

Towards a Morphosyntactic Analysis of Mandarin Mood/Aspect Marker *ge**

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This paper provides a novel descriptive and theoretical account for the ‘down-play’ mood marker *ge* in Mandarin Chinese. One essential property that is not covered by previous studies is its clitic status. Incorporating and enhancing Yang’s (2001) clitic treatment of numeral-less classifiers, I propose a morpho-syntactic analysis that identifies the *morphological-template* for the mood marker *ge* – [_{VP} V-(X_σ)-***ge***-YP_[+N]]. It is shown that this template is quite similar to the morphological template for internal affixes like *-de-* in Chinese. These findings suggest an updated treatment of clitics as ‘phrasal affixes’ (Klavans 1982, 1985, Anderson 1992, 2005). Furthermore, it supports Aronoff’s (1994) treatment of morphology as an independent component in grammar, and Chomsky’s (2000 *et seq.*) Agree framework, which allows syntactic operations to apply before morphological operations.

Key words: mood, aspect, classifiers, clitics, morphology, Agree theory

1. Introduction

Typically, Mandarin Chinese *ge* (個) serves as the most common classifier (cf. Chao 1968, Tang 1990, Yang 2001, etc.). As a classifier, it is obligatory, attached to numerals, and precedes count nouns, as illustrated below.

- (1) a. lisi jian-le yi-**ge** ren
 L. meet-Pfv one-Cl person¹
 ‘Lisi met a person.’

* I am deeply grateful to Mark Aronoff, Alice Harris, Robert Hoberman, and Richard Larson, who helped the early drafts of this paper to take shape. I have also benefitted greatly from two reviewers, whose comments and suggestions improved the content and presentation of the paper.

¹ The abbreviations for the glosses used in this paper are as follows: CAI/JIU = connective adverbs, Cl = nominal classifier, DE = nominal/verbal modification marker, TA = non-referential use of third-person singular pronoun, VC = verbal classifier, Pfv = perfective aspect, Q = question particle.

- b. ta xie-le liang-**ge** zi
he write-Pfv two-Cl character
'He wrote two characters.'
- c. zhe shi-**ge** fangfa hen qiguai
this ten-Cl method very strange
'These ten methods are very strange.'

In a different set of syntactic and semantic environments, *ge* can serve as a 'down-play' mood marker (Chao 1968, Lü 1980, and Lin 2001) which imposes the telic aspect (Wu 2002). In this article I shall alternatively call it a 'verbal classifier' for convenience. This 'verbal' *ge* is attached to verbs or verbal complex and precedes various indefinite nominal constituents, including those already containing a classifier, as shown below:

- (2) a. lisi xiang he **ge** shui (mass noun)
L. want drink VC water
'Lisi wants to drink water.'
- b. zhangsan zhe-ci gai fu **ge** ze (object part of a VO compound)
Z. this-time should bear VC responsibility
'Zhangsan should take responsibility this time.'
- c. zhangsan pao-le **ge** liang-fenzhong (indefinite temporal NP)
Z. run-Pfv VC two-minute
'Zhangsan ran for two minutes.'
- d. zhangsan zhi kan-le **ge** ji-bu dianying² (indefinite NP)
Z. only see-Pfv VC several-Cl movie
'Zhangsan only saw several movies.'

In two further sets of distinct syntactic and semantic environments, *ge* can serve as a 'maximum degree' mood marker (Biq 2004) and 'excessiveness' mood marker (Yeh 2006), respectively, as illustrated below:

- (3) a. lisi ke wan-de **ge** tongkuai
L. indeed play-DE VC₂ thorough.satisfaction
'Lisi indeed played to his heart's content.'

² The sentence is not well-formed without the marker of exhaustive identification marker *zhi*. This is presumably due to the 'down-play mood' semantic requirement of *ge*. I shall leave the semantic details for future research.

- b. zhangsan xiao **ge** bu ting
 Z. laugh VC₂ no stop
 ‘Zhangsan keeps laughing (and there is no sign of his stopping.)’
- (4) a. mai ta **ge** yi bai-ben shu (Examples from Yeh 2006)
 buy TA VC₃ one hundred-Cl book
 ‘To buy one hundred books.’
- b. wan ta **ge** guoyin
 play TA VC₃ to.one’s.satisfaction
 ‘To play to a thorough satisfaction of it.’

The issue we are interested in is the morphological and syntactic status of the mood/aspect marker *ge*. What is its syntactic category? What are the syntactic and morphological conditions that constrain its morphosyntactic distributions? What is its syntactic position?

Previous studies have either treated the mood/aspect marker as a *vP*-level element (Lin 2001), based on the assumption that there is *V-to-v* movement but no *V-to-T* movement in Chinese and *ge* occurs post-verbally, or a *DP*-level element (Wu 2002), based on the assumption that *ge* is derived from the nominal classifier *ge* and that *ge* has selectional restrictions with its nominal complement, namely the latter has to be indefinite. These analyses are problematic since an expression cannot be both a *D* element and a *v* element at the same time, unless it is composed of two elements, and they also face an important theoretical problem: why does a mood expression occupy a *vP*-internal position instead of a *vP*-external position?

In this paper, I shall focus on describing and accounting for the (near) affixal nature of the mood/aspect marker *ge* illustrated in (2), which will provide clues to the morphosyntactic status of *ge* in (3) and (4), and offer an up-to-date theoretical account. It will be shown that *ge* is neither an auxiliary verb nor an adverb, and does not have the morphosyntactic status of a phrase nor a free-standing word. More precisely, it should be treated as a clitic attached to a verb or a verbal complex, just as a nominal classifier is attached to a numeral or other types of hosts in Chinese (Yang 2001). Furthermore, it will be shown that the verbal classifier *ge* has the additional morphosyntactic requirement that it has to be overtly followed by a nominal constituent, due to its *morphological* templatic coding. None of these morphosyntactic properties can be fully accounted for in the verb movement and *ge-as-a-D-head* analysis. I shall, alternatively, adopt an updated Chomsky’s (2000 *et seq.*) Agree framework and Aronoff’s (1994) idea that morphology is an independent component in grammar, which can jointly provide a natural account for these morphosyntactic properties.

The rest of this paper is organized as follows. In §2, I shall discuss the general properties of the verbal classifier *ge*. In §3, I shall address the pros and cons of previous

studies. In §4, I shall show that the problems can be resolved once we identify the affixal nature of *ge*. In §5, I shall show that the properties of *ge* support the thesis that there is an independent Morphology component in grammar, and provide an Agree analysis. Section 6 concludes the paper.

2. Major semantic and syntactic properties of the verbal classifier *ge*

2.1 Semantic properties

As mentioned in the previous section, the major semantic functions of the verbal classifier *ge* in (2) is to express a ‘down-play’ mood and the telic aspect. The presence of the ‘down-play’ mood can be shown in the following examples:

- (5) a. jie wo **ge** qian, hao ma?
lend me VC money ok Q
‘(Just) lend me some money, will you?’
b. xi **ge** yifu bu yong hua duoshao shijian
wash VC clothes no need cost much time
‘(Just) doing laundry doesn’t take much time.’
c. chuan **ge** lifu zheme tongku ma?
wear VC tuxedo so painful Q
‘Is it so painful to (just) wear a tuxedo?’
- (6) a. jie wo (***ge**) qian, buran wo yihou ye bu jie ni qian
lend me VC money otherwise I afterwards no lend you money
‘Lend me some money, otherwise I won’t lend you money in the future.’
b. xi (***ge**) yifu hui hua hen duo shijian
wash VC clothes will cost very much time
‘Doing laundry takes a lot of time.’
c. chuan (***ge**) lifu zheme suibian ma?
wear VC tuxedo so casual Q
‘Is it right to wear a tuxedo so carelessly?’

The only difference between (5) and (6) is the perceived importance of the event, which determines whether *ge* is present or not. In (5a), because of the use of *ge*, the request is not perceived as urgent or imperative, so the speaker can be polite by hedging the question with *hao ma*. On the other hand, when the request is given with a threat (6a), which suggest it is important that the addressee fulfill the request, *ge* cannot be used. If

ge is used, (6a) would both convey that the request is not important and that the request is important, which is contradictory. Similarly, in (5b) the use of *ge* suggests the laundry-doing is perceived as an insignificant task, and it is natural to say that such a task does not take much time. On the other hand, *ge* is not allowed in (6b) since it does not make sense to say a task perceived as insignificant generally takes a lot of time. Lastly, in (5c) the use of *ge* suggests wearing a tuxedo is a significant task, and it's natural to assume an insignificant task not to be painful, therefore the question makes sense. However, in (6c), it is anomalous to assume that a task perceived as insignificant should be done seriously, so *ge* should not be allowed.

Further contrast can be seen in sentences modified by different evaluative adverbs *jiu* and *cai*, which mark consequent clauses in two types of conditional clauses: *jiu* marks the consequent clause of *if*-clauses, while *cai* marks the consequent clauses of *only if*-clauses.

- (7) a. ni chi **ge** yi-pian pisa, **jiu** neng qu kan dianshi
 you eat VC one-slice pizza JIU can go watch TV
 'Just) eat one slice of pizza, then you can go watch TV.'
- b. ni chi (***ge**) yi-pian pisa, **cai** neng qu kan dianshi
 you eat VC one-slice pizza CAI can go watch TV
 'Only if you eat one slice of pizza can you go watch TV.'

The difference between (7a) and (7b) is that the antecedent clause in (7a) is a sufficient condition, and the antecedent clause in (7b) is a necessary condition. By the law of logic, the positive truth value of a sufficient condition is not necessarily crucial (and therefore may not be important) for the positive truth value of its consequent clause. A sufficient condition should be compatible with the mood marker *ge*. On the other hand, since the positive truth value of a necessary condition is crucial (and therefore important) for the positive truth value of its consequent clause, a necessary condition should not be compatible with the 'play-down' mood marker *ge*. The facts in (7) thus conform to the semantics of *ge*.

The semantic property of telicity can be shown in the following sentences:

- (8) a. [A: What did Lisi do yesterday?]
 B: ta da-le **ge** quan
 he hit-Pfv VC fist
 'He practiced some martial arts.'
- b. [A: What does Lisi like to do as a hobby?]
 B: da (***ge**) quan

- (9) da (*ge) quan shi hao yundong
hit VC fist be good sport
'Practicing martial arts is a good sport.'
- (10) lisi zai da (*ge) quan
L. Prog hit VC fist
'Lisi is practicing martial arts.'

In (8a), the sentence depicts an episodic event, and there is no problem for the occurrence of *ge*. In (8b), however, the sentence depicts a generic event, and *ge* is not possible here. The same is true in (9). (10) shows that the verbal classifier *ge* is incompatible with progressive aspect, which is also observed by Wu (2002). In general, telic events are incompatible with generic aspect and progressive aspect, so these facts show *ge* marks telic aspect.

Further evidence of the telicity-marking function comes from the fact that the *ge* can only co-occur with indefinite noun phrases.³ Consider the following examples:

- (11) a. zhangsan zhi kan-le (*ge) zhe ji-bu dianying
Z. only see-Pfv VC this several-Cl movie
'Zhangsan just saw these movies.'
- b. lisi chi-le (*ge) na liang-wan fan
L. eat-Pfv VC that two-bowl rice
'Lisi ate those two bowls of rice.'
- c. lisi hua-le (*ge) na wu-kuai qian
L. spend-Pfv VC that five-Cl dollar
'Lisi spent those 5 dollars.'

According to Liu (2006), there is a relationship between the telicity/atelicity of an event and the definiteness/indefiniteness of the object noun phrase in the sentence. More precisely, enhancing Tenny's (1994) Aspectual Interface Hypothesis, Liu argues that a telic sentence requires an event measure, and that while an indefinite noun phrase is an event measure, a definite noun phrase is not. This means that a definite noun phrase does not contribute to a telic event. She listed the following examples as evidence for her proposal:

³ I am grateful for a reviewer who pointed out to me that Liu (2006) has insightful accounts of the relations between telicity and definiteness/indefiniteness of object noun phrases.

- (12) ni neng zai shi fenzhong nei gei women shuo (a) san-ge gushi ma?
 you can at 10 minute in to us tell three-Cl story Q
 (b) *naxie gushi
 those story
 ‘Can you tell us (a) three stories in ten minutes?’
 (b) *those stories

According to Liu, the reason behind the contrast in (12) is that only indefinite noun phrase objects are event measures, and are therefore compatible with telic events (marked by *zai shi fenzhong nei* ‘in ten minutes’). If this line of reasoning is correct, then we can argue that the VC *ge* has the similar function as *zai shi fenzhong nei*, i.e. the telicity-marking function. Sentences marked by the VC *ge* can take indefinite but not definite object noun phrases (11), because the latter are not event measures and are not compatible with telic events.⁴

2.2 Syntactic properties

Basically, the syntactic distributions of the VC *ge* is somewhat similar to those of the typical nominal classifiers and verbal measure words, in that, among other things, the VC *ge* must occur after the verb and before a noun phrase. However, it is also clearly distinct from typical nominal classifiers and verbal measure words when we examine it more carefully.

2.2.1 Similarities and differences between the VC *ge* and nominal classifiers

The VC *ge* has a number of syntactic properties that are shared by nominal classifiers. The most obvious one is that it occurs between a verb and a nominal expression, as we

⁴ In fact, the notion of telicity is not very precise. As noted by Lin (2001), the VC *ge* can co-occur with stative predicates:

- (i) a. dong ge fawen you sheme liao-bu-qi?
 understand VC French Foc what big.deal
 ‘Is it a big deal to understand French?’
 b. lao ge ji-sui bu shi hen zhongyao
 old VC several-year not be very important
 ‘It is not very important to be a few years older.’

In general a stative predicate is not compatible with telicity. It seems, however, the states ‘to understand French’ and ‘to be a few years older’ are regarded as bounded. Pursuing this boundedness notion will take us too far afield from the main concern of this paper, so it will stick to the telicity notion in this paper.

have seen above. Another important, albeit less discussed property they share is that they both need a host as if they are affixes or clitics. The most extensive discussions of nominal classifiers as suffixes and enclitics are provided by Yang (2001).⁵ According to Yang, nominal classifiers are either suffixes or enclitics. When numerals are present, they are suffixes, since they always attach to the numerals. When the numerals are absent (the semantic quantity can only be ‘one’), however, they are enclitics, due to two sets of facts: they always need another host word to precede it, and they appear in a wider range of contexts.

Typical cases of nominal classifiers with clitic status (the numerals are absent) are illustrated as follows:

- (13) a. *nei ben shu hen gui*
 that CL book very expensive
 ‘That book is expensive.’
 b. *mei ben shu dou hen gui*
 every CL book all very expensive
 ‘Every book is expensive.’
 c. *lisi mai-le ben shu*
 L. buy-Pfv CL book
 ‘Lisi bought a book.’

In (13a), the classifier is attached to a determiner. In (13b), it is attached to a quantifier. In (13c), it is attached to a verb-aspectual suffix complex. We see that the hosts can belong to a variety of syntactic categories. As Yang noted, this property indicates that a numeral-less classifier is less like a suffix but more like a clitic.

The need for an adjacent host is illustrated in the following examples:

- (14) a. **(yi) ben shu bu gou*
 one CL book not enough
 ‘One book is not enough.’
 b. *lisi song-le yi-ge pengyou *(yi) ben shu*
 L. give-Pfv one-CL friend one CL book
 ‘Lisi gave a friend a book.’
 c. *lisi mai-le yi-ben shu he *(yi) zhi bi*
 L. buy-Pfv CL book and one CL pen
 ‘Lisi bought a book and a pen.’

⁵ I am grateful to a reviewer for referring me to Yang’s (2001) work.

- d. na [houhou-de] *(yi) **ben** shu hen gui
 that thick-DE one Cl book very expensive
 ‘That very thick book is expensive.’

(14a) shows that in the sentence-initial position, a full NP containing a classifier can never occur without a numeral. (14b-c) shows that a numeral-less classifier cannot be separated from the verb by other words. Similarly, (14d) shows that a numeral-less classifier cannot be separated from the determiner by an adjective. As noted by Yang, these facts show that a numeral-less classifier needs a host and has to be adjacent to its host.

How about the VC *ge*? There is, in fact, some evidence showing that it also has some properties that suggest its clitic-hood. First, the VC *ge* either follows a verb or a verb-aspectual suffix complex, as we have seen in (2). This shows it allows a wider selection than suffixes. Second, it has to be adjacent to its host, as illustrated in the following examples:

- (15) a. wo xiang song ta **ge** ji-pen hua
 I want give him VC several.pot flower
 ‘I want to give him several pots of flowers.’
 b. *wo xiang song linju **ge** ji-pen hua
 I want give neighbor VC several.pot flower
- (16) a. wo zhi song-le ge ji-pen hua
 I only give-Pfv VC several.pot flower
 ‘I only gave somebody several pots of flowers.’
 b. *wo zhi song-le ta **ge** ji-pen hua
 I only give-Pfv him VC several.pot flower

The contrast between (15a-b) shows that while the VC *ge* can be separated from the verb by a pronoun, it cannot be separated from the verb by a non-pronominal noun phrase. (16) shows us that while *ge* can be separated from the verb by either a pronoun or an aspectual suffix, it cannot be separated by both a pronoun and a suffix. The general principle is thus the VC *ge* cannot be too far away from the verb, a property that is shared by numeral-less nominal classifiers.

Beyond the similarities, however, there are also obvious differences. There are four syntactic properties that distinguish the VC *ge* from nominal classifiers: the VC *ge* selects a wider range of nominal expressions, it can co-occur with nominal classifiers, it

does not generally co-occur with numerals, it generally follows only verbs or verbal complexes.

We have seen in (2) that the VC *ge* can co-occur with various types of noun phrases. Compare these cases to (17), where the same types of noun phrases are attached to nominal classifiers.

- (17) a. *lisi xiang he san-ge shui (mass noun)
 L. want drink three-Cl water
 b. *zhangsan zhe-ci gai fu san-ge ze (object part of a VO compound)
 Z. this-time should bear three-Cl responsibility
 c. *zhangsan pao-le san-ge liang-fenzhong (indefinite temporal NP)
 Z. run-Pfv three-Cl two-minute
 d. *zhangsan zhi kan-le san-ge ji-bu dianying (indefinite NP)
 Z. only see-Pfv three-Cl several-Cl movie

In (17) I attach *ge* to a random numeral *san* ‘three’ to indicate in these examples it is unmistakably a nominal classifier. It is clear that none of the sentences are acceptable, showing that nominal classifiers can only co-occur with unquantified count nouns, while the VC *ge* can co-occur with a wider range of nominal expressions.⁶ It is also clear that the VC *ge* always occurs *outside* a quantified noun phrase that already contain a nominal classifier, as we have seen in (2d). (17) also shows us that the VC *ge* does not co-occur with numerals. Finally, the following examples show that the VC *ge* does not co-occur with determiners and quantifiers:⁷

⁶ A reviewer noted that the VC *ge* can sometimes co-occur with the numeral *yi* ‘one’, making it difficult to distinguish the nominal *ge* from the VC *ge*. However, it is clear that the nominal *ge* can co-occur with any numeral, not just *yi*. I assume that when *ge* is attached to *yi* and serves as a verbal classifier, *yi* does not serve as a real numeral identifying the number of entities or events, but is actually a dummy morpheme that does not have semantic functions.

⁷ Note, however, that *ge* can sometimes occur with a determiner and appears to serve as an event measuring expression, such as the following (see also Huang 2009):

(i) zhe ge niu, ni chui de tai guohuo le
 this VC cow you blow DE too outrageous Pfv
 ‘This act of bluffing, you did it too outrageously.’

It is unclear whether this *ge* serves the same function as the one we are concerned with in this paper, but it appears that there is no ‘down-play’ mood here. I shall not discuss this case further. In any case, whether the VC *ge* can or cannot attach to determiners or even quantifiers does not affect the main analyses of this paper.

- (18) a. *lisi xiang he zhe-ge shui
 L. want drink this-Cl water
 b. *zhangsan zhe-ci gai fu mei-ge ze
 Z. this-time should bear every-Cl responsibility

In sum, we find that the VC *ge* and nominal classifiers differ in their syntactic distribution, but are similar in that they can be regarded as clitics.

2.2.2 Similarities and differences between the VC *ge* and verbal measure words

Although I tentatively call *ge* discussed throughout this paper a verbal classifier, there are no other verbal classifiers in Chinese. Instead, the type of *vP*-level expressions that resembles the VC *ge* the most are perhaps the verbal measure words. Like the VC *ge*, verbal measure words can occur between a verb and the direct object, and also conveys aspectual, and sometimes even mood information. In addition, verbal measure words resemble the VC *ge* in that they do not share some of the properties of nominal classifiers: they do not have strict selection restrictions with the following nominal constituents, as they can co-occur with nominal classifiers. These properties are illustrated as follows:

- (19) a. lisi he-le san-ci shui
 L. drink-Pfv three-time water
 ‘Lisi drank water three times.’
 b. zhangsan du-le san-bian na-ben shu
 Z. read-Pfv three-time that-Cl book
 ‘Zhangsan read that book three times.’

(19a) shows that verbal measure words can occur before a mass noun. (19b) shows that it can occur before a definite noun phrase, which already contains a classifier.

However, it is clear that the VC *ge* has a number of properties that distinguish itself from verbal measure words: the former behaves like a clitic, rather than a suffix, it generally does not attach to numerals, it cannot co-occur with a definite noun phrase, nor can it occur without a complement. We have seen some properties that indicate the clitic-hood of the VC *ge* above. Numeral-less verbal measure differs from the VC *ge* and numeral-less nominal classifiers in that the former generally do not attach to verbs or verbal complexes:

- (20) a. *lisi he-le-ci shui
 L. drink-Pfv-time water
 b. *zhangsan du-le-bian na-ben shu
 Z. read-Pfv-time that-Cl book

Unlike the VC *ge*, verbal measure words cannot occur with indefinite noun phrases:

- (21) *lisi du-le san-bian wu-ben shu
 L. read-Pfv three-time five-Cl book

The ungrammaticality of (21) can be explained by Tenny (1994), who argues that an event can be measured in one way. In (21), the event is measured twice, since both the direct object and the frequency adjunct provides event measure, so it is ill-formed. This also shows that while the VC *ge* marks telicity, it does not of itself have the event measuring function.

Verbal measure words can occur without overt ‘complements’. That is, they can occur in the sentence-final position. This property is not shared by the VC *ge*.

- (22) a. zhe-ben shu, lisi du-le san-ci
 this-book book L. read-Pfv three-time
 ‘This book, Lisi read three times.’
 b. zhangsan jiao-le liang-ci
 Z. shout-Pfv two-time
 ‘Zhangsan shouted two times.’
- (23) a. *lisi zhi pao-le **ge**
 L. only run-Pfv VC
 b. *zhangsan xiang chi **ge**
 Z. want eat VC

Generally, the VC *ge* is both semantically and syntactically distinct from verbal measure words, except that they both have looser selection restrictions of their complements than the nominal classifiers.

Let us sum up the properties of the VC *ge* discussed so far. It conveys mood and aspect information, and has the properties of a clitic. Generally, it follows a verb or a verbal complex, and precedes a nominal constituent. Its morphosyntactic distribution can be informally represented as follows (X_0 represents a monosyllabic functional morpheme):

- (24) [_{VP} V-(X_σ)-*ge*_{vc}-DP]

2.3 Two other cases

How about the instances of *ge* in (3) and (4) (repeated below)?

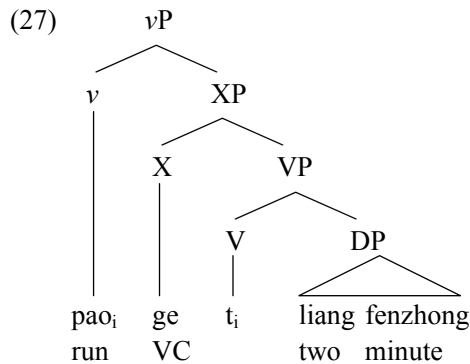
- (25) a. lisi ke wan-de **ge** tongkuai
 L. indeed play-DE VC₂ thorough.satisfaction
 ‘Lisi indeed played to his heart’s content.’
 b. zhangsan xiao **ge** bu ting
 Z. laugh VC₂ no stop
 ‘Zhangsan keeps laughing (and there is no sign of his stopping.)’
- (26) a. mai ta **ge** yi bai-ben shu
 buy TA VC₃ one hundred-Cl book
 ‘To buy one hundred books.’
 b. wan ta **ge** guoyin
 play TA VC₃ to.one’s.satisfaction
 ‘To play to a thorough satisfaction of it.’

I assume that these are distinct mood markers and do not directly bear on the VC *ge* with which we are concerned in this paper. They do, however, exhibit similar morpho-syntactic properties, which merit some discussion. I shall return to this issue in §5.

3. Pro and cons of previous studies

3.1 The VP-external analysis

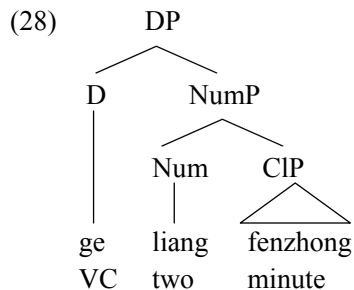
Based on the mood property of *ge*, Lin (2001) placed *ge* in a position higher than VP to account for the semantic effect of *ge* on the whole event, and adopts a V-to-*v* analysis to account for its post-verbal position. This analysis can be represented by the following structure:



This analysis has the advantage of accounting for *ge*'s semantic scope over an event, the loose selection restriction between *ge* and its NP complement, the fact that *ge* can co-occur with nominal classifiers, and its post-verbal position. However, it cannot account for the fact that various other mood expressions (mood adverbs, particles, modal auxiliaries) do not occur post-verbally, the fact that the VC *ge* has to be adjacent to the verb or the verbal complex, and the fact that it has to precede its overtly realized complement.

3.2 The DP-internal analysis

Based on the fact that the VC *ge* is phonetically and orthographically identical to the default nominal classifier *ge*, and its requirement of an indefinite noun phrase complement, Wu (2002) placed the VC *ge* as a D head inside DP, and adopts an analysis that treats overt determiners as overt realizations of a D head. This analysis is represented by the following structure:



This analysis apparently answered the question why the VC *ge* requires a complement and has to co-occur with an indefinite noun phrase. It is, however, unable to account for

the fact that the VC *ge* cannot occur in the sentence-initial position, the fact that it has to be adjacent to the verb or verbal complex, and its semantic scope over the whole event. Furthermore, it is unclear why telicity is encoded in the D head in (28), but encoded in the aspectual/temporal adjunct in (12).

4. An analysis of the VC *ge* as a clitic

We have seen that the VC *ge* has properties of a clitic that overlap with those of numeral-less nominal classifiers, yet it also possesses some unique properties. Furthermore, it is unclear how a clitic in Chinese can be accounted for in modern syntactic and morphological theories. To provide an up-to-date analysis of the VC *ge*, therefore, we need to incorporate the insights of Lin (2001), Yang (2001), and Wu (2002), as well as search for a coherent theoretical solution.

In this section I shall provide some background of the descriptive literature about clitics and incorporate the insight of previous three studies to provide a descriptive account for the VC *ge*. In §5 I shall provide a theoretical treatment.

4.1 Clitics and morphosyntactic clitics

Before we provide a more precise descriptive account of the morphosyntactic VC *ge*, we need to review what literature has to say about clitics in general. There are four important descriptive generalizations observed in the literature:

- (29) a. Clitics are distinct from words and phrases
- b. Clitics are distinct from affixes
- c. Special/morphosyntactic clitics are distinct from simple clitics
- d. Clitics can be described as phrasal affixes

(29a) refers to perhaps the most prominent property of a clitic: it is similar to an affix in that it is bound in a specific way. More specifically, a clitic needs a host, they have to be adjacent, and the order of the host and the clitic is fixed. Zwicky (1985) employs numerous other tests to distinguish clitics from words, some of which are based on unsettled theoretical assumptions, but the major ones are pretty straightforward and can be used to detect cliticness of a given expression. As we have seen in §2, Yang (2001) uses this criterion to help determine the cliticness of numeral-less classifiers.

(29b) refers to a set of properties that are not shared by affixes. Among these properties, the most prominent one is as follows (Zwicky & Pullum 1983):

- (30) Clitics can exhibit a low degree of selection with respect to their hosts, while affixes exhibit a high degree of selection with respect to their stems.

As noted by Zwicky & Pullum, English contracted auxiliaries like *-s/-ve* can attach to words of various syntactic categories:

- (31) a. The person I was talking to's going to be angry with me.
b. The ball you hit's just broken my dining room window.
c. Any answer not entirely right's going to be marked as error.

As we have seen in §2, Yang (2001) uses this criterion to test whether a numeral-less nominal classifier is a clitic or not.

(29c) and (29d) are closely interconnected properties of clitics. Among elements that fall into the above criteria of clitics, some have the same distribution as that of associated free forms, while the others either do not have free counterparts, or have a different distribution from their free counterparts. Zwicky & Pullum (1983:510) terms the former 'simple clitics' and the latter 'special clitics'. The behaviors of special clitics are not well understood and there have been conflicting analyses of the same phenomenon, but it seems clear that they are subject to principles that do not belong to the syntactic or phonological component. Anderson (2005:31) terms them 'morphosyntactic clitics' and provides the following definition:

- (32) **Morphosyntactic clitic:** a linguistic element whose position with respect to the other elements of the phrase or clause follows a distinct set of principles, separate from those of the independently motivated syntax of free elements of the language.

To provide a more precise characterization of morphosyntactic clitics, Klavans (1982, 1985) and Anderson (1992, 2005) developed the concept of special clitics as phrasal affixes. A characterization of special clitics as phrasal affixes is as follows (Anderson 2005:82):

- (33) A clitic is located
- within the **domain** of some syntactic constituent (X_0 or X_{\max} for some value of X);
 - by reference to the first versus last daughter constituent of that domain (interpreted either syntactically or prosodically); and
 - preceding** or **following** this anchor point.

This characterization of special clitics resembles descriptions of an affix, hence the term ‘phrasal affixes’.

According to Anderson, a case in point is second-position clitics. Such a clitic has CP as its *domain*, the *anchoring point* is the first daughter of the domain, and it *follows* the anchoring point. The following Czech examples discussed in Anderson (2005), cited from Richardson (1997), can serve as an illustration:

- (34) a. Včera =**jsem** =**se** =**mu** konečně omluvil
 yesterday PAST-1SG REFL 3SG-DAT finally apologized
 ‘Yesterday I finally apologized to him.’
 b. Červené tulipány =**se** objednal
 red tulips REFL ordered
 ‘He did order red tulips.’

From the perspective of phrasal affixation, the second position clitic in (34) is comparable to an infix, which is basically a prefix but is realigned to the stem-internal position due to some other independent principles or constraints. The main differences are that the ‘stem’ of the clitic is a phrase instead of the word, and that the anchoring point, can be a syntactic element, such as the noun phrase in (34b).

Properties (29c) and (29d) are important descriptive tools for studying clitics, but have not received much attention in the studies of the VC *ge* and clitics in Chinese in general.⁸ In what follows I shall show that they are essential for describing the morphosyntactic distributions of the VC *ge*.

4.2 A clitic analysis of *ge*

Let us now review the essential morphosyntactic distributions of *ge* established in §2 in light of linguists’ current understanding of clitics.

4.2.1 The VC *ge* is neither a free word/phrase nor an affix

We have seen in §2 that like numeral-less nominal classifiers, the VC *ge* behaves like a clitic instead of a free word/phrase, because it needs a host and needs to be adjacent to its host. Furthermore, we see that it has a wider range of selection restrictions with its preceding host, and it also requires a nominal constituent to follow it. These two

⁸ The only studies that have employed the notion ‘phrasal affixes’ to account for clitics in Chinese that I know of are C. Huang (1989) and Liu (1995, 1998).

properties indicate that the VC *ge* is a clitic instead of an affix.⁹ More specifically, this clitic is subject to the morphosyntactic templatic (24) ([_{VP} V-(X_σ)-*ge*_{vc}-DP]). This certainly cannot be a template for affixes.

4.2.2 The VC *ge* is a special/morphosyntactic clitic

In §2 I have shown clearly that *ge* conveys the speaker's under-evaluation and marks the telic aspect. In theories of syntax, mood is encoded either in I(nflection) or C(omplementizer). We have also seen in §2 that *ge* is phonetically realized between a verb and a nominal complement. This position certainly does not correspond to either I or C, nor does it correspond to the syntactic positions of other realizations of mood expressions. In addition, we have also seen that its distribution is very different from typical measure words, since measure words do not have a fixed position and can be free. These properties of *ge* all suggest *ge* is a special/morphosyntactic clitic, since its distribution is different from what we would expect of a free syntactic element.

4.2.3 The VC *ge* as a phrasal affix

In light of the useful set of parameters given in (33) and template (24), we can provide the following (partial) characterizations for the VC *ge*:¹⁰

- (35) a. domain: VP
 b. anchor: first
 c. orientation: follow

The domain is VP since a proper descriptive account has to refer to the whole VP, not just the verb, as we have seen in (24). The anchor is the first daughter constituent of the domain, since, as we have seen in (15) and (16), *ge* has to be adjacent to the verb or verbal complex. The VC *ge* also has to follow the anchor.

It thus seems the VC *ge* can be regarded as a phrasal affix.

However, despite the fact that the parameters in (33) can somewhat accommodate the VC *ge*, they are certainly insufficient. First of all, they fail to account for the fact that the VC *ge* can and must follow a monosyllabic pronoun, as shown in (15a). In addition, the fact that it has to precede a nominal constituent is also not captured. Furthermore, it has not yet been made clear how those parameters are encoded in grammar and how and when the clitic enters syntactic derivations. I shall address these issues in the next section.

⁹ See Liu (1995) for similar accounts of the verbal *de*.

¹⁰ This is also Liu's (1995) characterization of the verbal *de*.

5. The Morphology component and the Agree theory

To augment the descriptive power of our linguistic theory while staying coherent, I propose that we need a theory that allows Morphology as a component independent from *narrow syntax*, and allows morphological information to be encoded in the lexicon. Aronoff's (1994) framework provides just such a theory. In addition, I argue that the existence of clitics such as the VC *ge* provides evidence for Chomsky's (2000) Agree theory.

5.1 Morphology as a component of grammar

It is not surprising that the parameters in (33) are not sufficient to account for all the distributional properties of the VC *ge*, if it can indeed be regarded as a phrasal affix. This is because affixal morphology is far more complicated than what parameters like (33) can accommodate. If 'phrasal affixal morphology' parallels affixal morphology, then (33) is certainly not adequate. In this section, I should like to show there is indeed a word-level morphological process in Chinese that resembles the process that derives the VC *ge*, which cannot be adequately accounted for by parameters in (33). I argue that we need to employ a *morphological template* to derive the facts, and the template for the VC *ge* is (24), repeated below:

$$(36) \quad [_{VP} V-(X_{\sigma})-ge_{vc}-DP]$$

Due to the fact that *ge* occurs in the middle of the template, I call the VC *ge* an *internal clitic*.¹¹ The existence of this template can be accommodated by Aronoff's (1994) framework in which Morphology is an independent component of grammar. Let us see how.

In word-level morphology in Chinese, a morphological process typically labeled as the 'potential' construction (cf. Chao 1968, Li & Thompson 1981) involves internal affixation of a modal element in a verb-resultative compound. Examples are as follows:

- (37) a. ren - de - chu
 identify able out
 'able to recognize'

¹¹ This term should be distinguished from *endoclititic*, because an endoclititic splits apart a root and does not refer to templates.

- b. sou-xun - de - dao
find-seek able reach
'able to find out'
- c. na - de - qilai
take able rise
'able to pick (something) up'

In these examples, *ren-chu*, *souxun-dao*, and *na-qilai* are word-level verbal expressions, since *chu*, *dao*, and *qilai* are bound morphemes. The process that derives realization of *de* should therefore be a word-level affixal morphological process. Here the placement of *de* is sensitive to the morphological and semantic properties of the preceding *and* the following elements. The preceding element, no matter how many syllables it has, must be an activity verb that does not contain a resultative morpheme. The following element, no matter the number of its syllables, has to be a resultative morpheme that does not contain the activity verb. So the template for the internal affix *de* looks like this:

- (38) The morphological template of *de* 'able'
[V V_{Activity} - de - V_{Result}]

Any violation of the template yields ungrammaticality. This can be shown by comparing the following examples with (37):

- (39) a. *na - de
take able
b. *na-qilai-de
take rise able
c. *de - na - qilai
able take rise
d. *sou - de - xun
find able seek

The existence of the internal affix *de* shows that (33) is inadequate for word-level affixal morphology and we need a word-level morphology template in our repertoire of descriptive tools¹². Therefore, if phrase-level morphology parallels word-level mor-

¹² Contra Liu (1995:141), who employs parameters in (33) to account for the internal affix *de*:

phology, we should abandon (35) and favor (36) to describe the morphosyntactic distributions of the VC *ge*.

Further evidence for a morphological template analysis comes from the fact that *ge* exhibits properties that indicates direct correspondence between morphological form/class and morphology template, regardless of its meaning. First of all, when nominal classifiers are merged with the numeral *yi* and acts as a clitic, it is subject to the following template:¹³

- (40) [DP/VP Dem/Quant/V-(X_σ)-CI-NP]

Template (40) can be derived from facts in (13) and (14), and the fact that the clitic is also dependent on the following element, as shown in the following examples:

- (41) a. lizi, wo chi-le yi-ge
 pear I eat-Pfv one-CI
 b. *lizi, wo chi-le-ge
 pear I eat-Pfv-CI

The template shows that a numeral-less nominal classifier is an internal clitic, and can be separated from its preceding host only by a monosyllabic functional morpheme. Interestingly, this template resembles the template for the VC *ge* (24), in terms of the shape of the template and the syntactic categories of the participants involved: the preceding host can be a verb, the following host is a nominal constituent.

In addition to numeral-less nominal classifiers, two different instances of the VC *ge* are also subject to the same morphological template. These instances of *ge* have been briefly discussed in §1 and §2.3, repeated below:

- (42) a. lisi ke wan-de **ge** tongkuai
 L. indeed play-DE VC₂ thorough.satisfaction
 ‘Lisi indeed played to his heart’s content.’

-
- (i) a. scope - V
 b. anchor - head
 c. orientation - follow

This account cannot rule out (39a) and (39d).

¹³ This template is modified from Yang’s (2001) analysis of numeral-less nominal classifiers. Yang acknowledges the fact that they are dependent on both the preceding and the following element, but did not spell-out the whole template.

- b. zhangsan xiao **ge** bu ting
 Z. laugh VC₂ no stop
 ‘Zhangsan keeps laughing (and there is no sign of his stopping.)’
- (43) a. mai ta **ge** yi bai-ben shu
 buy TA VC₃ one hundred-Cl book
 ‘To buy one hundred books.’
- b. wan ta **ge** guoyin
 play TA VC₃ to.one’s.satisfaction
 ‘To play to a thorough satisfaction of it.’

We have seen in §2.3 that semantically the instances of *ge* in these examples are distinct from the ‘down-play’ mood marker VC *ge*. What is interesting for us is that they are still subject to the morphological template (24). The template is the same in that there is evidence that the adverbials in (42) are in fact nominalized adverbials, and that *ge* has properties of an internal affix. As the following examples show, adverbials modified by the typical adverbial *hen* or *bu* are not allowed:¹⁴

- (44) a. lisi ke wan-de ***(ge)** hen tongkuai
 L. indeed play-DE VC₂ very thorough.satisfaction
 ‘Lisi indeed totally enjoyed his time playing.’
- b. zhangsan wan-de ***(ge)** bu tongkuai
 Z. play-DE VC₂ Neg thorough.satisfaction
 ‘Lisi didn’t enjoy his time playing.’

The examples show that there is nothing wrong with the sentences if *ge* is not present. When *ge* is present, adverbial modifiers are not allowed. These facts receive a natural explanation if the adverbials in (42) as nominalized adverbials and *ge* is subject to template (24).^{15, 16}

¹⁴ Some adverbials cannot be modified by *hen* or *bu* directly in any context, such as *bu ting* ‘no stop’ in (42b), so this test is not applicable. I assume the adverbial is still a nominal adverbial in these cases.

¹⁵ A reviewer questioned why *ge* is obligatory in certain cases when adverbials are involved:

(i) wangwu ba xiaotou da-le ***(ge)** ban si
 W. BA thief hit-Pfv VC₂ half.dead

I assume that verbal adverbials in Chinese in general have to be licensed by specific morphemes. The licensing morphemes are either *de* or *ge*. As for why the licensing is required and how it works, I leave these issues for future research.

It is also clear that when *ge* occurs in the ‘excessive’ construction, it has to follow the same template, as its following adverbial cannot be modified by *hen*:

- (45) wan ta **ge** (*hen) guoyin
 play TA VC₃ very to.one’s.satisfaction
 ‘To play to a thorough satisfaction of it.’

Under no circumstances can those instances of *ge* occur without a preceding and a following host:

- (46) Q: [How much fun did Lisi have?]
 A: a. wan-le-ge tongkuai
 Play-Pfv-VC₂ thorough.satisfaction
 ‘He played to his heart’s content.’
 b. *ge tongkuai
 c. tongkuai
- (47) [Q: How many books do you want to buy?]
 a. mai ta ge yibai-ben shu
 buy TA VC₃ one.hundred-Cl book
 ‘I want to buy 100 books.’
 b. *ge yibai-ben shu
- (48) *mai ta ge
 buy TA VC₃

So far, we have seen that a single general morphological template can accommodate four types of clitics with distinct semantic and syntactic properties. It appears that individual affixes or clitics in Chinese are encoded with ‘template class’ in the lexicon. That is, certain morphological forms are associated with specific morphological templates, no matter their semantic and syntactic function. This suggests that Morphology is a grammatical component separate from *narrow syntax*. This process is similar to the situations of English past participle discussed in Aronoff (1994), in which exactly the same inflected morphological form (stem-*ed*, stem-*en*, etc.) of any given verb can express either passive voice or perfect aspect. The two different functions also cannot

¹⁶ Another question raised by the reviewer concerns the reason why *ge* can follow a verbal modification marker *de* if the adverbial is nominalized (cf. (42a)). I assume that the template of the internal clitic *de* allows the following constituent to be either nominal or adverbial, as long as the semantic requirements are met.

be semantically or syntactically derived. According to Aronoff, the two functions of passive and perfect are paired by the abstract morphological entity F_{en} , regardless of their syntactic or semantic differences. The function F_{en} is purely morphological (or, in Aronoff's term, 'morphomic'). In our analysis of the VC *ge*, we can also postulate a function F_{ge} to represent the mapping between morphological form/class and template class for the class of clitics represented by the VC *ge*.

In sum, we argue that clitics and affixes form a natural class, since they can both be regulated by morphological templates, which support the thesis that Morphology is a grammatical component. However, it is undeniable that postulating a Morphology component does not solve all the analytical problems, since inflectional affixes have syntactic properties as well. Morphology has to interact with *narrow syntax* somehow. I shall address this issue next.

5.2 Support for the Agree theory

If Morphology is an independent grammatical component, it still needs to interact with *narrow syntax*. This view is also shared by Aronoff (1994:71), who provides the following schema for 'the mapping from syntax to phonology through morphology':

(49) Level	Entity
(morpho)syntax	(morpho)syntactic properties (gender)
(morpho)syntax to morphology	morphosyntactic rules (gender to inflectional class)
morphology by itself	inflectional classes
	realization pairs
morphology to phonology	realization rules
phonology	phonological forms

According to (49), syntax provides information to morphology, which in turn provides information to phonology. However, not all syntactic theories are compatible with such a mapping. In Chomsky's (1995:Ch.3) framework, all morphological operations apply before syntactic operations, and no words can remain uninflected at any point in the syntactic derivations due to the Extension Condition. For example, in the sentence *John saw Mary yesterday*, the verb *saw* enters the numeration/lexicon fully inflected. When the tense head (T^0) is merged with vP , covert feature movement applies and the tense feature on T is checked. It is not possible for syntax to feed information to the Morphology component. Instead, morphological information encoded in the lexicon has to be 'checked off' by syntactic operations. It is clear that this framework is not compatible with Aronoff's framework.

Under Chomsky's (2000 *et seq.*) Agree framework, however, the situation is quite different. According to Chomsky (2001:5, 2004:16), the simplest assumption about an uninterpretable feature *F* is that it enters the derivation without value. This is so because the value is determined only in the syntactic context by Agree. For example, in the sentence *John saw Mary yesterday* the inflected verb *saw* is uninflected in the numeration, and is only inflected after Agree applies. This framework appears to be compatible with Aronoff's framework, since syntactic operations can apply before morphological operations, and words can remain uninflected until Agree applies. I shall now show that this framework indeed accommodates quite well the descriptive facts discussed in the paper thus far.

In this framework, the mismatch between the wide semantic scope and its post-verbal position noted by Lin (2001) indicates that Agree has to apply. More specifically, I argue that mood information is encoded at the C^0 , and correspondent uninterpretable unvalued features are encoded at the V head. Agree between C^0 and V^0 induces feature matching and valuation. These operations are defined as follows:

- (50) Agree
- a. Match: A feature *F* (a *probe*) on a head *H* at syntactic location α searches its c-command domain for another *F* (a *goal*) at location β with which to agree.
 - b. Valuation: Replace any unvalued feature with valued feature at α and β .

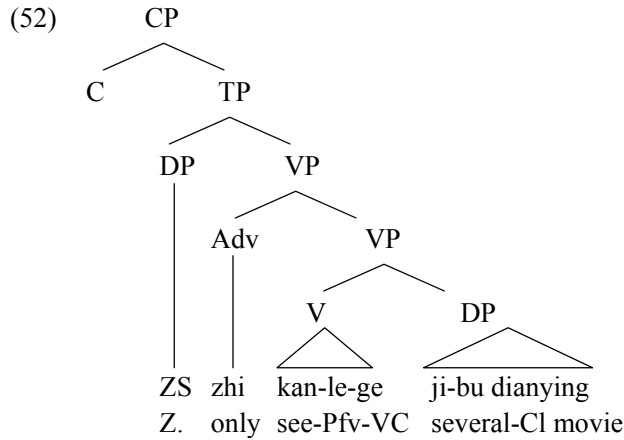
Feature valuation induces merge of *ge* to VP, where *ge* has to follow the morphological template TC_{ge} , because of the mapping rule F_{ge} in the Morphology component. The function of *ge* is to realize feature valuation. These processes are laid out below:

- (51) Agree
- a.

C	V	\rightarrow	C	V
valued [<i>i</i> M]	unvalued [<i>u</i> M]		valued [<i>i</i> M]	valued [<i>u</i> M]
 - b. Select *ge* and merge it to the edge of V .¹⁷ *ge* realizes the feature valuation of [*u*M].
 - c. The morphosyntactic context of *ge* has to conform to TC_{ge} , specified in the Morphology component as a mapping rule F_{ge} .
 - d. $TC_{ge} = [_{VP} V-(X_{\sigma})-ge-YP_{[+N]}]$

¹⁷ This operation may seem counter-cyclic, since the merging site is not the outermost syntactic constituent. However, Chomsky's assumptions about uninterpretable features readily accommodate 'delayed-Merge.' See Shu (2011:Ch.4) for discussion.

At the final stage of derivation, a sentence like (2d) can be represented by the following tree diagram:¹⁸



This analysis of *ge* captures the essential morphosyntactic properties of the VC *ge* laid out in §2. The semantic properties of ‘play-down’ mood and telicity aspect are encoded at the C^0 head. It has properties of a clitic because it is associated with TC_{ge} according to its morphological class, so the merge operation in which it is involved has to conform to the template. Its distributions are distinct from those of nominal classifiers and verbal measure words because nominal classifiers and verbal measure words have different semantic and syntactic functions: the former are reflexes of Agree between a noun and a numeral/verb/determiner, and the latter are verbal event measure words. None of these are encoded at C^0 .

6. Conclusion

In this paper I argue that the verbal classifier *ge* has the properties of an internal clitic, since it shows properties of being locally bound to its preceding and following elements, and those elements can have phrasal status. Furthermore, it is shown that not only the VC *ge*, but also affixes, numeral-less nominal classifiers, and two other instances of the VC *ge* are also subject to ‘internal bound morpheme’ analyses. We thus have two sets of general patterns. On the one hand, affixes and clitics can form a natural class; on the other, clitics with different syntactic properties can be subject to the same type of morphological template. The natural conclusion is that clitics and affixes are

¹⁸ Here I abstract away from light verb structures.

both subject to operations in the Morphology component, which is independent from *narrow syntax*. Furthermore, the state of affairs suggest direct mapping between morphological form/class and template class. Finally, it is shown that these morphological operations are compatible with the Chomsky's Agree framework, but incompatible with his older Checking framework.

Our treatment of the VC *ge* has the advantage of wider empirical coverage and adopting theoretical frameworks that have more descriptive power since they can capture the most crucial facts in our current understanding of these clitics. Nevertheless, there is still much unfinished business. The Morphology component, if it indeed exists, is an under-explored territory. The bulk of research is focused on Indo-European languages. Very little modern research is done with Chinese, which is sometimes regarded as morphology-free. There are certainly numerous other clitics and affixes in Chinese, including *ta*, *de*, briefly discussed in this paper, and perhaps sentence-final particles, which belong to distinct template classes. Theoretically, it is also worth pursuing whether templates can be derived from more primitive operations or rules, and refining the workings of word- and phrase-level morphology with relevant theoretical consequences. Eventually, we also need to address the challenging yet important question of how all the differences between different morphemes and among languages can be characterized in a theory of language parametrization.

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[Received 16 August 2010; revised 19 October 2011; accepted 28 October 2011]

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中文語氣/時貌標誌「個」的構詞句法分析

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本篇文章給中文淡化語氣助詞「個」提供了新的描述上和理論上的解釋。之前的研究並未討論其附著詞的地位。本文結合並拓展 Yang (2001) 對中文未附著在數詞上的類別詞的附著詞的分析，提出一個構詞句法分析，根據此分析，助詞「個」是由構詞模板 $[_{VP} V-(X_0)\text{-}\text{個-}YP_{[+N]}]$ 所規範的。這個模板和一些規範內部詞綴（比如「得」）的構詞模板極為相似。這些發現顯示我們需要更新 Klavans (1982, 1985) 和 Anderson (1992, 2005) 所提出的附著詞是「詞組的詞綴」的理論。此外，此分析支持 Aronoff (1994) 的構詞獨立於句法之外的看法，也支持 Chomsky (2000 及其後的著作) 的呼應理論，因為該架構容許構詞的組合在句法的組合之後發生。

關鍵詞：語氣，時貌，類別詞，附著詞，構詞，呼應理論