *san cun* ‘three inches’ occurs, but the two may not appear together.

⁷ We do not discuss Iatridou's (2000) analysis of imperfect aspect in CF readings in English for two reasons. First, we are dealing with perfect, rather than imperfect aspect morphology here. Second, her analysis of the imperfect aspect in CF constructions has been further discussed and challenged in Ferreira (2011). In this paper, I adopt Iatridou's analysis of the past tense morphology of CF only.

- (61) a. Lulu feichang gao (*190 gongfen).
 Lulu very tall 190 centimeter
 ‘Lulu is very (*190 centimeters) tall.’
- b. Lulu (*feichang) gao 190 gongfen.
 Lulu very tall 190 centimeter
 ‘Lulu is (*very) 190 centimeters tall.’
- (62) a. Zhe zhang zhuozi tai kuan-le (*san cun).
 this CL table too wide-PRF three inch
 ‘This table is (three inches) too wide.’
- b. Zhe zhang zhuozi (*tai) kuan-le san cun.
 this CL table too wide-PRF three inch
 ‘This table is three inches too wide.’

Corver (2009:72) claims that a degree adverb and a measure expression do not co-occur (e.g. *three centimeters* (**very*) *high*) because they compete for the same predicate position. But if they are both predicates, it is not clear why they do not form a complex predicate construction. Also, it is not clear why *too* may occur with a measure expression, as seen in the translation of (62b). Since the conflict between the two types of elements is found also in non-CE constructions such as those in (61), there may be a unified analysis of the conflict. See Cornilescu (2009:41) for a possible account.

One apparent exception to the above generalization is that the word *yidian* ‘a bit’ may occur with a degree adverb. In (63a), the degree adverb *tai* ‘too’ occurs with *yidian*, and in (63b), the degree adverb *guofen* ‘too’ also occurs with *yidian*.

- (63) a. Zhe zhang zhuozi tai kuan-le yidian.
 this CL table too wide-PRF a.bit
 ‘This table is a bit too wide.’
- b. Lulu guofen mingan-le yidian.
 Lulu too sensitive-PRF a.bit
 ‘Lulu is a bit too sensitive.’

According to Grano & Kennedy (2012:223), *a bit*, *a little* and their Chinese counterpart *yidian* are ambiguous between true measure phrases and degree modifiers. Since two degree modifiers may co-occur, as seen in (60), my hypothesis is that in examples like those in (63), *yidian* is a degree modifier rather than a measure expression.

In Mandarin Chinese, although degree adverbs usually precede a predicate, as

seen in *tai* and *guofen* in (63), certain degree words may follow a predicative adjective, as seen in (64). Thus my above hypothesis is not ad hoc.

- (64) a. Na zhang zhuozi da ji la.
 that CL table big extremely PRT
 ‘That table is extremely big.’
- b. Ni zou man yidian!
 you walk slow a.bit
 ‘Walk a little bit slower!’

When *yidian* is used as a degree adverb, it seems to be a post-predicate counterpart of the pre-predicate degree adverb *youdian* ‘a bit’. The two examples in (65) mean the same, and the two examples in (66) also mean the same.

- (65) a. Zhe ge shouji zhong-le yidian.
 this CL cell-phone heavy-PRF a.bit
 ‘This cell-phone is a bit too heavy.’
- b. Zhe ge shouji youdian zhong-le.
 this CL cell-phone a.bit heavy-PRF
 ‘This cell-phone is a bit too heavy.’
- (66) a. Tang zhu-xian-le yidian.
 soup cook-salty-PRF a.bit
 ‘The soup has been cooked a bit too salty.’
- b. Tang youdian zhu-xian-le.
 soup a.bit cook-salty-PRF
 ‘The soup has been cooked a bit too salty.’

There are still two remaining puzzles. First, if the pre-adjective degree adverb is *shaowei* ‘a bit’ or *duoshao* ‘somehow’, *yidian* must follow the adjective-*le* string, as seen in (67).

- (67) a. Zhe tiao qunzi shaowei duan-le *(yidian).
 this CL skirt a.bit short-PRF a.bit
 ‘This skirt is a bit too short.’
- b. Zhe tiao qunzi duoshao duan-le *(yidian).
 this CL skirt somehow short-PRF a.bit
 ‘This skirt is somehow too short.’

Second, unlike degree adverbs such as *tai* ‘too’, *guofen* ‘too’, and *youdian* ‘somehow’ (see (63a), (63b), and (65b), respectively), adverbs such as *hen* ‘very’, *tebie* ‘especially’, and *feichang* ‘very’ may not occur in an M-LE construction.

- (68) *Zhe gen shengzi {hen/tebie/feichang} duan-le.
This CL rope very/especially/very short-PRF

At this stage of the research, I do not have an account for these puzzles.

6.4 The C-domain of M-LE constructions

All evaluatives must be anchored to the reference world of a person. Thus, CE must be anchored to a reference world of a person. In the absence of an explicit anchor, the speaker is the anchor. (69a) (= (3a)) may, but (69b) (= (2a)) may not, be followed by a sentence meaning ‘but I don’t think so’.

- (69) a. Lulu renwei zhe gen shengzi duan-le. (Dan wo bu zheme renwei)
Lulu think this CL rope short-PRF but I not so think
'Lulu thinks this rope is shorter than expected. ('but I don't think so.')'
b. Zhe gen shengzi duan-le. (*dan wo bu zheme renwei)
this CL rope short-PRF but I not so think
'This rope is too short. (*'but I don't think so.')'

If (69b) above is paraphrased as (70) below, the semantic contradiction is explicit.

- (70) *I claim that this rope is too short, but I do not accept this claim.

The anchoring of an evaluation is also represented in syntactic structures. All evaluative sentences have Evaluative Phrase, subcategorized by the head of Speech Act Phrase in the CP Domain (C-Domain) (Cinque 1999; see Tenny & Speas 2003 for the difference of this theory from Ross's 1970 Performative Hypothesis).

Moreover, the reference world is either hosted by the Spec of Speech Act Phrase, i.e. Speaker (Speas 2004:265), or the subject of a verb of thought (Speas 2004:267, Tenny & Speas 2003:335), e.g. *renwei* ‘think’. The former situation is seen in (69b), and the latter is seen in the first conjunct of (69a). In (69a), the subject of the verb *renwei* ‘think’ is *Lulu*, and thus *Lulu* represents the reference world.

Finally, the reason for Speaker as the default reference world is that “a feature for matrix Speaker is globally available” (Tenny & Speas 2004:8), and “if we assume that

consistent indexing is the unmarked case, each indexing disjunct from speaker has an additional cost" (Speas 2004:266).

7. Summary

The two research questions raised in the introduction section of this paper are:

- A. Why may the perfect aspect marker *le* bring about the mirative reading?
- B. How is this reading represented syntactically?

I have shown that the mirative reading of M-LE comes from the feature [Exclusion], and M-LE has the same syntactic position as the canonical T-LE. Specifically, I have shown that M-LE occurs with individual level gradable predicates only, and that M-LE constructions are syntactically different from transitive comparative constructions. I have also argued for a parallelism between counterfactual (CF) morphology and counter-expectedness (CE) morphology. Finally, I have shown that the feature [Exclusion] covers both the fake past tense in CF and the fake perfect aspect in CE.

From the perspective of the mirativity studies, one can see that similar to CF, the ways of encoding mirativity vary in different languages and within the same languages (e.g. via functional words or adverbs). From the perspective of the aspect marker studies, one can see that Chinese *le* brings us to more facts of temporal and modal morphology and clause structures.

References

- Arregui, Ana. 2008. On the role of past tense in resolving similarity in counterfactuals. *Proceedings of SuB12*, ed. by Atle Grønn, 17-31. Oslo: ILOS.
- Bhatt, Rajesh. 2011. Ordinary and differential comparatives. Paper presented at the International Workshop on the Syntax-Semantics Interface, Institute of Linguistics Academia Sinica, Taipei, June 18, 2011.
- Borer, Hagit. 2005. *In Name Only*. New York: Oxford University Press.
- Bowers, John. 1993. The syntax of predication. *Linguistic Inquiry* 24:591-656.
- Chang, Li-Hsiang. 2009. Stance uses of the Mandarin LE constructions in conversational discourse. *Journal of Pragmatics* 41:2240-2256.
- Chao, Yuen-Ren. 1968. *A Grammar of Spoken Chinese*. Berkeley: University of California Press.
- Chen, Jidong and Yasuhiro Shirai. 2010. The development of aspectual marking in child Mandarin Chinese. *Applied Psycholinguistics* 31:1-28.

- Chomsky, Noam. 1986. *Knowledge of Language: Its Nature, Origin and Use*. New York: Praeger.
- Cinque, Guglielmo. 1999. *Adverbs and Functional Heads: A Cross-linguistic Perspective*. New York: Oxford University Press.
- Cornilescu, Alexandra. 2009. Measure phrases and the syntax of Romanian nouns and adjectives. *Bucharest Working Papers in Linguistics* XI (1):35-66.
- Corver, Norbert. 2009. Getting the (syntactic) measure of Measure Phrases. *The Linguistic Review* 26:67-134.
- Dikken, Marcel den. 2006. *Relators and Linkers: The Syntax of Predication, Predicate Inversion and Copulas*. Cambridge, Mass: MIT Press.
- DeLancey, Scott. 2001. The mirative and evidentiality. *Journal of Pragmatics* 33:369-382.
- Erlewine, Michael. 2007. A New Syntax-semantics for the Mandarin *bi* Comparative. MA Thesis, University of Chicago, Illinois.
- Ferreira, Marcelo. 2011. Displaced aspect in counterfactuals: towards a more unified theory of imperfectivity. Paper presented at I Encontro Internacional de Sintaxe e Semantica & suas Interfaces, Pucrs, Aug. 15-26, 2011.
- Grano, Thomas. 2012. Mandarin *hen* and universal markedness in gradable adjectives. *Natural Language and Linguistic Theory* 30:513-565.
- Grano, Thomas and Christopher Kennedy. 2012. Mandarin transitive comparatives and the grammar of measurement. *Journal of East Asian Linguistics* 21:219-266.
- Huang, Lillian Meei-jin. 1987. Aspect: A General System and its Manifestation in Mandarin Chinese. PhD dissertation, Rice University, Texas.
- Huddleston, Rodney and Geoffrey Pullum. 2002. *The Cambridge Grammar of the English Language*. Cambridge: Cambridge University Press.
- Iatridou, Sabine. 2000. The grammatical ingredients of counterfactuality. *Linguistics Inquiry* 31:231-270.
- Kennedy, Christopher and Beth Levin. 2008. Measure of change: The adjectival core of degree achievements. *Adjectives and Adverbs: Syntax, Semantics and Discourse*, ed. by Louise McNally and Christopher Kennedy, 156-182. Oxford: Oxford University Press.
- Klein, Wolfgang. 1994. *Time in language*. London: Routledge.
- Lecarme, Jacarne. 2008. Tense and modality in Nominals. *Time and Modality*, ed. by J. Guéron & J. Lecarme, 195-245. Heidelberg: Springer.
- Li, Yen-hui Audrey. 1998. Argument determiner phrases and number phrases, *Linguistic Inquiry* 29:693-702.
- Lin, Jimmy. 2004. Even Structure and the Encoding of Arguments: The syntax of the Mandarin and English Verb Phrase. Ph.D. Dissertation, MIT, Cambridge.

- Liu, Chen-Sheng. 2007. The chameleon in the Chinese individual exceed comparative. *Language and Linguistics* 8.3:767-797.
- Liu, Chi-Ming Louis. 2012. Mandarin Chinese as an exceed-type language. *Proceedings of the 22nd North American Conference on Chinese Linguistics (NACCL-22) and the 18th International Conference on Chinese Linguistics (IACL-18)*, ed. by Lauren Eby Clemens and Chi-Ming Louis Liu, 271-286. Cambridge, MA: Harvard University.
- Liu, Xunning. 1988. Xiandai hanyu ciwei ‘le’ de yufa yi [The grammatical meanings of the suffix ‘le’ in Modern Mandarin Chinese]. *Zongguo Yuwen* 5:321-330.
- Ljungqvist, Arin Marita. 2003. Aspect, Tense and Mood: Context Dependency and the Marker *le* in Mandarin Chinese. PhD thesis, Lund University, Lund.
- Ljungqvist, Arin Marita. 2007. *Le, guo and zhe in Mandarin Chinese: a relevance-theoretic account*. *Journal of East Asian Linguistics* 16:193-235.
- Lü, Shuxiang et al. 1999. *Xiandai Hanyu Babai Ci* [800 Words in Chinese]. Beijing: Shangwu Press (1st edition, 1980).
- Mok, Sui-Sang. 1998. Cantonese exceed comparatives. Ph.D. Dissertation, University of California, San Diego.
- Nishiguchi, Sumiyo. 2007. Temporal Dynamic Semantics of Factual Counterfactuals. *New Frontiers in Artificial Intelligence: JSAI 2003 and JSAI 2004*, ed. by A. Sakurai et al., 438-448. Berlin, Heidelberg: Springer.
- Ross, John R. 1970. On declarative sentences. *Readings in English Transformational Grammar*, ed. by R. A. Jacobs & Peter S. Rosenbaum, 222-272, Waltham, Mass.: Ginn.
- Shen, Li. 2004. Aspect agreement and light verbs in Chinese: A comparison with Japanese. *Journal of East Asian Linguistics* 13:141-179.
- Shi, Ziqiang. 1988. The present and past of the particle “le” in Mandarin Chinese. PhD dissertation, University of Pennsylvania.
- Smith, Carlota. 2008. Time with and without tense. *Time and Modality*, ed. by Guéron & Lecarme, 227-249. Heidelberg: Springer.
- Soh, Hooi Ling. 2009. Speaker presupposition and Mandarin Chinese sentence-final -*le*: a unified analysis of the “change of state” and the “contrary to expectation” reading. *Natural Language and Linguistic Theory* 27:623-657.
- Speas, Margaret. 2004. Evidentiality, logophoricity, and the syntactic representation of pragmatic features. *Lingua* 114:255-276.
- Stroik, Thomas. 1992. Middles and movement. *Linguistic Inquiry* 23:127-137.
- Svenonius, Peter and Christopher Kennedy. 2006. Northern Norwegian degree questions and the syntax of measurement. *Phases of interpretation*, Volume 91 of

- Studies in Generative Grammar*, ed. by Mara Frascarelli, 133-161. Berlin: Mouton de Gruyter.
- Tenny, Carol & Margaret Speas. 2003. Configurational properties of Point of View roles. *Asymmetry in Grammar*, ed. by A. DiSciullo, 315-344. Amsterdam/Philadelphia: John Benjamins.
- Tenny, Carol & Margaret Speas. 2004. The interaction of clausal syntax, discourse roles and information structure in questions. Handout for the Workshop of Syntax, Semantics and Pragmatics of Questions, Nancy, Aug. 13 2004.
- Xiang, Ming. 2005. Some topics in comparative constructions. PhD Dissertation, Michigan State University, East Lansing, MI.
- Yang, Suying. 2011. The parameter of temporal endpoint and the basic function of *-le*. *Journal of East Asian Linguistics* 20:383-415.
- Zhang, Niina Ning. 2007. A syntactic account of the Direct Object Restriction in Chinese. *Language Research* 43.1:53-75.
- Zhang, Niina Ning. 2009. The Syntax of Relational-Nominal Second Constructions in Chinese. *Yuyanxue Luncong* 39:257-301.
- Zhang, Niina Ning. 2012. *De* and the Functional Expansion of Classifiers. *Language and Linguistics* 13.3:569-582.
- Zhu, Dexi. 1982. *Yufa Jiangyi* [Lectures on grammar]. Beijing: Shangwu Press.

[Received 10 April 2012; revised 13 August 2012; accepted 30 January 2013]

Graduate Institute of Linguistics
National Chung Cheng University
Minhsiu, Chiayi, TAIWAN
Niina Ning Zhang: Lngnz@ccu.edu.tw

以時貌型態表達非預期語意

張寧

國立中正大學

當國語動詞表完成貌的標記“了”出現在穩定性性質謂語時，它可表達非預期意，有標示超常語意的功能。“了”的這種用法跟“了”在比較句中的用法不同。本文提出國語的這種特殊的動詞型態變化可對應於英語的表非現實意的過去式。兩種情況都可用「排斥性」這一特徵來概括在時間，空間，以及心理空間上對某種參照點的偏離。

關鍵詞：國語、非預期意義、時貌、完成貌，超常義