

A formal analysis of the Chinese excessive resultative construction

This paper offers a formal analysis for the Chinese excessive resultative construction such as *dòng wā qiǎn le* ‘the hole was dug shallow more than expected’, and explains why this construction can be used to express the meaning that a scalar expectation has been exceeded. According to the analysis, the Chinese excessive resultative construction describes events of affectedness consisting of two participants, a theme participant and a scale participant. The theme participant is affected according to a pre-determined value on a scale specified by the adjective in the construction, while the process of the event results in an actual value on the same scale. When the actual value exceeds the expected value, the ‘more than expected’ excessive interpretation arises. This analysis crucially hinges upon the assumption that there is a covert comparison between two values on the same scale. If such a comparison cannot be established within a resultative construction, the ‘more than expected’ excessive meaning will not arise.

Keywords: affectedness, resultative, excessive, comparison

1. Introduction

In Mandarin Chinese, there is a special type of resultative construction, which is in the form of “THEME+V+A-*le*”. This construction is ambiguous in that it can have an excessive resultative reading or an ordinary resultative reading, as is shown in the contrast between (1a) and (1b).^{1,2}

- (1) a. *dòng [wā shēn] le. bù shìhé zhòng shù le.*
hole dig deep LE NEG suitable plant tree LE
‘The hole was dug deep. [It is] not suitable for planting trees.’
b. *dòng [wā shēn] le. kěyǐ zhòng shù le.*
hole dig deep LE can plant tree LE
‘The hole was dug deep. [One] can plant trees in it.’

In (1a), the clause *dòng [wā shēn]-le* has a ‘more than expected’ excessive resultative reading. The meaning of (1a) is ‘the hole was dug deeper than what is expected to plant trees in it’. In (1b), the clause *dòng [wā shēn]-le* has an ordinary resultative reading. However, if we change the adjective *shēn* ‘deep’ into its antonym *qiǎn* ‘shallow’, the ambiguity will disappear, and the clause will only have the excessive resultative reading, as shown in (2a) below:³

- (2) a. *dòng wā qiǎn le. bù shìhé zhòng shù le.*
hole dig shallow LE NEG suitable plant tree LE
‘The hole was dug shallow. [It is] not suitable for planting trees.’
Inference: The hole was dug shallower than what is expected to plant trees in it.

¹ Abbreviations used in the examples are as follows: person is indicated 1,2,3; CERC Chinese excessive resultative construction; CL classifier; CONJ conjunct; DISJ disjunct; NEG negative morpheme; NML nominalizer; PFT perfective aspect marker; RES resultative structural particle; SFP sentence final particle; pl plural; sg singular.

² The morpheme ‘*le*’ in Chinese can be used either as a perfective aspect marker (PFT) or a sentence final particle (SFP) in different contexts. We will argue in Section 4 that ‘*le*’ in the Chinese excessive resultative construction is not a SFP, but a PFT. Before that, we will simply gloss it as LE to avoid confusion.

³ (2b) is grammatical, but pragmatically weird.

1 b. ? dòng wā qiǎn le. kěyǐ zhòng shù le.
 2 hole dig shallow LE can plant tree LE
 3 ‘The hole was dug shallow. One can plant trees in it.’

4

5 It is hard for (2a) to have the ordinary resultative reading, simply because the state of being
 6 shallow is not the natural result of the action of digging, as mentioned in Lu (1990). The
 7 following are some more examples which only have the excessive, but not the ordinary,
 8 resultative reading.

9

10 (3) a. qiáng qì ǎi le.
 11 wall build low LE
 12 ‘The wall was built low.’
 13 Inference: The wall was built lower than expected.

14 b. zhàopiàn fàng xiǎo le.
 15 photo enlarge small LE
 16 ‘The photo was enlarged small.’
 17 Inference: The photo was enlarged smaller than expected.

18

19 Since the sentences in (3) have a ‘more than expected’ excessive resultative reading,
 20 throughout the paper, I will dub them as the Chinese excessive resultative construction
 21 (CERC).⁴ In the literature of Chinese linguistics, it is Lu (1990) who first brought this
 22 construction into our attention. This construction has the following four characteristics:⁵

23

- 24 (4) a. the subject takes the semantic role of THEME of the verb;
 25 b. the predicate is invariantly in the form of a bare verb plus a bare adjective;
 26 c. the post-adjectival *le* is obligatory;
 27 d. the sentence has a “more than expected” meaning.

28

29 Lu (1990) observed that the adjectives that can occur in this construction belong to the
 30 following four types, based on an exhaustive study of Chinese adjectives.

31

- 32 (5) a. dimensional adjectives: *dà* ‘big’, *xiǎo* ‘small’, *cháng* ‘long’, *duǎn* ‘short’, etc.
 33 b. adjectives of colors: *bái* ‘white’, *hēi* ‘black’, *hóng* ‘red’, *huáng* ‘yellow’, etc.
 34 c. adjectives of tastes: *tián* ‘sweet’, *suān* ‘sour’, *xián* ‘salty’, *là* ‘spicy’, etc.
 35 d. other unsorted adjectives: *àn* ‘dark’, *jiān* ‘pointy’, *làn* ‘rotten’, *ruǎn* ‘soft’, etc.

36

⁴ Fan (2017) takes this construction as a quasi-resultative serial verb construction, arguing that it is syntactically different from typical resultative constructions, because the shared argument in this construction must be topicalized, and this construction allows independent coordination of V2-*le* from V1 and the insertion of the degree adverb *tai* ‘too’. We will show in Section 5 that all the unique properties associated with this construction results from its syntactic derivations as a degree-based resultative construction.

⁵ It is very interesting to note that when discussing the the Adj-*duo* construction in Mandarin Chinese, Lin (2014) observes that this construction has some unique properties, some of which are similar to those of CERC. Take the following sentence as an example, *Zhangsan congming duo le*. ‘Zhangsan is much more clever.’ First, in this sentence, the sentence-final *le* is obligatory. Secondly, the sentence does not contain any comparative morpheme, but it has a comparative meaning. Lin (2014) attributes the comparative meaning of such sentences to the interaction of several factors, particularly the semantic types of the gradable adjective, the degree adverb and the adjective of quantity *duo* ‘many/much’. Despite the similarities shared by the Adj-*duo* construction and CERC, we find striking differences between them. First, the Adj-*duo* construction is usually used to compare two entities, whereas CERC is used to compare two degrees (the actual value vs. the expected value) associated with the same entity. Second, CERC only allows adjectives with conventional measurement systems, but the Adj-*duo* construction does not have this constraint.

1 We can see that the adjectives listed above are all gradable adjectives. However, not all
 2 gradable adjectives can occur in this construction. For example, gradable adjectives like
 3 *gānjìng* ‘clean’ and *fēnglì* ‘sharp’ will not generate the ‘more than expected’ reading, as shown
 4 in (6).

- 5
 6 (6) a. yīfu xǐ gānjìng le.
 7 clothes wash clean LE
 8 ‘The clothes have been washed clean.’
 9 b. dāo mó fēnglì le.
 10 knife sharpen sharp LE
 11 ‘The knife has been sharpened.’

12
 13 A sentence in the form of “THEME + V+A-*le*” could have three different interpretations: an
 14 ordinary resultative reading, as in (6); an excessive resultative reading, as in (3); both an
 15 ordinary resultative reading and an excessive resultative reading, as in (1). Lu (1990) offers the
 16 following two rules for the interpretation of such sentences:

- 17
 18 (7) a. If the post-verbal adjective does not describe a natural result of the action denoted by
 19 the verb, then the sentence will have an excessive resultative reading;
 20 b. If the adjective describes the natural result of the action denoted by the verb, then the
 21 sentence can sometimes have an ordinary resultative reading, and sometimes have an
 22 excessive resultative reading.

23
 24 We know that the natural result of the action of digging *wā* ‘dig’ is the state of the hole
 25 becoming *shēn* ‘deep’, so according to (7), *wā shēn* ‘dig deep’ can lead to both an excessive
 26 resultative reading and an ordinary resultative reading. If the adjective after the verb *wā* ‘dig’
 27 is *qiǎn* ‘shallow’, which does not describe the natural result of the action of digging, according
 28 to (7), *wā qiǎn* can only lead to an excessive resultative reading. Lu’s (1990) interpretational
 29 rules correctly predict what adjectives can yield the excessive resultative reading, but it remains
 30 unclear why the sentences in (6) can only have the ordinary resultative reading, although the
 31 adjectives *gānjìng* ‘clean’ and *fēnglì* ‘sharp’ also describes the natural result of the actions of
 32 washing and sharpening respectively. In (6a), although the natural result of the action of
 33 washing clothes is the state of the clothes becoming *gānjìng* ‘clean’, the sentence can only have
 34 an ordinary resultative reading.

35 Shen and Peng (2010) argued that all the four types of adjectives listed in (5) actually
 36 belong to a single category, that is, open-scale adjectives, the meaning of which is determined
 37 by a context-sensitive standard. When the standard of the adjective in such a construction is
 38 identified with the speaker’s expectation, the excessive ‘more than expected’ resultative
 39 reading arises. For example, the excessive resultative reading in (1a) and (2a) comes from the
 40 comparison between the actual depth of the hole and the speaker’s expected depth. The reason
 41 why the examples in (6) cannot have an excessive resultative reading is that adjectives like
 42 *gānjìng* ‘clean’ and *fēnglì* ‘sharp’ are closed-scale adjectives. Kennedy and McNally (2005)
 43 shows that the adverb *completely* can be used to differentiate open-scale adjectives from
 44 closed-scale adjectives. In the examples of (8), *wánquán* ‘completely’ can co-occur with the
 45 adjective *gānjìng*, but not with the adjective *qiǎn*, indicating that *gānjìng* is a closed-scale
 46 adjective, while *qiǎn* is an open-scale adjective.

- 47
 48 (8) a. yīfu xǐ de wánquán gānjìng le.
 49 clothes wash RES completely clean LE
 50 ‘The clothes have been washed completely clean.’

1 b. *dòng wā de wánquán qiǎn le.
2 hole dig RES completely shallow LE

3

4 In the examples of (9), we found that *wánquán* ‘completely’ can co-occur with *wúqù* ‘boring’,
5 but cannot co-occur with *yǒuqù* ‘interesting’, indicating that *wúqù* ‘boring’ is a closed-scale
6 adjective and *yǒuqù* ‘interesting’ is an open-scale adjective, despite the fact that both of the
7 two adjectives can be modified by the degree adverb *shífēn* ‘very’.

8

9 (9) a. gùshi gǎi de shífēn yǒuqù le.
10 story change RES very interesting LE

11 ‘The story was changed into a very interesting one.’

12 b. gùshi gǎi de shífēn wúqù le.
13 story change RES vey boring LE

14 ‘The story was changed into a very boring one.’

15 c. *gùshi gǎi de wánquán yǒuqù le.
16 story change RES completely interesting LE

17 d. gùshi gǎi de wánquán wúqù le.
18 story revise RES completely boring LE

19 ‘The story was changed into a completely boring one.’

20

21 However, neither *wúqù* ‘boring’ nor *yǒuqù* ‘interesting’ can yield the ‘more than expected’
22 reading, as shown in (10).

23

24 (10) a. *gùshi gǎi yǒuqù le.
25 story change interesting LE

26 Intended: ‘The story was changed into a more interesting one than expected.’

27 b. *gùshi gǎi wúqù le.
28 story change boring LE

29 Intended: ‘The story was changed into a more boring one than expected.’

30

31 This fact tells us that the distinction between open-scale adjectives and closed-scale adjectives
32 does not matter in the proper use of adjectives in CERC. We would argue what really matters
33 here is the fact that such adjectives as *gānjìng* ‘clean’ and *wúqù* ‘boring’ do not use a scale for
34 which a conventional measurement system is defined. The adjectives in the excessive
35 resultative construction must be adjectives with a well-defined conventional measurement
36 system.⁶ We also noticed that adjectives using scales with conventional measurement systems
37 in Chinese are all mono-syllabic. The mono-syllabic adjective can serve as the root to form
38 derived words by the suffix *-dù* ‘degree’ or *-liàng* ‘amount’, such as *gāo-dù* (height), *zhòng-*
39 *liàng* (weight), *cháng-dù* (length), *hòu-dù* (thickness), *sù-dù* (speed), *wēn-dù* (temperature), or
40 to combine with its antonym to form a compound noun, such as *dà-xiǎo* (size), *zǎo-wǎn* (time),
41 *kuài-màn* (speed), etc.⁷

42

⁶ This constraint also holds with Chinese transitive comparatives, as has been investigated in Xiang (2005), and extensively discussed in Grano and Kennedy (2012). In their analyses, Chinese gradable adjectives are divided into two classes, depending on whether the adjective is associated with a conventional measurement system (linear extent, weight, time, age, speed, temperature, etc.).

⁷ Adjectives which do not use scales with conventional measurement systems are more than often disyllabic in modern Chinese, such as *congming* ‘smart’, *piàoliàng* ‘pretty’, etc. Such adjectives can combine with the disyllabic noun *chéngdù* ‘degree’, such as *piàoliàng chéngdù* to refer to the degrees on the beauty scale.

- 1 (11) a. Adjectives using scales with conventional measurement systems: *gāo* ‘tall’, *ǎi* ‘short’
 2 (opposite of ‘tall’), *zhòng* ‘heavy’, *qīng* ‘light’, *cháng* ‘long’, *duǎn* ‘short’ (opposite of
 3 ‘long’), *cū* ‘thick’, *xì* ‘thin’ [not in Xiang’s list: *zǎo* ‘early’, *wǎn* ‘late’, *dà* ‘big’/‘old’,
 4 *xiǎo* ‘small’/‘young’, *kuài* ‘fast’, *màn* ‘slow’]
 5 b. Adjectives using scales without conventional measurement systems: *piàoliàng* ‘pretty’,
 6 *xìxīng* ‘careful’, *gāoxìng* ‘happy’, *yǒuqù* ‘interesting’, *gānjìng* ‘clean’, *shūfu*
 7 ‘comfortable’, *míngliàng* ‘bright’ (Grano & Kennedy 2012: 222)

8 The question naturally arising here is why the adjective in CERC is subject to this semantic
 9 constraint. We will explore this issue in Section 5.

10 Adopting the affectedness theory proposed in Beavers (2011), we will offer an account for
 11 the inherent four properties of CERC by answering the following three questions:
 12

- 13 (12) a. Why is the post-adjectival *le* obligatory?
 14 b. How does the ‘more than expected’ reading arise?
 15 c. How is the argument structure of the predicates realized in this construction?
 16

17 This paper argues that CERC typically describes events of affectedness consisting of two
 18 participants, a theme participant and a scale participant that measures the degree of affectedness.
 19 In such an event, the affected participant is created or influenced according to a beforehand
 20 prescribed value (d1) on a scale specified by the adjective, while the process of the event results
 21 in an actual value (d2) on the same scale. When the actual value exceeds the expected value,
 22 the excessive “out of expectation” interpretation arises. This paper will also argue that the post-
 23 adjectival *le* in CERC is a perfective aspect marker, which is to mark the completion that the
 24 scalar expectation has been exceeded. This explains why the post-adjectival *le* is obligatory in
 25 this construction. This analysis crucially hinges upon the assumption that there is a covert
 26 comparison between the actualized value and the expected value on the same scale. If such a
 27 comparison cannot be established, the “more than expected” meaning will not arise, and the
 28 resultative construction will only have an ordinary resultative reading.

29 The significance of a detailed study on CERC is reflected in the following three aspects.
 30 First, the form of CERC is so bare that it is tempting to mistakenly treat the predicate as a single
 31 Verb-Complement (VC) compound. This paper will demonstrate that CERC actually contains
 32 an embedded comparative construction, which involves a bundle of covert categories, such as
 33 Deg, the comparative marker, etc. Secondly, the unique grammatical behavior of the post-
 34 adjectival *le* in CERC is worth a thorough study. I will show that the post-adjectival *le* is the
 35 perfective aspect marker; however, different from its canonical post-verbal syntactic position,
 36 in CERC, *le* occurs in the post-adjectival position, leading to its unique grammatical behavior
 37 in CERC. Thirdly, if ‘A-*le*’ is a comparative construction, then why is the *bi*-phrase ‘than
 38 expected’ not able to show up? I will show that this property is derived from a general word
 39 order constraint of Chinese resultatives, combined with the Case assigning mechanism of the
 40 *bi*-comparative, as proposed in Grano and Kennedy (2012).

41 The paper is organized as follows. Section 2 offers an affectedness-based analysis of the
 42 Chinese excessive resultative construction. Section 3 explains why some excessive resultatives
 43 can also have an ordinary resultative reading. Section 4 discusses the nature of the post-
 44 adjectival *le*, arguing that it is a perfective aspect marker based on some syntactic tests, and
 45 explains why it is obligatory in CERC. Section 5 compares the excessive resultatives with the
 46 *de*-resultative, and explains why the theme argument has to be fronted to the subject position
 47 in the excessive resultatives, and why the *bi*-phrase ‘than expected’ cannot show up in CERC.
 48 Section 6 is a brief summary.
 49

2. An affectedness-based analysis of CERC

In this section, we will first review the affectedness theory proposed in Beavers (2011). Based on the theory, we will put forward the action script of CERC. The action script can be understood as a kind of semantic template which straightforwardly shows how the argument structure is realized, and what is the function of the verb and the adjective in this construction.

2.1 Beavers's (2011) theory on affectedness

Affectedness has been approached from various perspectives, being an important research topic related to transitivity, argument structure, lexical aspect, telicity, and degrees (Hopper and Thompson 1980; Tenny 1994; Krifka 1998; Kearns 2007). Starting from the intuitive idea that affectedness refers to the situation in which some entity x changes from the initial state to the target state, Beavers (2011) proposed that the concept of change is an inherently relational one involving both a theme participant that undergoes a change and a scale participant defining the process of the change over time (following Hay et al. 1999; Rappaport Hovav and Levin 2001; Wechsler 2005; Kennedy and Levin 2008; Rappaport Hovav 2008). According to this scalar model of change, all types of change can be uniformly defined as a transition of a theme along a scale that defines the change. Beavers (2011) defined an operator *result'* to capture this notion of affectedness, and each affected event is decomposed into two parts: the dynamic event (denoted by the dynamic predicate) and the transition of states (denoted by the *result'* operator), both of which contain a scale argument s .

(13) For all dynamic predicates ϕ , themes x , events e , states g , and scales s :

$$[[\phi(x,s,e) \wedge \textit{result}'(x,s,g,e)] \longleftrightarrow [\phi(x,s,e) \wedge \textit{SOURCE}(x,b_c,e) \wedge \textit{GOAL}(x,g,e)]]$$

(This says for event e described by ϕ , g is the target state of theme x on scale s iff x transitions to g by the end of e from a contextually determined state b_c at the beginning of e .)

(Beavers 2011: 351)

Beavers (2011) argues that this scalar model of change can offer a unified analysis of different types of affectedness such as motion, change-of-state, and creation/consumption:

(14) a. John walked to the cafe. (scale of position of John)

$$\exists e \exists s [\textit{walk}'(\textit{john}, s, e) \wedge \textit{result}'(\textit{john}, s, \textit{cafe}, e)]$$

✧ *walk'*(**john**, s , e) says that this is a walking event of John along a path s ;

✧ *result'*(**john**, s , **cafe**, e) says that John transitions from some initial point b_c to the **cafe** on the path s .

b. John wiped the table clean. (scale of cleanliness of the table)

$$\exists e \exists s [\textit{wipe}'(\textit{john}, s, \textit{table}, e) \wedge \textit{result}'(\textit{table}, s, \textit{clean}, e)]^8$$

✧ *wipe'*(**john**, s , **table**, e) says that this is a wiping event of the table by John along a scale of cleanliness;

✧ *result'*(**table**, s , **clean**, e) says that the table transitions from some initial point of cleanliness to some subsequent degree **clean** on s .

c. John ate the apple. (scale of volume/existence of the apple)

$$\exists e \exists s [\textit{eat}'(\textit{john}, s, \textit{apple}, e) \wedge \textit{result}'(\textit{apple}, s, \mathbf{0}, e)]$$

✧ *eat'*(**john**, s , **apple**, e) says that this is an eating event of the apple by John.

✧ *result'*(**apple**, s , **0**, e) says that the apple transitions from some initial non-0 degree to **0**. (Beavers 2011: 352)

⁸ Beavers (2011) treats '**clean**' in *result'*(**table**, s , **clean**, e) as a degree argument.

1 This model teases apart an affected theme participant and a scale participant in an event, and
 2 argues that every predicate of affectedness contains both a theme argument and a scale
 3 argument. For example, in (14b), the predicate contains both the theme argument *table* and the
 4 scale argument of cleanliness *s*, and the event of *wipe...clean* is a compound event containing
 5 the subevents of “wiping the table” and “the table achieving the degree of *clean* on *s*”.

6 The advantage of this scalar model of change is that it manages to account for the double
 7 telicity effect, which says that telicity is jointly determined by definite objects and specific
 8 results. The following examples are given in Beavers (2011: 349) to show that the theme and
 9 the scale jointly determine the telicity of the sentences, in which the *for*-adverbial is used with
 10 atelic events, and the *in*-adverbial is used with telic events.

- 11
 12 (15) a. Bill dimmed the lights half dim in/?for five minutes.
 13 b. Bill dimmed lights half dim for/?in five minutes.
 14 c. Bill dimmed the lights dimmer and dimmer for/?in five minutes.

15
 16 The theme *the lights* and the degree on the scale of darkness *half dim* in (15a) are both specific,
 17 so the sentence is telic; in (15b) the degree is specific, but the theme is not, so the sentence is
 18 atelic; in (15c) the theme is specific, but the degree is vague, so the sentence is also atelic.

19 2.2 The action script of CERC

20 Beavers’s (2011) scalar model of affectedness can also offer a straightforward account for
 21 the telicity property of CERC. For example,

- 22
 23
 24 (16) máoyī zhī dà le.
 25 sweater knit large LE

26 ‘The sweater was knitted large.’

27 Inference: The sweater was knitted larger than expected.

28 $\exists e \exists s [knit'(sweater, s, e) \wedge result'(sweater, s, more-than-expected, e)]$

29 $\diamond knit'(sweater, s, e)$ says that this is a knitting event of the sweater along a scale
 30 of size;

31 $\diamond result'(sweater, s, more-than-expected, e)$ says that the sweater’s actual size on
 32 the scale of size transitions from the initial point to the degree of *more-than-expected*
 33 on the scale of size *s*.

34
 35 There are two end points in the event described in (16). The first end point is the completion
 36 of the sweat knitting, and the second end point is the the completion of comparing the final size
 37 of the sweater and the expected size. The first end point is related to the theme participant, and
 38 the second end point is related to the scale participant. We noticed that CERC exemplifies a
 39 very special type of affectedness. First, the two values compared are not the initial (SOURCE)
 40 state and the final (GOAL) state. Rather, what is compared is the final state and an expected
 41 state. This can be best illustrated by the following ambiguous sentence.

- 42
 43 (17) shéngzi jiǎn duǎn le.
 44 rope cut short LE

45 ‘The rope was cut short.’

46 Inference a: The rope was cut shorter than before.

47 Inference b: The rope was cut shorter than expected.

48
 49 There are at least two different readings associated with (17). Relevant to the two readings are
 50 three values of the length of the rope: the initial length of the rope before the cutting action,

1 the final length of the rope after the cutting action, and the desired length of the rope set by the
2 agent before the cutting action. Take the following two scenarios as an example.

3
4 (18) Scenario A:

5 The initial length of the rope is 20 meters, and the agent wants to have a 15-meter-
6 long rope. After the cutting action, the rope is found to be 16 meters long.

7 Scenario B:

8 The initial length of the rope is 20 meters, and the agent wants to have a 15-meter-
9 long rope. After the cutting action, the rope is found to be 14 meters long.

10
11 Under the “shorter than before” reading, (17) is true in both Scenario A and Scenario B;
12 however, under the “shorter than expected” reading, (17) is true in Scenario B, but false in
13 Scenario A. This example shows that what matters in the interpretation of CERC is the
14 comparison between the actualized degree and the expected degree. To be more specific, CERC
15 is one of the means which can be used to express the meaning that a scalar expectation has
16 been exceeded (Rett 2011; Zhang 2013).⁹

17 In CERC, apart from the constraints on the adjective, is there any constraint on the verb?
18 We have mentioned in (4) that the subject of CERC always takes the semantic role of THEME
19 of the verb. Relevant to this property is the fact that the predicate of the sentence must be non-
20 egophoric. Egophoricity is often called the conjunct/disjunct system in typological literature
21 (Aikhenvald 2004). Conjunct verbs can be used with the first person subject in declarative
22 sentences and the second person subject in interrogative sentences. The person agreement
23 between the subject and the verb indicates that the use of conjunct verbs indicates that the
24 speech act participants (SAPs) have control over the action denoted by the verb, while the use
25 of disjunct verbs indicates that the SAPs have no control over the action denoted by the verb.
26 DeLancey (1997) observed that Tibetan inflectional paradigms in both the copular and verbal
27 systems may register a difference between expected and unexpected information. For example,
28 with the first person subject, the existential copula *'dug* conveys a sense of surprise (19b), while
29 the existential copula *yod* in the same context is used for statements of ‘prior knowledge’ (19a).

- 30
31 (19)a. nga-r dngul tog=tsam yod
32 I-LOC money some exist
33 ‘I have some money.’ (e.g., I brought some with me)
34 b. nga-r dngul tog=tsam 'dug
35 I-LOC money some exist
36 ‘I have some money.’ (quite to my surprise) (DeLancey 1997)

37
38 These copulas can also be used as the markers of egophoricity. For example, the verb in (20a)
39 is a conjunct verb, so the sentence uses the marker *yod*, and the verb in (20b) is disjunct verb,
40 so the sentence uses the marker *'dug*.

- 41
42 (20)a. nga kha-lag zav-gi yod.
43 Isg rice eat-IMPF CONJ
44 ‘I am having a meal.’

⁹ “out of expectations” is closely related to the grammatical category of mirativity. The core function of mirativity is to show speakers’ unprepared mind or surprise at something out of expectations. Since CERC inherently encodes a ‘more than expected’ reading, we can assume that CERC encodes a kind of mirativity, though in our view it is more precise to call the encoded reading “excessive” in this particular construction.

1 The contrast shown in (22a) and (22b) indicates that SAPs do not have control over the event
 2 denoted by the ‘VA’ predicate, but such a constraint is absent from the Chinese BA-
 3 construction, as is shown in (22d). The examples in (22) highlight a significant property which
 4 differentiates the excessive resultative construction from the Chinese BA-construction, and this
 5 property is directly related to the semantic analysis shown in (16), where the knitting event
 6 implies an agent, who does not have control over the result of the event. In contrast, in the BA-
 7 construction, the agent denoted by the subject has control over both the theme and the result.
 8 With these differences in mind, we are now able to summarize the action script of CERC. By
 9 action script we mean a kind of semantic template of an event. It regulates the performance of
 10 all the participants, similar to the situation that all the actors and actresses in a movie must
 11 follow the film scripts to act. The action script of CERC is as follows:

12
 13 (23) A theme participant, serving as the grammatical subject, was unintentionally affected to
 14 such an extent that the degree associated with the final result has surpassed an expected
 15 degree which is set before the onset of the action. The dimension of the comparison is
 16 determined by the adjective.

17
 18 It is important to emphasize that both the final actual degree (d_2) and the expected degree (d_1)
 19 are solely based on the point of view of the speaker of the proposition. Thus, the so-called
 20 actual value (d_2) is in fact the ‘speaker-perceived’ actual value, not necessarily the physical
 21 value, and the so-called expected value (d_1) is in fact the ‘speaker-expected’ value, which is
 22 not necessarily shared by anyone else.

23 24 3. The reason for the potential ambiguity

25 Lu (1990) pointed out that some excessive resultative sentences may be ambiguous in
 26 having an additional interpretation besides the ‘more than expected’ reading. For example,

27
 28 (24) a. nà shuǐxiānhuā de yèzǐ zhǎng gāo le huì yǐngxiǎng kāihuā.
 29 that narcissus DE leave grow tall LE will influence bloom
 30 ‘If the leaves of the narcissus grow taller than expected, that will influence its blooming.’
 31 b. nà hái zǐ yì nián bú jiàn jiù zhǎng gāo le.
 32 that child one year NEG see JIU grow tall LE
 33 ‘I have not seen the child for a year. Now he has grown into an adult.’
 34

35 The predicates in (24a) and (24b) are both in the form of *zhǎng gāo le*, but their meanings differ.
 36 We know that the verb *zhǎng* ‘grow’ is an internally caused change-of-state verb, so there is
 37 no agent at all in this case. An implicit comparison is established in (24a) between the ideal
 38 height of the leaves (d_{ideal}) and the actual height of the leaves (d_{actual}), and the comparison result
 39 is $d_{actual} > d_{ideal}$. The surpassing relation is syntactically realized by the use of the perfective
 40 aspect marker *le*. Different from (24a), (24b) does not have the ‘more-than-expected’ meaning,
 41 despite the fact that this sentence has the same predicate as (24a). As is well-known in Chinese
 42 linguistics, the Chinese *le* can be used either as a perfective aspect marker (le_1) or a sentence
 43 final particle indicating change-of-state (le_2). For (24b), although there is also an implicit
 44 comparison, this comparison is between the present height of the child (d_{actual}) and a standard
 45 determined by contexts of the positive adjective *tall*. In this case, the sentence final *le* is not
 46 attached to the adjective, but to the whole proposition, hence a sentence final particle.

47 It is usually the case that the ambiguity relevant to degrees is rather complicated. Take the
 48 following two scenarios as examples: (I) Mary’s hair was originally 150 centimeters long. She
 49 wanted her hair to be 100 centimeters long. She went to a barber’s shop and had a haircut. After
 50 the haircut, her hair became 20 centimeters long. (II) Mary’s hair was originally 150

centimeters long. She wanted her hair to be 100 centimeters long. She went to a barber's shop and had a haircut. After the haircut, her hair became 120 centimeters long. Example (25) can be uttered to describe either of the two scenarios, but (25) is ambiguous in three ways. In the two scenarios, the truth value of (25) totally depends on which interpretation is intended.

- (25) *tóufà* *jiǎn* *duǎn* *le*.
 hair cut short LE
 a. Her hair was cut short.
 b. Her hair was cut shorter.
 c. Her hair was cut shorter than expected.

The truth value of (25) depends on four degrees: $d_{initial}$, d_{final} , d_{ideal} and d_c . For example,

- (26) a. $d_{initial}$: Mary's original hair length (150cm)
 b. d_{final} : May's final hair length (20cm in Scenario I; 120cm in Scenario II)
 c. d_{ideal} : May's intended hair length (100cm)
 d. d_c : the hair length which is considered short by the general public (e.g. 30cm)

Interpretations	Scenario I: $d_{final}=20\text{cm}$	Scenario II: $d_{final}=120\text{cm}$
a. $d_{final} < d_c$	T (20cm < 30cm)	F (120cm $\nless 30\text{cm}$)
b. $d_{final} < d_{initial}$	T (20cm < 150cm)	T (120cm < 150cm)
c. $d_{final} < d_{ideal}$	T (20cm < 100cm)	F (120cm $\nless 100\text{cm}$)

For interpretation (a) $d_{final} < d_c$, the adjective *short* refers to the property of the final state of the hair. Unless the final length of the hair is really considered to be short by the general public, (25) cannot be true. In Scenario II, although the final length of Mary's hair is less than the original length, the hair of the 120cm length is still far from short, according to the general assumption about short hair. Therefore, (25) cannot be true for Scenario II under the interpretation of (a) $d_{final} < d_c$. For interpretation (b) $d_{final} < d_{initial}$, (25) would sound most natural if a differential phrase such as *yidian* 'a little', *xuduo* 'much', *bushao* 'too much' is added at the sentence final position. For interpretation (c) $d_{final} < d_{ideal}$, as long as the final length of the hair is less than the expected length, (25) will be true. In Scenario II, 120cm is more than 100cm; therefore (25) is false on this reading. The correct way to describe this situation is (27).

- (27) *tóufà* *jiǎn* *cháng* *le*.
 hair cut long LE
 a. *Her hair was cut long.
 b. *Her hair was cut longer.
 c. Her hair was cut to such an extent that it is longer than expected.

(27) has only one meaning, the excessive resultative reading. The reason for the lack of ambiguity in (27) is transparent. First, the cutting event will not lead to the result that the hair becomes long, so interpretation (a) $d_{final} < d_c$ is not available. Secondly, the hair cutting event determines the dimension of comparison (LENGTH) and its direction (SHORTNESS), so interpretation (b) $d_{final} < d_{initial}$ is also not available. The only interpretation associated with *jiǎn cháng le* is the excessive resultative interpretation.

The ambiguity shown in (25) could be avoided in specific pragmatic contexts. For example, the second clause in (28a) determines that the first clause in (28a) could only have the "taller than expected" reading, while the second clause in (28b) determines the first clause in (28b) could only have the "taller than before" reading.

- 1 (28) a. tā zhǎng gāo le. bú shìhé dāng fēixíngyuán le.
 2 3.sg grow tall LE NEG suitable be pilot LE
 3 ‘He grew tall. Not suitable to be a pilot.’
 4 Inference: He grew taller than what is expected to be a pilot’s suitable height.
 5 b. tā zhǎng gāo le. néng mōdào chuānghù le.
 6 3.sg grow tall LE can touch window LE
 7 ‘He grew tall. (He) can touch the window.’
 8

9 The ‘more than expected’ reading can be further highlighted by the use of the optional
 10 differential phrase. For example,
 11

- 12 (29) a. máoyī zhī cháng le sān límǐ.
 13 sweater knit long LE three centimeter
 14 ‘The sweater was knitted three centimeters longer.’
 15 Inference: The sweater was knitted three centimeters longer than expected.
 16 b. máoyī xǐ cháng le sān límǐ.
 17 sweater wash long LE three centimeter
 18 ‘The sweater was washed three centimeters longer.’
 19 Inference: The sweater was three centimeters longer than it had been after washing.
 20

21 The meaning of (29a) is that the actual final length of the sweater is three centimeters longer
 22 than the intended length set before the knitting event. Since the verb *zhi* ‘knit’ is a verb of
 23 creation, it does not make sense to talk about the original length of the sweater, because it is
 24 still non-existent. If we change the verb of creation *zhi* ‘knit’ to the verb of affectedness such
 25 as *xi* ‘wash’, then we will have the ‘longer than the original length’ reading rather than the
 26 “longer than expected” reading. This is due to the fact that before the washing event it is
 27 unusual to set an intended length of the sweater as the result of the washing event, so the “more
 28 than expected” reading is absent from (29b). The only standard of comparison to anchor the
 29 differential phrase *san limi* ‘three centimeters’ is the original length of the sweater. The contrast
 30 shown in (29a) and (29b) suggests that the adjective in CERC does not refer to the final state
 31 of the theme. Rather, it provides the dimension of the comparison (with conventional
 32 measurement systems) between the final state and the ideal/intended/expected state.

33 The two examples in (29) also give us a hint of what verbs can occur in the excessive
 34 resultative construction. Only those verbs which denote actions that can lead to an intended
 35 degree on a scale are able to occur in CERC. The most typical verb, as Shen and Peng (2010)
 36 observed, is verbs of creation. Before creating something, the agent at least should have a plan
 37 in mind about the final state of the theme. Apart from verbs of creation, other verbs can also
 38 occur in the excessive resultatives, as long as the action denoted by the verb targets a specific
 39 intended degree on a scale. For example,
 40

- 41 (30) a. zhuōzi tái gāo le.
 42 table raise high LE
 43 ‘The table was raised high.’
 44 Inference: The table was raised higher than expected.
 45 b. dēnglóng guà ěi le.
 46 lantern hang low LE
 47 ‘The lantern was hung low.’
 48 Inference: The lantern was hung lower than expected.
 49

1 We need to pay attention to the concept of intention involved in CERC, which is doubly
 2 specified. First, the excessive resultatives require that there should be an intended/expected
 3 degree which is set before an action. Such a degree is set either by the SAPs or by the general
 4 requirement associated with the utterance context. Secondly, the intended degree is surpassed
 5 unintentionally. In other words, the final state of the theme surpassing the intended degree is
 6 not in the control of anybody, which directly embodies the non-egophoric property associated
 7 with CERC.

8 9 **4. The obligatory use of the perfective aspect marker**

10 We have proposed that the sentence final *le* in CERC is a perfective aspect marker. In this
 11 section, we are going to defend this proposal from three aspects: the negative imperative
 12 sentence, the exclamatory sentence, and the availability of differential measure phrases (DMPs).

13 14 **4.1 Evidence from negative imperative sentences**

15 There are two types of negative imperative sentences in Mandarin, differentiated by the
 16 verb class. For example,

- 17
18 (31) a. bié hē!
 19 don't drink
 20 'Don't drink!'
 21 b. [bié hē] le!
 22 don't drink SFP
 23 'Don't drink any more!'
 24 c. *bié bìng!
 25 don't get.sick
 26 d. bié [bìng le]!
 27 don't sick PFT
 28 'Don't get sick!'
 29

30 The verb *he* 'drink' is an egophoric verb with an agent who can control the action of drinking,
 31 but the verb *bìng* 'get sick' is a non-egophoric verb with an experiencer argument who cannot
 32 control the action leading to the result of getting sick. This difference reflects in different
 33 grammatical status of (31a) and (31c). By uttering (31a), the speaker can order the listener not
 34 to drink the liquid in sight, but nobody can be ordered not to get sick, because not getting sick
 35 is beyond the control of anybody; therefore, (31c) is ungrammatical. However, (31c) can be
 36 rescued by adding *le*, as in (31d). The structure of (31d) is different from that of (31b). By
 37 uttering (31b), the speaker can order the listener not to drink the liquid any more. The sentence
 38 final *le* indicates a change-of-state from the drinking state to the non-drinking state. The
 39 purpose of uttering (31b) is to stop the continuation of the event of drinking. In contrast, (31d)
 40 aims at reminding the listener not to run into the undesirable state of becoming sick. It is clear
 41 that what is negated in (31d) is the imagined state *bìng le* 'getting sick'. This does not apply to
 42 (31b), since *hē le* 'having drunk' could not be the imagined state being negated. This is the
 43 reason why we choose to treat *le* as SFP in (31b), but PFT in (31d). Looking back at CERC,
 44 we predict that it would follow the pattern of the verb *bìng* 'get sick', because the predicate in
 45 the excessive resultatives is always non-egophoric, and this prediction is borne out. For
 46 example,

- 47
48 (32) a. * máoyī bié zhī dà.
 49 sweater don't knit large
 50 Intended: 'Don't get the sweater knitted larger than expected.'

1 b. máoyī bié zhī dà le.
 2 sweater don't knit large PFT
 3 'Don't get the sweater knitted large.'
 4 Inference: Don't get the sweater knitted larger than expected.

5

6 Similar to (31d), (32b) aims at reminding the listener not to run into the undesirable state of
 7 getting the sweater knitted larger than expected. It is clear that what is negated in (32b) is the
 8 imagined state *dà le* 'getting larger than expected'.

9 If we compare the negative imperative sentence with the declarative sentence, we can see
 10 more clearly that the post-adjectival *le* in CERC is a perfective aspect marker, whose function
 11 is to mark the completion of the event of d_{final} surpassing d_{ideal} . In the declarative sentence *maoyi*
 12 *zhi da le*, it is certain that the action of knitting the sweater is completed, and the actual size
 13 turns out to be larger than what is expected. In this case, we can say that *le* has a scope over
 14 the two sub-events. But in (32b), the completion of the knitting event is irrelevant, because the
 15 sentence can be uttered before or in the knitting action. In other words, the sentence final *le*
 16 scopes only over the surpassing event, but not over the knitting event. That is the reason why
 17 we can directly coordinate A-*le*, as shown in (33a).

18

19 (33) a. máoyī bié zhī dà le huò féi le.
 20 sweater don't knit large PFT or fat PFT
 21 'Don't get the sweater knitted large or fat.'
 22 Inference: Don't get the sweater knitted larger or fatter than expected.
 23 b. máoyī bié dà le.
 24 sweater don't large PFT
 25 'Don't get the sweater large.'
 26 Inference: Hopefully, the sweater is not larger than expected.

27

28 In addition, we can also omit the verb *zhi* 'knit' in (32b), as shown in (33b). In this case, we
 29 are not sure what event brings about the result of the sweater being larger than expected. The
 30 sweater might be knitted or bought. The post-adjectival *le* does not care what action leads to
 31 the creation of the theme. Rather, it cares the completion of the comparing/surpassing event.

32

33 4.2 Evidence from exclamatory sentences

34 We observed that the post-adjectival *le* in CERC shares many similarities with the *le* in
 35 exclamatory sentences in the form of "NP+*tai*+A+*le*!". For example,

36

37 (34) a. wǎn tài dà!
 38 bowl too big
 39 'The bowl is too big.'
 40 b. wǎn tài dà le!
 41 bowl too big PFT
 42 'The bowl is much much bigger (than expected).'
 43 c. lùnwén tài nán dǒng!
 44 paper too difficult understand
 45 'The paper is too difficult to understand.'
 46 d. lùnwén tài nán dǒng le!
 47 paper too difficult understand PFT
 48 'The paper is much much more difficult to understand (than expected).'

49

1 The post-adjectival *le* in (34b) and (34d) is not the sentence final particle of change-of-state,
 2 because it does not indicate any change of state. We would argue that the sentence final *le* in
 3 (34) should be treated as perfective aspect marker. This is evidenced by the contrast between
 4 (34a) and (34b). Without the sentence final *le*, (34a) is a simple exclamatory sentence with a
 5 positive adjective *da* ‘big’. In contrast, the post-adjectival *le* turns the positive adjective into a
 6 comparative adjective, as in (34b), comparing the actual size of the bowl and a much smaller
 7 size expected before the speaker seeing the bowl in sight. Similarly, without the post-adjectival
 8 *le*, (34c) is a simple exclamatory sentence with a positive adjective *nán dòng* ‘difficult to
 9 understand’. In contrast, with the post-adjectival *le*, (34d) becomes a comparative sentence,
 10 comparing the actual degree of difficulty of the paper and a lesser degree of difficulty expected
 11 before the speaker finished reading the paper. The sentence final *le* in both (34b) and (34d)
 12 indicates the completion of the comparing event that the actual degree has surpassed the
 13 expected degree.

14 4.3 Evidence from the availability of DMPs

15 We observed that a differential measure phrase (DMP) can be added after *le* in CERC. For
 16 example,
 17

- 18
 19 (35) a. máoyī zhī dà le sān límǐ.
 20 sweater knit large PFT three centimeter
 21 ‘The sweater was knitted three centimeters larger (than expected).’
 22 b. tóufà jiǎn cháng le sān límǐ.
 23 hair cut long PFT three centimeter
 24 ‘The hair was cut three centimeters longer (than expected).’
 25

26 Since *le* is not in the sentence final position in (35), it is groundless to claim that it is a sentence
 27 final particle. The real function of *le* in (35a) and (35b) is to mark the completion of the
 28 comparing event of d_{final} having surpassed d_{ideal} on the scale denoted by the adjective.
 29

30 5. Syntax of the Chinese excessive resultative construction (CERC)

31 Although the linear sequence of CERC is quite simple (in the form of THEME+V-A-*le*),
 32 we would argue that its syntax contains many grammatical elements not phonetically realized.
 33 The simple form of CERC shows that there is only one argument (THEME), but two predicates,
 34 V and A. How is this single argument related to the two predicates? When explaining the
 35 “subject-result” reading of Chinese verb copying construction, Cheng (2007) follows Hoekstra
 36 and Mulder’s (1990) argument that there is ergative shift in case of *de*-resultatives. That is, a
 37 non-ergative verb can become ergative if a *de*-introduced resultative clause is added. Cheng
 38 (2007: 158) gives (36) to illustrate the process of ergative shift.
 39

- 40 (36) shǒupà kū de hěn shī.
 41 handkerchief cry DE very wet
 42 ‘The handkerchief is wet as a result of crying.’
 43

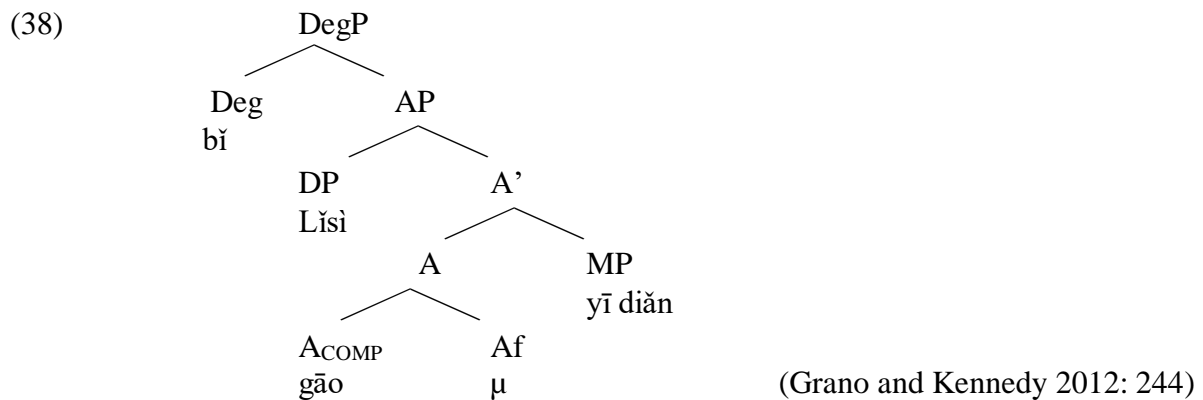
44 In (36), only one single argument is present, and this argument is interpreted as the subject of
 45 the resultative clause. The subject of the resultative predicate can be raised to the matrix when
 46 the main verb is used as an ergative verb. (36) shows that an unergative verb can be shifted to
 47 an ergative verb when a resultative *de*-clause is added. It is obvious that the subject in the
 48 matrix clause originates from the complement clause, which is a small clause such as [_{sc}shǒupà
 49 hěn shī].

1 In the same vein, we would argue that in CERC, the verb also undergoes a morphological
 2 change similar to the ergative shift. For example, in *tóufà jiǎn cháng le* ‘The hair was cut
 3 longer than expected’, the transitive verb *jian* ‘cut’ undergoes the de-causativation process,
 4 which has two effects. On the one hand, the external argument of the verb is completely erased
 5 in the argument structure of the verb. On the other hand, the internal argument changes from
 6 an individual argument to a small clausal argument. In other words, the verb in CERC is in
 7 essence a raising verb, taking a resultative clause as its complement. We will detail the internal
 8 structure of CERC in (46). Before that, we need to figure out how the comparative reading is
 9 derived in CERC.

10 From the previous discussion, we know that CERC is always associated with a ‘more than
 11 expected’ comparative meaning (d_{final} surpassing d_{ideal}). In order to account for the comparative
 12 meaning, we would propose that the post-verbal resultative clause is a comparative clause.
 13 Comparative clauses has attracted attention since the 1970s, and various proposals have been
 14 offered (Bresnan 1973; Klein 1982; Kennedy 1997; Schwarzschild and Wilkinson 2002;
 15 Kennedy and McNally 2005; Bhatt and Takahashi 2011).¹⁰ For studies of Chinese
 16 comparatives, the key issue is how standard of comparison is introduced. Grano and Kennedy
 17 (2012) compares Chinese *bi*-comparatives with transitive comparatives, and propose that there
 18 are (at least) two Case assigners for standards of comparison in Mandarin: the overt morpheme
 19 *bi* and the covert morpheme μ in transitive comparatives. For example,

- 20
 21 (37) a. Zhāngsān bǐ Lǐsì gāo (yī diǎn).
 22 Zhangsan SM Lisi tall (one dot)
 23 ‘Zhangsan is (a little) taller than Lisi.’
 24 b. Zhāngsān gāo Lǐsì yī diǎn.
 25 Zhangsan tall Lisi one dot
 26 ‘Zhangsan is a bit taller than Lisi.’

27
 28 Taking DegP to be extended projection of AP (Abney 1987; Grimshaw 1991; Kennedy 1997),
 29 the syntactic structure of (37) can be diagrammed as in (38).



41
 42 Grano and Kennedy (2012) proposes that projection of a measure phrase (MP) both requires
 43 and is required by the presence of the degree morpheme μ , which may combine only with

¹⁰ One of the central questions in the research of the Chinese comparative constructions is how to treat the standard-introducer *bi*. Liu (1996) treats *bi* as a preposition which forms a constituent with the standard, while Xiang (2005) analyzes it as the head of a functional projection (Deg) above AP. Building on Zhang’s (2010) proposal of syntax of coordination, Gu and Guo (2015) proposed that the subject of Chinese comparatives is a comitative construction formed by DP1-*bi*-DP2 ‘DP1-than-DP2’. In Gu and Guo’s analysis, *bi* is treated as having the same status as other coordinating conjunctions *gen/he/tong* ‘and’.

1 gradable adjectives that use scales with defined measurement systems. In English, μ is realized
 2 as a functional head (degree morphemes) that projects over AP, but in Chinese, μ is realized as
 3 an affix that attaches to the adjective, deriving a new head which selects for a measure phrase,
 4 as shown in (38). This analysis offers two possibilities for the standard of comparison (DP_{std})
 5 to receive Case. For adjectives like *gao* ‘tall’ that are associated with measurable scales, the
 6 Case assigner can be either *bi* (occupying the Deg position), or the functional element μ , which
 7 combines with the adjective if and only if a measure phrase (MP) is projected. When neither
 8 of these elements is present, the resulting structure is ungrammatical. Grano and Kennedy
 9 (2012: 252) summarized the Case assigning strategies in (39).

10
 11 (39) *Adjectives with measurable scales*

- | | | |
|----|--|--------------------------------------|
| 12 | a. bi DP_{std} A_{COMP} (+ μ DP_{meas}) | <i>bi</i> assigns Case to DP_{std} |
| 13 | b. A_{COMP} + μ DP_{std} DP_{meas} | μ assigns Case to DP_{std} |
| 14 | c. * A_{COMP} DP_{std} | DP_{std} does not get Case |

15
 16 For adjectives that are not associated with a conventional measurement system, such as *gaoxing*
 17 ‘happy’, *bi* is an appropriate case assigner, and μ is independently ruled out since it is
 18 incompatible with this kind of adjective. Comparing CERC with *bi*-comparatives and transitive
 19 comparatives, we noticed that the differential measure phrase is optional in CERC, which
 20 suggests that CERC is more similar to the *bi*-comparative than to the transitive comparative.
 21 Another piece of evidence confirms this view. For the *bi*-comparative, the perfective aspect
 22 marker *le* can be inserted between the adjective and the measure phrase, as in (40b), but *le*
 23 cannot occur in the transitive comparative, as in (41b).

- | | | | | | | | | |
|----|---------|-------------------------------------|------|------|------|--------|--------|--------|
| 24 | | | | | | | | |
| 25 | (40) a. | Zhāngsān | bǐ | Lǐsì | gāo | sān | línmǐ. | |
| 26 | | Zhangsan | SM | Lisi | tall | 3 | cm | |
| 27 | | ‘Zhangsan is 3cm taller than Lisi.’ | | | | | | |
| 28 | | b. Zhāngsān | bǐ | Lǐsì | gāo | le | sān | línmǐ. |
| 29 | | Zhangsan | SM | Lisi | tall | PFT | 3 | cm |
| 30 | | ‘Zhangsan is 3cm taller than Lisi.’ | | | | | | |
| 31 | (41) a. | Zhāngsān | gāo | Lǐsì | sān | línmǐ. | | |
| 32 | | Zhangsan | tall | Lisi | 3 | cm | | |
| 33 | | ‘Zhangsan is 3cm taller than Lisi.’ | | | | | | |
| 34 | | b. *Zhāngsān | gāo | le | Lǐsì | sān | línmǐ. | |
| 35 | | Zhangsan | tall | PFT | Lisi | 3 | cm | |

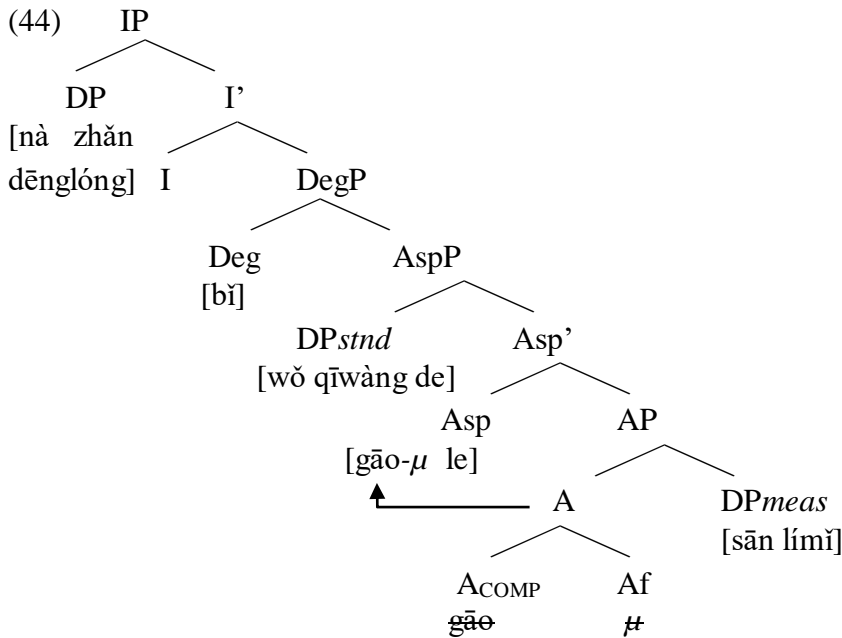
36
 37 The contrast in (40) and (41) indicates that the *bi*-comparative allows a post-adjectival *le*, but
 38 the transitive comparative disallows it. The reason for this asymmetry, as will be shown in the
 39 following, is that the aspect marker *le* intervenes and prevents the complex head of [A_{COMP} μ]
 40 from climbing up to the Deg position to assign Case to *Lisi* (DP_{std}) in (41b). At least, CERC
 41 is similar to the *bi*-comparative in two aspects. Both of them allow an optional measure phrase.
 42 Both of them allow the post-adjectival perfective aspect marker *le*. However, CERC differs
 43 from the *bi*-comparative in that CERC disallows the presence of the standard marker *bi*. We
 44 will explain why CERC disallows the presence of the standard marker *bi*. Drawing on the
 45 similarities between CERC and the *bi*-comparative, we follow (39) and represent the adjectival
 46 part of CERC as follows: A_{COMP} + μ + PFT (DP_{meas}).

47 In the following part, we will offer a syntactic analysis for CERC. We can first take a look
 48 at the following example.

1 (42) nà zhǎn dēnglóng guà gāo le sān límǐ.
 2 that CL lantern hang high PFT 3 cm
 3 ‘The lantern was hung 3cm higher.’
 4

5 (42) has the same meaning as (43a). The difference is that (42) does not contain the standard
 6 of comparison (*DP_{stnd}*), while (43a) contains the *DP_{stnd}*. In addition, the verb in (43a) is
 7 suffixed by the result-denoting morpheme *de*. The subject for the *DegP* in (43a) is the subject
 8 of the matrix sentence, as is shown in (43b), whose syntactic structure is shown in (44).
 9

10 (43) a. nà zhǎn dēnglóng guà de [*DegP* bǐ wǒ qīwàng de gāo le sān límǐ].
 11 that CL lantern hangRES SM 1sg expect NML high PFT 3 cm
 12 ‘The lantern was hung 3cm higher than expected.’
 13 b. nà zhǎn dēnglóng bǐ wǒ qīwàng de gāo le sān límǐ.
 14 that CL lantern SM 1sg expect NML high PFT 3 cm
 15 ‘The lantern was 3cm higher than expected.’
 16

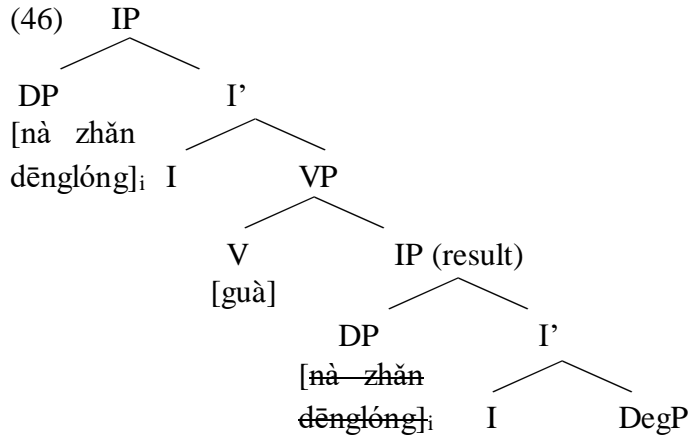


34 The analysis in (44) leads us to the assumption that the verb with the resultative suffix [*gua de*]
 35 in (43a) can be best analyzed as a raising verb, like the English raising verb *seem*. The subject
 36 in the embedded clause is raised to be the subject of the matrix clause. Similar to the analysis
 37 in (41b), the aspect marker intervenes and prevents the complex head of [*A_{COMP} μ*] from
 38 climbing up to the *Deg* position to assign Case to *DP_{stnd}*, as exemplified in (45b).
 39

40 (45) a. [nà zhǎn dēnglóng]_i guà de [*DegP* e_i bǐ wǒ qīwàng de gāo le sān límǐ].
 41 that CL lantern hang RES SM 1sg expect NML high PFT 3 cm
 42 ‘The lantern was hung 3cm higher than expected.’
 43 b. *[nà zhǎn dēnglóng]_i guà de [*DegP* e_i gāo le wǒ qīwàng de sān límǐ].
 44 that CL lantern hang RES high PFT 1sg expect NML 3 cm
 45 Intended: ‘The lantern was hung 3cm higher than expected.’
 46

47 With this in mind, we can come back to the syntactic analysis of CERC, exemplified in (42).
 48 The verb in (42) is not suffixed with the result-denoting morpheme *de*; besides, the subject
 49 assumes the semantic role of *THEME*. These two points suggest that the verb *guà* is a typical

1 raising verb. The surface word order of the predicate in (42) [*gua gao*] is in the form V-A,
 2 where V denotes an action and A the result of that action. Previous literature either treats it as
 3 a resultative verb compound (Li 1990) or a small clause structure (Sybesma 1999). In this paper,
 4 we adopt the small clause analysis, because of the existence the degree projections, as shown
 5 in the lower IP (result) part of (46).



19 It is transparent that the syntactic analysis of (46) is a direct mapping of the action script
 20 described in (16). The upper part encodes the hanging event, and the lower IP encodes the
 21 result. The analysis given in (46) will not yield the correct word order of CERC, as (47a) shows,
 22 assuming the internal structure of DegP as shown in (44). The correct word order is (47b),
 23 where the standard of comparison (DP_{std}) and the standard marker *bi* are not allowed to appear.

- 24
 25 (47) a. * *nà zhǎn dēnglóng guà* [_{DegP} *bǐ wǒ qīwàng de gāo le sān límǐ*].
 26 that CL lantern hang SM 1sg expect NML high PFT 3 cm
 27 Intended: 'The lantern was hung 3cm higher than expected.'
 28 b. *nà zhǎn dēnglóng guà* [_{DegP} ~~*bǐ wǒ qīwàng de*~~ *gāo le sān límǐ*].
 29 that CL lantern hang SM 1sg expect NML high PFT 3 cm
 30 'The lantern was hung 3cm higher than expected.'

31
 32 We would argue that this is the reflection of a general surface word order constraint with
 33 Chinese resultative constructions. As mentioned in Zhu (1982), Chinese resultatives are
 34 divided into two types: the combinatory resultative and the direct resultative.

- 35
 36 (48) General surface word order constraint with Chinese resultatives:
 37 a. Combinatory resultatives: V-de is followed by a resultative clause
 38 b. Direct resultatives: V is directly followed by a result-denoting adjective
 39

40 For the combinatory resultatives, the resultative clause is introduced by the post-verbal
 41 resultative morpheme *de*, while for the direct resultatives, nothing is allowed to intervene
 42 between the verb and the adjective. CERC is a type of direct resultatives, because the verb is
 43 not suffixed with the resultative morpheme *de*. This suggests that nothing could be inserted
 44 between the verb and the adjective in (47b). If we raise the complex Aspect head [*gao-μ le*] to
 45 the Deg position, the morpheme *μ* can assign Case to DP_{std}, and at the same time satisfies
 46 the general surface word order constraint of (48b). However, sentences generated in this way
 47 are still ungrammatical, as is shown in (49).

1 (49) * nà zhǎn dēnglóng guà [_{DegP} gāo le [_{DP_{std}} wǒ qīwàng de] sān límǐ].
 2 that CL lantern hang high PFT 1sg expect NML 3 cm
 3 Intended: ‘The lantern was hung 3cm higher than expected.’
 4

5 This sentence is ungrammatical, because the aspect marker *le* intervenes and prevents the
 6 complex head of [_{ACOMP} μ] from climbing up to the Deg position to assign Case to DP_{std},
 7 similar to the situation in (41b). The standard of comparison (DP_{std}) and the standard marker
 8 *bi* in (47b) has to be deleted, and we would argue that this is a kind of PF deletion, driven by a
 9 phonetic realization rule regulated in (48).

10 If nothing is allowed to intervene between the verb and the adjective in CERC, why can
 11 the degree adverb *tài* ‘too’ can be naturally inserted, as shown in (50a).
 12

13 (50) a. dòng wā tài qián le.
 14 hole dig too shallow PFT
 15 ‘The hole was dug too shallow.’
 16 b. dòng wā de tài qián le.
 17 hole dig RES too shallow PFT
 18 ‘The hole was dug too shallow.’
 19

20 Zhu (1982: 138) takes (50a) to be an instance of combinatory resultatives, with the resultative
 21 marker *de* being deleted, as shown in (50b). We agree with Zhu (1982) that (50a) is not an
 22 instance of direct resultatives, and we will argue in the following that (50a) does not belong to
 23 CERC, and will explain why *de* can be deleted in (50b).

24 Zhu (1982: 138) explicitly mentions that “V-tài-A-le” is a reduced form of “V-de-tài-A-
 25 le”. This means “V-tài-A-le” and “V-A-le” are two different constructions. While the former
 26 is an instance of combinatory resultatives, the latter is an instance of direct resultatives.
 27 However, Zhu (1982) does not give the details of this reduction process. Here we are faced
 28 with two questions. The first question is why other degree adverbs such as *fēicháng*, *hěn*, and
 29 *shífēn* cannot occur between V and A, but *tài* can. The second question is what is the reduction
 30 mechanism of *-de* with *tài*. To answer these two questions, it is very important for us to notice
 31 that when native speakers say *dòng wā tài qián le*, there is a small pause like a glottal stop
 32 between *wā* and *tài*. This phonological clue indicates that the post-verbal resultative morpheme
 33 *de* is still there, although in a severely reduced form. The phonological reduction process
 34 involves two steps. The first step is the omission of the schwa [ə]. The resultative particle *de*
 35 [tə] becomes [t]. The second step is that this alveolar stop will not be released, because it is
 36 followed by another alveolar stop, [tʰ] in [tʰai]. When two stops are adjacent, the first stop is
 37 more likely to be pronounced as a glottal stop, as English *can't do* is pronounced as [kʰa:nʔ-tu:].
 38

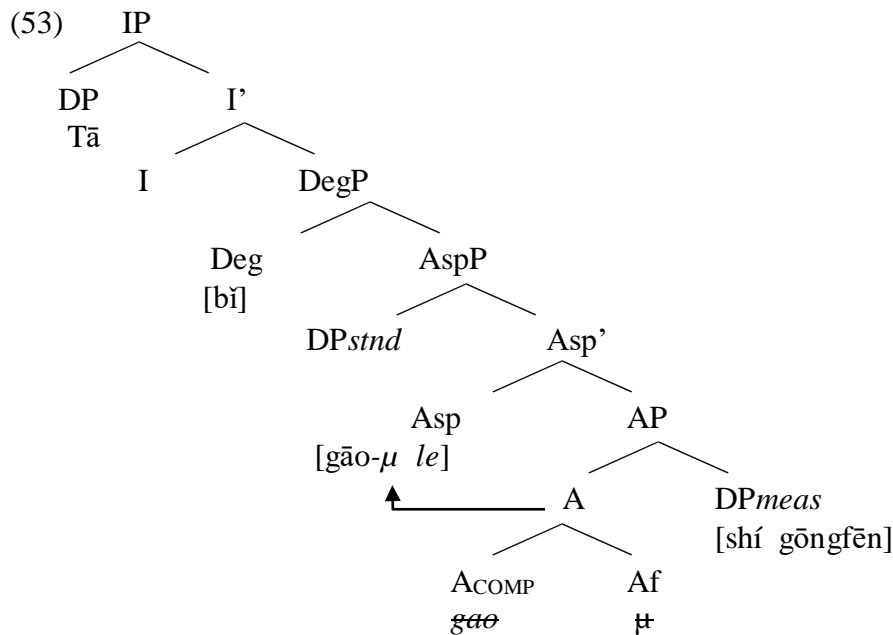
39 (51) a. dòng wā de tài qián le
 40 b. [tuŋ ua t̚ tʰai tɕʰiən lə] → [tuŋ ua t̚ tʰai tɕʰiən lə] (schwa-deletion)
 41 c. [tuŋ ua t̚ tʰai tɕʰiən lə] → [tuŋ ua ʔ tʰai tɕʰiən lə] (glottalization)
 42

43 From the surface, it seems that “V-tài-A-le” is the result of inserting *tài* between V and A. In
 44 actuality, it is the result of the phonological reduction of the resultative particle *de* from [tə] to
 45 [t], and then to [ʔ]. The phonological evidence shows that “V-tài-A-le” is a reduced form of
 46 “V-de-tài-A-le”. Other degree adverbs such as *fēicháng*, *hěn*, and *shífēn* cannot occur between
 47 V and A, simply because their (initial) syllables do not begin with a stop consonant. Therefore,
 48 the phonological reduction observed with *tài* are not found with these degree adverbs. The
 49 degree adverb *tèbié* ‘especially’ begins with a stop consonant, but it is not compatible with the
 50 excessive reading of CERC; therefore, all these degree adverbs cannot naturally occur in CERC.

We also noticed that the examples in (52) can also have the excessive reading, which suggests the possibility that in CERC what gives the excessive reading is not the V-A sequence, but the A alone. The examples in (52) can have both the ordinary comparative reading and the “more than expected/required” excessive reading, depending on the standard of comparison involved. This phenomenon is not surprising, following the syntactic analysis given in (44). Since the two examples in (52) both have comparative interpretations, they must have a DegP structure.

- (52) a. Dòng qiǎn le diǎnr.
 hole shallow PFT a-bit
 ‘The hole has become a bit shallower than before.’
 ‘The hole is a bit shallower than expected/required.’
- b. Tā gāo le shí gōngfēn
 he tall PFT ten cm
 ‘He is ten centimeters taller than before.’
 ‘He is ten centimeters taller than expected/required.’

The internal syntactic structure of (52b) is illustrated in (53). The Deg head can be occupied by the Case assigner *bǐ*, which assigns the accusative case to the standard of comparison. In (52b), the Case assigner *bǐ* is absent, so DP_{std} cannot be overtly realized. There is also a possibility that DP_{std} can be assigned Case by μ , but in (53), the aspect marker *le* intervenes between μ and DP_{std} , so this Case assigning option is also banned.



If the Deg position is occupied by the Case assigner *bi*, then (52b) can be uttered either as ‘tā [bǐ yǐqián] gāo le shí gōngfēn’ or ‘tā [bǐ wǒ qīwàngde] gāo le shí gōngfēn’. Different standards of comparison give rise to different interpretations. The absence of *bi* prevents the DP_{std} from being phonetically realized, leaving the sentence being vague with different standards of comparison.

6. Conclusion

This paper investigates the Chinese excessive resultative construction in the form of “subject_{THEME} +VA-*le*”, where the predicate embodies two properties. First, the verb has the

1 properties associated with disjunct verbs; secondly, the adjective denotes scales with
2 conventional measurement systems. Semantically, such a construction typically describes
3 events of affectedness. In such an event, the affected participant is created or influenced
4 according to a beforehand prescribed value (d1) on a scale denoted by the adjective, while the
5 process of the event results in an actual value (d2) on the same scale. When the actual value
6 exceeds the pre-determined value ($d2 > d1$), the excessive resultative interpretation arises. The
7 post-adjectival perfective aspect marker *le* is to signal the completion of the comparing action
8 between d2 and d1. This explains the obligatory presence of *le* in this construction. This
9 analysis crucially hinges upon the assumption that there is a covert comparison between two
10 values on the same scale. If such a comparison cannot be established within a resultative
11 construction, the excessive meaning will not arise. This analysis also builds upon the ergative
12 shift, which renders the erstwhile egophoric verbs into non-egophoric raising verbs, which can
13 only take a small clause as its complement. This explains how the argument structure is realized
14 in CERC, and why the predicate is invariantly in the form of a bare verb plus a bare adjective.
15 The interaction of the use of the perfective aspect marker, the adjectives with conventional
16 measurement systems, and verbs with no agentivity jointly determines the excessive reading
17 of CERC. Because the “more than expected” reading of CERC at first sight seems to stem from
18 nowhere, CERC can be said to violate the principle of compositionality. This paper shows that
19 CERC does not violate the principle of compositionality, if we accept that the standard of
20 comparison in CERC cannot be phonetically realized due to syntactic constraints.

21 In the past, discussions on the syntax and semantics of Chinese comparative constructions
22 are mainly framed within the main clause context (Liu 1996; Ansaldo 1999; Xiang 2005; Li
23 2009; Lin 2009; Gu and Guo 2015). This paper looks at comparative constructions being used
24 as embedded resultative clauses. The analysis offered in this paper might not only expand our
25 understanding of Chinese comparative constructions, especially on why standards of
26 comparison in CERC cannot be phonetically realized in syntax, but also shed some light on
27 Chinese resultative constructions, especially on how the argument structure of complex
28 predicates are realized.

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