

Encoding Unexpectedness by Aspect Inflection*

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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 in this example. (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 another one in the context).'
這根繩子短了三公分。
- b. Zhe gen shengzi duan san gongfen.
this CL rope short three centimeter
only reading: = reading C above.
這根繩子短三公分。

For a mirative reading, the measure expression such as *san gongfen* 'three centimeters' is not obligatory. (2a) and (2b) have no measure expression, and both still have a mirative reading. Note that in all of verbal *le* sentences, a degree achievement reading, as Reading B in (1a), is also available, but we will discuss the mirative reading only.

- (2) a. Zhe gen shengzi duan-le.
this CL rope short-PRF
'This rope is too short.'
這根繩子短了。
- b. Tang xian-le.
soup salty-PRF
'The soup is too salty.'
湯鹹了。

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

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 short-PRF a.little
'Lulu feels that this rope is a little bit longer than expected.'
露露覺得這根繩子短了一點。
- b. Wo cengjing yiwei zhe gen shengzi chang-le yidian. (shiji-shang bu shi)
I once think this CL rope short-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.)'
我曾經以為這根繩子短了一點。(實際上不是。)

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). We 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 "不表示有什麼變化, 只表示某一性質偏離標準") and Shi (1988: 105-107). This use of *le* has also been mentioned in 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.

The research questions of the paper are:

- 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.

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 this section, question B above is answered. In Section 6, linking to the use of past tense in CF constructions, I address question A 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 *zai* 'narrow' in (4a), *tian* 'sweet' in (4b), and *gui* 'expensive' in (4c).

- (4) 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 cannot sleep two persons.'
床窄了。

- b. Nai-cha tian-le.
milk-tea sweet-PRF
'The milk-tea is too sweet.'
奶茶甜了。
- c. Zhe dongxi gui-le. (Chao 1968: 692)
this thing expensive-PRF
'This thing is too expensive.'
這東西貴了。

If the predicate is a stage-level predicate, only T-LE may occur. In all of the examples in (5), the predicate is a stage-level one and thus the *le* is not an M-LE.

- (5) a. Yanhui kan-le yi bu dianying. (transitive)
Yanhui see-PRF one CL movie
'Yanhui has seen a movie.'
燕慧看了一部電影。
- b. Yanhui lai-le. (unaccusative)
Yanhui come-PRF
'Yanhui has come.'
燕慧來了。
- c. Yanhui shui-le san tian. (unergative)
Yanhui sleep-PRF three day
'Yanhui has slept for three days.'
燕慧睡了三天。
- d. Wendu jiang-le shi du. (degree achievement) 274
temperature fall-PRF ten degree
'The temperature has fallen ten degrees.'
溫度降了十度。
- e. Yanhui zui-le zhengzheng yi shangwu. (stage-level state)
Yanhui drunk-PRF whole one morning
'Yanhui has been drunk for the whole morning.'
燕慧醉了整整一上午。
- f. Lulu e-le (san tian). (stage-level state)
Lulu hungry-PRF three day
'Lulu has been hungry (for three days).'

Not only verb types, but also the context needs to be considered. M-LE may not occur in a boundary context. Specifically, it may not occur with a durative adverbial, verb-reduplication, and frequency adverbial. All of these three contexts signal the so-called "provided temporal endpoint" of a situation (Yang 2011). In (5c), (5e), and (5f) above, the T-LE is compatible with a durative adverbial, but the intended M-LE in (6) is not compatible with such an adverbial. In (7a), the verb *zou* 'walk' with the T-LE is reduplicated, but the predicate *duan* 'short', with the intended M-LE in (7b), may not be reduplicated. In (8a), the repetitive adverbial *san ci* 'three times' is compatible with the T-LE, whereas the M-LE in (8b) is not compatible with the adverbial.

- (6) *Zhe gen shengzi duan-le san nian.
this CL rope short-PRF three year
- (7) a. Ta zai gongyuan-li zou-le-zou.

- s/he at park-in walk-PRF-walk
'S/he walked a bit in the park.'
- b. *Zhe gen shengzi duan-le-duan.
this CL rope short-PRF-short
- (8) a. Ta ke-le san ci.
s/he cough-PRF three time
'S/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: Sec. 3). 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 (9a), the occurrence of a stage-level predicate marker, such as *xialai* 'down' in (9b), excludes the latter reading:

- (9) a. Niunai leng-le.
milk cold-PRF
A: 'The milk has become cold.' (Temporal)
B: 'The milk is too cold.' (Non-temporal, mirative)
牛奶冷了。
- b. Niunai leng-xialai-le.
milk cold-down-PRF
'The milk has become cold.' (= Reading A above)
牛奶冷下來了。

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, as in (10a), the inner subject of the so-called double-subject constructions (Zhang 2009), as in (10b) and (10c), kind-denoting nominal phrase, as in (10d), and a quantity-denoting expression (Li 1998), as in (10e).

- (10) 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!'
倫敦大了。找一個小一點的城市！
- b. Zhe haizi yanjing xiao-le. (inner subject: relational noun)
this kid eye small-PRF
'This kid, his eyes are too small.'
這孩子眼睛小了。
- c. Zhe ge xigua pi hou-le. (inner subject: relational noun)
this CL watermelon skin thick-PRF
'This watermelon, its skin is too thick.'
這個西瓜皮厚了。
- d. Zhe zhong bu bo-le. (kind-denoting)
this kind cloth thin-PRF
'This kind of cloth is too thin.'
這種布薄了。
- e. 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.'
 五公斤鹽多了, 我只要四公斤。

The predicate of an M-LE construction can be a matrix one, as seen the above examples, or be embedded in a modifier, as in (11a), or be the secondary predicate of a complex predicate (for V1V2 constructions where V1 is a verb of creation), as in the rest examples in (11):

- (11) a. Ni ba shang-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!'
 你把長了三吋的繩子挑出來!
- b. Yanhui ba mao-yi zhi-chang-le (yi cun).
 Yanhui BA wool-sweater knit-long-PRF one inch
 'Yanhui has knitted a wool-sweater, which is (one inch) too long.'
 燕慧把毛衣織長了 (一吋)。
- c. Yanhui ba zi xie-da-le (yidian).
 Yanhui BA character write-big-PRF a.little
 'Yanhui has written the characters (a little bit) too big.'
 燕慧把字寫大了 (一點)。
- d. Yanhui ba keng wa-qian-le (shi gongfen).
 Yanhui BA pit dig-shallow-PRF ten centimeter
 'Yanhui has dug a pit, which is (ten centimeters) too shallow.'
 燕慧把坑挖淺了 (10公分)。

In the examples in (11), the scope of the CE is the secondary predicate only, not including the matrix predicate. For instance, for (11b), the speaker has no evaluation of the activity *zhi* 'knit' conducted by Yanhui. What is evaluated is the property of the product of the knitting.

M-LE may occur in either a realis or irrealis context, as shown by (12a) and (12b), respectively.

- (12) a. Lulu zuotian ba zi xie-xiao-le.
 Lulu yesterday BA character write-small-PRF
 'Lulu wrote the characters too small yesterday.'
 陸露昨天把字寫小了。
- 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.'
 如果你把字寫小了, 就擦掉。

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 from the expectation. However, data like (2a) and (2b) 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 (13). Example (13d), is acceptable, but there is no CE reading, and thus the *le* is T-LE, rather than M-LE.

- (13) a. *Mianbao fang-le.
bread square-PRF
*麵包方了。
- b. *Chuanghu tuoyuan-le.
window oval-PRF
*窗戶橢圓了。
- c. *Zhe fen dang'an jue-mi-le.
this CL file absolute-secret-PRF
*這份檔案絕密了。
- d. Lulu ba shui shao-gan-le. (No CE reading)
Lulu BA water boil-dry-PRF
'Lulu boiled the water so much that the container was dried up.'
陸露把水燒乾了。

2.3. The interactions M-LE and excessive adverbs

If an evaluative excessive degree adverb (e.g., *tai* 'too', *guofen* 'too much', *guoyu* 'too much') occurs, M-LE is optional, as in (14).

- (14) a. Zhe gen shengzi tai duan (-le).
this CL rope too short PRF
'This rope is too short.'
這根繩子太短 (了) 。
- b. Lulu dui Duoduo guofen keqi (-le).
Lulu to Duoduo too polite PRF
'Lulu is too polite to Duoduo.'
露露對多多過份客氣 (了) 。

Sentences with neither *le* nor an excessive adverb do not express CE (also in (1b)):

- (15) a. Zhe ge zhuozi da-**le** yi-dianr.
this CL table big-PRF a-little
'This table is a little bit too big.'
這個桌子大了一點。
- b. Zhe ge zhuozi da yi-dianr.
this CL table big a-little
'This table is a little bit bigger.'
這個桌子大一點。

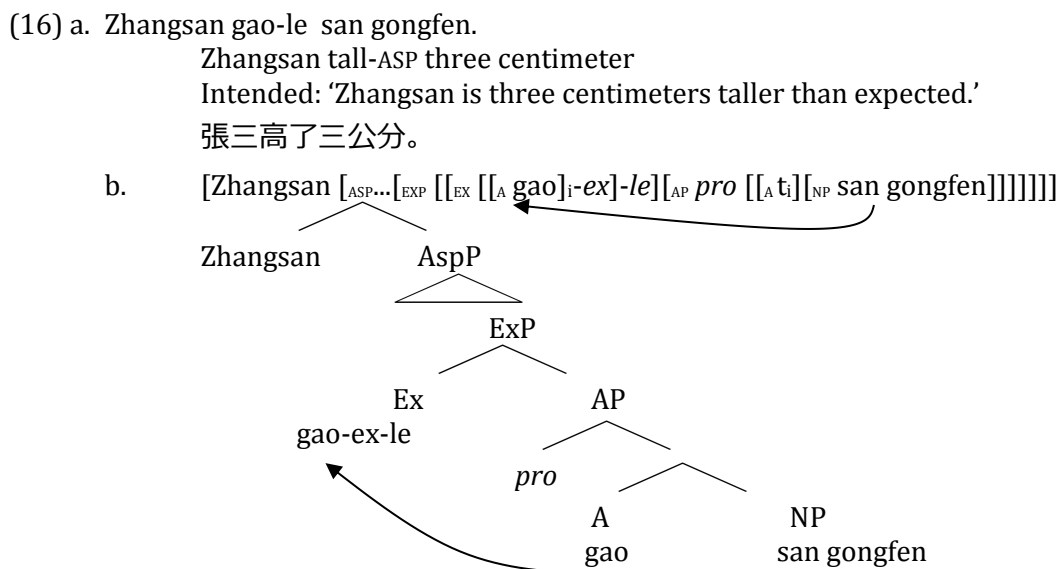
Our descriptive generalization is that M-LE and the excessive adverbs have the same semantic function, i.e. they both encode mirativity.²

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.

In this approach, (16a) is claimed to have the structure in (16b) (p. 789):



Basically, in Liu’s analysis, M-LE is the licenser 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, Claim A asserts that a measure expression is obligatory for an M-LE construction. It thus wrongly rules out the acceptability of data like (2a) and (2b). The assumption is thus descriptively inadequate.

Generally, *pro* may be replaced by an overt pronoun, as shown in (17a), however, the assumed *pro* in the M-LE construction may not be replaced by a pronoun, as shown in (17b). Therefore, Claim B is also problematic.

- (17) a. Lulu ting-le na ge xiaoxi yihou, {*pro*/ta} tebie gaoxing.

² The alternation between M-LE and an evaluative degree adverb also shows that the alleged rule that gradable adjectives must occur with *hen* ‘very’ in Mandarin Chinese is false. In the presence of M-LE, bare adjective can function as a predicate. This supports Chen (2010) and Grano’s (2012) analysis that bare adjectives need to occur with a functional element in order to function as a predicate.

Lulu hear-PRF that CL news after *pro*/3SG especially happy
 ‘After hearing the news, Lulu was especially happy.’
 露露聽了那個消息以後，（他）特別高興。

- b. Zhangsan gao-le (*ta) san gongfen.
 Zhangsan tall-asp 3SG three centimeter
 Intended: ‘Zhangsan is three centimeters taller than expected.’
 張三高了（*它）三公分。（要表達意：張三比預料高三公分。）

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 (17a) will be unacceptable, contrary to the fact. We 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 (p. 789) misrepresents the semantics of the construction. In (16b), *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 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 (16a).

A similar analysis of the same construction in Cantonese is seen in Mok (1998: 113).

A more reasonable 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 2011: 25), or the complement of the combination of the adjective and μ (Grano & Kennedy 2011: 26, 41), rather than the complement of the adjective directly.

Mainly because of the problem of Claim D, we 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*

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

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 LE

‘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

- (18) Wo zui xihuan Lulu le.
I most like Lulu PRT
'I like Lulu the most.'
我最喜歡露露了。

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:

- (19) Xiao shu 50 gongfen le.
small tree 50 centimeter PRT
'The small tree has grown up to 50 centimeters.'
小樹50公分了。

The *le* in (18), which is non-temporal, can be replaced with the sentence-final particle *la*, without a change of meaning. M-LE, which is a verbal suffix and thus never follows a nominal, may not be replaced by *la*. This is shown in the acceptability contrast between (20a) and (20b).⁴

- (20) a. Wo zui xihuan Lulu la. (the same reading as (18) above)
I most like Lulu PRT
'I like Lulu the most.'
我最喜歡露露啦。
- b. *Zhe gen shengzi duan-la 50 gongfen.
this CL rope short-PRT 50 centimeters
*這根繩子短啦50公分。

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-typing particles is that they may not occur in an embedded sentence, as shown in (21a). However, M-LE may occur in an embedded clause, as in (21b). Therefore, M-LE is not a root-clause marker.

- (21) a. Ruguo (ni renwei) [ta zui xihuan Xiaomei (*le)], ...
if you think he most like Xiaomei PRT
'If (you think) he likes Xiaomei most, ...'
如果 (你認為) [他最喜歡小梅 (*了)],

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.

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!
goog extremely PRT goog-eat extremely PRT handsome extremely PRT
'Extremely good!' 'Extremely delicious!' 'Extremely handsome!'

- 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.'
 如果你認為這根繩子短了, 請告訴我。

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, (22) has three readings, listed in A, B, and C.

- (22) Lulu gao-le san gongfen.
 Lulu high-PRF three centimeter
 露露高了三公分。
- A. 'Lulu has become three centimeters taller than before.' (T-LE)
 B. 'Lulu is three centimeters taller than another individual identifiable in the
 discourse context.' (non-temporal & 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: Section 3.3). The *le* is thus T-LE, a canonical perfect aspect marker.

(22) 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; the Bare Comparative in Xiang 2005). The meaning that Lulu is three centimeters taller than another individual or other individuals identifiable in the discourse context is a pure narrative reading, without any evaluation from the speaker. The *le* is thus a non-temporal & 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.

We 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.

<i> 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).

- (23) a. Lulu gao-le Duoduo *(san gongfen/henduo/bu-shao). (transitive
 comparative)
 Lulu tall-PRF Duoduo three centimeter/much/not-less
 'Lulu is {three centimeters/much} taller than Duoduo.'
 露露高了多多*(三公分/很多/不少)。

- b. Lulu gao-le (san gongfen). (M-LE construction)
 Lulu tall-PRF (three centimeter)
 'Lulu is (three centimeters) taller than I expected.'
 露露高了(三公分)。

This contrast indicates 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 (2011, G&K henceforth), in a transitive comparative construction, μ_{COMP} occurs. 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.

<ii> 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 (24a). 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 (24b) (We have seen the constraint in (17b)). The acceptability contrast between (24a) and (24b) shows that the M-LE construction is not a transitive comparative construction.

- (24) a. Lulu gao-le Duoduo san gongfen. (transitive comparative construction)
 Lulu tall-PRF Duoduo three centimeter
 'Lulu is three centimeters taller than Duoduo.'
 露露高了多多三公分。
- 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.'
 *露露高了它三公分。

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 (25a), but not in an M-LE construction, as in (25b):

- (25) a. Lulu bu xiang gen Duoduo_i tiaowu, yinwei Lulu gao-le ta_i san gongfen.
 Lulu not want with Duoduo dance because Lulu tall-PRF 3SG three centimeter
 'Lulu does not want to dance with Duoduo, because Lulu is three centimeters taller than him.'
 露露不想跟多多跳舞, 因為露露高了他_{多多}三公分。
- 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.'
 *我要[170公分的人]_i。露露高了他_i三公分。

For a transitive comparative construction, the second argument can be either explicit, as in (24a), or implicit, *pro* (G&K: 42). In the latter case, the surface string is identical to an M-LE construction. Therefore, (22) 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 (26a), 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 (26b) and (26c). It has been assumed that only an agent can license an agent-oriented adverb, and the unacceptability of (26b) and (26c) indicates that middles have no agent in their syntactic structures (Stroik 1992).

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

<iii> 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.

- (27) a. Lulu gao-(le) Duoduo san gongfen. (transitive comparative construction)
 Lulu tall-PRF Duoduo three centimeter
 'Lulu is three centimeters taller than Duoduo.'
 露露高(了)多多三公分。
 b. Lulu gao-*(le) san gongfen. (M-LE construction)
 Lulu tall-PRF three centimeter
 Intended: 'Lulu is three centimeters taller than expected.'
 露露高*(了)三公分。 要表達意：露露比預料高三公分。)

<iv> 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 (28a), but M-LE may not be replaced by *chu*, as seen in (28b).

- (28) a. Lulu gao-{le/chu} Duoduo san gongfen. (transitive comparative construction)
 Lulu tall-PRF/beyond Duoduo three centimeter
 'Lulu is three centimeters taller than Duoduo.'
 露露高{了/出}多多三公分。
 b. *Lulu gao-chu san gongfen. (M-LE construction)
 Lulu tall-beyond three centimeter
 Intended: 'Lulu is three centimeters taller than expected.'
 *露露高出三公分。 (要表達意：露露比預料高三公分。)

Both transitive comparatives and *bi* constructions can express an unexpected reading if the second argument denotes the expected standard overtly. In this case, *chu* is always possible.

- (29) a. Lulu gao-{*le/chu} wo yao de gaodu san gongfen. (transitive comparative)
 Lulu tall-PRF 3SG/beyond I want DE height three centimeter
 Intended: 'Lulu is three centimeters taller than the height that I want.'
 露露高{了/出}我要的高度三公分。

- b. Lulu bi [wo yao de gaodu] gao-{le/chu} san gongfen. (*bi* construction)
 Lulu than I want DE height tall-PRF/beyond three centimeter
 'Lulu is three centimeters taller than the height that I want.'
 露露比我要的高度高{了/出}三公分。

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

- (30) Lulu mai-{le/*chu} hua.
 Lulu buy-{PRF/beyond flower
 'Lulu bought flowers.'
 露露買{了/*出}花。

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

<v> 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 (31a) and *piaoliang* 'pretty' in (31b) (see Xiang 2005; also see Grano & Kennedy 2011: 3-4).

- (31) 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.'
 露露高 (了/出) 麗麗 {三公分/很多}。
 b. *Lulu piaoliang-(le/chu) Lili {henduo/yidian}.
 Lulu pretty-PRF/beyond Lili three centimeter/much
 *露露漂亮 (了/出) 麗麗 {很多/一點}。

The constraint on the transitive comparative construction is not seen in either *bi*-comparative or M-LE constructions, as seen in (32a) and (32b), respectively.

- (32) a. Lulu bi Lili piaoliang {henduo/yidian}.
 Lulu than Lili pretty much/a.little
 'Lulu is {much/a little} more pretty than Lili.'
 露露比麗麗漂亮{很多/一點}。
 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.'
 露露(太)漂亮了一點。導演要找相貌平平的。

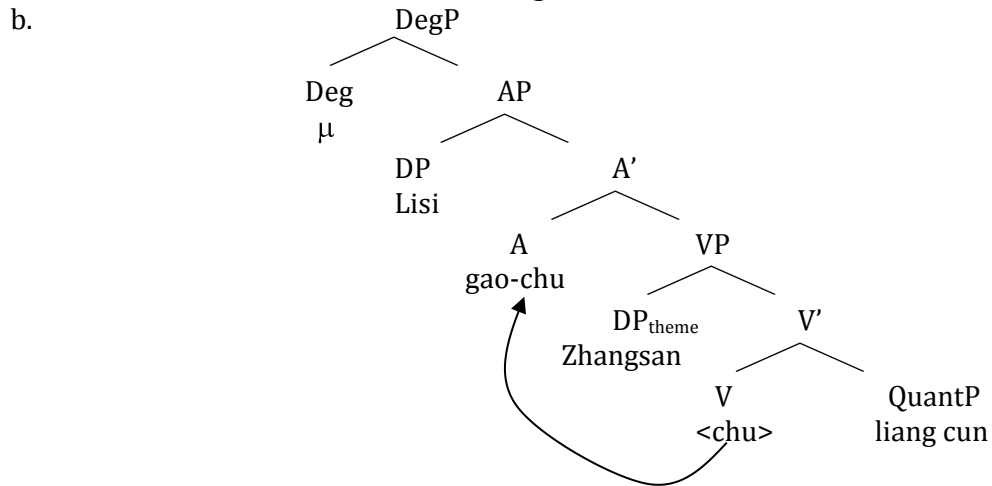
In G&K (p. 35; 39), the contrast between (31a) and (31b) is accounted for by the selectional restrictions of μ . They claim that "*gao* but not *congming* uses a scale that supports measurement, and so is able to combine with μ " (p. 39).

Based on the above five contrasts, we 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, we present our syntactic structure for transitive comparative constructions, leaving the structure of M-LE constructions to 5.3. The syntactic structure of the transitive comparative (33a) is (33b):⁵

- (33) a. Lisi gao-(chu/le) Zhangsan liang cun. (transitive comparative)
 Lisi tall-exit/PRF Zhangsan two inch
 'Lisi is two inches taller than Zhangsan.'



Major characteristics of the structure in (33b) are the following.

Chu assigns Case to *Zhangsan* and takes the measure expression *liang cun* 'two inch' as its complement.

The measure expression *liang cun* is obligatory because it is the internal argument of *chu*. The measure expression is c-commanded by μ , and gets licensed by the latter semantically (cf. Svenonius & Kennedy 2006; G&K: 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

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 (G&K p. 17), 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. G&K p. 22, 24-25).

- (i) a. John is three centimeters taller than *Mary*.
 b. Duoduo bi Lulu gao san gongfen
 Duoduo than Lulu tall three centimeter
 'Duoduo is three centimeters taller than Lulu.'
 多多比露露高三公分。
 c. Duoduo gao Lulu san gongfen.
 Duoduo tall Lulu three centimeter
 'Duoduo is three centimeters taller than Lulu.'
 多多高露露三公分。

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.

In (33b), *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. For instance, in (34), *feng* ‘mad’ moves to the right of *qi* ‘anger’, forming a compound *qi-feng*.

- (34) Lisi qi-feng-le Zhangsan
 Lisi anger-mad-PRF Zhangsan
 ‘Lisi angered Zhangsan such that the latter became mad.’

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

Although many details of my analysis are different from G&K, the two analysis 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, G&K does 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. (35a) has neither a temporal nor a mirative reading. Such an element is not compatible with an excessive or mirative adverb, either, as shown in (35b).

- (35) a. *{yiqian/benlai/lilai/so-wei}-le
 past/original/always/so-called}-PRF
 *{以前/本來/歷來/所謂}了
- b. *tai {yiqian/benlai/lilai/so-wei}
 too past/original/always/so-called}
 *太{以前/本來/歷來/所謂}

Second, like T-LE, neither *chu* nor *la* substitution is possible, as shown above (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.

-
- (i) Lulu duo-chi-le *(yi ge pingguo).
 Lulu more-eat-PRF one CL apple
 ‘Lulu ate one more apple.’
 露露多吃了一個蘋果。

- (36) a. Lulu yijing shuijiao, bu yao dasheng shuohua.
Lulu already sleep not should loud speak
'Lulu has already slept. You should not speak loudly.'
露露已經睡覺, 不要大聲說話。
- b. Lulu shuijiao-le, bu yao dasheng shuohua.
Lulu sleep-PRF not should loud speak
'Lulu has slept. You should not speak loudly.'
露露睡覺了, 不要大聲說話。
- c. *Lulu shuijiao. (No perfect aspect reading)
Lulu sleep
*露露睡覺。

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

- (37) a. Lulu tai gao.
Lulu too tall
'Lulu is too tall.'
露露太高。
- b. Lulu gao-le.
Lulu tall-le
'Lulu is too tall.'
露露高了。
- c. Lulu gao. (No CE reading)
Lulu tall
'Lulu is taller than others.'
露露高。

Fourth, a measure phrase is optional in both cases.

- (38) a. Lulu shui-le (san tian).
Lulu sleep-PRF three day
'Lulu slept for three days.'
露露睡了 (三天) 。
- b. Zhe gen shengzi duan-le (san gongfen).
this CL rope short-PRF three centimeter
'This rope is (three centimeters) shorter than expected.'
這根繩子短了 (三公分) 。

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:

- (56) a. Lisi xiang pang (*le) san gongjin.
Lisi want fat PRF three kilogram
'Lisi wants to gain three kilograms.' (Lin 2004:87)

- b. Lisi mei nian gao (*le) yi gongfen.
Lisi every year tall PRF one centimeter
'Lisi grows a centimeter every year.' (Lin 2004:87)

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

- (56) 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

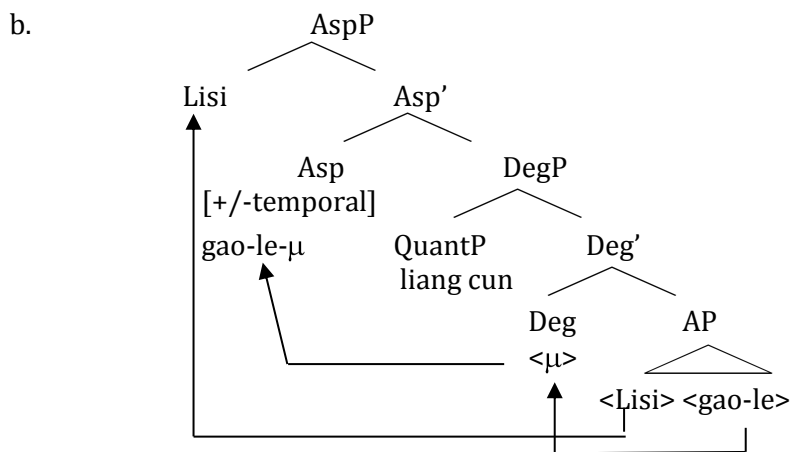
The first difference between M-LE and T-LE is in the semantic types of predicates: T-LE (perfect aspect marker), by definition, is for stage-level predicates, whereas M-LE is for individual-level predicates only (see 2.1).

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. In all of our examples, 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 (39a), the structure is the same, as in (39b).

- (39) 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]



One major property of the structure in (39b) 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; G&K: Sec. 2.3). In (39b), the dependency of *liang cun* 'two inches' on μ is represented as a Spec-Head relation.

Another major property of the structure in (39b) 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.

In summary, certain formal properties of T-LE and M-LE are the same, and they are captured by the same functional head Asp in syntactic structures.

6. Temporal morphology and the feature Exclusion

Why may the perfect aspect marker *le* bring about this special reading in an M-LE construction? How is this reading represented syntactically? These are our empirical issues.

6.1. Perfect aspect morphology and CE

I will show that there is a parallelism between counter-expectation (CE) and counterfactual (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, we 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 may have a counterfactual (CF) reading, encoding a modal of exclusion or remoteness, in English (e.g., Iatridou 2000, Huddleston and Pullum 2002).

- (40) 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.')

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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).

- (41) 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*."

Our data 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 notion. 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 respectively.

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

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. We 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 (43) and (44) (C is probably a short-form for Comment, which is in construal with a topic, T).

- (43) T(x) excludes C(x).
 (44) 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:

- (45) 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)

(43) thus derives (46), when its range is the time dimension. (46) means that the topic time is in the past with respect to the utterance time.

- (46) 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:

- (47) 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)

(43) thus derives (48), when its range is the world dimension. (48) covers a CF reading.

- (48) The topic world excludes the actual world.

Similarly, in Arregui's (2008) semantic study of past tense of CF, she 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 (43), we propose (49):

- (49) T(x) excludes C_{ref}(x).
 (50) a. T(x) stands for "Topic(x)" (i.e., "the x that we are talking about"). (= (44a))
 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:

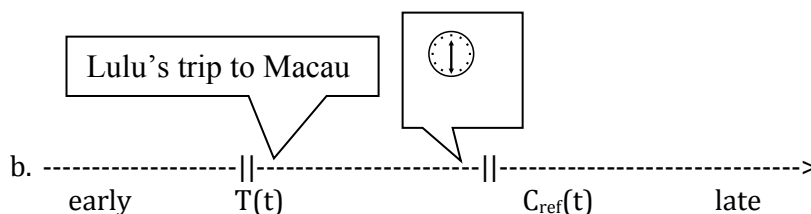
- (51) a. $T(t)$: the time interval (set of times) that we are talking about (= (45a))
 b. $C_{ref}(t)$: the time interval (set of times) that for all we know is the time of the reference

(49) thus derives (52), when its range is the time dimension:

- (52) The topic time excludes the reference time. (cf. (46))

(52) covers perfect aspect. We use (53) 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.

- (53) 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.'
 {昨天/明天}六點的時候, 露露已經去了澳門。



When x ranges over worlds, we get:

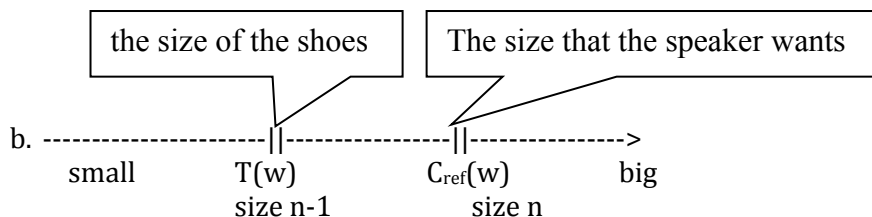
- (54) a. $T(w)$: the worlds that we are talking about (topic worlds) (= (47a))
 b. $C_{ref}(w)$: the worlds that for all we know are the worlds of the reference

(49) thus derives (55), when its range is the world dimension:

- (55) The topic world excludes the reference world. (cf. (48))

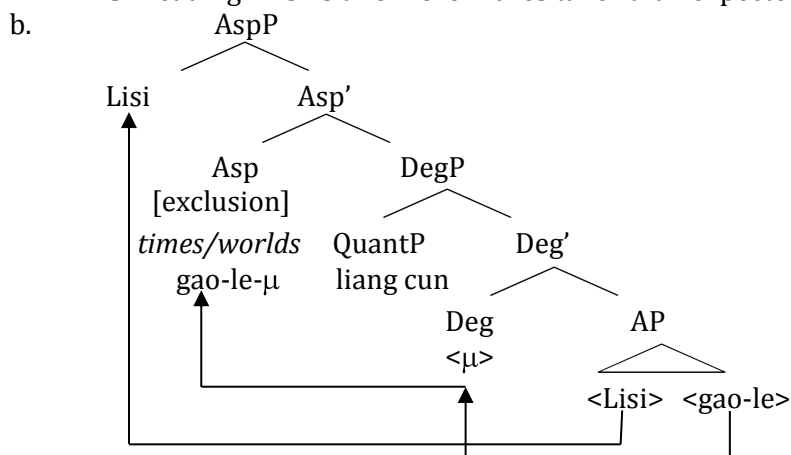
(55) covers a CE reading. For instance, in (56), the topic world is the size of the shoes and the reference world is the size that the speaker wants. The former is one number smaller than the latter. The speaker finds the size of the shoes is unexpected, therefore, M-LE is used to encode the mirativity.

- (56) 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.'
 這雙鞋小了一號。



We now refine our structure in (39) into the following:

- (57) 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.'
worlds



6.2.3. A comparison of CE and CF

With respect to the anchor, 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 a [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. There are other morphosyntactic ways other than past tense to express CF, cross-linguistically, as mentioned in Iatridou (2000). In Mandarin Chinese, expressions such as *fouzede hua* (否則的話), *burandehua* (不然的話), *yaobushi* (要不是) 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 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. The distributions of M-LE are different from T-LE. But like T-LE, it is found in both matrix and subordinate clauses.

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 (14), follows the properties of aspect markers in the language. In English, non-fake past tense is obligatory. Accordingly, the fake past tense of remoteness is also obligatory. 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', *qiqi* 'very', *tebie* 'especially', *gewai* 'extremely', *guofen* 'too'. In (58a) both *tai* and *guofen* occur, and in (58b), both *tebie* and *gewai* occur (note that all excessive adverbs belong to degree adverbs).

- (58) 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.'

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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 (59), either the adverb *feichang* 'very', or the measure expression *190 gongfen* '190 centimeters' occurs, but the two may not occur together. In the two M-LE constructions in (60), either the adverb *tai* 'too', or the measure expression *san cun* 'three inches' occurs, but the two may not occur together.

- (59) 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.'
- (60) a. Zhe zhang zhuozhi tai kuan-le (*san cun).
 this CL table too wide-PRF three inch
 'This table is (three inches) too wide.'
 這張桌子太寬了(*三吋)。

⁷ We do not discuss Iatridou's (2000) analysis of imperfect aspect in CF readings in English. 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.

- b. Zhe zhang zhuozi (*tai) kuan-le san cun.
 this CL table too wide-PRF three inch
 'This table is three inches too wide.'
 這張桌子(*太)寬了三吋。

Cover (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 (60b). Assume both measure expressions and degree adverbs are licensed by DegP (e.g., Svenonius & Kennedy 2006; G&K). My hypothesis is that in Mandarin Chinese, one DegP does not license two types of elements at the same time: degree adverb and measure expression.

One apparent exception to the above generalization is that the word *yidian* 'a bit' may occur with a degree adverb. In (61a), the degree adverb *tai* 'too' occurs with *yidian*, and in (61b), the degree adverb *guofen* 'too' also occurs with *yidian*.

- (61) a. Zhe zhang zhuozi tai kuan-le yidian.
 this CL table too wide-PRF a.bit
 'This table is a bit too wide.'
 這張桌子太寬了一點。
- b. Lulu guofen mingan-le yidian.
 Lulu too sensitive-PRF a.bit
 'Lulu is a bit too sensitive.'
 露露過份敏感了一點。

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According to G&K (p. 5), *a bit*, *a little* and their Chinese counterpart *yidian* is ambiguous between true measure phrases and degree modifiers. Since two degree modifiers may co-occur, as seen in (58), my hypothesis is that in examples like those in (61), *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 (61), certain degree words may follow a predicative adjective, as seen in (62). Thus our above hypothesis is not ad hoc.

- (62) 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!'
 你走慢一點！

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 (63) mean the same, and the two examples in (64) also mean the same.

- (63) a. Zhe ge shouji zhong-le yidian.
 this CL cell-phone heavy-PRF a.bit
 'This cell-phone is a bit too heavy.'
 這個手機重了一點。

- b. Zhe ge shouji youdian zhong-le.
this CL cell-phone a.bit heavy-PRF
'This cell-phone is a bit too heavy.'
這個手機有點重了。
- (64) a. Tang zhu-xian-le yidian.
soup cook-salty-PRF a.bit
'The soup has been cooked a bit too salty.'
湯煮鹹了一點。
- b. Tang youdian zhu-xian-le.
soup a.bit cook-salty-PRF
'The soup has been cooked a bit too salty.'
湯有點煮鹹了。

We have two remaining puzzles. First, if the pre-adjective degree adverb is *shaowei* 'a bit' or *duoshao* 'somehow', the occurrence of *yidian* to the right the adjective is obligatory, as seen in (65).

- (65) a. Zhe tiao qunzi shaowei duan-le *(yidian).
this CL skirt a.bit short-PRF a.bit
'This skirt is a bit too short.'
這條裙子稍微短了*(一點)。
- b. Zhe tiao qunzi duoshao duan-le *(yidian).
this CL skirt somehow short-PRF a.bit
'This skirt is somehow too short.'
這條裙子多少短了*(一點)。

Second, unlike degree adverbs such as *tai* 'too', *guofen* 'too', *youdian* 'somehow' (see (61a), (61b), and (63b), respectively), adverbs such as *hen* 'very', *tebie* 'especially', and *feichang* 'very' may not occur in an M-LE construction.

- (66) *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. (67a) (= (3a)) may, but (67b) (= (2a)) may not, be followed by a sentence meaning 'but I don't think so'.

- (67) 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.')
- 露露認為這根繩子短了。但我不这么认为。
- b. Zhe gen shengzi duan-le. (*dan wo bu zheme renwei)
this CL rope short-PRFbut I not so think
'This rope is too short.' (*'but I don't think so.')

這根繩子短了。(*但我不这么认为。)

If (67b) above is paraphrased as (68) below, the semantic contradiction is explicit.

(68) *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 Complementizer 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 (67b), and the latter is seen in the first conjunct of (67a). In (67a), 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. 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.

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