

# **The Investigation of Mandarin Aspect: With Special Reference to the *Ba*-Construction**

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## Abstract

This thesis is an investigation of the aspect system in Taiwanese Mandarin (TM). It examines the four aspect particles *le*, *guo*, *zai*, *zhe* and two constructions, the reduplicative verb construction and the resultative verb construction. It also explores the aspect of the *ba*-construction used in TM. Different from previous research, this study adopts the three-dimension model of aspect established by Declerck, Reed, & Cappelle (2006) as the basic framework. To better apply the model to analysing the aspect in TM, I draw from Depraetere's (1995) conceptual definition of (non)boundedness, the semantic feature that the actualisation aspect pivots on, to conduct the analysis at the actualisational level. I also use Klein's (1994) framework, treating the perfect as a category of aspect, rather than of tense. Additionally, Smith's (1997) approach of temporal boundary to define the viewpoint aspect is also used in this study.

Chapter 1 lays the conceptual foundation of the thesis, introducing the general background, the sociolinguistic background of Taiwan, the aims and approach of this research and key terminologies. Chapter 2 reviews Smith's and Klein's frameworks of aspect as well as the syntactic account of the *ba*-construction proposed by Sybesma (1999) and C.-T. J. Huang, Li, & Li (2009). In the end, I propose a syntactic structure for the *ba*-construction.

Chapter 3 is the full analysis of the aspect in TM on the basis of the three-dimension model. In this approach, TM is analysed as a language having the dichotomous perfective/imperfective opposition. It also distinguishes between the continuous and the progressive aspects. Chapter 4 then analyses the aspect of the *ba*-construction according to the aspect system developed in Chapter 3.

# Table of Contents

<b>Abstract</b> .....	<b>ii</b>
<b>Table of Contents</b> .....	<b>iii</b>
<b>Acknowledgements</b> .....	<b>vi</b>
<b>Author's Declaration</b> .....	<b>viii</b>
<b>Conference presentations</b> .....	<b>viii</b>
<b>Chapter 1 Introduction</b> .....	<b>1</b>
1.1 General background .....	1
1.2 Sociolinguistic background of Taiwan.....	3
1.3 Aims and scope .....	4
1.4 The <i>ba</i> -construction in TM .....	9
1.5 The approach.....	15
1.6 Conceptual preliminaries .....	17
1.6.1 Tense .....	18
1.6.2 Aspect .....	21
1.6.2.1 Viewpoint aspect.....	23
1.6.2.2 Ontological aspect .....	30
1.6.2.3 Actualisation aspect .....	33
1.7 Thesis outline.....	36
<b>Chapter 2 Previous approaches to Mandarin aspect and the <i>ba</i>-construction</b> .....	<b>38</b>
2.1 Aspect in Mandarin .....	38
2.1.1 Smith's theory.....	39
2.1.2 Klein's theory.....	48
2.2 The syntax of the <i>ba</i> -construction.....	54
2.3 Summary.....	71

<b>Chapter 3 The three-dimensional approach to TM</b> .....	<b>74</b>
3.1 Viewpoint aspect.....	76
3.1.1 Perfective viewpoint .....	77
3.1.1.1 Bounding perfectivity: perfect markers and the reduplicative construction.....	87
3.1.1.2 Telic perfectivity: RVCs.....	114
3.1.2 Imperfectivity .....	117
3.1.2.1 Continuous aspect .....	120
3.1.2.2 Progressive aspect.....	137
3.2 Ontological aspect .....	144
3.2.1 The situation conceptualisation in TM.....	144
3.2.2 Two diagnostics of (a)telicity? .....	153
3.3 Actualisation aspect.....	162
3.3.1 Actualisation aspect at VP level .....	165
3.3.2 (Non)boundedness of 'V+ specific NP' .....	167
3.3.3 Actualisation aspect and temporal interpretation in TM .....	173
3.3.4 The salience of the actualisation aspect in TM .....	187
3.4 Summary.....	193
 <b>Chapter 4 Aspectual analysis of the <i>ba</i>-construction in TM</b> .....	 <b>195</b>
4.1 The definiteness/specificity of the <i>ba</i> -construction .....	195
4.2 The <i>ba</i> -construction's verbal complement constraint .....	202
4.3 Temporal delimitedness of the predicate.....	211
4.4 The temporal interpretation of the <i>ba</i> -construction .....	221
4.5 Summary.....	229
 <b>Chapter 5 Conclusion</b> .....	 <b>231</b>
5.1 Synopsis .....	231

5.2 Further Research.....	233
<b>Abbreviations .....</b>	<b>235</b>
<b>References .....</b>	<b>237</b>

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## Author's Declaration

I declare that this thesis is a presentation of original work and I am the sole author. This work has not previously been presented for an award at this, or any other, University. All sources are acknowledged as References.

## Conference presentations

Chang, Y.-J. (2017). Tense marking in Taiwanese Mandarin. Poster session presented at: *Tenselessness Workshop*, 2017 Oct 05-06. London: University of Greenwich.

Chang, Y.-J. (2018). The temporal reference of bare accomplishment sentences in Taiwanese Mandarin. In *Linguistics and English Language Postgraduate Conference*. Edinburgh: University of Edinburgh.

Chang, Y.-J. (2018). The temporal reference of aspectually unmarked bare accomplishment *ba*-sentences in Taiwanese Mandarin. In *The 51st International Conference on Sino-Tibetan Languages and Linguistics*. Kyoto: Kyoto University



# Chapter 1

## Introduction

### 1.1 General background

The main objective of this study is to provide a comprehensive account of the aspect system in Taiwanese Mandarin (hereafter ‘TM’), in the sense that all the three aspect parameters, viewpoint aspect, ontological aspect and actualisation aspect, are taken into account. It explores the constitution of perfectivity, the aspectual functions of the four widely discussed aspect markers, *le* (V-*le*), *guo*, *zhe*, *zai* alongside resultative verb constructions (henceforth ‘RVCs’) and reduplicative verb constructions (V-(*yi*)-V), how to conceptualise a simple situation-template and how aspect affects the temporal interpretation, with special attention paid to the *ba*-construction.<sup>1</sup>

The study is motivated by the following five reasons. First, after World War II TM has evolved as a distinct and distinctive variety of Mandarin (Lien, 1994). It has developed its own phonological, lexical, and syntactic characteristics, which differentiate it from other Mandarin dialects, for example, its source language Peking Mandarin (Kubler, 1985; Kuo, 2005; Tseng, 2003). In this regard, it is expected that research results or generalisations that are not based on the data of TM may be inapplicable to TM. Likewise, research results or generalisations that come from the data of TM may not be applicable to other Mandarin varieties.

The example that C. N. Li & Thompson (1981) use in (1) can illustrate this point. They claim that the aspect marker *le*’s occurrence is not acceptable, but to TM speakers it is totally acceptable. Similar dialectal differences can also be seen in the case of the *ba*-construction. The example in (2) is often seen as a grammatical *ba*-sentence in the literature, but ungrammatical to TM speakers. I will show what kinds

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<sup>1</sup> There are two kinds of *le* discussed in the literature: sentence-final *le* (S-*le*), and verb-final *le* (V-*le*). As the names suggest, the former appears at the end of a sentence and the latter follows a verb. The distinguishing line between them is not always clear, as some cases of *le* can be both sentence-final and verb-final (e.g., *wo kan-le* ‘I read-LE’). The discussion of *le* in this study is restricted to V-*le*, including V-*le* that occupies the sentence-final position.

of *ba*-sentences that are reported as grammatical in the literature but ungrammatical in TM on the basis of Sybesma's (1999) categorisation in 1.4.

(1) wo he- le cha  
I drink- LE tea  
'I have drunk tea.' (C. N. Li & Thompson, 1981:200)

(2) \*Lao Li ba Zhang San sha- le fuqin  
Lao Li BA Zhang San kill- LE father  
'Lao Li killed Zhang San's father.' (Sybesma, 1999:148)

Second, the analysis of the aspect in Mandarin has long been a controversial issue in the study of aspect. Opinions differ in: 1) whether *le* signals completion (e.g., Chao, 1968; Henne, Rongen, & Hansen, 1977; Lü, 1984; Ren, 2008; Tsee, 1986; W. S.-Y. Wang, 1965) or termination (Klein, Li, & Hendriks, 2000; X. Liu, 1988; Shih, 1990; Smith, 1997; Tai, 1984), 2) whether *le* denotes perfectivity (C.-T. J. Huang et al., 2009; Smith, 1997; Soh & Gao, 2006; Soh & Kuo, 2005) or more than perfectivity (J.-W. Lin, 2000, 2006; Ross, 1995; C.-C. Wang, 1999; L. Zhang, 1995) and 3) whether *zhe* is a resultative imperfective marker (Du, 1999; Furuli, 1997; Haihua Pan, 1998; Smith, 1997; Yeh, 1991) or not (Xiao & McEneaney, 2004).

Third, Smith (1997) makes an acute observation that completion and termination are two different concepts that are distinguished linguistically in Mandarin. This important characteristic has not received sufficient attention.

Fourth, there have been various proposals put forward to characterise the temporal interpretation in Mandarin from the aspect perspective, such as J.-W. Lin (2003b), Smith & Erbaugh (2005) and Sun (2014), provided that there is absence of overt temporal specification. Many efforts have been devoted to establishing the correlation between the viewpoint aspect and temporal interpretation. A satisfactory account for TM nonetheless is still in demand.

Fifth, it is often suggested that perfective viewpoints license the *ba*-construction (L. S. Cheng, 1988; Hopper & Thompson, 1980; Mei, 1978; Sun, 2014; Szeto, 1988). However, empirical data in TM do not support this view.<sup>2</sup>

## 1.2 Sociolinguistic background of Taiwan

Mandarin was not introduced to Taiwan until 1949, when the Kuomintang (KMT) government of the Republic of China (ROC) lost the Chinese Civil War to the Communists, became a government in exile and then relocated to the island of Taiwan. Before that, Taiwan was already a pluralistic society comprising multiple ethnic groups using various languages, including more than 20 kinds of Austronesian languages used by aborigines, Japanese, Hakka and Southern Min. The dominant language was Southern Min (SM), which was officially termed Taiwanese by the ruling Japanese government back then (1895-1945).

The relocation of the KMT government occasioned an influx of Chinese immigrants constituted by military forces and refugees; the ratio of these Chinese immigrants to Taiwanese people was about 1:5. These Chinese immigrants brought more languages, such as Wu, Cantonese and Tibetan, to Taiwan. The KMT government soon promoted Peking Mandarin by prohibiting the use of Japanese, Taiwanese, Hakka and the aboriginal languages. This prohibition lasted until the 1980s, when there was a shift in power away from the KMT to native Taiwanese people. The Taiwanization Movement thus has been strongly supported since then, which includes promoting languages, viz. Taiwanese, Hakka and aboriginal languages, locally established in Taiwan. Although TM is currently the official language of Taiwan, 73% of Taiwanese people can also speak Taiwanese (Luo, 2018).

Up to now, Taiwanese has been evolving on the island of Taiwan for almost 400 years. According to Ang (1994), all versions of Taiwanese used in Taiwan are mixtures of Quanzhou SM and Zhangzhou SM, which have diverged into more than

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<sup>2</sup> It is worth mentioning that the judgement of the TM and Mandarin data presented in this study is on the basis of the intuition of six TM native speakers.

100 dialects in Taiwan. In the evolution process, Taiwanese has absorbed linguistic elements from Dutch, Japanese and aboriginal languages (Luo, 2018). Therefore, it has been seen a branch of SM and very different from its sources, viz. the Quanzhou and Zhangzhou dialects of SM.

Over a much shorter time period, Mandarin has been evolving on this island for 70 years. Taiwanese Mandarin is a newly formed variety of Mandarin, being considerably distinct from its source, Peking Mandarin, in terms of phonology, lexicon and syntax (Kubler, 1985; Kuo, 2005; Tseng, 2003). For example, TM lacks the retroflex sounds, the most salient phonological feature of Peking Mandarin (Kuo, 2005). Her (2009:377) points out that basically no one is using Peking Mandarin in Taiwan. In addition, Cheng (1985) observes that TM has been affected by Taiwanese in regard to phonological and syntactic respects. Kubler (1985) illustrates more than 10 syntactic influences that Taiwanese has had on TM. For example, influenced by the polysemous verb/auxiliary *ū* 'have' in Taiwanese, the auxiliary verb you 'have' in TM, corresponds to Mandarin aspectual marker *le*, can be used to indicate the termination of an action.

### 1.3 Aims and scope

The main questions concerned and addressed in this study can be formulated as: 1) what the big picture of the aspect system in TM is, 2) how to account for the behaviours of *le* in TM, 3) what the differences between *zai* and *zhe* are in TM, 4) how aspect interacts with the temporal interpretation in TM and 5) what roles aspect plays in licensing *ba*-sentences.

The aspect of Mandarin has been intensively studied for several decades, but there is no commonly agreed account for its aspect system. Most efforts have been invested in analysing the four aspect particles, *le*, *guo*, *zai* and *zhe*. Traditionally, the former two are analysed as perfective markers and the latter two as imperfective markers. There are also some researchers analysing *guo* as an experiential perfect marker (e.g., Comrie, 1976: 59; Klein et al., 2000: 759), but *le* has never been viewed as a perfect marker. Smith (1990, 1997) adds into the category of perfective

viewpoints resultative verb constructions and reduplicative verb constructions. The addition of RVCs is accepted and advanced by later researchers such as Cherici (2019), Klein et al. (2000) and Xiao & McEney (2004). The addition of reduplicative verb constructions is accepted and advanced by Xiao & McEney. Along this line, there are four grammatical ways to express perfectivity in Mandarin: by the two markers *le* and *guo* and by the two constructions RVCs and reduplicative verb constructions.

It is commonly agreed that imperfective viewpoints are marked by *zai* and *zhe* in Mandarin. Opinions diverge on the differentiation between them and the function that *zhe* entertains. The two imperfective markers have been conflated together by L. L. S. Cheng (1988), C. N. Li & Thompson (1981), Tiede (1986) and L. Zhang (1995). *Zhe* has been treated as a progressive marker (Chao, 1968; Comrie, 1976; Tiede, 1986; L. Zhang, 1995) and a durative marker (Dai, 1997; C. N. Li & Thompson, 1981; Xiao & McEney, 2004).

Taking these arguments into account, it is clear that the aspect system of Mandarin contains the dichotomy of perfective and imperfective. I accept Smith's including RVCs and reduplicative verb constructions into the category of perfective viewpoints. In so doing, the aspect system of TM is in line with that of Mandarin in that it has the perfective/imperfective dichotomy, the four aspect particles and the two perfectivity denoting constructions. The inventory of the viewpoint aspect in TM hence comprises four grammatical perfective tools, *le*, *guo*, RVCs and reduplicative verb constructions, and two imperfective markers, *zai* and *zhe*.

Although I agree that *le* is a perfective marker, I also observe that it is more than a perfective marker, as previous researchers such as J.-W. Lin (2000, 2006) and Ross (1995). All of them claim that *le* is able to specify relative anteriority or relative past. This is not the only reason that calls for a better account of *le*'s behaviours than treating it as a perfective marker. Klein et al. (2000) offer another view to highlight the insufficiency of the perfective treatment. They point out that if *le*'s function is to indicate a situation's being viewed perfectly, then it appears to have no

independent functional value when it marks situations that are already represented as perfective before *le*'s suffixation. To illustrate, consider the example in (3). The verb *shuai-puo* 'fall-break' is an RVC. The result *puo* 'break' is caused by the action *shuai* 'fall'. The secondary predicate *puo* 'break' encodes a resultative final endpoint, and thereby the RVC denotes perfectivity. Under the circumstances, *le*'s occurrence is redundant, since without *le* the sentence already represents a perfective situation contributed by the RVC.

- (3) Timu shuai- puo- le huaping  
 Tim fall- break- LE vase  
 'Tim has broken the vase.'

It can be seen that viewing *le* as a perfective marker ignores its tense-like function and causes redundant perfective marking. My aim is to provide a unified account for *le*'s tense-like function, aspectual function and its co-occurrence with perfective expressions. To do that, I am going to argue that *le* serves as a perfect marker, rather than a perfective marker. The present study will show that the perfect marker treatment can best account for *le*'s versatility.

Similarly, *guo* is more than a perfective marker. I will follow Comrie and Klein et al. treating it as a perfect marker. Furthermore, I will employ Comrie's (1976) four kinds of perfects to analyse the perfects of TM. This means that there are two perfect markers in this Mandarin variant, with *guo* denoting experiential perfect and *le* denoting perfect of recent past, perfect of persistent situation and perfect of result.

The distinction between the imperfective markers *zai* and *zhe* is another controversial issue. The central problem lies in pinpointing the aspectual role that *zhe* plays. *Zhe* has been labelled as a progressive marker, a durative marker and a resultative imperfective marker. When it is viewed as a progressive marker or a durative marker, it in effect has no difference from *zai*, since *zai* encodes these two aspectual meanings as well. Labelling *zhe* as a resultative imperfective marker is a misinterpretation, as it does not encode such semantics. Accordingly, two additional

problems arise: 1) the differentiation between *zai* and *zhe* has never been clearly made and 2) the typological characteristics of the imperfective aspect of Mandarin has never been reflected. The present study aims to remedy the three unsettled concerns by adopting Comrie's (1976) and Mair's (2012) approaches to analyse the two imperfective markers according to the data in TM.

The progressive aspect and the continuous aspect are special cases of imperfectivity. About 40% of the world's languages have the perfective/imperfective dichotomy in their grammars. It naturally follows that fewer languages have the progressive aspect and the continuous aspect in their grammars (Comrie, 1976: 25). Mair (2012) further points out that of the world's languages, the progressive aspect is more likely to be grammaticalised compared to the continuous aspect. Cantonese, as a Chinese language, is one of the languages explicitly separating the two imperfective aspects, with *gán* marking the progressive aspect and *jyuh* marking the continuous aspect (Matthews & Yip, 1994).

In TM, *zai* is highly similar to the progressive marker *gán* and *zhe* to the continuous *jyuh*. Due to the affinities between these two pair of imperfective markers, I contend that *zai* signals progressivity and *zhe* signals continuousness. As such, TM is one of the languages that distinguishes the progressive aspect and the continuous aspect. I will show that this analysis can correctly characterise the imperfective aspect in TM, and show the typological similarities with other languages that grammatically differentiate these two aspects.

Temporal interpretation in Mandarin is another issue that have drawn much interest in the study of Mandarin. It is generally classified as a tenseless language (e.g., Comrie, 1976; Klein et al., 2000; J.-W. Lin, 2006, 2010; Smith, 1997; Smith & Erbaugh, 2005; Xiao & McEnery, 2004), although some researchers think of it as having a syntactic T node (e.g., Chen & Husband, 2017; C.-T. J. Huang et al., 2009). I take the former view assuming TM is a tenseless language. The discussion is presented in 1.6.1.

There have been researchers associating temporal interpretation with aspect. For example, J.-W. Lin (2006) utilises Bohnemeyer & Swift's (2004) default aspect theory to argue that aspect markers in Mandarin function as tense indicators in a tensed language. Sun (2014) claims that temporal adverbials per se cannot determine the temporal reference of sentences, provided that the predicate is eventive and in its bare form. It involves the marking of the viewpoint aspect markers to license the episodic reading. These proposals, however, cannot hold in TM.

I agree with the two researchers' idea that the temporal interpretation in Mandarin correlates to aspect. My approach, nonetheless, will be different from J.-W. Lin's and Sun's. As observed from TM data, temporal interpretation does not show close correlation to either the viewpoint aspect or the ontological aspect, given that temporal expressions that can indicate the relation between, in Klein's (1994) words, topic time (TT, the time for which the assertion is made or confined) and time of utterance (TU) are absent. Instead, it is the actualisation aspect that plays the decisive role. In this connection, this study aims to uncover the interaction between the temporal interpretation and the actualisation aspect in TM.

Finally, the present study is also an inquiry into the *ba*-construction with respect to the verbal complement constraint (VCC) (Lipenkova, 2011). The constraint states that bare verbs are not admitted in the *ba*-construction, which has been attributed to the temporal delimitedness of the construction, such as F.-H. Liu (1997), Rhys (1996) and Sybesma (1999). This delimitedness approach is invalidated owing to the fact that the construction in effect allows non-delimited predicates. For example, *ba qiu diu-lai-diu-qu* 'toss the ball back and forth' and *ba qiu bao-zhe* 'holding the ball' are acceptable in the *ba*-construction in TM.

Inasmuch as previous proposals for the VCC can account for only a part of predicates allowed in the *ba*-construction, my account for the VCC will be given from a different perspective. Specifically, I draw from the concept of situation-template developed by (Declerck et al., 2006) to analyse the *ba*-construction's predicate. I will show that the construction does not demand its predicate to be temporally delimited



or to have particular value for the viewpoint aspect, the ontological aspect or the actualisation aspect.

So far, I have been using the term '(non)delimited' without clearly defining it. I follow Declerck et al. (2006) and Depraetere (1995), distinguishing '(a)telic' from '(non)bounded'. (A)telic refers to the ontological feature of a situation, meaning that a situation has a potential final endpoint (an inherent/intended/natural final endpoint). (Non)bounded refers to the actualisational feature of a situation, meaning that if a situation is represented as having an actual final endpoint. (Non)delimited is used as an umbrella term of (a)telic and (non)bounded.

#### **1.4 The *ba*-construction in TM**

The *ba*-construction has been widely studied in the literature of Mandarin, but little attention has been devoted to its dialectal differences. As alluded to in previous sections, the use of the *ba*-construction in TM is different from that reported in the literature. More specifically, the use of the *ba*-construction is more restricted in TM. The purpose of this section is to give a general picture of the *ba*-construction in TM, rather than a syntactic or semantic account for the differences. In the following, I will show what kinds of *ba*-sentences and what kind of constituency of the *ba*-construction are unacceptable in TM. Those unacceptable types of *ba*-sentences will not be included in this study. All the judgements of the TM data illustrated in this study are based on five informants' and mine. All of us are native speakers of TM.

A well-known characteristic of the *ba*-construction is that it is incompatible with simplex verbs. Lipenkova (2011:150) terms this phenomenon verbal complement constraint (VCC), illustrated in (4). Many efforts have been devoted to analysing the possible complex verb phrases. Lü (1955) classified 13 patterns for this construction, which has been the basis of subsequent research. For example, Sybesma (1999) categorises *ba*-sentences into ten types, which are illustrated in (5). Some of these types are unacceptable in TM: Durative *ba*-sentences (5c), NP-resultative *ba*-sentences (5d), Inal.poss/Part-whole *ba*-sentences (5e,e') and Unaccusative *ba*-

sentences (5i). Hence, these types of *ba*-sentences will not be discussed in this study.

(4) **Verbal complement constraint (VCC)**

The *ba*-construction cannot be formed with a bare verb; the verb must combine with an additional element:

\*[...[*ba* NP V]]

(5) a. Resultative *ba*-sentences

Hailun ba shoupa ku- shi- le  
Helen BA handkerchief cry- wet- LE  
'Helen has cried the handkerchief wet.'

b. Prepositional dative *ba*-sentences

Hailun ba shu song wo le  
Helen BA book give I LE  
'Helen has given me the book.'

c. Durative *ba*-sentences

\*Hailun ba zhe- ben shu kan- le liang- ge xiaoshi  
Helen BA this- CLF book read- LE two- CLF hour  
'Helen has been reading this book for two hours.'

c'. Frequentative *ba*-sentences

Hailun ba shu kan- le liang bian  
Helen BA book read- LE two times  
'Helen has read the book two times.'

d. NP-resultative *ba*-sentences

\*Hailun ba cai qie- le yi wan  
Helen BA vegetables cut- LE one bowl  
'Helen has cut the vegetables into a bowl.'

e. Inal.poss *ba*-sentences

\*Hailun ba Timu sha- le fuqin  
Helen BA Tim kill- LE father  
'Helen has killed Tim's father.'

e'. Part-whole *ba*-sentences

\*Hailun ba zhu mai- le san- tou  
Helen BA pig sell- LE three- CLF  
'Helen has sold three of the pigs.'

f. Followed by aspect marker *zhe*

Hailun ba yifu bao- zhe  
Helen BA clothes hold- ZHE  
'Helen is holding the clothes.'

g. Followed by aspect marker *le*

Hailun ba che mai- le  
Helen BA car sell- LE  
'Helen has sold the car.'

h. Preverbal adverb *ba*-sentences

Hailun ba dao \*(yi)- fang  
Helen BA knife \*(once)- put down  
'Helen put down the knife.'

i. Unaccusative *ba*-sentences

\*Ba ge zei pao- le  
BA CLF thief escape- LE  
'A thief has escaped/they have had a thief escape.'

j. Locative *ba*-sentences

Hailun ba men shang- le suo  
Helen BA door put on- LE lock  
'Helen has locked the door.'

The use of the *ba*-construction in TM can be characterised as follows. First, the division between the causative verb *rang/shi* ‘make, let’ and *ba* is more definite in TM. Some ‘well-formed’ *ba*-sentences reported in the literature are thought of as ill-formed in TM, unless *ba* is replaced by *rang/shi*. This can be illustrated by the causative *ba*-sentences extracted from Sybesma (1999:133) in (6).<sup>3</sup>

- (6) a. zhe- jian shi \*ba/ rang Zhangsan ku- lei le  
 this- CLF thing \*BA/ make Zhangsan cry- tired LE  
 ‘This case has made Zhangsan cry himself tired.’
- b. zhe- ping jiu \*ba/ rang Lisi zui de zhan bu qilai  
 this- CLF liquor \*BA/ make Lisi drunk DE stand not up  
 ‘This bottle of liquor made Lisi so drunk that he could not stand up.’

The unacceptability of (6a,b) does not entail that there is no causative *ba*-sentences in TM. The example in (7) is a well-formed causative *ba*-sentence in TM, and the case of *ba* in this sentence cannot be replaced by *rang* or *shi*.

- (7) fangdai yali kuai ba/ \*rang/ \*shi ta yakua- le  
 mortgage pressure soon BA/ \*let / \*made she collapse- LE  
 ‘She is soon going to buckle under the pressure of mortgage.’

Second, the secondary predicate of the VP of the *ba*-construction, in most cases, predicates of the *ba*-NP in TM, otherwise the *ba*-sentence is ungrammatical.<sup>4</sup> This can be seen in (8a,b). C.-T. J. Huang et al. (2009) suggest that (8a) is ambiguous regarding who own ‘the hand(s)’ in the VP. In TM, it is not ambiguous. The owner of ‘the hands’ can only be the *ba*-NP, *tamen* ‘they’, instead of the subject *wo* ‘I’.

<sup>3</sup> According to Sybesma (1999:133), causative *ba*-sentences differ from canonical *ba*-sentences in that 1) the *ba*-NP is interpreted as the subject, rather than the object, of the VP, and 2) the sentence subject is (interpreted as) inanimate.

<sup>4</sup> I follow Sybesma (1999) and Y.-H. A. Li (2006), using ‘*ba*-NP’ to refer to the NP immediately following *ba*.

- (8) a. wo ba tamen da- de shou dou zhong- le  
 I BA they hit- DE hand all swell- LE  
 i. #‘I hit them such that my hands got swollen.’  
 ii. ‘I hit them such that their hands got swollen.’  
 (C.-T. J. Huang et al., 2009:160)
- b. wo ba fan chi- \*bao/ wan, jiu lai  
 I BA meal eat- \*full/ finish then come  
 i. #‘I will come when I am full.’  
 ii. ‘I will come when I eat up my meal.’ (C.-T. J. Huang et al., 2009:160)
- c. ni xian ba heyue kan- dong  
 you first BA contract read- understand  
 ‘You read and understand the contract first.’

The secondary predicate *bao* ‘full’ in (8b) is reported as acceptable in C.-T. J. Huang et al., and yet in TM it is unacceptable because *bao* ‘full’ is predicated of the subject *wo* ‘I’. If the secondary predicate is replaced with *wan* ‘finish’, predicated of the *ba*-NP (*fan* ‘meal’), then the *ba*-sentence is well-formed. That said, there are grammatical *ba*-sentences having the secondary predicate predicated of the subject of the whole sentence as in (8c). The secondary predicate *dong* ‘understand’ predicates of the subject *ni* ‘you’, rather than the *ba*-NP. Such *ba*-sentences are not as common as those having the secondary predicate predicative of the *ba*-NP in TM.

Third, in TM the object of the VP must be put in the position of the *ba*-NP. The sentence in (9a) is illustrated as a well-formed sentence in Sybesma (1999:137), but unacceptable in TM. The object *juzi-pi* ‘orange skin’ cannot be separated by the verb as in (9a). It must be represented as a whole in the *ba*-NP position as in (9b).

(9) a. \*ta ba juzi bo- le pi  
 he BA orange peel- LE skin  
 'He peeled the skin off the orange.'

b. ta ba juzi- pi bo- le  
 he BA orange- skin peel- LE  
 'He peeled the skin off the orange.'

Finally, in C.-T. J. Huang et al. canonical *ba*-sentences (in Sybesma's sense) can allow that 1) the *ba*-NP alongside the VP form a constituent, and 2) *ba* alongside and *ba*-NP form a constituent. These two kinds of constituencies are exemplified by the sentence in (10).<sup>5</sup> The sentence (10b) is illustrated as grammatical sentence, but ungrammatical to TM speakers.

(10) a. ni xian ba zhe- kuai rou qie- yi- qie  
 you first BA this- CLF meat slice- one- slice  
 'You slice the meat first.'

b. \*[ba zhe- kuai rou], ni xian qie- yi- qie  
 BA this- CLF meat you first slice- one- slice  
 'You slice the meat first.'

c. ni ba [zhe- kuai rou qie- yi- qie], [naxie cai  
 you BA this- CLF meat slice- one- slice those vegetable  
 xi- yi- xi ]  
 wash- one- wash  
 'You slice the meat and wash the vegetables.'

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<sup>5</sup> I make two changes to the original sentences illustrated by C.-T. J. Huang et al. (2009:167) to avoid the ungrammaticality of these sentences coming from the reasons other than constituency. First, I add *yi* between the reduplicative verbs *qie-qie* 'slice-slice' and *xi-xi* 'wash-wash', as the reduplicative forms of the two verbs are not acceptable in these sentences to TM speakers. Second, I delete the sentence-final particle *ba*, as it sounds very odd in these two sentences to TM speakers.

As shown in (10b), the constituent formed by *ba* and the *ba*-NP is not acceptable in TM. On the contrary, the constituent formed by the *ba*-NP and the VP is acceptable in TM, as (10c) shows. This indicates that it is possible for the structure [ba NP VP] to be analysed as [ba [NP VP]], but not as [[ba NP] VP] in TM.

## 1.5 The approach

In this section, I sketch out some aspect theories that have informed this study. Dissimilar to many previous accounts of the aspect system in Mandarin, this study does not pursue a single research framework, but draws from interconnected theories of aspect. The three theoretical frameworks that provide the conceptual basis for this study are the three-dimension theory developed by Declerck et al. (2006), the relational theory of aspect developed by Klein (1994) and the temporal boundary theory put forward by Smith (1997).

Despite the fact that the above three theories account for aspect from separate angles, they all succeed in characterising certain temporal features of situations. They seemingly view temporality from different perspectives, yet they share an underlying metaphorical notion. That is, the notion of temporal boundary. Smith and Declerck et al. explicitly use aspectual operators to refer to the initial and final endpoints, whilst Klein does the same concept by utilising the containment and precedence relations among topic time (TT, the time for which the assertion is made or confined), time of situation (TSit, the time at which the situation obtains) and time of utterance (TU). All of them take advantage of invisible temporal boundaries in our mental constructs. Since no particular aspect theory is comprehensive and powerful enough to cover all phenomena, I take the view that an eclectic approach is necessary.

Smith (1997), the representative of temporal boundary theories, employs aspectual operators to refer to the temporal boundaries or edges of situations. For example, the perfective aspect includes the initial and final endpoints, and the imperfective aspect includes neither of these two endpoints, but only the part between them. The two-dimension theory she developed is syntax-centred, in the sense that the basic

unit of analysis/interpretation is the sentence (Pang, 2016). Her framework distinguishes the viewpoint aspect (grammatical aspect) and the situation aspect (situation type, lexical aspect or Aktionsart). Among the three frameworks involved in the present study, Smith's is the only one that adopts the trichotomous opposition for the viewpoint aspect: perfective aspect, imperfective aspect and neutral aspect. The other two frameworks have the usual dichotomous opposition: perfective vs. imperfective. Her situation aspect largely hinges on Vendler's classes, and is expressed by verb constellations (consist of the main verb, its arguments and aspectual form).

Klein (1994) subscribes to Johnson's (1981) relational perspective, providing a theory pivoting on the relations between TT, TSit and TU. In his approach, tense is defined as expressing the temporal relation between TT and TU, and aspect as capturing the temporal relation between TT and TSit. The relations between these three times can be represented by two notions: containment and linear sequence. For example, the perfective aspect means that TT contains TSit and the imperfective aspect means the reverse; the past tense means that TT precedes TU and the reverse is the future tense.

The central claim of the framework established by Declerck et al. is that they distinguish three levels in linguistic representations of a given situation: viewpoint aspect, ontological aspect (similar to Smith's situation aspect) and actualisation aspect. The viewpoint aspect is realised by verb morphology, the ontological aspect by a VP and the actualisation aspect by a clause. It specifically concerns the nature of the final endpoint. This leads to the distinction between (a)telicity and (non)boundedness. The former refers to the situation represented as having a telos at the ontological level, whereas the latter refers to the situation represented as having a terminus at the actualisational level. A telos is a kind of termini, but not vice versa. At the VP/ontological level, they put forward a concept of abstract situation-template. The term 'abstract' means the lack of some necessary information, like a subject or tense, to denote a situation proper. By contrast, a sentence like *Tim ran to school* has all elements that can denote a situation proper (Declerck, 2007).



My approach is going to be established on the basis of the concept of temporal boundary as well. The idea of the three-dimension theory drawn from Declerck et al. will be the key to my analysis of the aspect system in TM, as I will show that the actualisation aspect is the most prominent parameter in this language but has not yet obtained sufficient attention. This is by far the best approach to present the characteristic that Mandarin linguistically distinguishes termination from completion, an insightful observation made by Smith. As a dialect of Mandarin, TM inherits this aspectual attribute. Moreover, the concept of abstract situation-template is conducive to explaining the VCC of the *ba*-construction.

Klein's (1994) relational aspect theory will be employed to illustrate the viewpoint aspect based on three reasons. First, he gives a unified account for tense and aspect by clearly identifying that tense is determined by the relationships between TT and TU, and aspect by those between TT and TSit. Second, he successfully shows that the two controversial categories, the retrospective aspect (the perfect) and the prospective aspect, are aspectual categories, rather than tense categories, as they concern the relation between TT and TSit instead of that between TT and TU. Third, his approach gives the dichotomous opposition of perfective vs. imperfective a very clear shape, by specifying the containment relation of TT and TSit.

Smith's definition of closed and open representation of a situation serves as the basic notion to evaluate (im)perfectivity at the viewpoint level, (a)telicity at the ontological level and (non)boundedness at the actualisational level. The closed representation signals the presence of a final endpoint and the open representation signals the absence of a final endpoint. This does not contradict with Klein's approach to the viewpoint aspect, as alluded to before, all the three frameworks are formulated by means of the notion of temporal boundary.

## **1.6 Conceptual preliminaries**

The purpose of this section is to lay the foundation of the study by presenting the important linguistic terminology, which will be used in the following chapters. I start

with the concept of tense in 1.6.1, and therein reach the conclusion that TM is a genuinely tenseless language. Next I elaborate on the concept of aspect in 1.6.2. I first briefly discuss what the viewpoint aspect concerns, and what the ontological aspect involves. At last, I introduce what the actualisation aspect is about and its difference from the ontological aspect.

### 1.6.1 Tense

Time is one of the basic categories of human experience and cognition, which leads to the fact that natural languages are equipped with a rich repertoire of linguistic means to indicate temporality. It must be kept in mind that time and tense are two different concepts. Time is an existence independent of language and shared by all mankind; it is an extralinguistic category. Tense, conversely, is a linguistic concept; a grammatical category relates to a particular verbal form's specification of the temporal location of a situation. It can be seen as an association of a particular verbal form with a meaning, which defines a situation's temporal location on the timeline. A tense form can be either an inflected main verb or a verb alongside one or more auxiliaries. For example, as *walked* in *I walked the dog* denotes the past tense, meaning the situation referred to is located before speech time; *will walk* in *I will walk the dog* denotes the future tense, meaning the situation referred to is located after speech time. Simply put, tense is the "grammaticalised expression of temporal location" (Comrie, 1985:9).

Every tense indicates a tense structure, a model of a particular way in which a speaker can locate a situation in time. The structure reflects the temporal relation between a TSit (or event time in Reichenbach's (1947) terms) and a known time (or assumed to be known), which is an orientation time (or reference time in Reichenbach's words). The orientation time functions as the origin of a temporal relation. It is usually TU (or speech time according to Reichenbach), but it is not necessarily TU. In *Tim said that Helen had tried a snail*, there are two orientation times. The time of Tim's saying provides the orientation time before which Helen's trying a snail happens. TU provides another orientation time before which Tim's saying takes place.

“A system which relates entities to a reference point is termed a deictic system, and we can therefore say that tense is deictic” (Comrie, 1985:14). Since tense defines temporal relations on the basis of an orientation time, which changes according to the context, tense is deictic and relational. The most straightforward and common deictic centre (or ‘deictic time’ in Huddleston’s (2002) words) in most known languages is the time when the communicative situation takes place, which is ‘now’. However, if specified by the context, the deictic centre can refer to another temporal point or time. Note that, the temporal relation can be expressed by means of either grammatical tools (e.g., English) or lexical tools (e.g., Mandarin), but there is always a deictic centre common to both the speaker and the hearer.

As stated above, tense is a grammatical category, a pairing of morphosyntactic forms and temporal meanings to anchor situations in the timeline. It is not the only way that language can express deictic temporal relations. Mandarin, for instance, is a typical case of a language that resorts to other means, such as adverbials and the context, to temporally anchor situations. It has been reported that Mandarin lacks grammaticalised tools to specify a situation’s position in time and on that view is regarded as tenseless (Binnick, 1991; Klein, 1994; Klein et al., 2000; J.-W. Lin, 2003b, 2006, 2010, 2012; Smith & Erbaugh, 2005; Xiao & McEnery, 2004). This consensus is then challenged by Matthewson’s (2006) analysis of St’át’imcets.

Matthewson proposes that St’át’imcets is superficially tenseless. There is a phonologically null tense morpheme, TENSE, restricting possible reference times to non-future times. In St’át’imcets, all superficially tenseless predicates, irrespective of situation types, can allow either present tense interpretations or past tense interpretations. That said, different situation types have their own preferences for temporal interpretation, if uttered out of the blue. That is, stative predicates, as the example in (11a), strongly prefer present tense readings, and accomplishment predicates, as in (11b), and achievements prefer past tense readings. Activities such as (11c), contrastively, show no strong preference either way.

- (11) a. táyt- kan  
 hungry- 1SG.SUBJ  
 'I was hungry / I am hungry.' (Matthewson, 2006:676)
- b. k'ác- an'- lhkan  
 dry- dir- 1sg.subj  
 'I dried it / I am drying it.' (Matthewson, 2006)
- c. sáy'sez'- lhkan  
 play- 1SG.SUBJ  
 'I played / I am playing.' (Matthewson, 2006:676)

Another feature determining if a sentence is superficially tenseless is that finite sentences, as those in (11), cannot be used to describe future situations. Future tense interpretations are excluded. The addition of future-time temporal adverbials does not license a future reading but contrarily results in ill-formedness, as shown in (12), in contrast to (11a). Overt marking for future-tense interpretations, like *kelh*, is necessary for future interpretations, shown in (13).<sup>6</sup>

- (12) \*táyt- kan *nacw / zánucwem*  
 hungry- 1SG.SUBJ *one.day.away / next.year*  
 'I will be hungry tomorrow / next year.' (Matthewson, 2006:677)

- (13) táyt- kan *kelh*  
 hungry- 1SG.SUBJ *kelh*  
 \*'I was hungry / \*I am hungry / I will be hungry.' (Matthewson, 2006:678)

On her analysis, superficially tenseless languages can be analysed as tensed languages, since tense can be phonologically null (inaudible), yet semantically interpretable. By the same token, Mandarin can be viewed as a tensed language

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<sup>6</sup> Matthewson (2006: 688) argues that the future morpheme *kelh* is the overt spell-out of the morpheme WOLL, since it behaves like *will/would* in English in all aspects.

equipped with a phonologically absent but semantically functioning TENSE, which determines the temporal interpretation of superficially tenseless sentences to the present tense or the past tense, viz. non-future tense interpretation. Crucially, if Mandarin is a superficially tenseless language, it is expected that finite sentences marked by the covert TENSE cannot accept the addition of future-tense indicators (regardless lexical or grammatical) to convey future meanings, as the contrast between (11a) and (12).

To illustrate, consider the example (14a). It is finite and restricted to past and present tense readings. Following Matthewson, future-time expressions such as adverbials (*daoshi* ‘by then’) or modal auxiliaries (*hui* ‘will’) cannot be added to the sentence to convey future meanings. Yet, as (14b) shows, the future expressions *daoshi* ‘by then’ and *hui* ‘will’ can be added in the sentence, which contradicts Matthewson’s analysis for superficially tenseless languages. The examples lead us to the conclusion that Mandarin is not a superficially tenseless language, but a genuinely tenseless language.

- (14) a. women gen meiguo hezuo  
 we with the US cooperate  
 ‘We work with the US/ We worked with the US’
- b. women daoshi / hui gen meiguo hezuo  
 we by then/ will with the US cooperate  
 ‘We will cooperate with the US by then.’

### 1.6.2 Aspect

Aspect has to do with “different ways of viewing the internal temporal constituency of a situation” (Comrie, 1976:3), “the internal temporal structure” (Chung & Timberlake, 1985:202) or “temporal shape of a situation” (Xiao & McEnery, 2004:2). Smith (1997:1) gives a more comprehensive definition: “Aspect is the semantic domain of the temporal structure of situations and their presentation”.

The term 'aspect' originally came from Russian *vid* 'view' (Grech, 1827), referring to the opposition of the perfective and the imperfective in the Slavonic languages, and then was translated into French as 'aspect'. Its origin reflects that the term originally pertains to the viewpoint or perspective that speakers adopt to depict situations. Smith (1997) terms it 'viewpoint aspect'. Later on, the term 'aspect' extends to encompass the ontological nature and the internal temporal structure of situations, which is usually represented by the term *Aktionsart*, introduced by Agrell (1908).

It has been pointed out that *Aktionsart* is an unsatisfactory term in two senses. First, it has to do with only the lexical content of verbs, taking no account of other categories and elements, such as adverbials or arguments contributing to aspectual characteristics of a situation. For instance, *to run fast* differs from *to run a mile* in its temporal characteristics. Second, Agrell coined this term to refer only to the secondary modifications of basic verb meanings realised by overt derivational word-formation devices. This lexicalisation with regard to 'manners of action' can be instantiated by the German verb *blühen* 'to flower'.<sup>7</sup> The affixes *er-* and *ver-* in *erblühen* 'to start flowering' and *verblühen* 'to wither' respectively impart the ingressive and resultative significances to the basic verb, which would be *Aktionsarten* (plural form of *Aktionsart*) in Agrell's sense (Filip, 2011:48; Klein, 1994:16-17).

In the light of the aforesaid, I use the two terms 'viewpoint aspect' and 'ontological aspect' as they are closer to the nature of what they refer to, among various terms that have been used such as grammatical aspect and lexical aspect. In addition to the two parameters, I follow Declerck et al. taking into account the actualisation aspect. Thereby, there are three parameters considered in my framework. In the next three subsections, I will briefly introduce the concepts of the viewpoint aspect, the ontological aspect and the actualisation aspect.

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<sup>7</sup> The term 'manners of action' refers to ontological features of situations, such as terminative, resultative, delimitative, iterative, etc.

### 1.6.2.1 Viewpoint aspect

As the name itself suggests, the viewpoint aspect encodes a temporal perspective of a situation. It is often called 'grammatical aspect', since it is usually expressed by means of grammatical morphemes, viz. suffixes on the verb, auxiliaries or a combination of the two. The basic inventory of the viewpoint aspect subsumes the perfective or the imperfective viewpoints. Perfectivity means presenting a situation in its entirety, whereas imperfectivity means presenting a part of a situation. The contrast can be seen between *il plut* and *il pleuvait* in French and between *it rained* and *it was raining* in English. All of them are presented in the past tense, but in different viewpoints, with *il plut* and *it rained* being perfective, and *il pleuvait* and *it was raining* being imperfective.

Not every language has the dichotomic viewpoint distinction. Some even do not have overt marking for viewpoint contrast, such as Finnish and Icelandic. This indicates that the viewpoint system is not uniform across languages and can be language specific. In a language which has the viewpoint aspect as a category, absence of contrast in individual cases does not necessarily imply the absence of aspectual marking. For example, in Russian, *oč-nu-t'-sja* 'recuperate' allows for perfective only (Gvozdanović, 2012:784).

When making an utterance, the speaker can choose which part of a situation to be in focus. The focus part is special. Smith (1997:62) terms the special status of the focused part 'visibility' and only what is visible is asserted (cf. Klein's (1994) 'topic time'). So, it can be said that the crucial distinction for the viewpoint opposition lies in how much of a situation the speaker makes visible. The perfective viewpoint makes a situation visible as a whole, but the imperfective viewpoint makes visible only the beginning, middle or end. Situations presented perfectly are indivisible, without referring to any part of their inner temporal structure (beginning, middle or end).

Perfectivity sometimes is defined as presenting a 'complete' situation. It is noteworthy that 'complete' is applied to telic situations only.<sup>8</sup> It does not entail that the referred situation is 'completed'. Situations can be presented in their entirety, yet unfinished, as in (15). These two notions (complete vs. completed) will correspond with each other when the referred telic situation is finished at TU and also presented as a whole, as in (16) (see Comrie, 1976:18; Declerck et al., 2006:53).

- (15) a. Here comes the winner! (Declerck et al., 2006:53)  
b. Owen races towards the goal. (Declerck et al., 2006:53)

(16) Helen cleaned the kitchen.

Contrastively, the imperfective viewpoint means only a part of a situation is made visible by the speaker; it can be the situation's beginning, middle or end. The inventory of the imperfective aspect includes various kinds: inchoative, progressive, egressive, iterative, habitual, delimitative and etc. This is not the whole list, but illustrates imperfective viewpoints. Presentation of the beginning of a situation is the inchoative (also called ingressive or inceptive) aspect; the middle section is the progressive or the continuous aspect; and the end section is the egressive (also labelled cessative or terminative) aspect. The iterative (also semelfactive) aspect refers to the repetition of an event on a single occasion. The habitual aspect is similar to the iterative aspect in that it signals the repetition of an event, but, different from the iterative aspect, over more than one occasion and over an extended period of time. Instances of these aspects can be seen in (17).

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<sup>8</sup> An ontological feature of a situation, referring to situations with an inherent or natural final endpoint, as in *Helen walks to school*. The inherent final endpoint is reached when Helen arrives at school.



(17)

Aspect	Language	Example
Inchoative	German	<b>erblühen</b> (Klein, 1994:16)
Egressive	Tümpisa Shoshone	Satü püe nangkawimmaahwa that just talk-egressive 'He just finished talking.' (Dayley, 1989:59)
Progressive	Mandarin	ta <b>zai-</b> wan she progressive play 'She is playing.'
Iterative	West Greenlandic	<b>isattarpaa</b> 's/he slaps him/her on the face repeatedly.' (Trondhjem, 2012:67)
Habitual	West Greenlandic	unnuk- kut sul- <b>sar-</b> poq evening- VIA <sup>9</sup> work- HAB <sup>10</sup> - IND.3SG 'She works in the evening.' (Trondhjem, 2012:69)

In English, only the progressive aspect is qualified as a grammatical category among the aforesaid five imperfective aspects. Generally, English makes use of aspectualisers (aspectual lexical verbs) to express the inchoative, egressive and iterative aspect, such as *start*, *stop*, *repeatedly* etc. The semi-auxiliary *used to* and the auxiliary *would* can be used to convey habituality in the past, as *Tim used to eat an egg in the morning before he had a stroke* or *Tim would eat an egg in the morning before he had a stroke*.

The retrospective aspect, commonly known as the perfect, has been under debate as to whether it belongs to tense or aspect. Traditionally, it is viewed as aspect because situations expressed by the perfect reflect a particular perspective, namely the perspective of the time when a result came to be, or else the relevance of an anterior situation represented by the perfect form is perceptible, as in (18). The

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<sup>9</sup> Vialis.

<sup>10</sup> Habitual.

perfect sentence (18a) suggests something like '*I am not thirsty now*', '*I feel quite refreshed now*'. Such present 'results' are not hinted at by (18b), which therefore does not indicate the retrospective aspect, even though the factual situation described by each example might be the same.

- (18) a. I have had lemonade.  
 b. I had lemonade.

Nevertheless, as Comrie (1976:52) points out that the perfect differs from the other aspects in that it reflects a relation between two time-points: the time of the resultant state caused by a prior situation and the time of the prior situation. Mainly because of this 'relational' temporal relation, some scholars claim that it should be treated as tense rather than aspect.

The temporal relation indicated by the perfect is in fact disputed by Portner (2003). It appears that the sentences in (19) show a correlation between aspectual class and temporal interpretation, with the TSit of the 'event' predicated in (19a) preceding the reference time (viz. TU), whilst the event time of the 'state' predicated in (19b) preceding or overlapping the reference time.<sup>11</sup> The sentence (19a) is labelled the non-continuative perfect and (19b) the continuative perfect.

- (19) a. Mary has read Middlemarch.  
 Reference time  $r$  = speech time (contribution of present tense)  
 Event time  $e < r$
- b. Mary has been upset.  
 Reference time  $r$  = speech time (contribution of present tense)  
 Event time  $e \text{ } O \text{ } r$  or  $e < r$ <sup>12</sup>

(Portner, 2003:481)

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<sup>11</sup> In Portner (2003), situations are divided into two types only: states and events.

<sup>12</sup>  $e \text{ } O \text{ } r$  means  $e$  and  $r$  overlap.

According to Portner, the difference in these two sentences' temporal interpretation directly follows from the distinctness in their aspectual class (event vs. state), and it is not encoded in the perfect. He employs the two non-perfect sentences in (20) to support this claim and to further argue that embedded clauses such as those in (20a,b) are semantically tenseless, and so are interpreted as phrases embedded under the perfect operator. The time of the matrix situation (John's saying) serves as the reference time for the embedded situation (Mary's being upset). The stative embedded clause has the potential for two readings: a shifted reading and a simultaneous reading. The shifted reading means that the embedded situation precedes the matrix situation, and the simultaneous reading means that the two situations overlap. However, when the embedded situation is eventive, it must precede the matrix situation; that is, only the shifted reading is available for (20b). Since the same pattern is also observed in perfect and non-perfect sentences, it is clear that the precedence or simultaneity of the temporal relation is not a part of the perfect's semantic meaning.

- (20) a. John said that Mary was upset. (stative complement)  
 b. John said that Mary read Middlemarch. (eventive complement)  
 (Portner, 2003:481-482)

Portner then makes a proposal on the basis of Ogihara's (1989) tense-deletion operation, to the effect that a past tense may be deleted when it is in the scope of another. Under Ogihara's operation, the simultaneous reading of (20a) arises when the embedded past is deleted; the shifted readings of (20a,b) occurs when the embedded past is not deleted. Portner proposes that no matter when a past tense morpheme is embedded under another, it deletes. On Portner's analysis, in (20b), the 'pastness' related to the time of John's saying in the interpretation of the embedded clause cannot be attributed to the past tense morpheme in that clause.

He suggests that there are more general principles establishing the temporal relation of the perfect sentences in (19) and the non-perfect sentences in (20), which include the temporal sequencing principle (TSP). We let  $||\emptyset||^{r,e}$  indicate that  $\emptyset$  is interpreted

on the basis of a reference time  $r$  and a situation  $e$ , as shown in (21). Following Portner, we can see that the perfect does not encode relational temporal relations, which then signifies that the perfect should not be viewed as tense.<sup>13</sup> I accept his argument and treat the perfect as the retrospective aspect in this study.

(21) **Temporal sequencing principle (TSP)**

For any tenseless clause  $\emptyset$ , reference time  $r$ , and event  $e$ ,

- (i) if  $\emptyset$  is not stative:  $||\emptyset||^{r,e}$  implies that  $e$  precedes  $r$ ; and
- (ii) if  $\emptyset$  is stative:  $||\emptyset||^{r,e}$  implies that  $e$  either precedes or overlaps  $r$ .

Now to the prospective aspect, based on Comrie (1976), which is similar to the retrospective aspect in that it relates to a time of situation, but different in that it refers to some subsequent situation. In English, prospective meaning can be expressed by constructions like *be going to*, *be about to* etc., as in (22a). The situation predicated in (22a) indicates a relation between a present state and a future event, but without any implication of imminent futurity. An important difference between prospective expressions and straight future time reference can be shown by (22a,b). If Tim at the end does not win, (22b) makes the wrong prediction. On the contrary, Tim's not winning does not impose the same effect on (22a). This is due to the fact that the prospective sentence is uttered with regard to present conditions, and there might be other future situations (which happen after the utterance) which prevent Tim's winning.

- (22) a. Tim is going to win.  
b. Tim will win.

In English, although the present perfect (present retrospective) meaning relates TU to a prior situation, it disallows the specification of the time of the past situation, as in (23a). The past adverbial *yesterday* sabotages the well-formedness of this sentence. Asymmetrically, the present perfect meaning allows the specification of future times

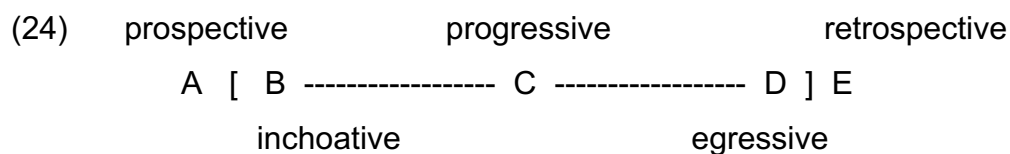
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<sup>13</sup> Please refer to Portner (2003) for more details of his argument.

at which future situations will happen, shown in (23b,c). The English perfect's incompatibility with past time expressions is not shared universally. In Spanish the perfect *me he levantado a las cinco* 'I (have) got up at five o'clock' is a perfect sentence which can allow the past time specification. In some other languages, the past time expression's constraint may not be found (Comrie, 1976:54; Portner, 2003:465).

- (23) a. Tim has watched *Howards End* (\**yesterday*).
- b. I'm going to be a journalist *when I grow up*.
- c. The planet is going to explode *500 years from now*.

To illustrate, I borrow (with some tweaks) Hewson and Bubenik's (1997:14) diagram of the aforementioned aspects, shown in (24). In the diagram, the square brackets symbolise the beginning and the end of a situation. A marks the prospective aspect, preceding the situation proper; B signals the inchoative aspect, with the situation just starting; C marks the progressive aspect, with the situation in progress; D signals the egressive aspect, with the situation just terminated, and E marks the retrospective aspect, following the situation proper. Among the five aspects, the prospective and the retrospective aspects belong to the perfective viewpoint, whereas the inchoative, the progressive and the egressive aspects belong to the imperfective viewpoint.



### 1.6.2.2 Ontological aspect

Before diving into the ontological aspect, there are some concepts to be defined first. 'Situation' is the term that I use to cover all possible kinds of situation types (state, activity, accomplishment, achievement). There are other terms, like 'state of affair' and 'eventuality', that can be seen in the literature. For the following terms, I follow Declerck et al. (2006).

A prototypical clause is a combination of a subject and a predicate, which can be called 'predicate constituent' in order to distinguish it from 'verb phrase'. The predicate constituent contains all the other elements of a clause except for the subject, minimally a VP. A verb's denotation (lexical meaning) is called a 'simple situation-template'. By adding other constituents, minimally a subject, we can create a clause denoting a situation, as in *Tim ran*. A simple situation-template can be transformed into an 'enriched situation-template' with the addition of other constituents, such as complements or adverbials in *run to the school* or *run to the school yesterday*.

The referent of an uttered verb, VP or predicate constituent is called 'abstract situation type', with 'abstract' signalling that there is no reference to an actualising situation. An abstract situation type is a mental construct without any reference to a situation's actualisation. Following this, we can say that *laugh*, *laugh loudly*, *be slim* refer to separate abstract situation types. The denotation of a clause is a situation. The referent of an uttered clause maps on to something that exists in an extralinguistic world (which can be the real world or a nonfactual world), viz. the actualisation of a situation. Note that not every non-finite clause has a referent. This can be illustrated by the infinitive clause in (25a), which lacks a referent, and the participle clause in (25b), which has a referent. The above-stated concepts are encapsulated in (26).

- (25) a. For Tim to say such a thing is impossible.  
b. Climbing Mt. Everest, the Sherpa broke his ribs.

(26)

<b>Linguistic expression</b>	<b>Denotation of the linguistic expression</b>	<b>Referent of the uttered linguistic expressions</b>
Verb e.g., run	Simple situation-template	Abstract situation type
Verb phrase e.g., run to the school	Enriched situation-template	Abstract situation type
Predicate constituent e.g., run to the school yesterday	Further enriched situation-template	Abstract situation type
Clause e.g., Tim ran to the school yesterday.	Situation	Actualisation of the situation

Situation-templates can be put into sets according to whether or not the situations they represent have particular ontological features. The set of features attributed to a situation is a kind of aspect, tantamount to the internal constituency of a situation, or “the internal temporal structure” in Chung & Timberlake’s (1985) sense. In contrast to the viewpoint aspect, which can be language specific, the ontological aspect is independent of language, and also known as ‘lexical aspect’, ‘Aktionsart’ or ‘situation aspect’ in Smith’s (1997) sense. It concerns how the components of a verb phrase determine the intrinsic or inherent features (like (non)staticness, (a)telicity, (non)durativeness etc.) of a situation.<sup>14</sup> ‘Intrinsic’ or ‘inherent’ means that a situation necessarily has the features in question, regardless of the context.

Also, for the inherent characteristics of a situation, the VP must not be marked for the perfective or the imperfective aspect, as the viewpoint aspect may overrule the ontological aspect of the unmarked VP. This can be manifested by the progressive and the non-progressive aspect in English, as in (27). The verb ‘run’ is thought of as dynamic, but the sentence (27a) is interpreted as habitual, referring to a state (which lacks dynamism). This static interpretation results from the use of the non-

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<sup>14</sup> The term ‘(a)telicness’ can also be seen in the literature (e.g., Binnick, 1991).

progressive form of the present tense. Its counterpart sentence (27b) otherwise denotes a dynamic situation, due to the use of the progressive form (Declerck et al., 2006:49).

- (27) a. Tim runs to the school.  
b. Tim is running to the school.

From the illustration of (27), we can see that the ontological aspect interacts with the viewpoint aspect; it also interacts with tense, adverbials, expressions of quantity. The past tense and the past adverbial *last night* in the sentence (28a), compared to (27a), turn the situation (Tim's running to the school) into a one-off event, whereas the present tense renders the same situation a habitual state. Similarly, the indefinite plural form of the NP *book* makes Tim's reading book an atelic (with no inherent final endpoint) situation, whereas the definite single form of the NP turns the situation to telic (with an inherent final endpoint).

- (28) a. Tim ran to the school last night.  
b. Tim reads books.  
c. Tim reads the book.

The ontological aspect of a verb can be exemplified by the verb *run*. When viewed in isolation, it can be represented by the ontological features: [-static], [+agentive], [+homogeneous], [-transitional], [+durative] and [-telic]. Not all lexically relevant aspect meanings are considered ontological; some are just a question of representation. As in the case of *run fast*, the feature [fast movement] is not conceived of as ontological. The inherent characteristics taken into account of the ontological aspect are limited to those that are grammatically relevant. For example, [±dynamic] can help to determine whether a verb phrase can be marked progressive and [±telic] can help to determine the use of temporal adverbials.



### 1.6.2.3 Actualisation aspect

The definition of telicity has been a controversial issue in the study of aspect. Depraetere (1995), for instance, contends that (a)telicity should be separated from (non)boundedness at the conceptual level, with the former referring to if a situation has an inherent/intended final endpoint and the latter to if a situation is described as having reached a final endpoint, regardless it is a *telos* or an arbitrary terminus. In addition to that, Declerck et al. treat the distinction as linguistic realisations at different grammatical ranks. That is, the viewpoint aspect is realised by verb morphology, the ontological aspect by a VP and the actualisation aspect by a clause or sentence.

However, separating (a)telicity from (non)boundedness in terms of grammatical ranks may be applicable to TM, since (non)boundedness can be determined by a VP. The secondary predicates of resultative verb constructions (RVCs) in TM can denote the (non)boundedness of a situation-template. Consider the three VPs, *he yi-bei shui* 'drink a glass of water', *he-wan* 'drink-finish' and *he-wan yi-bei shui* 'drink-finish a-glass water'. The first VP conveys a telic situation-template because the object NP is quantitatively delimited, but the actualisational information is underspecified. The second VP *he-wan* 'drink-finish', contrastively, clearly specifies the completion by means of the second predicate *wan* 'finish'. It lacks an object NP conducive to offering the quantitative information or offering other clues relating to (a)telicity. Although superficially its (a)telicity is underspecified, the lexical meaning of the second predicate clearly denotes the notion of completeness, which implies that the VP is telic. The third VP *he-wan yi-bei shui* 'drink-finish a-glass water' has a quantitative delimited object NP. Its telicity is explicitly conveyed by the object NP and boundedness by the secondary predicate.

The second and the third VPs show that the actualisation aspect can be evaluated at VP level in TM. The contrast between the two VPs also indicates that in this language telicity can be implied by boundedness. Since in TM the actualisation aspect can be determined at a lower level than clause/sentence, I will not adopt the idea that seeing aspect parameters as realisations at different grammatical ranks

proposed by Declerck et al. and Declerck (2007). I will stick to Depraetere's conceptual definitions of (a)telicity and (non)boundedness.

Following Depraetere, (a)telicity labels the inherent/intended temporal boundary of a situation, and (non)boundedness captures the actual temporal boundary of a situation. These two semantic features concern the absence or presence of a final endpoint. In other words, the presence of a final endpoint at the ontological level defines a situation as telic or closed (in Smith's sense), otherwise as atelic or open. Similarly, the presence of a final endpoint at the actualisational level determines a situation as bounded or closed, otherwise as nonbounded or open. A situation is labelled [+bounded] if a situation is described as having reached a terminus, including a telic point or an arbitrary terminal point. A twofold distinction can thus be made below:

(29)

<b>Telic situation</b>	<b>Atelic situation</b>
Bounded	Bounded
Nonbounded	Nonbounded

Telic situations refer to situations that have an inherent/intended terminal point, and atelic situations do not. It can be seen from (29) that the actualisation aspect is independent to (a)telicity. Telic situations do not guarantee the realisation of the final endpoints; it can be represented as not yet reaching the final endpoints, and in such case, nonbounded. Also, they can be presented as terminated prior to or at the telos. If so, they are bounded. Contrastively, atelic situations can be represented as reaching a terminal point (not a point of completion, because atelic situation do not have such points), which is labelled [+bounded]. In case they are not presented as terminated, they are labelled as nonbounded. Exemplary sentences can be found in (30).

- |      |    |                                    |                      |
|------|----|------------------------------------|----------------------|
| (30) | a. | Helen read the book.               | (telic, bounded)     |
|      | b. | Helen was reading the book.        | (telic, nonbounded)  |
|      | c. | Helen lived in Belfast for a year. | ((a)telic, bounded)  |
|      | d. | Helen has been living in Belfast.  | (atelic, bounded)    |
|      | e. | Helen lives in Belfast.            | (atelic, nonbounded) |

The sentences (30a,b) are telic, as the measure phrase *the book* functions as a telicising constituent. The use of the past tense and the non-progressive form renders (30a) bounded, as Helen's reading the book is described as finishing reading the book. The use of the progressive form in (30b) indicates that Helen did not finish reading the book nor Helen's reading the book was terminated, thus nonbounded. The sentences (30d,e) are atelic, and (30e) is nonbounded since Helen's living in Belfast continues and there is no termination represented. The other two sentences (30c,d) are bounded, with (30c) having a bounding phrase *for a year*, and (30d) expressed by the present perfect.<sup>15</sup> The example (30c) is ambiguous in terms of (a)telicity. It depends on if the measure phrase *for a year* is pre-determined or not. If it is decided in advance, it is telic; if not, atelic. It can be generalised that there are three ways to represent situations as bounded: 1) the use of the non-progressive form alongside the use of the past tense, 2) the use of the present perfect and 3) the use of bounding constituents.

Similar to (a)telicity, (non)boundedness can be affected by the use of the progressive. Note that the use of the non-progressive form and the progressive form is not tantamount to the opposition of boundedness and nonboundedness. In (29b), the use of the progressive form results in a nonbounded situation, but this cannot be applied to the progressive sentence (29d), because the effect the present perfect exerts overrides the nonboundedness established by the progressive; (29d) is bounded.

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<sup>15</sup> The present perfect refers to a situation that starts in the past and leads up to speech time, and thus indicates a terminal point at speech time.

Again, comparable to (a)telicity, (non)boundedness can be altered by NPs and directional PPs. As shown by (31a,b), if an NP can telicise a situation of a sentence, and if the sentence is expressed with a non-progressive form, then the situation of the sentence will be bounded, (31b). The directional PP can bring about the same effect. Given that the non-progressive form is used, if a directional PP can telicise a proposition of a sentence, then the situation is bounded, as in (31c,d). The use of the progressive form can turn a proposition into a nonbounded one, regardless the existence of the directional PP, as in (31e).

- |      |   |                      |
|------|---|----------------------|
| (31) | a. Tim drew circles.                        | (atelic, nonbounded) |
|      | b. Tim drew two circles.                    | (telic, bounded)     |
|      | c. Tim pushed the box.                      | (atelic, nonbounded) |
|      | d. Tim pushed the box into the garage.      | (telic, bounded)     |
|      | e. Tim was pushing the box into the garage. | (telic, nonbounded)  |

## 1.7 Thesis outline

This thesis is structured as follows. Chapter 2 is devoted to a critical review of two aspect theories followed by two syntactic accounts for the *ba*-construction in Mandarin. In the first part, I evaluate the two frameworks of aspect developed by Smith (1997) and Klein (1994), and also their accounts for the aspect system of Mandarin. In the second part, I review two syntactic accounts for the *ba*-construction put forward by Sybesma (1999) and C.-T. J. Huang et al. (2009). At the end of this chapter, I propose my own syntactic structure for the construction on the basis of TM data.

Chapter 3 introduces my analysis of the aspect system in TM in terms of the three-dimension model containing the viewpoint aspect, the ontological aspect and the actualisation aspect. I first discuss the viewpoint aspect including the dichotomous perfective and imperfective opposition. Afterwards, I focus on the ontological aspect and discuss how a situation-template is conceptualised in TM. Finally, I demonstrate that the actualisation aspect can be evaluated at VP level, and how it affects

temporal interpretation in sentences that do not accommodate expressions relating TT to TU.

Chapter 4 conducts an aspectual analysis on the *ba*-construction in TM according to the aspect system I proposed in chapter 3. In this section I address some issues that have drawn much interest but not yet been properly accounted for. I discuss how definiteness of the *ba*-NP interacts with the aspect of this construction and the (non)delimitedness of the predicate. On top of these, I give an account for the VCC and show how aspect determines the temporal interpretation of *ba*-sentences.

In the end, chapter 5 summarises the main arguments and findings of this study, giving an outlook on further research.

## Chapter 2

### Previous approaches to Mandarin aspect and the *ba*-construction

This chapter has two parts, with the first part introducing and reviewing two aspect theories of Mandarin proposed by Smith (1997) and Klein et al. (2000) and the second part introducing and reviewing two theories as to the syntax of the *ba*-construction, put forward by Sybesma (1999) and C.-T. J. Huang et al. (2009). The term ‘delimited’ is used as an umbrella term for telic and bounded.

#### 2.1 Aspect in Mandarin

Languages can broadly be classified into two types: tense languages and aspect languages. A language is seen as a tense language if it specifies the temporal location of a situation by means of grammatical tools; otherwise, a language is treated as an aspect language if it represents by virtue of grammatical means the viewpoint of depicting a situation or the internal temporal structure of a situation. Of all the languages in the world, aspect is more commonly found than tense, viz. many languages lack tense, but very few, if any, languages have no aspect (Lyons, 1977: 705).

It is widely acknowledged that Mandarin lacks an absolute tense system and has traditionally been viewed as a tenseless language (Binnick, 1991; Kang, 1999; Klein et al., 2000; Smith, 1997; Smith & Erbaugh, 2005). To anchor a situation in time, Mandarin resorts to lexical resources (e.g., adverbials), discourse anaphora or aspectual information. Meanwhile, Mandarin is identified as an aspect language (Norman, 1988; Xiao & McEnery, 2004), and its aspect system has been much studied in the literature, compared to other tenseless languages. Most efforts have been devoted to the four aspect markers: *zai*, *zhe*, *guo*, *le*. The precise aspectual functions of these four markers are still under debate, but in general, it is believed that *zai* and *zhe* are imperfective markers, and *guo* and *le* are perfective markers. In

the following, I will introduce two approaches to the aspect system of Mandarin: Smith's approach and the approach of Klein et al.

### 2.1.1 Smith's theory

On the whole, Smith (1997) resorts to the temporal boundary of situations to define the viewpoint aspect. The perfective viewpoint includes both the initial and final endpoints, and thereby is referred to as 'closed'; contrarily, imperfective situations have no endpoints included, and are thus 'open'. There are three points of her analysis of the aspect system of Mandarin. First, she suggests that there is neutral viewpoint in Mandarin's aspect system, other than the dichotomous opposition, perfective vs. imperfective. Second, she posits a null imperfective morpheme  $\emptyset$ , in addition to the two well-known imperfective markers *zai* and *zhe*. Third, she observes that completion and termination are two distinct concepts in Mandarin, and this contrast is reflected linguistically.

Smith identifies four ways to convey perfectivity in Mandarin: by means of the two perfective markers *le* and *guo*, and of two constructions resultative verb constructions (RVCs) and tentative reduplications (V-(*yi*)-V). The two perfective markers *le* and *guo* are terminative, rather than completive. RVCs can denote termination or completion, which, specifically, is contributed by the secondary predicates' semantic connotations. For example, *chi-wan* 'eat-finish' conveys completion, determined by the secondary predicate *wan* 'finish', and *chang-guo* 'have sung' expresses termination, determined by the phasal complement *guo* (hereafter *guo<sub>c</sub>*). Note that Smith specifies that the perfective marker *guo* and the phasal complement *guo<sub>c</sub>* have a difference in tone, with the perfective *guo* being toneless and complement *guo<sub>c</sub>* having the 4<sup>th</sup> tone. I shall point out that this tonal distinction does not exist in TM.

The tentative reduplication is termed tentative aspect in Chao (1968). Smith characterises situations referred to by tentative reduplications as having short duration and of little importance, as in (32). It presents a situation as closed; thereby it conveys perfectivity.

- (32) wo guang- (yi)- guang  
 I roam- (one)- roam  
 'I will roam around.'

The schematic diagrams of *le* and *guo* are given in (33). Both include the initial and final endpoint. According to the diagrams, their difference lies in that *guo* has a longer visible interval than *le*, with *guo* extending its visible interval to F+1, the post-final change of state. In terms of semantics, *guo* displays the notion of discontinuity, yet *le* does not. This can be illustrated by (34a,b); the two sentences are the same except for the use of perfective markers. The use of *le* in (34a) “has special current relevance with respect to some particular situation” (C. N. Li & Thompson, 1981:240), so it implies something like ‘my leg is still in a cast’. By contrast, *guo* requires the discontinuity between the prior situation and the present.

- (33) a. Temporal schema for the *le* Perfective  
 I F/E<sup>16</sup>  
 //////////////// (Smith, 1997:266)

- b. Temporal schema for the *guo* Perfective  
 I....F/E F+1  
 ////////////////////// (Smith, 1997: 269)

- (34) a. Wo shuai-duan- le tui  
 I break- LE leg  
 'I broke my leg.' (it's still in a cast) (Smith, 1997:267)

- b. Wo shuai-duan- guo tui  
 I break- GUO leg  
 'I broke my leg.' (it has healed since) (Smith, 1997:267)

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<sup>16</sup> I: initial endpoint, F: final endpoint, E: single-stage event



Moreover, Smith claims that the perfective marker *le* cannot appear in sentences referring to stative situations, as such situations do not have final endpoints. Because of *le*'s incompatibility with statives, she suggests two kinds of shifted interpretations under the circumstances. The first kind is triggered by stative verbs, as in (35a). Although *bing* 'sick' is stative, its combination with *le* activates a shifted dynamic reading: inchoatively presenting the coming about of a state.

The second kind is triggered by adverbials which indicate the final endpoint of a situation, as *liang-ge-yue* 'two months' in (35b). The adverbial triggers a shift in the aspectual class of the situation referred to by the sentence, from stative to dynamic, as the adverbial imparts a closure to the situation. However, *guo* has a contrastive distribution in that it can appear with stative constellations. There is no shift of any kind in the case of *guo*'s combination with stative constellations.

- (35) a. Wo   bing-   le  
       I     sick-   LE  
       'I have been sick.'<sup>17</sup> (Smith, 1997:265)
- b. Wo   zai   nali   zhu-   le   liang-   ge   yue  
       I     at   there   live-   LE   two-   CLF   month  
       'I lived there for two months.' (Smith, 1997:265)
- c. Wangping   qian-   guo   wo   yi-   bi   zhang  
       Wangping   owe-   GUO   I     one-   CLF   debt  
       'Wangping has owed me a debt (and no longer does).' (Smith, 1997:268)

Smith's analysis of the two perfective markers is problematic in three respects. First, she claims that perfectivity in Mandarin includes both initial alongside final endpoints and can be used in closed situations only. To satisfy this definition, she denies the co-occurrence of *le* and stative constellations (because stative situations lack final endpoints) by suggesting two types of obligatory shifted interpretations, turning

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<sup>17</sup> Some English translations of Smith's examples may be different.

stative interpretation into dynamic interpretation. The perfective *guo*, however, does not have to meet the definition. Smith accepts *guo*'s co-occurrence with stative constellations, but without explanation for the perfective marker *guo*'s compatibility with states.

Second, Smith claims that situations expressed by the perfective aspect must be closed, viz. temporally delimited. This entails that the interval marked by *le* and *guo* must be delimited, in the way that the final endpoint must be included. The schemata in (33) seemingly show that both *le* and *guo* meet the definition by including the final endpoint of a situation proper. Yet, with a closer scrutiny, *guo*'s schema does not really present a delimited interval. The interval is actually open because it includes the post-final change of state F+1, which does not have a final endpoint in nature. To really meet the delimitedness requirement, the schema of *guo* must include the final endpoint of F+1, rather than that of the situation prior to F+1.

Finally, Smith suggests two obligatory shifted interpretations when *le* combines with stative constellations. Accordingly, (35a,b) have dynamic readings, with (35a) expressing inchoative meaning, and no specification of what shift (35b) undergoes. As a matter of fact, these two sentences do not refer to dynamic situations as Smith claims; (35a) does not have an inchoative connotation and (35b) still refers to a stative interpretation. Smith's claim related to shifted interpretation does not hold.

Concerning the imperfective aspect, Smith distinguishes three types: unmarked imperfective, resultative imperfective and preliminary imperfective. Their schemata are illustrated in (36). The schema in (36a) refers to the progressive. The resultative imperfective (36b) "presents a state that follows the final endpoint of a telic event" (Smith, 1997:76), which characterises the continuous marker *zhe* in Mandarin. The preliminary imperfective (36c) reflects the co-occurrence of achievement and the progressive in English.

- (36) a. Unmarked imperfective: I.....//////////.....F  
 b. Resultative imperfective: I.....F//////////  
 c. Preliminary imperfective: //////////I.....F

(Smith, 1991:111,116,225)<sup>18</sup>

For the two imperfective markers, *zai* and *zhe*, Smith proposes the two schemata respectively in (37). *Zai* focuses on the dynamic stages of a situation, while *zhe* has a static and stative focus. It is reported by Smith that *zai* often co-occurs with the morpheme *zheng*, and the sentence particle *ne*. In TM, it is true that it often co-occurs with *zheng*, but not *ne*. The progressive *zai* is similar to the progressive form in English in that it does not include both endpoints. However, in English, achievement verb constellations can be expressed by the progressive, but such a combination is not allowed in Mandarin, as in (38). In other words, there is no grammatical marking for the preliminary imperfective in Mandarin. When *zai* is used to present semelfactive situations, a shifted interpretation arises: a single-event semelfactive will turn into a multi-event semelfactive situation, viz. an activity.<sup>19</sup> The example in (39) denotes a coughing activity: Helen is not coughing just once, but several times. The restriction against the appearance in achievements and the semelfactive shift indicate that the progressive *zai* in Mandarin can be used to refer to durative situations only.

<sup>18</sup> As referred to in Xiao & McEnery (2004:29).

<sup>19</sup> I follow Comrie (1976:42), using the term 'semelfactive' to refer to a situation that occurs only once, (e.g., one cough), so it is instantaneous and telic. I will specify if the semelfactive situation repeats (e.g., a series of coughs), using terms like iterative, repeating etc.

- (37) a. Temporal schema for the progressive *zai*  
 I.....F  
 //// [+Stage] (Smith, 1997:272)
- b. Temporal schema for the stative *zhe*  
 I/E.....  
 ////<sub>Stat</sub>  
 a'. *Zhe*[S] presents a moment or interval of a situation S that includes  
 neither endpoint, and does not precede *I/E*.  
 b'. Intervals focused by *zhe* have the [+Static] property.  
 (Smith, 1997:276)

- (38) a. Tim is dying.
- b. \*Hailun zai- si  
 Helen ZAI- die  
 'Helen is dying.'

- (39) Hailun zai- ke-sou  
 Helen ZAI- cough  
 'Helen is coughing.'

Similar to the progressive *zai*, *zhe* does not include both endpoints, and it imparts staticness to situations it refers to, rendering them stative situations. Smith suggests three usages of *zhe*: the basic, resultative stative and extended usage. The first kind refers to position or posture, and the second kind to the stative situation resulting from a previous telic situation. Moreover, the extended use presents the internal stages of situations in a static manner, and they are temporally delimited. Examples of these usages are given in (40). Smith also suggests that there is an internal/external contrast between (40b,c). If the visible interval is prior to the initial endpoint or beyond the final endpoint, it is external; if it is between the two endpoints, it is internal. Following this, *zhe* in (40b) focuses on the external interval

of the situation, writing four characters; *zhe* in (40c) otherwise focuses on the internal interval of the situations, loving and relying on each other.

- (40) a. Ta zai chuang shang tang- zhe  
he at bed on lie- ZHE  
'He is lying on the bed.' (Smith, 1997:273)
- b. Men- shang xie- zhe si- ge zi  
door- top write- ZHE four- CLF character  
'Four characters are written on the door.' (Smith, 1997:273)
- c. Women bici shen- ai- zhe, bici yilai- zhe  
we each other deep- love- ZHE e.o. rely- ZHE  
'We deeply loved each other, and relied on each other.'  
(Smith, 1997:273)

Smith's analysis of *zhe* is arguable for three reasons. First, it is not clear what necessitates the demarcation between the basic and extended usages, since a wide range of types of verb constellations can co-occur with *zhe*, including dynamic, stative, action constellations, etc. Second, the resultative imperfective cannot properly account for or predict the case of *zhe* in the sentence (41), although it is of the same usage with (40b). The verb *liu* 'flow' does not refer to a telic event of any kind happening prior to the situation referred to by this sentence.

- (41) Ni sheng- shang liu- zhe wode xie  
you body- upon flow- ZHE my blood  
'My blood flows in your body.'

Third, her reference to both endpoints seems ambiguous in the way that sometimes they are the endpoints of the presented situation denoted by a sentence, and sometimes they are the endpoints of a different situation (the situation prior to or posterior to the presented situation). The former can be seen in (33a,b), (36a) and

(37a), while the latter can be seen in (36b,c). To be consistent in her definitions of endpoints, the endpoints must refer to those of the presented situation for all viewpoints. For example, the initial endpoint of the resultative imperfective situation in (40b) should be the time-point that the four characters' beginning to appear on the door, and the final endpoint should be the time-point that the four characters are removed from the door. The initial endpoint of the preliminary imperfective sentence (38a) *Tim is dying* should be the time-point when Tim starts to enter the state of dying, and the final endpoint should be the time-point when the state of dying ends, for example, when Tim dies.

In addition to *zhe* and *zai*, Smith suggests that there is the null imperfective ( $\emptyset$ ) in Mandarin, and its schema is shown in (42) and examples in (43). This imperfective can be applied to stative constellations only.

(42) Temporal schema of the  $\emptyset$  imperfective

.....

////

$\emptyset$ [S] presents a moment or interval of a stative situation S. (Smith, 1997:277)

(43) a. Ta xihuan wo  
 he like I  
 'He likes me.'

b. Ama hen kaixin  
 grandma very happy  
 'Grandma is very happy.'

On top of the common viewpoint opposition (perfective vs. imperfective), Smith claims that there is neutral viewpoint in Mandarin. Situations expressed by this viewpoint are open informationally, meaning that they can be interpreted as both open and closed. In other words, they are "neither perfective nor imperfective" (Smith, 1997:278). The example that she offers can be seen in (44). Smith specifies

that the receiver 'may' plausibly ask questions like *Is he still repairing it?* or *Did he finish it?*

- (44) Zhangsan xiuli yi- tai luyinji  
Zhangsan repair one- CLF recorder  
'Zhangsan repaired/is repairing a tape recorder.' (Smith, 1997:277)

Again, this proposal is arguable for three reasons. First, it is pointed out by de Swart (1998) that the 'neutral/zero' aspect may be necessary for languages that have no visible effect of the viewpoint aspect. Since Mandarin is a language that has multiple overt viewpoint markers and various constructions to indicate the viewpoint of a presented situation, there is no need to resort to this approach. Second, grammatical means are not the only way to express the viewpoint aspect in Mandarin. There are other ways such as aspectualisers, RVCs and pragmatic means to impart a viewpoint to a sentence. Smith points out that in Mandarin sentences lacking grammatically overt viewpoint marking can acquire their viewpoint information from the context (1997:280).

Third, the neutral viewpoint approach in Mandarin is contradictory to one of Smith's two-component theory requirements. She suggests that "The two-component theory requires that all sentences have a viewpoint, since situation type information is not visible without one" (Smith, 1997:62), and "...viewpoints are necessary to make visible the situation talked about in a sentence" (Smith, 1997:61). Therefore, it is clear that every sentence must have a specific viewpoint.

It is true that the sentence (44) in isolation is underspecified regarding its viewpoint aspect, but it can still receive a viewpoint aspect from the context. For example, the sentence (44) in the context of (45) is imperfective, and it is the only viewpoint that it has. It is not 'informationally open' to both imperfective and perfective as Smith expects. Xiao & McEnery (2004:236-240) also disagree with Smith's neutral viewpoint proposal for Mandarin.

- (45) Zhangsan xiuli yi- tai luyinji, xiu chao jiu, wonatai  
 Zhangsan repair one- CLF recorder repair super long my recorder  
 dao xianzai haimei xiu wan  
 until now not yet repair finish  
 ‘Zhangsan spends extremely long time repairing a recorder, and until now  
 he has not finished the repair of my recorder.’

### 2.1.2 Klein’s theory

Klein (1994) defines both tense and aspect according to temporal relationships, namely ‘prior to’, ‘posterior to’, or ‘contained in’, in relation to temporal intervals. Other than ‘time of utterance’ (TU), two time spans are distinguished. First, the time span at which the situation obtains is ‘time of situation’ (TSit). Second, the time span about which something is said is ‘topic time’ (TT). Accordingly, tense expresses the temporal relation between TT and TU, whereas aspect expresses the temporal relation between TT and TSit. The past tense means that TT precedes TU; the present tense means that TT contains TU; the future tense means that TT follows TU.

With regard to aspect, two kinds of relations are concerned between TT and TSit: inclusion and linear sequence. In terms of inclusion, if TT is a sub-interval of TSit, it denotes imperfectivity. Contrarily, if TSit is contained in TT, it denotes perfectivity. In terms of linear sequence, if TT follows TSit, it indicates the perfect aspect; if TT precedes TSit, it indicates the prospective aspect. All the tense and aspect relations are encapsulated in (46).

(46)

Tense	
Past tense	TT precedes TU
Present tense	TT contains TU
Future tense	TU precedes TT



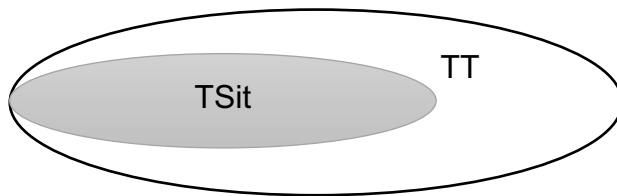
<b>Aspect</b>	
Inclusion	Linear sequence
Imperfective TSit contains TT	Retrospective (the perfect) TSit precedes TT
Perfective TT contains TSit	Prospective TT precedes TSit

The specific points of Klein's theory lie in three respects. First, he provides a unified account for both tense and aspect by means of defining the temporal relationships among TT, TSit and TU. Second, he specifically separates TT from TSit, viz. the assertion from the situation proper, whereby he clearly characterises the contrast between perfectivity and imperfectivity. Although the concept of TT equals to Smith's 'visible part' of a situation, Smith does not further demarcate TT from TSit. Third, Klein's relational approach to aspect clearly includes the retrospective aspect (the perfect) and the prospective aspect into the domain of aspect, instead of tense, by clarifying the fact that these two aspects capture the relation between TT and TSit, rather than TT and TU.

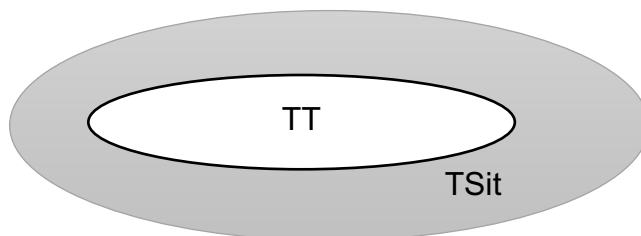
Gvozdanović's diagrams (2012:790) can be used to illustrate Klein's definitions of perfectivity and imperfectivity, shown in (47). TT is represented by the white ellipse and TSit is represented by the grey ellipse. It is obvious that the perfective aspect is conceptualised as a set-subset relation between TT and TSit (the scope of TT is bigger than that of TSit), whereas the imperfective aspect is conceptualised as a set subset relation between TSit and TT (the scope of TSit is bigger than that of TT). It is noted in Klein et al. (2000) that this approach is aimed to capture the intuition behind the traditional definitions of aspect, such as 'viewed as a whole', 'presented in its entirety' or 'reference to inner constituency', and to avoid the metaphorical characterisations of the traditional definitions of aspect. I agree that the relational approach to the viewpoint aspect further captures the relation between temporal intervals (TT and TSit) and thus gives a more concrete picture of the dichotomous opposition, perfectivity and imperfectivity. This approach is still metaphorical by the

containment or precedence conceptualisation of temporal intervals. It is, however, unavoidable, since our understanding of time is essentially metaphorical.

(47) Perfective



Imperfective



Languages vary in how they grammaticalise particular aspects; namely the relations between TT and TSit in Klein's sense. In addition, languages also vary in how temporal characteristics of situations are encoded in lexical contents (the term 'lexical contents' can be applied to all kinds of expressions, including words, phrases, clauses and sentences, here, it is restricted to simplex and complex verbs). These two dimensions' interaction yields the aspectual system of a language. The notion of distinguished phase (DP) in Klein et al. (2000) is added to characterise the second dimension, specifically, to indicate whether the source phase or the target phase is selected as DP.

The DP is a) the only phase of 1-phase contents, and b) either the source or target phase of 2-phase contents. In English, it is the source phase that is selected as the DP, whilst in Mandarin, it is the target phase that is chosen as the DP. TT concerns DP. The temporal relations between TT and TSit thus can be represented by T-DP (time of DP), pretime of T-DP and posttime of T-DP. Following this, viewpoint aspects can be understood as:

- (48) a. Imperfective: TT IN T-DP  
 b. Perfective: TT OVL T-DP and POSTTIME of T-DP  
 c. Perfect: TT AFTER T-DP (Klein et al. 2000:751)

Under the DP approach, the four aspect markers in Mandarin, *le*, *guo*, *zai* and *zhe*, are analysed as (49). Note that the DP in Mandarin is the target phase. There are two particularities of Klein et al.'s analysis in comparison to previous analysis: a) *le* is a perfective marker, but perfectivity in Mandarin differs from that in English ((48b) and (49a)), and b) *guo* is a perfect marker, rather than an experiential perfective marker.

- (49) a. *le* TT OVL PRETIME T-DP and T-DP  
 b. *guo* TT AFTER T-DP =retrospective aspect (the perfect)  
 c. *zai* TT IN T-DP =progressive aspect  
 d. *zhe* TT IN T-DP =progressive aspect  
 (Klein et al., 2000:754)

Examples and the schemata of each marker are shown below, with ----- indicating the source phase, +++++ indicating the DP and [ ] the assertion time TT. The illustration of *le* in (50) shows that TT includes some pretime of T-DP, and it does not necessarily include the telic point of a situation. In other words, the occurrence of *le* does not guarantee the realisation of the telic point, as the contrast between (50a) and (50b,c) shows.

- (50) a. Hailun kan- le dianying, dan mei kan- wan  
 Helen watch- LE movie but not watch- finish  
 'Helen watched the movie, but she did not finish it.'<sup>20</sup>  
 [ ++++++]+++++

<sup>20</sup> Note that the English translation is odd.

b. Hailun pang- le  
 Helen fat- LE  
 'Helen became fat.'  
 [ ++++++++]

c. Hailun kan- wan- le dianying  
 Helen watch- finish- LE movie  
 'Helen finished watching the movie.'  
 -----[-----+++++++]

The second aspect marker *guo* is treated as the English perfect in the theory of Klein et al. An exemplary sentence and its schema are shown in (51). The other two imperfective marker *zai* and *zhe* are treated as the English progressive in their approach, their example and schemata can be seen in (51b,c).

(51) a. Hailun qu- guo budan  
 Helen go- GUO Bhutan  
 'Helen has been to Bhutan.'  
 -----+++++++ [ ]

b. Hailun zai- xiang shiqing  
 Helen ZAI- think matter  
 'Helen is thinking about something.'  
 +++++[++++]+++++

c. Hailun xiang- zhe shiqing  
 Helen think- ZHE matter  
 'Helen is thinking about something.'  
 +++++[++++]+++++

There are three problems regarding the analysis put forward by Klein et al. First, their schemata cannot reflect the difference in (a)telicity of a situation. Regardless

the aspect marker *le* in (50b,c), the predicate *pang* 'become fat' in (50b) is atelic and *kan-wan dianying* 'watch-finish movie' in (50c) is telic. The schemata of these two sentences do illustrate the contrast in what type of content (1-phase or 2-phase) they belong to, by showing if there is a source phase in a situation or not, but do not reflect the contrast in the (a)telicity of these two situations.

Moreover, the schema of (50b) indicates that the situation of Helen's becoming fat is 'completed', since the TT includes the entire T-DP, as the telic situation (50c). Note that the term 'completed' can only be applied to situations having a telos. In the case of (50b), the 'completion flavour' can only come from the aspect marker *le*, since 1) the verb *pang* 'become fat' is atelic, and 2) there are no more other elements in the predicate of (50b) denoting completion. Viewing (50b) as a completed situation means that *le* is treated as a completion indicator. This does not hold, since the situation described by (50b) does not convey the completion of Helen's becoming fat.<sup>21</sup> The sentence in isolation only means that, up to the TU, the speaker finds that Helen has become fatter than before. It does not say anything more than that, so we have no idea if Helen continues to gain weight after the TU.

Third, the DP-approach cannot apply to situations expressed by more than one aspect, such as the combination of the retrospective aspect (the perfect) and the imperfective (the progressive) aspect. Their definitions and schemata of the perfect, the progressive and the perfective are listed in (52). In English, the perfect can co-occur with the progressive form in a sentence, as in (53). According to the definitions offered by Klein et al., the TT of the situation described by (53) must be included in T-DP because of the use of the progressive form according to (52b), and the TT must be after the T-DP due to the use of the perfect according to (52a). As a result, the scope of the TT of *Tim has been eating* equals to the definition of the perfective aspect in (52c), despite the fact that this sentence is not expressed by the perfective aspect.

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<sup>21</sup> I have asked several native speakers of Taiwanese Mandarin if they feel that Helen's becoming fat is completed, and they do not think that the sentence has such an implication. I agree with them.

(52)	a.	Perfect	1-phase/2-phase	+++++[ ]	TT AFTER T-DP
	b.	Imperfective	1-phase/2-phase	+++[[+++]]+++	TT IN T-DP
	c.	Perfective	1-phase/2-phase	[+++++ ]	TT OVL T-DP and POSTTIME of T-DP

(53) Tim has been eating.

## 2.2 The syntax of the *ba*-construction

In this section, I will briefly review two influential syntactic analyses, Sybesma (1999) and C.-T. J. Huang et al. (2009), of the *ba*-construction. I will present the strengths and weaknesses of the two approaches in terms of TM data and offer my own proposed structure at the end of this section.

There have been various proposals relating to what *ba* is. Hashimoto (1971) suggests that it is a lexical verb, which does not hold due to the fact *ba* lacks lexical verbal properties. Chao (1968) proposes that it is a preposition and Goodall (1987) proposes that it is a dummy Case assigner. These two proposals follow that the *ba*-NP can form a constituent with *ba*, but not with the VP.<sup>22</sup> This contradicts with the fact that the *ba*-NP can form a constituent with the VP, rather than *ba*. The contradiction thus rules out the preposition and the dummy Case assigner proposals. Presuming that every *ba*-sentence has a non-*ba*-counterpart, Sybesma (1999) suggests that it is the realisation of the CAUS head of CAUSP and semantically dummy. In this connection, *ba*-sentences mean exactly the same as their non-*ba*-counterparts. Different from the aforesaid three approaches, Sybesma's can correctly predict the fact that the *ba*-NP can form a constituent with the VP, not with *ba*.

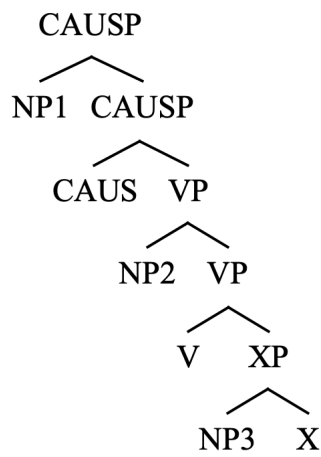
On Sybesma's theory, all *ba*-sentences are accomplishments and underlyingly causatives; thereby, they share the structure (54). The central claim lies in that the head of CAUSP must be phonologically realised, and it can be done in two ways:

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<sup>22</sup> I follow Y.-H. A. Li (2006), using the term '*ba*-NP' to refer to the NP following *ba*.

either *ba* is inserted, or the embedded (complex) V moves into the position CAUS. The former derives *ba*-sentences and the latter non-*ba*-counterparts. *Ba* is a dummy, so its insertion imposes no semantic influence. Note that the term ‘accomplishment’ here has a simpler meaning. It is used in Hoekstra’s sense (1990a, 1990b): a situation has an initiator point and a telos. Another commonly seen semantic property — duration — is not factored in.

(54)

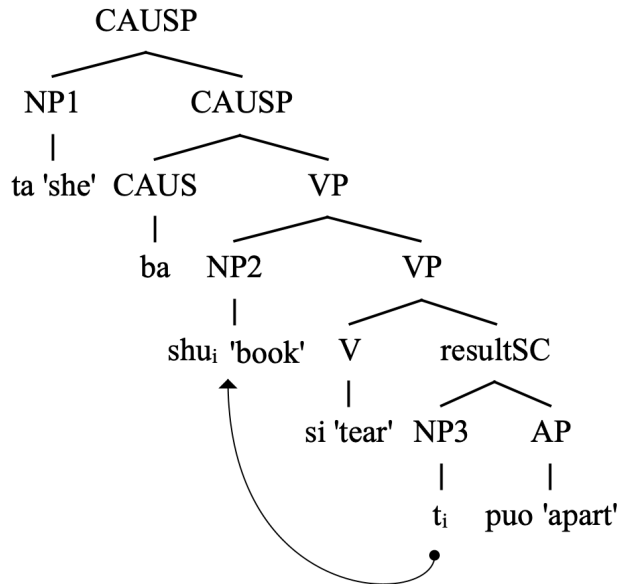


(Sybesma, 1999:165)

The XP in (54) is the complement of the matrix verb, and the complement is a resultative small clause. The sentences in (55a,b) illustrate how the *ba*-sentence and its non-*ba*-counterpart share the structure (54). (55a’) shows that the CAUS is realised by the *ba*-insertion. The *ba*-NP is originally the subject of the small clause complement of the verb, *shu* ‘book’. As such, it does not thematically relate to *ba*, as it is the subject of the result denoting predicate X (*puo* ‘apart’). The subject of the small clause is adjoined to VP, and Case-marked by CAUS. The embedded VP must be complex so as to have a subject raising to be the *ba*-NP. The VPs embedded under CAUS are unaccusative in the sense that they do not project an external argument. The subject of the whole sentence (*ta* ‘she’) thematically hinges on CAUS, rather than the matrix verb (*si* ‘tear’). Another way to phonologically realise CAUS is to raise the embedded complex V into the position, as shown in (55b’). In doing so, we have a canonical non-*ba*-sentence.

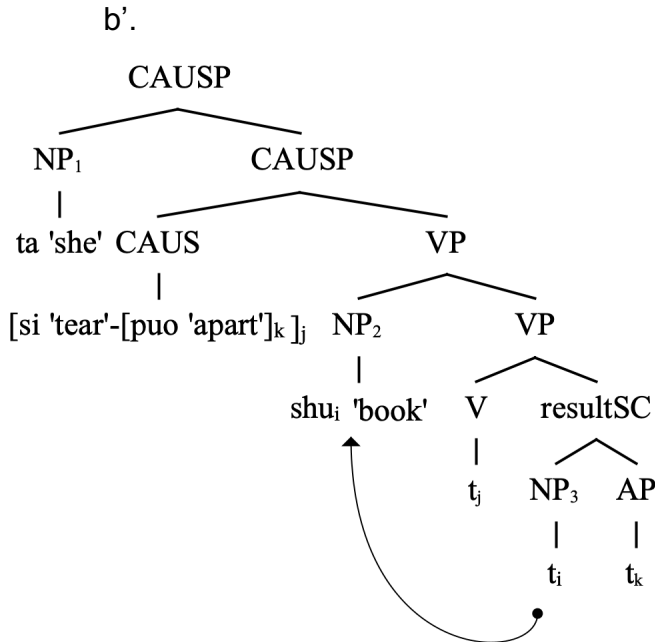
(55) a. ta ba shu si- puo  
 she BA book tear- apart  
 'She tore the book apart.'

a'.





b. ta si puo shu  
 she tear apart book  
 'She tore the book apart.'



Aspectually, Sybesma argues that the predicate in *ba*-sentences is invariably delimited, in the sense that the predicate can refer to a telic situation, to a situation in which the end result is specified or to a situation containing a quantificationally closed object. This is to say that the *ba*-construction invariably denotes telic situations .

Sybesma's analysis successfully captures two properties of the *ba*-construction: 1) the subject of the whole sentence is a causer and 2) it is not necessary for the *ba*-NP to be affected, which leaves room for unaffected *ba*-NPs to occur in the *ba*-construction, as in (56). The *ba*-NP *shi-qing* 'matter' in (56a) and *ren* 'people' in (56b) are unaffected. However, his analysis has three weaknesses. First, *ba*-sentences are not semantically equal with their non-*ba*-counterparts. The *ba*-construction is an SOV pattern, deviating from the canonical SVO pattern. In that regard, Jing-Schmidt (2005) suggests that its deviation from the canonical pattern, in fact, has a semantic-

pragmatic property — discourse dramatisation. The canonical SVO pattern is otherwise devoid of this property.

- (56) a. Hailun ba shiqing xiang de tai nan  
 Helen BA matter think DE too difficult  
 ‘Helen overestimates the difficulty of this matter.’
- b. Hailun ba ren xiang de tai hao  
 Helen BA people think DE too good  
 ‘Helen overrates people (people are not as good as she thinks).’

Second, the predicate in a *ba*-sentence is not necessarily delimited or telic, as in (57). The verb *pong* ‘hold up with both hands’ in (57a) is followed by the imperfective aspect marker *zhe*, which denotes the ongoingness of a situation, without any specification of a final endpoint of either termination or completion. Therefore, the situation referred to is atelic and nondelimited. *Ba*-sentences of this kind (marked by *zhe*) are very common in TM, and such sentences indicate that the predicate of *ba*-sentences does not necessarily be an accomplishment in Hoekstra’s sense, as they do not have a final endpoint. The example (57b) is not marked by the imperfective *zhe*, but it depicts an ongoing situation as well. The predicate *ti-lai-ti-qu* ‘kick-back-kick-forth’ is atelic and the representation does not specify as terminated. Therefore, this sentence is not an accomplishment in Hoekstra’s sense either. The lack of a telos and a terminating point of the two *ba*-sentences cast Sybesma’s suggestions as to accomplishment and delimiteness in doubt.

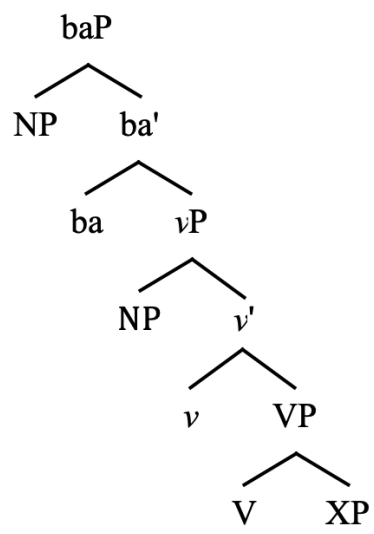
- (57) a. Hailun ba paiwei pong- zhe  
 Helen BA ancestral tablet hold up- ZHE  
 ‘Helen is holding up the ancestral tablet with her both hands.’
- b. Hailun ba qiu ti- lai- ti- qu  
 Helen BA ball kick- back- kick- forth  
 ‘Helen is kicking the ball back and forth.’

Finally, considering the position of adverbials, the structure in (54) would wrongly predict the non-*ba*-sentence in (58b) as grammatical, since the verb *fang* ‘put’ occupies the same position as *ba* (CAUS) in (58a) after the V-to-*v* raising. The adverbial *xiaoxin-di* ‘carefully’ in the *ba*-construction can either be positioned prior to *ba* or posterior to the *ba*-NP, as in (58a,a’). In the non-*ba*-sentence, it can merely be placed prior to the verb, as the contrast shown by (58b,b’).

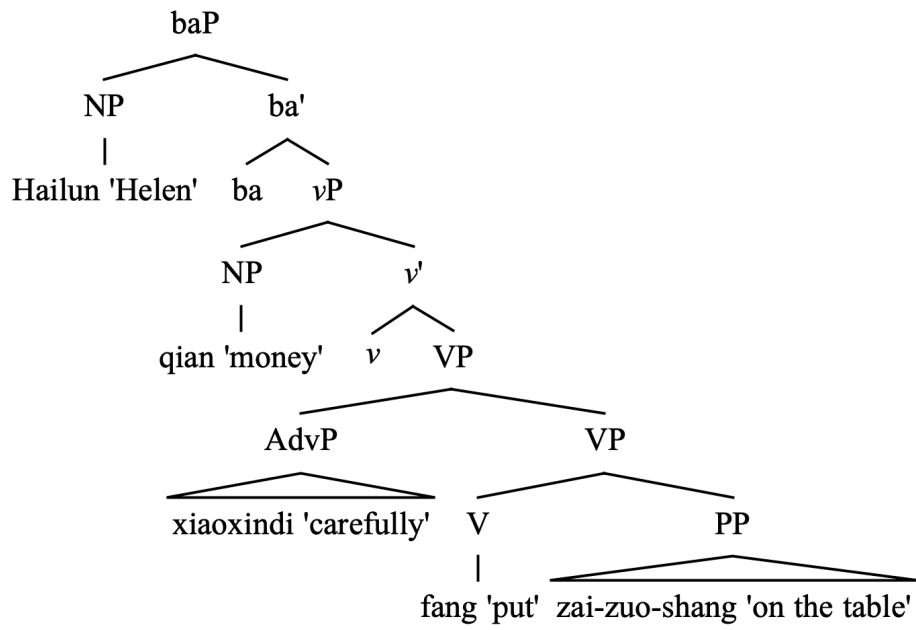
- (58) a. Hailun ba qian xiaoxin- di fang zai- zuo- shang  
 Helen BA money careful- ly put on- table- top  
 ‘Helen carefully put the money on the table.’
- a’. Hailun xiaoxin- di ba qian fang zai- zuo- shang  
 Helen careful- ly BA money put on- table- top
- b. \*Hailun fang- qian xiaoxin- di zai- zuo- shang  
 Helen put- money careful- ly on- table- top  
 ‘Helen carefully put the money on the table.’
- b’. Hailun xiaoxin- di fang- qian zai- zuo- shang  
 Helen careful- ly put- money on- table- top  
 ‘Helen carefully put the money on the table.’

The structure (59a) proposed by C.-T. J. Huang et al. (2009:182) can solve the problem of adverbial placement by ruling out the sentences like (58b). Under this structure, the subject is in the Spec of *ba*P, the *ba*-NP is in the Spec of *v*P. There are four possible positions that adverbials can be adjoined to: *ba*P, VP, *ba*’ or *v*’. The structures of the sentences (58a,a’) are shown in (59b,c) respectively. *Ba* assigns Case to the *ba*-NP, but not theta-role. The *ba*-NP is always an outer object, which is associated with an NP in the complement of the verb and is assigned the theta-role Affectee by the complex verb phrase.

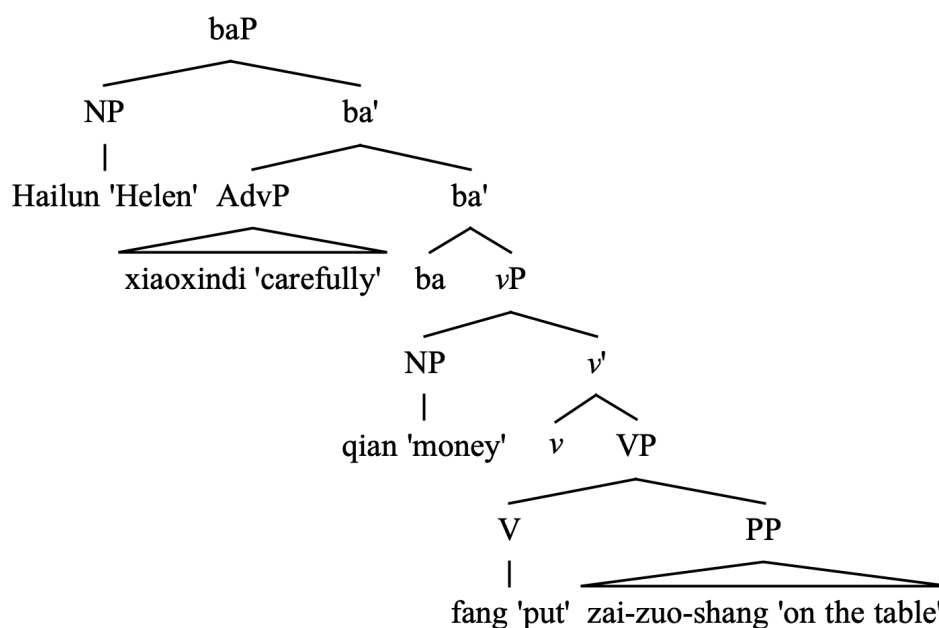
(59) a.



b.



c.



They compare the *ba*-construction with the passive *bei*-construction. The comparison leads to two suggestions. First, they find that these two constructions accept different types of verbs, and they conclude that the difference arises from the affectedness requirement on the *ba*-NP. As illustrated in the examples in (60), the object *tade-mimi* 'her secret' is not affected by the verb *faxian* 'find out', which is acceptable for the *bei*-construction, yet not for the *ba*-construction. This is due to that the *ba*-construction, but not the *bei*-construction, is subject to the affectedness requirement.

- (60) a. tade mimi bei wo faxian- le  
 her secret BEI I find-out- LE  
 'Her secret was found out by me.'
- b. \*wo ba tade mimi faxian- le  
 I BA her secret find-out- LE  
 'I found out her secret.'

However, the affectedness requirement hypothesis is not unproblematic for two reasons. First, it does not hold for all *ba*-sentences, as the following sentences in (61) serve as counterexamples to the hypothesis proposed by C.-T. J. Huang et al. Like *faxian* ‘find out’, *xiang* ‘think’ is a verb unable to affect its object, but it can appear in both constructions. The sentence (61a) is perfectly acceptable, as its *bei*-counterpart (61b). This indicates that the affectedness requirement is not necessary for the *ba*-construction, and this semantic requirement cannot be used to differentiate between the types of verbs which can occur in the *ba*-construction and those which can occur in the *bei*-construction. This follows that the *ba*-NP need not be assigned the theta-role of Affectee by the complex verb phrase.

- (61) a. ta ba shiqing xiang de tai nan  
 he BA matter think DE too difficult  
 ‘He overestimates the difficulty of this matter.’
- b. zhe- jian shi bei ta xiang de tai nan  
 this- CLF matter BEI he think DE too difficult  
 ‘The difficulty of this matter is overestimated by him.’

Second, they claim that the *ba*-NP is always an outer object. An inner object receives its theta-role from the verb, while an outer object receives its theta-role from the complex verb phrase and is related to an NP in the complement of the verb, such as possessor or an argument in the complement clause. The outer object analysis comes from the examples in (62a). This sentence is acceptable in C.-T. J. Huang et al. (2009:140), but not to TM speakers. The NP *baba* ‘father’ is the immediate object of the verb *sha-si* ‘kill-die’. These two form a complex predicate V’ that takes another object — the outer object. This outer object controls the null possessor Pro and then undergoes NOP-movement to IP, where it is coindexed with *Zhangsan*.<sup>23</sup> The inner

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<sup>23</sup> The structure of (62a) under the outer object analysis is (C.-T. J. Huang et al., 2009:142):

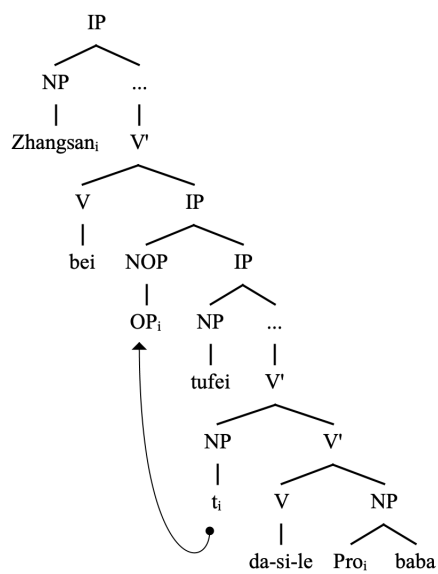
object *baba* ‘father’ receives the Patient/Theme role from the verb *da-si* ‘kill-die’, and the outer object receives Affectee<sup>24</sup> from the V’ *da-si-le Pro baba*.

(62) a. \*Zhangsan bei tufei da- si- le baba  
 Zhangsan BEI bandit kill- die- LE father  
 ‘Zhangsan’s father was killed by the bandits.’

a’ Zhangsan-de baba bei tufei sha- si- le  
 Zhangsan’s father BEI bandit kill- die- LE  
 ‘Zhangsan’s father was killed by the bandits.’

b. \*tufei ba Zhangsan da- si- le baba  
 bandit BA Zhangsan kill- die- LE father  
 ‘The bandit killed Zhangsan’s father.’

b’ tufei ba Zhangsan-de baba da- si- le  
 bandit BA Zhangsan’s father kill- die- LE  
 ‘The bandits killed Zhangsan’s father.’



<sup>24</sup> The theta-role that an outer object is assigned to has to be Affectee; otherwise, the sentence is unacceptable. Please refer to C.-T. J. Huang et al. (2009:142-143) for the argument and examples.

- c. tufei da- si- le Zhangsan-de baba  
 bandit kill- die- LE Zhangsan's father

In TM, this outer object analysis cannot be properly applied to the *bei*-construction, nor the *ba*-construction, since sentences like (62a,b) are unacceptable. In these two examples, the two nominals *Zhangsan* (NP<sub>1</sub>) and *baba* (NP<sub>2</sub>) are in a possessive relationship, with *Zhangsan* being the possessor. Such possessive relationships are presented by *de*-possessive, as shown in (63) (Yang, 2005). Although in TM, the possessive marker *de* can be silent when NP<sub>1</sub> is a pronoun and NP<sub>2</sub> is a relational noun (Yang, 2005) as in (64), NP<sub>1</sub> and NP<sub>2</sub> cannot be separated by elements other than *de*, as in (62a,b). In addition, the possessive marker *de* cannot be silent in (62a,b) since the NP<sub>1</sub> *Zhangsan* is not a pronoun. In TM the acceptable variants of (62a,b) are respectively illustrated in (62a',b'), with the possessive marker *de*, and nothing else, being explicitly presented between NP<sub>1</sub> and NP<sub>2</sub>.

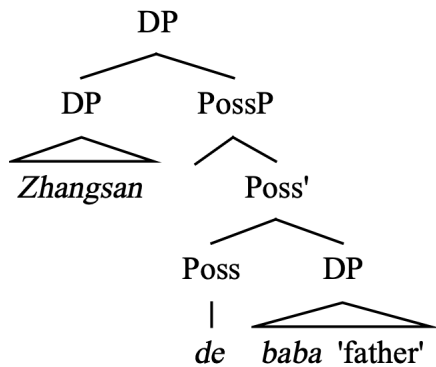
(63) [<sub>PossP</sub> NP<sub>1</sub> (de) NP<sub>2</sub>]

(64) Zhangsan xiang [ta (de) baba]  
 Zhangsan resemble [he (DE<sub>PossP</sub>) father]  
 'Zhangsan looks like his father.'

Under the DP hypothesis, *Zhangsan de baba* 'Zhangsan's father' can be viewed as a DP, with *Zhangsan* occupying the Spec of DP, possessive *de* occupying the head of Poss and *baba* 'father' occupying the complement position of Poss, as in (65) (Niu, 2015:82). As can be seen in (62c), *Zhangsan de baba* is the object DP of the verb *sha-si* 'kill-die' in the canonical version of the *ba*-sentence and the *bei*-sentence. The data (62) indicate that in TM the object possessive DP must be entirely preposed. The possessor DP *Zhangsan* and the possessed DP *baba* are not separable.

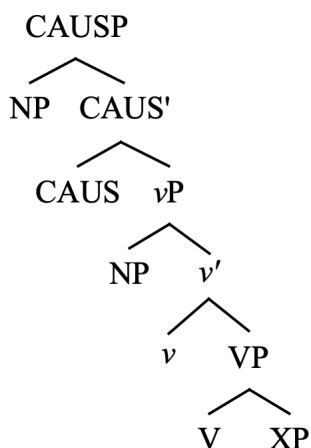


(65)



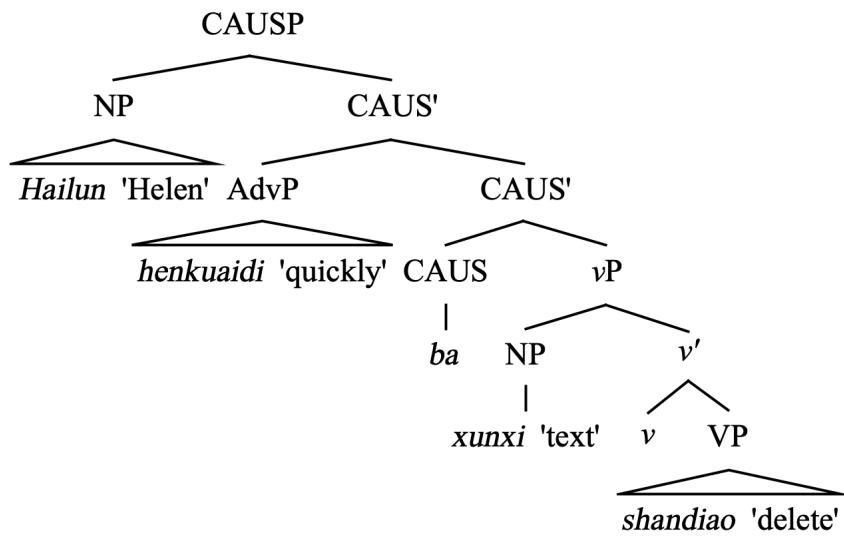
Although the syntactic structures that Sybesma and C.-T. J. Huang et al. put forward for the *ba*-construction are different, they share the same assumption: *ba* is the head of a functional projection that is higher than a verbal projection. The structure that I propose is (66), which is on the basis of the structure suggested by C.-T. J. Huang et al., with some modifications. I follow Sybesma's proposal that *ba* takes up the CAUS position, assigns the thematic role Causer to the subject of the whole *ba*-sentence and assigns Case to the *ba*-NP. The *ba*-NP occupies the Spec of  $\nu$ P and semantically depends on the VP. The thematic role that it receives does not have to be Affectee, as (61) indicates. Adverbials can be placed in four possible positions: CAUSP, VP, CAUS' or  $\nu'$ , as demonstrated below in (67).

(66)



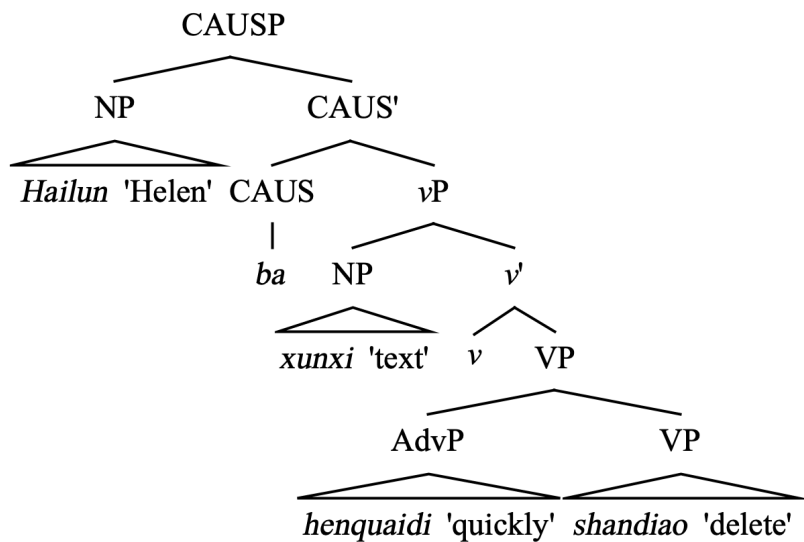
- (67) a. Hailun henkuai-di ba xunxi shandiao  
 Helen quick-ly BA text delete  
 'Helen quickly deleted the text.'

a'.



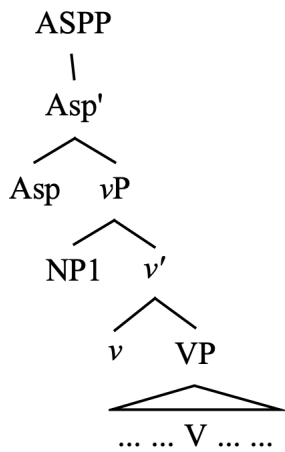
- b. Hailun ba xunxi henkuai-di shandiao  
 Helen BA text quick-ly delete  
 'Helen deleted the text quickly.'

b'.

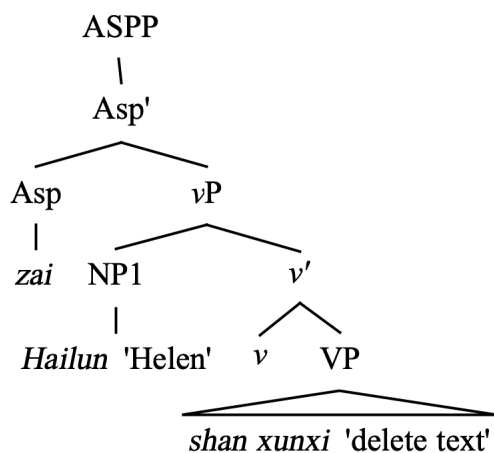


Also, I adopt the analysis of the AspP postulated by C.-T. J. Huang et al. (2009:102) in (68) and propose that the AspP is higher than the CAUSP, as shown below in (72). As mentioned in the previous chapter, there are three types of aspect markers in TM: progressive (*zai/zhengzai*), continuous (*zhe*) and perfect (*le, guo*). The progressive is the only type that occur prior to the predicate, whereas the other two types occur posterior to the predicate. The AspP structure (68) is straightforward for the progressive markers (*zai/zhengzai*) to fit into, with *zai/zhengzai* taking up the Asp position and NP1 moving to a clause-initial position for the subject.

(68)



(69) Hailun zai- shan xunxi  
 Helen ZAI- delete text  
 'Helen is deleting the texts.'



Fitting the suffixal aspect marker (*zhe*, *le* and *guo*) into the structure (68) is not as straightforward as the progressive ones. Assuming that the suffixal aspect markers are affiliated with Asp, the verb moves from V to Asp to merge with a given suffixal aspect marker. This possibility, as shown in (70), is infeasible for two reasons: 1) V cannot move out of  $vP$  and 2) adverbials must adjoin to  $v'$  (see C.-T. J. Huang et al., 2009:102-103).

- (70) a. ta    zai-    dasheng    changge  
       he    ZAI-    loud        sing  
       ‘He is singing loudly.’ (C.-T. J. Huang et al., 2009:102)
- b. \*ta    dasheng    zai-    changge  
       he    loud        ZAI-    sing (C.-T. J. Huang et al., 2009:102)

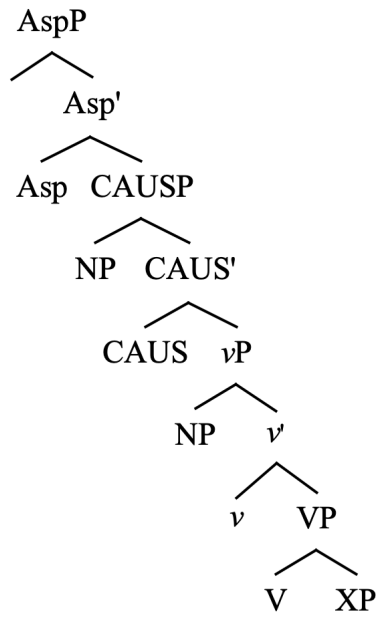
Following this, the verb-suffix cluster must occur posterior to the  $v'$ -adjoined adverbials, meaning that the suffixal aspect marker cannot take up the Asp position. To solve this problem, C.-T. J. Huang et al. propose that the suffixation of the aspect marker and the verb is done by a word-formation rule independent of syntax, rather than by syntactic movement. To illustrate, consider the sentence (71). The verb-suffix cluster *chang-zhe* ‘sing-continuous marker’ first moves overtly from V to  $v$ , and then moves covertly to Asp at LF. The verb-suffix cluster is pronounced in the  $v$  position as the second movement at LF is covert.

- (71) ta    dasheng-di    chang-    zhe    ge  
       he    loud-ly        sing-    ZHE    song  
       ‘He is singing the song loudly.’

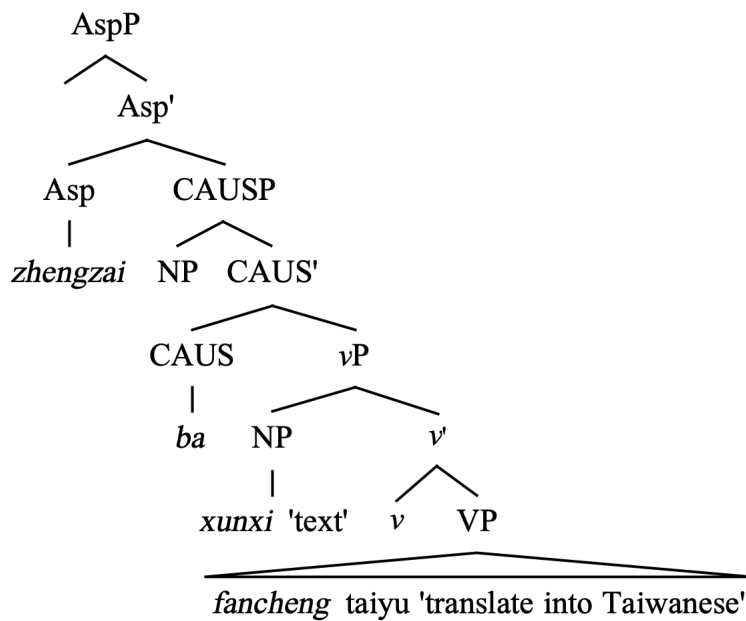
The AspP analysis of C.-T. J. Huang et al. is applicable to the *ba*-construction. In the *ba*-construction, the progressive markers need to precede *ba* and the other two types of markers (*zhe*, *le* and *guo*) follow the verb. The structure (72) straightforwardly predicts the progressive markers’ position in *ba*-sentences, as the

AspP is higher than and to the left of the CAUSP. The example in (73) confirms this structure.

(72)

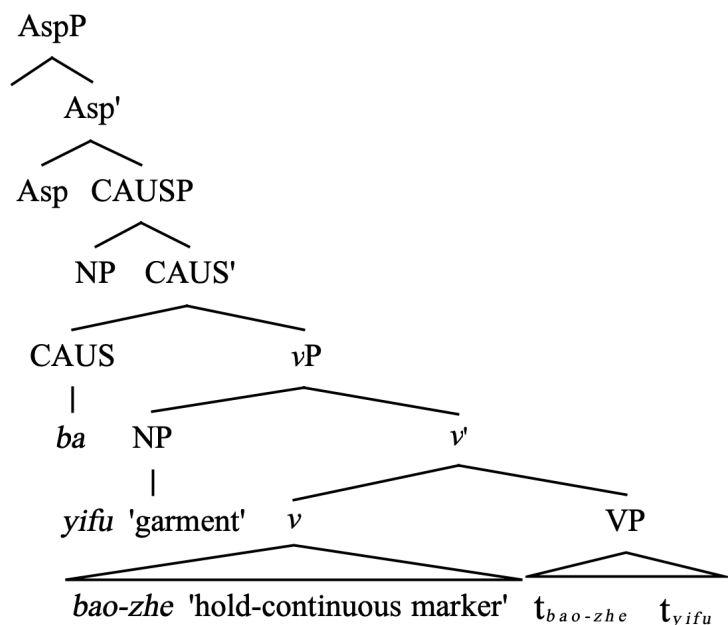


- (73) a. Hailun zhengzai- ba xunxi fancheng taiyu  
 Helen ZHENGZAI- BA text translate Taiwanese  
 'Helen is translating the text into Taiwanese.'



Different from the progressive markers, the suffixal aspect markers first suffix to a verb via a word-formation rule. The suffixed verb then overtly moves from V to  $v$ , and continues to covertly move to Asp at LF. The example (74) below demonstrates the structure for *ba*-sentences accommodating a suffixal aspect marker, which in this example relates to Asp via covert movement. As can be seen, the structure (72) can predict the right linear relation for *ba*-sentences with a suffixal aspect marker, for instance, the continuous marker *zhe* in (74).

- (74) Hailun ba yifu bao- zhe  
 Helen BA garment hold- ZHE  
 'Helen is holding the garment.'



### 2.3 Summary

In this chapter, I first reviewed two theories of aspect established by Smith (1997) and Klein (1994), and then two syntactic accounts of the *ba*-construction proposed by Sybesma (1999) and C.-T. J. Huang et al. (2009). At the end of the syntactic part, I proposed a syntactic structure for the *ba*-construction in (72), with AspP dominating CAUSP.

Smith's two-component theory of aspect (viewpoint aspect and situation aspect) has been influential, and her temporal boundary approach to aspect has brought some insights into the aspect system of Mandarin. However, her theory cannot be directly applied to TM, due to the inconsistency in the definition of final endpoint and the obligatory dynamic shift reading, the misinterpretation of *zhe*'s semantic encoding and misunderstanding that there is neutral viewpoint in Mandarin.

By contrast, Klein (1994) and Klein et al. (2000) take a relational view on aspect, depicting by the interplay between TT and TSit. Their interpretation of aspect is neat and clear, and successfully defines four aspects by means of the relation of inclusion and precedence: perfective, imperfective, retrospective aspect (the perfect) and prospective aspect. However, their theory does not reflect the distinction between completion and termination in Mandarin. Also, their DP approach cannot be appropriately applied to situations expressed by more than one aspect.

I next reviewed two syntactic accounts for the *ba*-construction. Sybesma's analysis is established on the postulation that every *ba*-sentence has a non-*ba*-counterpart; hence, they have the same semantic contents, and they share the same underlying syntactic structure (54). In this regard, *ba* is just a phonological realisation of CAUS, given that there is no V-to-*v* raising. It is CAUS that gives Case to the *ba*-NP and assigns the theta-role causer to the sentence subject. This postulation of semantic equality, in fact, is not correct. Nonetheless, he takes into account the event structure. Based on that, he identifies the leftmost subject as a Causer, and concludes that affectedness is not a mandatory property to the *ba*-NP. These two points indeed capture some key characteristics of the *ba*-construction in TM.

The account of C.-T. J. Huang et al. does not consider event structure. They suggest that *ba* is a light verb assigning Case to the *ba*-NP, whose theta-role is in turn assigned by the complex predicate. The *ba*-NP is an outer object, which receives the theta-role Affectee from the complex verb phrase. The outer-object treatment is established according to the sentences in (62a,b), which are not acceptable in TM. Since the specific suggested structure makes some incorrect predictions, it is not applicable to the *ba*-construction in TM. Additionally, sentences such as (61a) suggest that not all the *ba*-NP bear the thematic role Affectee. In that regard, Sybesma's event structure approach is closer to the empirical data of TM.

Finally, I propose a syntactic structure for the *ba*-construction in TM in (72). I follow Sybesma viewing *ba* as the head of CAUSP, occupying the position of CAUS. It assigns Case to the *ba*-NP and a thematic role to leftmost subject. The *ba*-NP



semantically hinges on the VP and its thematic role need not be Affectee. The AspP dominates the CAUSP and takes the CAUSP as its complement. The progressive aspect markers (*zai/zhengzai*) can directly fit into the structure by taking up the position of Asp. The suffixal ones (*le, guo, zhe*) otherwise merge with the verb via a word-formation rule, overtly move from V to  $v$ , and land at Asp by covert movement at LF.

## Chapter 3

### The three-dimensional approach to TM

In this chapter, I am going to use Smith's (1997) closedness/openness to interpret aspect. The notion of closedness/openness concerns the final endpoint of a situation. Simply put, the presence of a final endpoint constitutes closedness and the absence of a final endpoint constitutes openness. However, different from Smith's two-dimensional approach concerning the viewpoint aspect and the ontological aspect ('situation type' in Smith's words), I additionally take into account the actualisation aspect. So, I adopt a three-dimensional model to analyse the aspect of TM, which is composed of three aspect parameters: viewpoint aspect, ontological aspect and actualisation aspect.

The notion of closedness/openness is applicable to all the three aspect parameters. Closedness on the viewpoint level leads to perfectivity, on the ontological level leads to telicity and on the actualisational level leads to boundedness. On the contrary, openness on the viewpoint level brings about imperfectivity, on the ontological level brings about atelicity and on the actualisational level leads to nonboundedness. The dichotomy of each aspect level is determined by the presence or absence of the final endpoint of a situation.

Comrie's aspectual scheme is utilised to outline the viewpoint aspect structure of TM. Following the scheme, TM has the usual dichotomy of perfective and imperfective viewpoints. Imperfectives can be further divided into the dichotomy of habitual and continuous, and the latter is made up of another dichotomy of the progressive and the nonprogressive. Differently, Klein's approach to viewpoint is established on the scopes of TT and TSit. Specifically, if TT is bigger than TSit, TT contains TSit. Then we have the perfective viewpoint. If reverse, we have the imperfective viewpoint. The containment relation between TT and TSit is utilised to conceptualise the dichotomy of perfective and imperfective viewpoints. I will adopt

Comrie's and Klein's frameworks to analyse the four aspect particles, *le*, *guo*, *zai* and *zhe*, and the tentative construction (V-*yi*-V) in TM.

As to the ontological aspect, I argue that simplex verbs in TM are inadequate to conceptualise a mental construct in terms of their lexical content. From the aspect perspective, they merely have one ontological feature of dynamicity/staticness, and lack the other two ontological qualities: durativity and (a)telicity. As a result, they are unable to construct a simple situation-template of their own accord, and to be assigned for a situation type. They need to combine with other elements to form a simple situation-template, which is the foundation of an enriched situation-template, a further enriched situation-template and ultimately of a proposition at sentential level.

The third sort of aspect, the actualisation aspect, is postulated by Declerck et al. (2006). It concerns on the actualisational level if a situation is represented as reaching a terminal point (bounded) or not (nonbounded). It is essentially separated from the ontological feature, (a)telicity. A bounding point can be arbitrary, yet a telos is a non-arbitrary point of completion. A bounding point and a telos do not need to coincide. This parameter of aspect is developed by Declerck et al. on the basis of English. They define the actualisation aspect as a question of clauses. To better account for the data in TM, I suggest that the actualisation aspect can be a property of verb phrases.

In this chapter, I argue that the actualisation aspect is the most salient parameter in TM. Thereby, the three-dimension model can better explain and make correct predictions of the interaction between the three aspect parameters and of the temporal interpretation in TM. By stark contrast, the two-dimension model is not of much help for understanding and analysing the aspect system and the temporal interpretation in TM, since it does not acknowledge the existence of the actualisation aspect.

### 3.1 Viewpoint aspect

The discussion of aspect of Mandarin has been largely centred on the four particles: *le*, *guo*, *zai* and *zhe*. Traditionally, the former two particles are viewed as perfective markers, and the latter two as imperfective markers. The distinction between the two perfective markers lies in that *guo* has the property of discontinuity but *le* does not. The traditional treatment of *le* has two problems: 1) it neglects *le*'s ability to temporally anchor a situation, and 2) it cannot account for *le*'s co-occurrence with RVCs (resultative verb constructions). Both are traditionally viewed as perfective indicators. This raises a question: why would a sentence need double perfective markings? The traditional approach to *le* cannot offer a proper explanation to this question. In 3.1, I will follow Comrie's approach to the perfect aspect, treating *le* as a perfect marker. *Le* alongside with *guo*, denote four types of perfect meanings in TM. This treatment of *le* can give a unified account for *le*'s versatile functions and for its co-occurrence with RVCs.

Although the two imperfective markers *zai* and *zhe* have been intensively studied, there has not yet been a unanimous agreement upon their respective functions and the distinction between them. Some researchers even conflate *zai* and *zhe* (L. L. S. Cheng, 1988; C. N. Li & Thompson, 1981; Tsee, 1986; L. Zhang, 1995). *Zai* has been treated as an adverb (Dai, 1997; Henne et al., 1977), and as a progressive marker (e.g., Xiao & McEnery, 2004). *Zhe* has been referred to as a progressive indicator (Chao, 1968; Comrie, 1976; Tsee, 1986), as a continuative indicator (L. Zhang, 1995), as a durative indicator (Dai, 1997; Henne et al., 1977; C. N. Li & Thompson, 1981; Xiao & McEnery, 2004) and as a resultative imperfective marker (Haihua Pan, 1998; Smith, 1997; Yeh, 1991).

In this section, I will treat *zai* as a progressive marker and *zhe* as a continuous marker. This treatment manifests Comrie's distinction between progressivity and continuousness. Furthermore, I will argue that *zhe* is not only a continuous marker, it is also a stativiser, being able to stativise dynamic verbs.

Other than the discussion of the four aspect particles, the tentative construction (V-*yi-V*) will be included in the discussion. It is treated as a perfective construction in this study.

### 3.1.1 Perfective viewpoint

As mentioned in chapter 1, both Smith and Klein use temporal boundaries to define perfectivity and imperfectivity. Smith's definition hinges on the inclusion of the final endpoint, whereas Klein's on whether TT includes TSit or the reverse. According to Smith, the presence of a final endpoint leads to closedness, which then leads to perfectivity. The presence of a final endpoint along with a starting endpoint establish a definite temporal boundary. Imperfectivity otherwise requires the absence of a final endpoint, which leads to openness. Hence, imperfectivity does not have a definite temporal boundary, since it leaves the final end open.

Although Klein does not directly utilise the notion of final endpoint to construct his approach as Smith does, Klein's containment relation between TT and TSit still needs the notion of final endpoint. TT and TSit can be viewed as two temporal intervals, the bigger interval must contain the smaller one to form a viewpoint. TT's containing TSit (perfectivity) entails that TT is bigger than TSit; TSit's containing TT (imperfectivity) entails that TSit is bigger than TT. Neither of the two containment relations requires both TT and TSit to have a definite temporal boundary (viz. have a final endpoint). Specifically, only the smaller one needs to have a final endpoint, and the bigger one need not have a final endpoint. In the sense of closedness/openness, only the smaller one has to be closed, and the bigger one can be either closed or open. Neither Smith nor Klein specifies what kind of final endpoint (telic point, arbitrary terminal point or both) they adopt to formulate their theories.<sup>25</sup>

In my approach, I distinguish two kinds of perfective viewpoints on the basis of termination: bounding perfectivity and telic perfectivity. As the names suggest, the former is established by a bounding point (arbitrary terminal point) and the latter by a

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<sup>25</sup> To save space, I will also use 'bounding point' or 'terminal point' referring to arbitrary terminal point.

telic point. In TM, bounding perfectivity is expressed with the perfect markers *le* and *guo* and the reduplicative construction (V-*yi*-V); telic perfectivity is conveyed by resultative verb constructions (RVCs).

Smith (1997:67) suggests that the perfective viewpoint does not apply to stative situations, since states are bereft of final endpoints. This is to say that, in Smith's sense, only telic situations can be represented perfectly. In other words, situations must be closed at the ontological level to be compatible with perfective representations. I do not agree with Smith. Sentences like *Tim has been frustrated* show that states can have perfective representations, and the final endpoint is made up by a bounding point. The predicate is atelic and open at the ontological level, but bounded and closed at the actualisational level as the perfect aspect bounds a situation at the time of statement. Although such situations do not have an inherent culminating point, they can be terminated at a certain point. That is, they can be arbitrarily bounded, and consequently can be given a bounding point. Speakers can still add an arbitrary terminal point to states when describing stative situations. That being so, Smith's suggestion takes only telic points into account and overlooks bounding points, with respect to perfective viewpoints. Distinct from Smith, Klein does not specifically restrict the final endpoint to inherent ones. He instead uses the scopes of TT and TSit and their inclusion relations to define perfectivity and imperfectivity.

The inclusion relations of TT and TSit defines viewpoint. To formulate a viewpoint, TT and TSit must contain one another. If TT is bigger than TSit, TT must contain TSit; otherwise, TSit must contain TT. The former leads to the perfective viewpoint whereas the latter leads to the imperfective viewpoint. It can be inferred that the scope (the beginning and terminal end) of TT is determined by the speaker. Whether the scope of TSit is defined by a telic point or a bounding point is not specified. Logically speaking, Klein's approach is relatively loose compared to Smith's in that Klein leaves room for bounding points to determine the scope of TSit. That being the case, Klein's approach can give a better account of TM.

As mentioned in chapter 2, Smith notices that the concepts of completion and termination are grammatically distinguished in Mandarin, but her theory does not really reflect this distinction, nor does Klein's. Completion means that situations are telic/closed at the ontological level, and also bounded/closed at the actualisational level. Moreover, the bounding point must coincide with the telos. Termination otherwise means that situations can be either closed (telic)/open (atelic) at the ontological level, and closed (bounded) at the actualisational level. For atelic situations, the bounding point can be any point within TSit; for telic situations, the bounding point can be any point that is prior to the telos or coincides with the telos, as telic situations cannot continue beyond the telos. The respective characteristics of completion and termination are summarised in (75).

- (75) a. Completion and termination at the ontological and the actualisational levels

	<b>Completion</b>	<b>Termination</b>
<b>Ontological aspect</b>	+	+/-
<b>Actualisation aspect</b>	+	+

\* + means the presence of a final endpoint (closed), and – means the absence of a final endpoint (open)

- b. The properties of the final endpoint of completion and termination:
- (i) Completion: the bounding point must coincide with the telos;
  - (ii) Termination of telic situations: the bounding point must precede the telos.  
Termination of atelic situations: the bounding point is arbitrary.

So far, it should be clear that the two-dimensional approach is insufficient to characterise the temporality of a situation, since it does not acknowledge the actualisation aspect and the bounding point. The addition of the third parameter, the actualisation aspect, represented by the feature of (non)boundedness, is necessary.

On that account, I follow the definition of (non)boundedness developed by Declerck (1989, 1991) and Depraetere (1995), which concerns the overt specification of the termination of a situation and is later added on as the third aspect parameter by

Declerck et al. (2006), to perform my analysis of the aspect system of TM. Note that completion is considered a kind of termination, but not vice versa. So, there are two sorts of terminations: arbitrary termination and completive termination. If not specified, I will use 'termination' referring the former, and 'completion' referring the latter. In English termination can be lexically or grammatically expressed. The former uses temporal adverbials (also called bounding phrases) such as *for a year* or *until 5pm*. The latter can be aspectual means, such as the use of the perfect aspect, or the combination of tense and non-progressive verb forms. The examples were illustrated in (30) and are repeated here in (76).

- (76) a. Helen lived in Belfast for a year.  
b. Helen read the book.

The adverbial *for a year* in (76a) creates a bounding point for Helen's living in Belfast. In (76b), the past tense and the non-progressive form of *read* together bound the situation. In other words, these two examples are represented as closed at the actualisational level separately by a lexical means (bounding phrase) and by grammatical means (the combination of the past tense and non-progressive verb forms). Although the two sentences are bounded (closed at the actualisational level), they differ in the ontological aspect. As living in Belfast is atelic (open at the ontological level), (76a) involves an arbitrary termination. On the other hand, reading the book is telic (closed at the ontological level), (76b) involves a completive termination, namely, completion.

As noted in chapter 1, telic situations do not guarantee the realisation of telic points. They can be bounded or nonbounded. That is, closedness of the ontological aspect does not necessarily lead to the closedness of the actualisation aspect. These two aspect levels are independent. Telic situations can be bounded in two ways: 1) the telic point is expressed as realised, which I call 'completely bounded', and 2) there is an arbitrary bounding point in an utterance, which I call 'arbitrarily bounded'. Note that an arbitrary bounding point must be prior to the telos, since a telic situation cannot continue beyond the telos. Likewise, atelic situations can be bounded or nonbounded. Since they lack an inherent/intended telos, they can be bounded in just



one way: arbitrarily bounded. Atelic situations do not have *teloi*, so, they cannot be completely bounded (bounded by the realisation of the *teloi*). If a telic or an atelic situation is nonbounded, there is no termination of any kind expressed.

Smith (1997:71) makes three proposals to the perfective viewpoint in Mandarin: 1) *le* and *guo* are acknowledged as perfective markers, 2) the perfective marker *guo* represents a telic event, and 3) states cannot be expressed with the perfective viewpoint because states lack *teloi*. Point 1 and 3 together directly lead to the prohibition of the co-occurrence of states along with *le* and *guo*. Empirical data such as the sentences exemplified in (77) cast doubt on Smith's proposals, as the sentences (77a,c) are respectively dynamic and stative but are compatible with the two perfective markers *le* and *guo*.<sup>26</sup> To tackle this problem, Smith further suggests that when stative situations are marked by perfective markers, a shift in situation type, namely, dynamicisation are necessarily triggered. However, the examples (77a,c) do not signal the dynamicisation at all. Neither *le* nor *guo* is a dynamiciser as Smith suggests, since (77a) remains its dynamicity and (77c) remains its stativeness after being separately marked by *le* and *guo*.

Another two problems of Smith's shifted interpretation claim lie in when the dynamicisation happens and what triggers it. As aforesaid, the dynamicisation happens when states are represented with the perfective viewpoint, as (77a,c), due to the incompatibility between states and the perfective viewpoint. Non-states are compatible with the perfective viewpoint and, therefore, the dynamicisation is not required. However, the situation of my living there for two months described in (77b) is a non-stative accomplishment, yet Smith suggests that it undergoes the dynamicisation. This clearly contradicts her dynamicisation rule.

The examples (77a,b) show an inconsistency of the dynamicisation rule, relating to what triggers the dynamicisation. Smith claims that the dynamicisation in (77a) is caused by *le*, but that of (77b) is caused by the temporal adverbial 'two months'

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<sup>26</sup> The examples in (77a,b,c) were first illustrated in chapter 2, originally used by Smith (1997).

because this adverbial creates a closure to the situation proper. It is, however, puzzling that although both (77a,b) have *le*, their changes in situation type are not consistently triggered by *le*, as the dynamicisation rule suggests. Smith does not explain why the two cases of *le* function in separate ways.

- (77) a. Wo   bing-   le  
       I     sick-   LE  
       'I have got sick.'<sup>27</sup>
- b. Wo   zai   nali   zhu-   le   liang-   ge   yue  
       I     at   there live-   LE two-   CLF month  
       'I have lived there for two months.'
- c. Wangping   qian-   guo   wo   yi-   bi   zhang  
       Wangping   owe-   GUO I     one-   CLF debt  
       'Wangping has owed me a debt (and no longer does).'
- d. wo   chi-   guo   shijia  
       I     eat-   GUO custard apple  
       'I have eaten custard apple.'

According to Smith, *guo* should be like *le*, triggering a shifted interpretation (from stative to dynamic) to license its appearance in stative sentences. However, the appearance of *guo* does not trigger a shifted reading of the stative constellation 'owe me a debt'. (77c) is still a stative sentence. In this case, it is clear that *guo* and *le* have different performance in terms of licensing their appearance in stative sentences by triggering a dynamic shifted reading. This inconsistency is not expounded by Smith. Additionally, the example in (77d) shows that *guo* does not represent a telic situation as Smith claims. The telicity of this sentence is non-committal as to there being no inherent or intended culminating point overtly conveyed. By contrast, there is only a bounding point explicitly specified by *guo*. All

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<sup>27</sup> Smith's translation is 'I have been sick', which is incorrect.

these indicate that Smith's viewpoint aspect accounts for Mandarin are not satisfactory.

The traditional view of the perfective viewpoint in Mandarin cannot well characterise perfectivity either. In the literature, *le* has been treated as a perfective marker. This traditional treatment, as a matter of fact, is not unproblematic. RVCs, as well as *le*, are viewed as a device to convey perfectivity, and it is also commonly seen RVCs' being followed and marked by *le*, as (78a). The traditional treatment would have to answer the question: why does a situation need double markings for perfectivity? It can be seen that in (78a) *le* licenses this sentence. *Le* cannot be omitted. This leads to another thinking: are double perfective markings necessary to license a perfective sentence? The sentence (78b) negates the thinking. It is marked once by the perfective marker *guo* and does not need another perfective marking, either by *le* or another perfective indicator, to license its grammatical acceptability.

- (78) a. ta      bing- si-    \*(le)  
         she ill-    die-    LE  
         'She died of disease.'
- b. Wangping    qian-    guo    wo    qian  
         Wangping    owe-    GUO    I    money  
         'Wangping has owed me money (and no longer does).'

As seen in the foregoing demonstration, empirical evidence casts doubt upon the traditional treatment of *le*, viewing it as a perfective marker. In addition to that, recent researchers such as J.-W. Lin (2000, 2006) and Ross (1995) notice that *le* serves more than a perfective marker. Generally speaking, they postulate that it conveys past-tense-like information, relative anteriority or relative past, as well.

I agree with these researchers on that *le* is more than a perfective marker. I propose that *le*, as well as *guo*, is a perfect marker, denoting perfect meanings as well as perfectivity. This treatment offers a unified account for *le*'s versatility including its

denoting perfectivity, tense-like function, relative anteriority and relative past. As such, there are two perfect markers in TM, *le* and *guo*, together expressing four perfect senses reported by Comrie (1976) — the experiential perfect, the perfect of result, the perfect of persistent situation and the perfect of recent past. *Guo* is responsible for the first perfect meaning as Comrie (1976:59) points out, and *le* for the other three. The detailed discussion is to be presented in 3.1.1.1.

My perfect-marker treatment of *le* and *guo*, compared with Smith's and traditional treatments, makes different, yet, better predictions. My approach to *le* can better capture *le*'s behaviours in that 1) my approach takes both *le*'s aspectual and tense-like properties into account, while Smith's focuses only on its aspectual property, 2) my approach allows the co-occurrence of states and *le*, without resorting to a shifted-interpretation and the inconsistencies pertaining to the shift reading, 3) my approach avoids the potential inconsistent behaviours of *le* and *guo*, and 4) my treatment offers a simple and reasonable justification for *le*'s co-occurrence with RVCs.

As a perfect marker, *le* is able to indicate both relational temporal relations (relative anteriority or past tense) and perfectivity, as reported in recent studies (J.-W. Lin, 2000, 2006; Z. Shi, 1988, 1990). Its ability to represent a situation perfectly comes from its perfect significance — it bounds a situation at an orientation time or TU. This is not tantamount to telicising a situation by giving a situation an inherent or intended final endpoint. Bounding a situation means to give a situation a bounding endpoint (terminal, rather than a culminating end), and it can be arbitrary, no matter whether it is a telic or an atelic situation.

Regarding telic situations, if the realisation of a terminal point corresponds to that of a telos, then it is the whole telic situation that is represented. If not, only a part of a telic situation that is represented. For atelic situations, there is no difference in partial or total realisation, since there is no inherent final end to define their inherent wholeness or entirety. The bounding endpoint together with the starting endpoint of TSit form a temporal scope of an actualised atelic situation. Provided that TSit is contained by TT, it is expressed with the perfective viewpoint. On this account,

perfectivity can be compatible with states, as long as there is a linguistically realised bounding endpoint.

As the examples in (79) indicate, the stative constellations *zhidao-zhe-jian-shi* ‘know about this matter’ and *you-che* ‘have a car’ do not shift into dynamic interpretations because of the addition of *le* as Smith predicts. The situations referred to by the two sentences are represented in the perfective viewpoint, with no reference to their internal constitutions or segments. The depiction in (79a) is uncommitted as to how long Helen has known about this matter or when she got to know about this matter (the starting end of this situation), but the appearance of the perfect marker *le* imparts a terminal endpoint to the situation: TU. In this case, the terminal endpoint equates to the final endpoint of TT. In this example, *know about this matter* is instantaneous, and *le* indicates that TSit precedes TU. Thus, TSit is smaller than and included in TT, and as such the perfective viewpoint is constructed.

- (79) a. Hailun zhidao- le zhe- jian shi  
Helen know- LE this- CLF matter  
‘Helen has known about this matter.’
- b. Hailun wu sui qian jiu ban- le san- ci jia  
Helen five year prior to already move-LE three- CLF house  
‘Helen had moved three times before she was five.’
- c. Hailun you- le che  
Helen have- LE car  
‘Helen has had a car.’

In parallel, the stative constellation *you-che* ‘have a car’ in (79c) remains stative after *le* attaches to it. This sentence is underspecified on when Helen obtained the car, but it does not affect *le*’s marking perfectivity.

The sentences in (79a,c) in isolation are bounded at their orientation times, consistent with TU, because their temporal reference is the present 'now'. Not all perfect sentences' orientation times coincide with TU, such as (79b). The orientation time of (79b) is when Helen turned to five years old, not TU. As Comrie points out that the perfect aspect is not restricted to the present tense, the past perfect and the future perfect are also possible. In the latter two cases, the orientation times are some intervals located in the past and in the future respectively.

The example in (80a) is expressed with the past perfect. The orientation time is when Helen went abroad. The example (80b) is expressed with the future perfect. Its orientation time is 'the time you grow up', which refers to some time in the future.

- (80) a. Hailun chuguo qian jiu mai- le lupingxian  
 Helen go abroad prior to already buy- LE travel insurance  
 'Helen had already bought travel insurance before she went abroad.'
- b. deng ni zhangda wo yijing mai- le haoji- jian fangzi  
 wait you grow up I already buy- LE several- CLF apartment  
 'By the time you grow up, I will have already bought several apartments.'

Thus far, I have shown how the actualisation aspect affects the perfective viewpoint. In my approach, both telic and atelic situations are compatible with the perfective viewpoint seeing that a given situation can be completely or arbitrarily bounded. There are grammatical and lexical means to bound a situation. The former can be the use of the perfect aspect or the combination of tense and non-progressive verb forms. The latter can be temporal adverbials. Under this view, all kinds of situations can be bounded, as long as a bounding point is linguistically realised. Teloi can be bounding points, yet not vice versa. It naturally follows that it is a bounding point/end that is necessary to construct a perfective viewpoint, rather than a telic point/end.

The clarification of this boundary-related conception is significant for TM, owing to the fact that completion (realisation of a telos) and termination (realisation of an

arbitrary bounding point) are linguistically distinguished in this language. In this regard, there are two kinds of perfective viewpoints as to the final end: perfectivity constituted by an arbitrary bounding point and by a telic point. Smith's view leaves no possibility for a bounding point's serving as the final endpoint for perfective viewpoints, or forming the right end of the scope of TSit in Klein's sense. Empirical evidence I have illustrated so far, however, does not back Smith's view. Telicising a situation is not the only fashion to depict a situation perfectly. An arbitrary bounding point can establish perfectivity as well.

Different from the traditional view, I treat *le* as a perfect marker, rather than a perfective marker. In consequence, there are two perfect markers in TM: *le* and *guo*. Together they denote four types of perfect meanings. Other than the two perfect markers that can bound a situation, the reduplicative construction, *V-yi-V*, has the ability to bound a situation as well. This reduplicative construction can denote more than one aspect meanings, the delimitative aspect or the tentative aspect, depending on the context. Either way, it bounds a situation, instead of telicising a situation. A detailed discussion is given in 3.1.1.1.

Perfect markers and the reduplicative construction represent situations perfectly by arbitrarily bounding. RVCs otherwise represent situations perfectly by telicising and completely bounding them. I will present the discussion relating to RVCs in 3.2.

### **3.1.1.1 Bounding perfectivity: perfect markers and the reduplicative construction**

In the last section, I argue that perfectivity can be constructed by including either a telos or an arbitrary bounding point, and show that *le* and *guo* are perfect markers. I am going to discuss the two types of perfective viewpoints, the bounding perfective viewpoint and the telic perfective viewpoint, in more detail. The bounding perfective viewpoint is constituted by an arbitrary bounding end, while the telic perfective viewpoint is constituted by a telos. An arbitrary end can be placed to all kinds of situations, both telic and atelic, but only telic situations have a telos.

The perfect aspect expresses a relation between two time-points: the time of the state resulting from a prior situation and the time of the prior situation. For example, the sentence *I have been sick since last Tuesday* involves both the present (I am still sick) and the past (I got sick last Tuesday). It has an implication that I am still sick. Its non-perfect counterpart *I was sick last Tuesday* otherwise has no such implication.

Other than the present perfect (usually called the perfect), the past perfect (pluperfect) and the future perfect are also possible. The pluperfect, e.g., *I had cleaned the kitchen before you came home*, relates a past situation of your coming home and an even earlier situation of cleaning the kitchen. The future perfect, e.g., *I will have cleaned the kitchen by the time you come home*, relates a future situation of your coming home and a preceding situation of cleaning the kitchen.

It is well known that the perfect does not admit temporal specification in English as in (81), but this is not universal. In Spanish or Russian, for example, the perfect allows temporal specification, as in (82). Comrie (1976:56-61) identifies four types of perfect meanings: the experiential perfect, the perfect of result, the perfect of persistent situation and the perfect of recent past, see (83). Not all languages have all the four perfect meanings.

(81) I have cleaned the kitchen (\*at 3 o'clock).

(82) a. Esta mañana me he levantado a las seis.<sup>28</sup> (Spanish)  
'This morning I got up at six.'

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<sup>28</sup> *-ado* denotes the present perfect.



- b. Dom postroen v prošlom godu.<sup>29</sup> (Russian)  
 house was.built in last year  
 'The house has been built last year.' (implies still standing)  
 (Comrie, 1976:54; Kroeger 2005:158)

The experiential perfect means that a situation has held at least once in some interval in the past leading up to the present. The perfect of result indicates that a present state is referred to as being the result of a past situation. As illustrated in (83), it is clear that the experiential perfect and the perfect of result can be formally distinguished in English, although, in most cases, there are no specific formal expressions for the experiential perfect in English. The experiential perfect is expressed by 'have been to' in (83a) and the perfect of result by 'have gone to' in (83b). In (83a), it says that at least one occasion and possibly more than one, Tim did go to Japan. Otherwise (83b) implies that Tim is now in Japan or on the way to Japan, which are the results of his past action of going to Japan. Contrastively, the experiential perfect (83a) does not have such implication (see Declerck et al., 2006:247), which in the literature is referred to as discontinuity.

The perfect of persistent situation depicts a situation starting in the past and continuing (persisting) into the present. The example (83c) describes that my action of waiting started at some time in the past and until the utterance time I am still waiting. Finally, in the perfect of recent past, a situation referred to happened at some interval in the past, which is very close to the utterance time. In (83d), Tim's arrival is very recent as of the utterance time.

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<sup>29</sup> The non-perfect counterpart:

Dom byl postroen v prošlom godu.  
 house was built in last year  
 'The house was built last year.' (no implication about present state)  
 (Comrie, 1976:54; Kroeger 2005:158)

- |      |  |                                 |
|------|--|---------------------------------|
| (83) | a. Tim has been to Japan.              | Experiential perfect            |
|      | b. Tim has gone to Japan.              | Perfect of result               |
|      | c. I have been waiting for hours.      | Perfect of persistent situation |
|      | d. Tim has just (this minute) arrived. | Perfect of recent past          |

According to Klein (1994:111-113), the present perfect is analysed as (84) TT AFTER TSit, meaning that TT is entirely in the posttime of TSit, and TU INCL TT, meaning that TT includes TU. Nothing is said about the DISTANCE between TT and TSit. This definition holds for all the four types of perfect. I agree with Klein that this analysis holds for the experiential perfect, the perfect of result and the perfect of recent past, but I do not think that it is valid for the perfect of persistent situation. Klein uses the sentence *Chris has shopped there for ten years* to exemplify his point, and I will follow him using this example to explain why his analysis cannot be applied to the perfect of persistent situation.

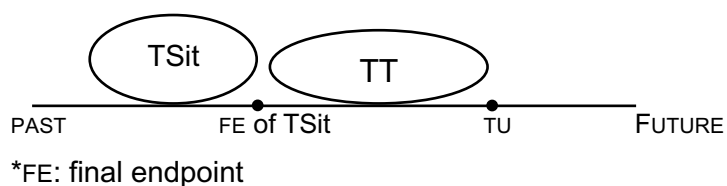
Klein argues that the full lexical content of the predicate needs taking into account. It is Chris's shopping there that will persist, not Chris's shopping there for ten years will persist. Additionally, the posttime of the TSit (Chris's shopping there for ten years) starts with the 11<sup>th</sup> year, and thereby according to (84a), the TT in this case refers to the posttime which starts with the 11<sup>th</sup> year. For the ease of understanding, I will illustrate with the diagrams in (85).

- |      |                             |
|------|-----------------------------|
| (84) | a. TT AFTER TSit            |
|      | b. TU INCL TT <sup>30</sup> |

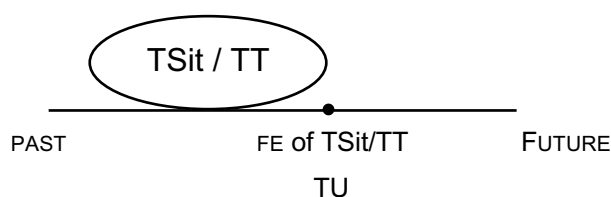
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<sup>30</sup> INCL means 'fully included in' (Klein, 1994:100).

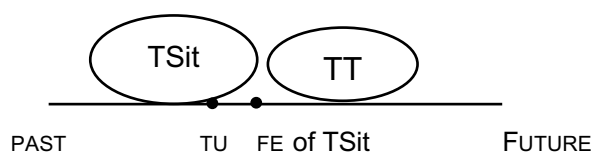
- (85) a. Klein's analysis for the experiential perfect, the perfect of result and of recent past



- b. My analysis for the perfect of persistent situation



- c. Klein's analysis to the perfect of persistent situation



Klein's analysis of the present perfect can be diagrammed as (85a), which can be applicable to the experiential perfect, the perfect of result and the perfect of recent past. Regarding (83a,b,d), the TSit respectively refers to Tim's being to Japan, going to Japan and Tim's arrival. As can be seen, the final endpoints of these three situations locate prior to the TU, which constitutes the final endpoint of the TT. So, the TU is included in the TT, but not included in the TSit. The TT and the TU, entirely falls in the posttime of TSit. The three perfect meanings can be well captured by this analysis.

Nevertheless, Klein's analysis of the perfect in (84) cannot apply to the perfect of persistent situation, because the situation is ongoing. The perfect just imposes a bounding point onto the ongoing situation, and the bounding point situates at the TU.

The perfect does not terminate the situation and locate the situation at a certain point prior to the TU. Suppose the utterance (*Chris has shopped there for ten years*) is made on the morning of 25<sup>th</sup> of December 2019 and the next day (26<sup>th</sup>) is the start of the 11<sup>th</sup> year of Chris's shopping there, the posttime should begin right after the utterance (still on the morning of 25<sup>th</sup>), rather than the 11<sup>th</sup> year starting from 26<sup>th</sup> as Klein argues. Klein's analysis of the perfect of persistent situation is diagrammed as (85c), and mine is as (85b).

As shown in (85c), Klein's analysis leads to the TU's locating prior to the final endpoint (FE) of the TSit, since he suggests that the full lexical content need considering. In so doing, the scope of the TSit extends to the end of 25<sup>th</sup> of December, rather than the TU (the morning of 25<sup>th</sup>). The location of the TU clearly violates Klein's analysis of the perfect in (84), as the TU is included in the TSit, not in the TT.

Other than that, Klein also suggests that the beginning endpoint of the TT is the start of the 11<sup>th</sup> year (26<sup>th</sup>). In this way, not just does the TT but also the TU locate in the posttime of the TSit, according to (84b). This does not correctly capture the perfect sentence's semantics. The final endpoint of the TT should be constituted by the TU, not a time-point after the TU. The perfect of persistent situation describes an ongoing situation by bounding the situation at the TU. It does not say anything about what will happen after the TU. Simply put, the TT is confined within the ten years, rather than extending beyond the ten-year duration. In sum, Klein's analysis of the perfect of persistent situation has two problems: mislocation of the TU and misinterpretation of the semantics of the perfect of persistent situation.

My analysis, contrastively, does not have these two problems, as shown in (85b). The TSit and the TT share the same scope, with the starting endpoint thereof made up by the time when Chris began shopping there and the final endpoint thereof by the TU. The real final endpoint of the ten-year duration of Chris's shopping there, said, is the final time-point of 25<sup>th</sup> December of 2019. If the utterance is made prior to or exactly at the final time-point of that day, the situation obtains, otherwise not. So, the final endpoint of the TT, namely, the TU, can be any time-point on that day, but not beyond that day. My analysis sticks to Klein's analysis (84b), but not (84a). It is,

however, unavoidable, since the nature of the perfect of persistent situation is different from the other three perfect meanings. The perfect of persistent situation deals with ongoing situations whereas other three perfect types deal with situations that have ended prior to the TU. Klein (1994:112) admits this difference and thinks of the perfect of persistent situation tricky. After clarifying the analysis of the four types of perfect, below I am going to discuss the perfect markers in TM: *guo* and *le*.

In the literature, *guo* has been reported as an experiential perfect marker or an experiential perfective marker (Comrie, 1976; Smith, 1997; Xiao & McEnery, 2004). Different from *guo*, *le* has been reported as a perfective marker (e.g., Chao, 1968; Dai, 1997; Henne et al., 1977; C. N. Li & Thompson, 1981; Tsee, 1986), and never as a perfect marker. Some researchers have alternative proposals. For example, Z. Shi (1988, 1990) identifies it as a marker of relative anteriority, and a resultative complement in habitual or future contexts. Ross (1995) suggests that it functions as a perfective marker as well as a past tense marker. Xiao & McEnery (2004) propose that it denotes 'actual aspect', a kind of the perfective aspect with which a situation is presented as an actualised single whole. J.-W. Lin (2000) suggests that *le* is both an aspect marker and a relative past tense marker. Except for Xiao & McEnery, the other three alternative proposals have one point in common: *le* has a tense-like function.

Z. Shi, Ross and J.-W. Lin notice that *le* does not function solely as an aspect marker, it is also capable of providing information about temporal anchoring of the marked situation. I agree with these researchers that *le* denotes more than perfectivity. Moreover, I argue that *le* in TM denotes three perfect meanings: the perfect of result, of persistent situation and of recent past. The experiential perfect is otherwise expressed by *guo*. The examples can be seen in (86).

- (86) a. Hailun qu- guo riben (Experiential perfect)  
       Helen go- GUO Japan  
       'Helen has been to Japan.'

b. Hailun qu- le riben (Perfect of result)  
Helen go- LE Japan  
'Helen has gone to Japan.'

c. wo zai zheli zhu- le si nian (Perfect of persistent situation)  
I in here live- LE four year  
'I have lived here for four years.'

d. ta dao- le (Perfect of recent past)  
he arrive- LE  
'He has arrived.'

The experiential perfect indicates that Helen's going to Japan in (86a) have happened at least once up to the TU, and she is currently not in Japan, which is referred to as 'discontinuity' in previous studies. The perfect of result in (86b) shows that Helen is currently in Japan or on her way to Japan. The perfect of persistent situation in (86c) indicates that my living here continues up to the TU, and it has been four years. Finally, the perfect of recent past in (86d) expresses that his arrival is very recent, very close to the TU.

So far, it can be seen that the perfect in TM is similar to that in English in two respects: 1) both languages have all the four types of perfect, and 2) the experiential perfect and the perfect of result are formally differentiated (although not in all cases in English). However, the present perfect in English does not admit the specification of time, while that in TM does, as in (87). In this regard, TM is more like Russian and Spanish in that it allows temporal specification in the present perfect. This difference in the allowance of temporal specification between TM and English can be seen in the English translation of this sentence (87) as well. The TM sentence cannot be translated into the present perfect in English.

(87) ta wudian shi da- le yi- tong dianhua  
 she 5 o'clock when dial- LE one- CLF call  
 'She made a call at five o'clock.'

Although all the examples in (86) and (87) are expressed in the present perfect, the combination of the perfect aspect is not restricted to the present tense. The perfect aspect in TM can also occur in the past tense and the future tense. The exemplary sentences of the past tense can be seen in (88), and those of the future tense in (89). Taking all the temporal environments into account, a conclusion of the uses of *le* and *guo* can be reached: the difference in the orientation time of individual clauses brings about the distinction in the temporal reference. This can explain *le*'s and *guo*'s abilities to mark relative anteriority or relative past suggested by previous researchers, rather than absolute anteriority/past, because the orientation time is not limited to the present tense (TU) only, it can be some time in the past and future. As aforesaid, their feature of relating two time-points comes from their perfect meanings.

(88) a. Hailun zai na zhiqian jiu qu- guo riben  
 Helen at that before already go- GUO Japan  
 'Before then, Helen had already been to Japan.'

b. Hailun jiueryi dizhen qian qu- le riben  
 Helen 921 earthquake before go- LE Japan  
 'Helen had gone to Japan before the 921 earthquake.'

(89) a. zai ni qu daban zhiqian, wo hui xian ba jingdu  
 at you go Osaka before, I will first BA Kyoto  
 wan- guo yilun  
 travel- GUO once  
 'Before you go to Osaka, I will have traveled around Kyoto once.'

- b. deng ni qichuang, wo zao yi chi-wan- le zaocan  
 wait you get up, I early already eat-up- LE breakfast  
 'I will have eaten up my breakfast by the time you get up.'

These two perfect markers signal termination, which is not equivalent to completion of a situation. The telic points of telic situations which are represented by these two perfect markers are not guaranteed to be realised. The fact that the realisation of a telos can be pragmatically cancelled indicates that the notion of completion is not encoded in the two perfect markers' lexical meanings. This suggests that they are capable of bounding a situation, instead of telicising a situation. They are bounding markers, rather than telicising markers. This can be supported by the sentences in (90).

- (90) a. ta he- guo zhe- ping jiu, dan zhi he yi- kou  
 he drink- GUO this- CLF wine but only drink one- sip  
 'He has drunk this bottle of liquor, but just took a sip.'<sup>31</sup>
- b. ta kan- le na- ben shu, dan zhi kan- le ji- ye  
 he read- LE that- CLF book but only read- LE few- page  
 'He has read that book, but only a few pages.'

Some researchers (J.-W. Lin, 2006; Smith, 1997) suggest that when *le* appears in a stative predicate, it imparts inchoative force to the situation. This may not be true, since none of the sentences in (91) convey inchoativity. The situation described in (91a) does not give information about when everyone got to know about the matter. It may be that everyone got to know about this matter at different timings and on different occasions. Alternatively, it may be that all of them were informed at the same time and on the same occasion, and it may be moments, days or even years ago as of the speech time. All the example expresses is that by the speech time, everyone has been informed of or got to know about this matter. There is no inchoative interpretation triggered whatsoever. Also, the verb *zhidao* 'know' is

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<sup>31</sup> Note that the English translations in these two sentences are odd.



instantaneous, which means it cannot be segmented into smaller parts, such as inchoative, middle or terminative stages. This quality of 'know' easily invalidates the inchoative interpretation claim that Smith proposes.

- (91) a. dajia dou zhidao- le zhe- jian shi  
everyone all know- LE this- CLF matter  
'Everyone has known about this matter.'  
#'Everyone has come to know about this matter.'
- b. wo qian- le Hailun yi- bai- kuai  
I owe- LE Helen one hundred dollar  
'I have owed Helen one hundred dollars.'
- c. ta pang- le  
he fat LE  
'He has gotten fatter.'

The sentence (91b) does not have an inchoative reading either. It just says that I owed Helen money, and I still owe her that money at the time of utterance. The example is uncommitted on when this situation started or this situation has just started. It may be that I owed Helen this money for years or just for a moment.

The example (91c), like (91a,b), does not have inchoative force. The sentence (91c) refers to the situation that he got fatter at some point in the past; it can be several years ago or very recent. It provides nothing about whether his getting fatter has ceased by the TU or is going to continue beyond the TU. It does not specify his getting fatter is inchoative.

C. N. Li & Thompson (1981) suggest that *le* is a perfective marker and is used when a situation has a telic point or a terminal point. Situations that do not meet this requirement cannot be expressed with *le*. They use the example in (92) to illustrate this point. This example is marked as ungrammatical by C. N. Li & Thompson

because the direct object *cha* 'tea' is unquantified, indefinite and even nonreferential, and so the situation referred to is not telicised nor bounded — which is to say that it does not have a telic or terminal point. Thus, it is incompatible with *le*.

- (92)   wo   he-    le    cha  
      I    drink- LE   tea  
      'I have drunk tea.' (C. N. Li & Thompson, 1981:200)

On the contrary, all my informants and myself think that this sentence is perfectly grammatical in TM. The situation [I drink tea] referred to by this sentence is similar to that of (91c) in that it does not specify a telos of the situation proper. That is, not by a quantified direct object (e.g., a cup of tea). However, it is a bounded event, and the boundedness is contributed by the use of the present perfect, which results from using the TU as the orientation time and the occurrence of the perfect marker *le*. In this case, it introduces a bounding point to the situation by setting the orientation time (the TU) as the terminal point. So, the situation is represented as open at the ontological level, but as closed at the actualisational level. In Klein's sense, the final endpoint of the TT, in this case, corresponds to the TU. The whole TSit (my drinking tea) is located prior to the orientation time (the TU) in the timeline. The TT situates in the posttime of the TSit, as the diagram in (85a).

C. N. Li & Thompson argue that *le* signals perfectivity, and the perfective viewpoint guarantees the inclusion of both endpoints (the starting and culminating) of a situation. Hence, *le* can only be compatible with situations which already have a starting endpoint and a final endpoint before the affixation of *le*. Theoretically speaking, if the representation of a situation already includes both the starting and culminating endpoints without the appearance of any perfective aspect marker, the situation is represented perfectly. Under such circumstances, the occurrence of *le* seems redundant if *le* is treated as a pure perfective marker.

The sentences in (93) can illustrate this point. The sentence (93a) is a bare sentence without any aspect and tense indicator. It is underspecified considering its viewpoint

aspect and temporal interpretation. Technically, it needs a context to precisely define these two information. Without the context, we do not know if the phone-calling situation is represented as closed/open at the viewpoint level and the ontological level. In contrast to these two parameters, the actualisation aspect of this sentence is relatively clear: it is represented as open. Which is to say that it is nonbounded. This is because TM is subject to the boundedness constraint (BC), which is presented in (157) and discussed in 3.3.2. Owing to the nonboundedness, this sentence is interpreted as a present occurrence by default, unless there is a temporal anaphora or overt temporal specification in the context, which may override the default temporal interpretation of this sentence. The temporal interpretation in TM is determined by the actualisation aspect, which is presented in (167) and discussed in 3.3.3. The sentence (93b) is still unclear as to the ontological closedness. Its being prefixed by the progressive marker *zai* unambiguously indicates its openness at the viewpoint and the actualisational levels. The actualisational nonboundedness leads to the present tense interpretation by default.

- (93) a. ta da dianhua  
 she make phone call  
 'She is making/makes phone call(s).'
- b. ta zai- da dianhua  
 she ZAI- make phone call  
 'She is making a phone call.'
- c. ta da- le dianhua  
 she make- LE phone call  
 'She has made phone call(s).'
- d. ta da- wan dianhua  
 she make finish phone call  
 'She finished the call(s).'

e. ta da- wan- le dianhua  
 she make- finish- LE phone call  
 'She has finished the call.'

Similarly, the representation of (93c) does not give a clue about if the phone-calling situation is telic or atelic ontologically, but the use of the perfect *le* bounds the situation at the TU at the actualisational level. The bounding point also leads to the closedness at the viewpoint level, and thus perfective representation. In (93d) the culmination is overtly specified by the RVC *da-wan* 'make-finish'. The RVC directly contributes to both the viewpoint aspect and the actualisation aspect: representing the situation as completely closed. Such closedness may not affect the viewpoint aspect, but as to the actualisation aspect it denotes complete boundedness. This kind of boundedness implies ontological closedness (telicity) in case there is no overt specification of telicity like (93d). The discussion related to the complete boundedness's implying telicity can be seen in 3.3.4. Adding *le* to (93d) generates (93e). The perfect *le* explicitly locates the phone-call event prior to the TU, making the event a past occurrence.

A closer scrutinisation will find that (93c,d) are represented separately with one perfective tool (the former is *le* and the latter is an RVC) and (93e) with two perfective tools (*le* and an RVC). If we follow the traditional view treating *le* as a pure perfective marker, there raises the question: why (93e) is perfectly marked twice (*le* + RVC)? This has been neglected in the previous studies.

My treating *le* as a perfect marker does not raise this problem. My treatment acknowledges *le*'s three temporal functions: 1) presenting a situation in holisticly, 2) situating the situation it marks prior to an orientation time (usually TU) and 3) bounding a situation at an orientation time. If *le* is used in the present tense, it bounds a situation at TU. If it is used in the past or future tense, it does not bound a situation at TU, but at an orientation time set in the past or future respectively. As such, *le* contributes to the viewpoint aspect, the actualisation aspect and the temporal interpretation of a situation.

On this account, the temporal differences among (93c,d,e) can be clearly and properly dealt with. In the case of (93c), the predicate *da-dianhua* ‘make phone call(s)’ ontologically is an activity. With the marking of *le*, the activity has two possible perfect meanings: the perfect of result or the perfect of recent past. In addition to the perfective denotation, *le* locates the whole TSit (including the final endpoint of TSit) prior to the TU, and bounds the TT at the TU. The former indicates that the situation marked by *le* is thus unambiguously interpreted as a past occurrence, and the latter indicates that the situation is represented as bounded at the actualisation level.

The RVC predicate *da-wan dianhua* ‘finish phone call(s)’ in (93d) denotes a telic situation-template. The secondary predicate *wan* ‘finish’ signals telicity and also boundedness. Different from (93c), this sentence does not have an expression indicating temporal interpretation, but still have a past tense reading. This can be ascribed to the boundedness of the predicate. Since the situation is represented as having culminated, the hearer can naturally locate this event on the time line (cf. Hatav, 1989), as predicated by the BC stated in (157). It supports that the actualisation aspect can contribute to the temporal interpretation in TM. That said, this temporal interpretation is implied, which means it can be changed pragmatically. For example, adding the clause *cai hui zou* ‘then will leave’ after (93d) will relocate the situation described by (93d) in the future tense. The temporal interpretation of TM will be discussed in 3.3.3.

(93e) accommodates the RVC predicate *da-wan dianhua* ‘finish phone call(s)’ and the perfect *le*. In my analysis, the RVC contributes to telicity, perfectivity and boundedness. Although the perfect *le* denotes boundedness and perfectivity, which are conveyed by the RVC as well, *le*, additionally, overtly relates the TSit to the orientation time (TU) in this case. This temporal function situates the entire event prior to the TU, namely, in the past. This approach justifies *le*’s collocation with RVCs and unveils *le*’s grammatical versatility. Treating *le* as a pure perfective marker as previous studies do would make it look like a redundant existence when co-occurring with RVCs, since RVCs denote perfectivity already.

RVCs such as *da-wan* 'make-finish' in (93d) represent situations with a culminating point, which signals that situations are expressed as closed at both the ontological and the actualisational levels. In other words, they are telic and bounded. *Le*, as a perfect marker, it creates a bounding point at TU, and the bounding point need not correspond to a telic point. Distinct from RVCs, *le* is able to denote a relational relation of two time-points (the TSit and the orientation time), and thus can explicitly define the sequential relation between the TSit and the orientation time, which is usually TU if not specified by a temporal adverbial or a temporal anaphora in a given discourse. This function helps to define the temporal reference of the marked situation. Provided that the orientation time is TU, the marked situation would be taken as a past occurrence, since it is entirely located prior to TU by *le*.

Accordingly, the perfect marker *le* in (93c) provides the viewpoint aspect, the actualisation aspect and tense-like information. It presents the situation [she make phone call] in the holistic manner by creating a bounding point, and locates the situation prior to TU. In so doing, we can unambiguously locate the temporal location of the situation in the past. The RVC *da-wan* 'finish making' in (93d), contrastively, explicitly offers aspectual information only: telicity, boundedness and perfectivity (closedness of all the three parameters). The boundedness then leads to the past interpretation of the described situation. Adding *le* to (93d) derives (93e). This addition directly locates the TSit prior to TU, and explicitly determines the past interpretation of the situation.

This account justifies the occurrence of *le* in clauses or sentences having RVCs by showing *le*'s capability for overtly indicating the temporal anteriority of a given situation to an orientation time. RVCs are bereft of such ability to relate two time-points. My viewing *le* as a perfect marker is clearly better than the traditional view (*le* is a perfective marker) in that 1) *le* is not a redundant existence when occurring with an RVC and 2) this treatment captures both *le*'s temporal anchoring and aspectual functions.

Recall that C. N. Li & Thompson suggest that *le* can be used under one condition: when a situation has a telos or a terminal point before the affixation of *le*. The sentence (91c) and (92) contradict this suggestion, since gaining weight and drinking tea in (91c) and (92) are atelic. My treatment of *le* is very different from C. N. Li & Thompson's, but better characterises *le* and makes more correct predictions. In my analysis, the perfect *le* is a bounding device. Its occurrence bounds a situation, giving a situation a bounding point, regardless it is atelic or telic. Being a perfect marker, *le* is equipped with the bounding ability to create a terminal point at an orientation time for situations with or without a telos. For situations with a telos, *le* can introduce a terminal point, be it completive or arbitrary. If it is arbitrary, the sentence/clause indicates a partial actualisation (the actualisation of a situation stops before reaching the telos). If it is completive, the sentence/clause indicates the completion (total actualisation) of a situation. In both cases, *le* locates the situation prior to an orientation time or TU.

So, it can be said that my view is opposite to C. N. Li & Thompson's. A terminal point or telos does not license *le*'s occurrence as they claim. It is *le*'s occurrence that imparts a terminal point onto the situation it marks. My analysis, instead, correctly predicts the grammaticality of (91c) and (92).

Another interesting example (94) provided by C. N. Li & Thompson illustrates that a quantised direct object does not necessarily bound or telicise an event or situation. According to C. N. Li & Thompson, *le*'s existence in (94) is licensed by the quantised direct object (a very lovable little cat), because it bounds or telicises the cat-raising situation. As a matter of fact, this quantised direct object does not telicise or bound the situation [his family raise cat] as C. N. Li & Thompson claim. This sentence in fact refers to an ongoing state. According to C. N. Li & Thompson's theory, *le* cannot appear in sentences like this.

(94) ta jia yang- le yi- zhi<sup>32</sup> hen keai de xiao mao  
 he home raise- LE one- CLF very lovable NOM small cat  
 'His family have raised a very lovable little cat.'

(C. N. Li & Thompson, 1981:191)

Contrary to C. N. Li & Thompson's incorrect prediction of the grammaticality of this sentence, my perfect marker treatment of *le* otherwise makes the correct prediction and offers a proper account for this sentence. This sentence denotes the perfect of persistent situation due to *le*'s marking. It is essentially an ongoing situation. The TSit and the TT overlap as (85b), and the TU serves as the final endpoint of both the TSit and the TT. The quantised object does not bound or telicise the situation, since the verb *yang* 'raise' lacks the structure-preserving-mapping property. That is, the verb phrase headed by *yang* 'raise' does not inherit its quantised or cumulative character from the referent of the direct object, *yi-zhi hen keai de xiao-mao* 'a very lovable little cat'.

In contrast to *yang* 'raise', the verb *he* 'drink' in (92) is the kind of verbs having such property. If its direct object is quantised as in *wo he-le yi-bei cha* 'I have drunk a cup of tea'. The verb phrase *he-le yi-bei cha* 'have drunk a cup of tea' does inherit the quantised character from the referent of the direct object *yi-bei cha* 'a cup of tea'. In this case, the quantised direct object does bound or telicise the situation. However, in (94) it is the perfect *le* that bounds the TSit and the TT, not the quantised object. The representation indicates that the cat-raising situation started prior to the TU and continues up to the TU. Taking the structure-preserving-mapping property into account, the occurring environment that C. N. Li & Thompson propose for *le* does not hold.

My treating *le* as a perfect marker is in line with Smith's (1997) view that *le* marks termination, rather than completion of a situation. It signals termination. Whether the termination is arbitrary or completive is not encoded in *le*. That is, *le* is capable of

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<sup>32</sup> The classifier used in C. N. Li & Thompson is *ge*, which is unacceptable in TM. So, I replace *ge* with *zhi*.



bounding a situation, not telicising a situation. Despite that, such capability, meanwhile, disproves Smith's another claim that the perfective viewpoint does not apply to states for the reason that states lack an inherent final endpoint to construct perfectivity. Nevertheless, a telos is not necessary for perfectivity. A bounding point can serve as the final endpoint at the viewpoint level, conducive to the perfective representation of a situation. As a perfect marker, *le* can create a bounding point at an orientation time (usually TU) of a sentence. This ability is demonstrated in (91), (92) and (94). It is clear that the termination created by *le* licenses the compatibility between perfectivity and states.

Hitherto, I have demonstrated with empirical data to show that *le* functions as a perfect marker instead of a perfective marker, and expounded *le*'s occurring environment. It can be certain that there are two perfect markers in TM: *le* and *guo*. Based on previous analyses (L. M.-J. Huang & Davis, 1989; Mangione & Li, 1993; Smith, 1997; Yeh, 1996), *le* and *guo* are assumed as perfective markers with the following contrasts: 1) *guo* signals partial occurrence of the situation it marks, but *le* suggests the total occurrence of the situation it marks; 2) the situation marked by *guo* must be repeatable, whilst *le* is not subject to this requirement; 3) *guo* denotes a discontinuity, which means that the resultative state caused by a previous situation does not hold at TU, yet *le* does not have the discontinuity property.

Point 1 suggests that *le* is a telicising marker whereas *guo* is a bounding marker. Since *guo* signals partial occurrence, the terminal point that *guo* marks cannot correspond to the telic point of a situation. As I have illustrated so far, neither the totality nor partiality of a situation's actualisation plays a part in licensing the occurrence of *le* and *guo*. As perfect markers, they are capable of creating a terminal endpoint for a given situation, which need not be the telos. The former can be referred back to the examples in (90a) (*guo*) and (90b) (*le*), and the latter to (88a) (*guo*) and (88b) (*le*).

Sentences such as (90a,b) indicate that *le* and *guo* signal arbitrary termination (partial occurrence), rather than completion (whole occurrence). It follows that *le* and

*guo* do not necessarily denote a holistic situation, since a situation can be terminated at any point prior to its telic point, if any. In these cases, what is represented is partial, rather than total, realisation of a situation. If the terminal point that *le* and *guo* mark corresponds to a situation's telic point, then it is the entire realisation of a situation (completion) that is represented.

Until now, there is no evidence showing that *le* and *guo* have specific restrictions on the mereological marking. Empirical evidence suggests: 1) both *le* and *guo* signal the final endpoint of a situation; 2) the final endpoint they mark can be telic or arbitrary (for atelic situations, any point is arbitrary; for telic situations, any point prior to the telic one). If the final endpoint is telic, the completion and the whole of a situation is referred to. If the final endpoint is arbitrary in telic situations, then only partial occurrence of a situation is referred to.

Point 2 above relating to repeatability is usually used to account for why predicates like *si* 'die' or *lao* 'old' are not compatible with *guo*, as in (95). However, unrepeatable predicates like *de-shuidou* 'get chickenpox' and *nianqing* 'be young' can be marked by *guo*, as in (96). These two examples show that repeatability is an unnecessary property for *guo*, and therefore it is not sufficient to contrast *guo* with *le*.

(95) a. \*ni si- guo  
 you die- GUO  
 'You have died before.'

b. \*ni lao- guo  
 you old- GUO  
 'You have been old before.'

(96) a. ni de- guo shuidou  
 you get- GUO chickenpox  
 'You have got chickenpox.'

- b. ni nianqing- guo  
 you young- GUO  
 'You have been young before.'

Regarding point 3, Hongze Pan & Lee, (2004) point out that if *guo*'s discontinuity is associated with TU (they term this 'absolute discontinuity'), then the sentence (97) would be contradictory since at TU 'he' is not in the US in the first clause but 'he' is in the US at TU in the second clause. *Guo* in the first clause signals that 'he' was in the US during some interval three years ago, yet 'he' is not in the US at TU, while *le* signals that 'he' is in the US at TU. It is impossible for a person to be in and not in the same place at the same time, viz. TU in this case. As a result, the absolute discontinuity cannot be applied to this case.

- (97) ta sannian qian qu- guo meiguo, zuotian you qu- le  
 he 3 years before go- GUO the US yesterday again go- LE  
 'He has been to the US three years ago. Yesterday, he has gone there again.'<sup>33</sup>

To avoid this problem, they propose that *guo* denotes a relative discontinuity, not an absolute discontinuity. Contrastive to the absolute discontinuity's taking TU as its evaluation reference, the relative discontinuity takes an orientation time (Pan and Lee use 'reference time') as its evaluation reference. According to them, the orientation time of the first clause is some interval ( $t_1$ ) three years ago from TU; the orientation time of the second clause is some interval ( $t_2$ ) of yesterday. The relative discontinuity operates on orientation times, which requires that "he is no longer in the US at some point after  $t_1$ , restricted by *sannian qian* 'three years ago', whereas the second clause states that he is in the US at some time point after  $t_2$ , as restricted by *zuotian* 'yesterday', and that these two times simply are far apart" (Hongze Pan & Lee, 2004:446).

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<sup>33</sup> Note that the English translation of the second clause is odd.

However, their relative-discontinuity argument does not hold in that viewing the two clauses in isolation, their respective orientation times are still TU, viz. speech time. The two clauses are represented in the present perfect, and the two temporal adverbials ‘three years ago’ and ‘yesterday’ are the temporal specifications in the present perfect. Employing their argument does not solve the contradiction they point out.

In my view, the two clauses together need to be understood with the past perfect. Recall that one of the functions that perfect meanings carry is to relate two time points. In the present perfect, it is TU that relates to the other time point, which has to precede TU, of the described situation. In TM, the present perfect admits temporal specification of the described situation. That being the case, ‘three years ago’ and ‘yesterday’ respectively specify the temporal location of the situation of his going to the US in the two clauses.

When reading the two clauses together, the two time points that the perfect aspect relates are the intervals of the two occurrences of his going to the US: the occurrence of three years ago and the other of yesterday. The orientation time of the whole sentence becomes the more recent occurrence: his going to the US yesterday, rather than TU. Due to the fact that the two related intervals situated in the past, the whole sentence is expressed in the past perfect. As a result, there is no reading contradiction pertaining to TU.

To summarise, different from previous studies’ seeing *le* as a perfective marker, I propose to view it as a perfect marker instead. That being so, there are two perfect markers in TM: *le* and *guo*. Both mark perfectivity, admitting partial and total representation of a situation. They together express four types of perfect meanings: *guo* lends the experiential perfect meaning to a described situation, whereas *le* imparts one of the three perfect meanings to a given situation — the perfect of result, the perfect of persistent situation and the perfect of recent past.

Treating *le* as a perfect marker gives a unified account for *le*'s behaviours previously observed and reported. First, the perfect aspect treatment can account for its specifying both temporal reference and aspectual meanings of a situation. Second, its abilities to express both absolute tense information and relative tense information can be explained by the difference in the orientation time. If the orientation time is TU, *le* gives absolute tense information. If the orientation time is some time in the past or future, then it defines relative tense information. Third, the discontinuity of *guo* and *le*'s lack of this property can be explained by their indicating different perfect meanings.

Concerning perfectivity, both *le* and *guo* can represent states respectively in (91) and (96b), which goes against Smith's claim that the perfective viewpoint is not compatible with states. I propose that *le* and *guo* are perfect markers, denoting perfectivity and relating two time-points. Because of this aspectual role, they are equipped with the ability to create a terminal endpoint (not telic point) of a situation. In so doing, they bound a situation. This reflects that boundedness suffices for perfectivity in TM. A telic point can be used to form the perfective viewpoint, and so does a bounding point.

In my approach, another way to construct bounding perfectivity is the reduplicative construction. In the following, I am going to focus on the construction of *V-yi-V*. Shin (2011) points out that influenced by Taiwanese, TM develops another kind of reduplicative construction expressing tentative meaning: *V-kan-kan*, which is very common in TM but does not exist in Chinese Mandarin.<sup>34</sup> Shin suggests that the advent of *V-kan-kan* in TM results from the tentative construction of *V-khuànn-māi* in Taiwanese.<sup>35</sup> It can be seen as a result of language contact between Mandarin and Taiwanese. The verb reduplication *kan-kan* comes from and functions as its Taiwanese counterpart *khuànn-māi*, meaning 'to see what will happen next'. This tentative construction of *V-kan-kan* is not to be included in my discussion because its

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<sup>34</sup> The Mandarin spoken in China.

<sup>35</sup> It is romanised as *V-kuā-bāi* in (Shin, 2011). I adopt The Taiwanese Romanisation System (Tâi-Lô) to transcribe Taiwanese in this study.

tentative meaning is conveyed lexically by the reduplicative verb *kan-kan* 'see-see', rather than grammatically.

Smith (1997:271) views the construction of V-*yi*-V as a lexical perfective, which does not hold for two reasons. First, if it is a lexical perfective, then its denotation of perfectivity must be encoded in its lexical content, which is clearly not true. Its perfectivity meaning cannot be derived merely from the lexical meaning of the two verbs and the numeral *yi* 'one', as shown in (98i) by *hua-yi-hua* 'paint-one-paint'. Literally, the semantic composition of the three elements does not make sense given the two cases of *hua* are both seen as verbs. Second, many researchers (e.g., W. Li, 2007; C. Zhang, 2000) have constructed the historical development of V-*yi*-V. Initially, the second verb *hua* 'paint' was not a verb, but a noun meaning 'stroke' instead. Together with the numeral *yi* 'one', they form a noun phrase, serving as the first verb's direct object, as translated in (98ii). The construction of V-*yi*-V has undergone grammaticalisation and then become a fixed grammatical construction denoting the delimitative or tentative aspect as we see now in (98iii).

- (98)    *hua*   *yi*    *hua*  
          paint one  paint  
          paint one  stroke  
          i. \*'paint one paint'  
          ii. 'paint a stroke'  
          iii. 'paint a little bit'/'paint first and see what will happen'

C. N. Li & Thompson (1981), Smith (1997) and Xiao & McEnery (2004) all claim that V-*yi*-V represents a situation of short duration and of little importance in the holistic fashion, and therefore is a perfective construction. Xiao & McEnery further specify three characteristics of this construction. First, the reduplication of [+durative] verbs reduces the duration of events, and that of [-durative] verbs reduces the iteration frequency of events. Second, delimitative and tentative should be treated as different concepts. Third, only [+dynamic] and [-result] verbs can be reduplicated.

Point 1 does not supported by the empirical data in (99a,b). The reduplicative verb construction *shui-yi-shui* ‘sleep one sleep’ in (99a) is underspecified in terms of the duration of this activity. It can be about the normal duration, longer or shorter than the normal duration. It does not overtly or covertly express that the duration of the activity represented by *shui-yi-shui* ‘sleep one sleep’ is to be reduced in any sense.

- (99) a. ni shui- yi- shui hui hao yi-dian  
 you sleep- one- sleep would better a bit  
 ‘You may feel better if you go sleep.’
- b. zhe- jian yifu wo feng- yi- feng jiu hao  
 this- CLF garment I sew- one- sew then fine  
 ‘It will be fine after I mend the garment (by sewing).’
- c. Hailun jiandao yi- zhi mao, ni qu ren- yi- ren,  
 Helen find one- CLF cat you go recognise- one- recognise  
 kan shi- bu- shi ni na- zhi  
 see be- not- be you that- CLF  
 ‘Helen has found a cat. (I suggest that) you go see if that is your cat.’
- d. ni zenmo bu qu si- yi- si  
 you why not go die- one- die  
 ‘Why don’t you go kill yourself!’

Similarly, the reduplicative construction *feng-yi-feng* ‘sew-one-sew’ does not mean that the repetition of the activity (sewing) is to be reduced. Imagine a scenario that a button falls off from a shirt, and a tailor utters the sentence (99b) to the shirt-owner. It does not make sense that the tailor uses the phrase *feng-yi-feng* ‘sew-one-sew’ to tell the shirt-owner that there will be some stitches reduced or I will not repeat the action of sewing as it takes. It otherwise makes more sense that the use of this phrase is to tell the owner that it is a quick job and it will not take long.

Although these two examples disprove point 1, they support point 2. The sentence (99a) is in the tentative aspect, but not the delimitative aspect, while (99b) is in the delimitative aspect, rather than the tentative aspect. The scenario of (99a) may be that, say, Tim is under the weather, and Helen suggests him go sleep. When Helen is offering this suggestion, she believes that sleeping may be helpful, but she does not know for sure if Tim will feel better afterwards. In this case, *shui-yi-shui* 'sleep-one-sleep' here conveys a tentative meaning. The use of the construction *shui-yi-shui* 'sleep-one-sleep' does not suggest that Helen expects Tim to sleep just for a little while, or shorter than Tim's usual sleep duration.

In different way, the use of the construction *feng-yi-feng* 'sew-one-sew' in (99b) does not signify the tentative meaning. It makes more sense that the tailor in the scenario of (99b) is firmly aware of the outcome of his/her sewing activity: the button will be sewn back on to the shirt. So, the use of *feng-yi-feng* 'sew-one-sew' cannot denote the tentative meaning: to see what will happen after my sewing. Instead, it denotes the delimitative meaning, indicating that the sewing can be done within a short period of time.

As to point 3, it can be invalidated by (99c), since *ren* 'recognise' is [-dynamic] and [+result] and can be used to form the V-*yi*-V construction. The other verb *si* 'die' is [+dynamic] but [+result], and can also form the V-*yi*-V construction in (99d). The two sentences indicate that the restriction that Xiao & McEnery suggest for the forming of the reduplicative construction (only [+dynamic] and [-result] verbs can be reduplicated) does not hold.

Also, as aforesaid, the reduplicative construction has been reported that it represents a situation of little importance. (99a,c) contradict this view. Suggesting an unwell person to have some sleep is, in most cases, not of little importance; trying to help someone bring back his/her cat is usually not of little importance. These instances indicate that the little-importance claim is not encoded in this construction.



From the above discussion, it can be seen that the reported semantic properties, representing a situation of a short duration and little importance are not encoded in the reduplicative construction. They are more likely pragmatically implied. In a similar vein, whether a reduplicative construction signifies the tentative or delimitative meaning partly depends on the context.

Jing-Schmidt (2005:305) rejects C. N. Li & Thompson (1981) use of the term 'delimitative aspect' (and embraces Chao's (1968) term 'tentative aspect' instead) referring to the construction, because she does not think that the quantity of an action is relevant to this construction. It is the quality, namely, tentativeness, that captures the semantic character of this construction. That said, she agrees that "Of course something tentative is naturally lesser in quantity" (Jing-Schmidt, 2005:305). This raises a contradiction to her own view. She first rejects C. N. Li & Thompson's term because the quantity of an action is 'irrelevant' to the construction, but she then associates the quantity of an action to the construction and the tentative aspect. In doing so, she weakens her own view. Moreover, as (99a) shows, tentativeness does not necessarily entail lesser quantity of an action.

I agree with Xiao & McEnery's claim that neither tentativeness nor delimitedness is sufficient enough to exclusively characterise the aspectual significance of the reduplicative construction. It can signify the tentative meaning or delimitative meaning, as the contrast demonstrated by (99a,b). However, the construction per se does not provide information about whichever aspectual meaning to be used. It is pragmatically determined, as shown in (100). The reduplicative construction *qiao-yi-qiao* 'tap-one-tap' appears in both sentences, with (100a) conveying the tentative meaning and (100b) the delimitative meaning. These two examples support another pragmatic function of the reduplicative construction: it establishes a mild request or imperative.

Regarding the temporal boundary, the construction creates a bounding terminus, rather than a telic terminus. As it can be seen that there is no temporal specification or the specification of a particular terminus in the construction. Both the examples of

(100) denote telic activities. The telicity does not come from *qiao-yi-qiao* ‘tap-one-tap’, but the quantitatively delimited object NP, *dan* ‘egg’. The reduplicative verb *qiao-yi-qiao* ‘tap-one-tap’ denotes an action with an arbitrary terminus. It does not specify how long the action lasts or how many repetitions to be done, but it encodes an arbitrary final endpoint. As such, the reduplicative construction denotes bounding perfectivity, instead of telic perfectivity.

(100) a. qiao- yi- qiao kan dan you- mei- you shou  
 tap- one- tap see egg have- not- have cooked  
 ‘Tap the egg to see if it is cooked.’

b. xian qiao- yi- qiao dan cai hao buo  
 first tap- one- tap egg then easy peel  
 ‘Tap the egg a bit first, and then it will be easy to peel.’

### 3.1.1.2 Telic perfectivity: RVCs

In Smith's (1997) and Xiao & McEnery's (2004) approaches, RVC stands for ‘resultative verb complement’. I will follow Chiang (2007), treating it as a syntactic construction. As such, RVC represents ‘resultative verb construction’ in my approach. As Chiang points out, many properties of RVCs cannot be explained by treating them as compound verbs; they have to be viewed as productive syntactic constructions, without explicit markers linking the first verb and the secondary verb. For example, the transitivity of an RVC is influenced by various factors. It is not determined simply by either the first or the secondary verb. It needs to consider the syntactic relations between the RVC and other components in a given sentence as well as the relations between the first and the secondary verb of an RVC (Lu & Ma, 1996; Y.-Z. Shi, 2000). Also, C.-H. Liu (2002) suggests that for some cases, their transitivity have to be traced back to their individual diachronic developments.

As Smith mentions, RVCs do not just contribute to the viewpoint aspect, but also to situation type. In this section, I discuss their properties regarding the viewpoint aspect. Smith classifies RVCs into three groups, Directional, Result state and Phase,

on the basis of the secondary verb. The examples are listed in (101). The class of Phase is problematic because the secondary verb *hao* in *xiuli-hao* means ‘finish’ and *dao* in *qu-dao* means ‘arrive at, reach’. Both indicate the completion of a situation, rather than the phase. In addition, the two verbs in *kan-jian* ‘spot’ have the same semantic connotation, to see, but the combination of them become an achievement verb meaning ‘spot’. There is no ‘phase’ encoded in either of the verbs.

- (101) Directional: *fei-shang* (fly up), *zou-jin* (walk in), *na-qi* (pick up)  
 Result State: *xie-xingchu* (write clearly), *tang-ping* (lie flat)  
 Phase: *xiuli-hao* (repair-good), *kan-jian* (spot), *qu-dao* (arrive)<sup>36</sup>  
 (Smith, 1997:283)

Xiao & McEnery (2004) inherit Smith’s categorisation criterion (based on the semantics of the secondary verb) and the first two classes, but change Phase into completive. Their three classes are directional, result-state and completive (cf. Klein et al., 2000). All the three types indicate the completion of a situation, and the completion or result cannot be cancelled (Klein et al., 2000). Compared to Smith’s categorisation, their approach is better as their semantic characterisation of the secondary verb is more precise.

According to Xiao & McEnery, the class of completive overtly expresses the completion and implies the resultant state by the secondary predicate, whereas that of result-state focuses on the resultant state and implies the completion. The three classes and the exemplified secondary verbs are illustrated in (102), and the exemplified sentences in (103).

- (102) a. Completive secondary verb: *wan*, *hao*, *guo* ‘finish’  
 b. Result-State: *ganjing* ‘clean’, *kai* ‘open’, *po* ‘broken’  
 c. Directional: *shang* ‘up’, *xia* ‘down’, *jin* ‘in’, *chu* ‘out’, *qi* ‘up’, *xialai* ‘down’

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<sup>36</sup> Smith (1997:283) glosses it ‘see’, but it is incorrect.

- (103) a. dao zhe- pian wenzhang xie- hao shi [...]  
 till this- CLF article write- finish when  
 'By the time this article is finished [...]' (Xiao & McEnergy, 2004:162)
- b. weile da- po tanpan de jiangju [...]  
 in-order-to hit- broken negotiation GEN deadlock  
 'In order to break the deadlock in negotiation [...]'  
 (Xiao & McEnergy, 2004:164)
- c. dangshi tamen yao wo de che ting-xialai  
 at-that-time they ask I GEN car stop-down  
 'At that time they asked me to stop my car.' (Xiao & McEnergy, 2004:170)

These RVCs represent situations perfectly, in both Smith's and Klein's approaches. They include both the starting and the final endpoint of a given situation, and establish perfective representations by creating a larger TT containing TSit. The final endpoint created by RVCs are telic, since the situations they represent are either accomplishments (e.g., (103a,c)) or achievements (e.g., (103b)).

Klein et al. (2000:758) suggest that RVCs need the appearance of *le* to guarantee the realisation of the target phase. They illustrate with (104a), but this sentence is unacceptable in TM. On the contrary, the sentence (104b) is perfectly grammatical in TM, contradicting their claim. It does not need *le* to guarantee the realisation of the target phase of the vase's being broken. As such, the claim made by Klein et al. does not hold in TM.

- (104) a. \*Zhangsan zhongyu dao- le jia  
 Zhangsan finally arrived- LE home  
 'Zhangsan finally arrived home.' (Klein et al., 2000:758)

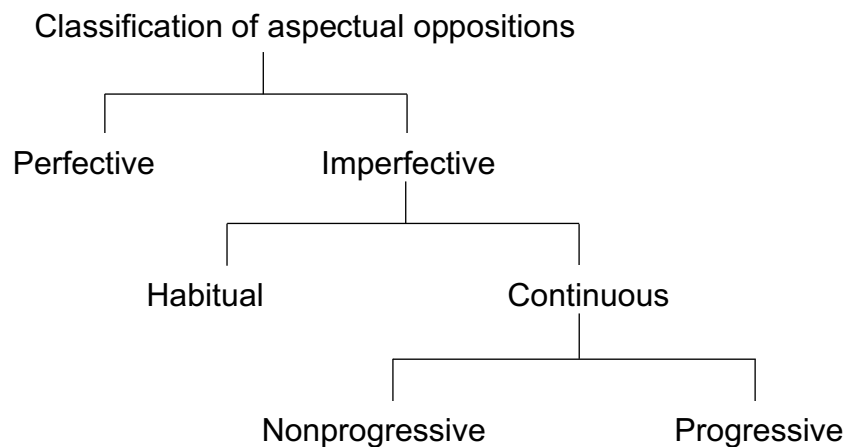
- b. Hailun gang-gang da- po huaping  
Helen just now hit- break vase  
'Helen broke the vase just now.'

### 3.1.2 Imperfectivity

Imperfective viewpoints, in Smith's sense, means that the representation of a situation excludes its starting and final endpoint. This definition leaves out the other two imperfective aspects, the ingressive aspect and the cessative/terminative aspect, as these two aspects include just one endpoint: respectively the starting endpoint and the terminal endpoint. Klein's approach does not have this problem, as he defines the imperfective viewpoint in the way that TSit is bigger than TT and TSit includes TT.

According to Comrie (1976), the imperfective viewpoint can only apply to situations which have internal structure. He devised the widely-used aspectual opposition scheme (105) (Comrie, 1976:25). Imperfective viewpoints can be further divided into the habitual and the continuous aspect; the continuous aspect can be split into nonprogressive and progressive. It is suggested by a large number of languages that not all languages make distinctions between all these subdivisions of imperfectivity. Some languages, such as English, make a distinction between nonprogressive and progressive (e.g., John sings vs. John is singing), yet not between continuous and progressive. To illustrate, let us consider the sentence *Tim is studying*. It can be either progressive or continuous. It is interpreted as progressive if Tim is studying right now for tomorrow's exam, on the one hand. It is continuous if Tim is studying for a degree, on the other hand.

(105)



Mandarin is like Cantonese in that it makes a distinction between nonprogressive and progressive, and also between continuous and progressive. The contrasts between continuous and progressive in Cantonese and Mandarin are shown in (106). Cantonese uses *gán* to mark progressive whereas Mandarin uses *zai*; *jyuh* marks continuous in Cantonese while *zhe* in Mandarin.

(106) Cantonese

a. kéuih jeuk- gán sāam (progressive)  
he wear- GÁN clothes  
'He is putting on clothes.'

b. kéuih jeuk- jyuh sāam (continuous)  
he wear- JYUH clothes  
'He is wearing clothes.'

Mandarin

a' ta zai- chuang yifu (progressive)  
he ZAI- wear clothes  
'He is putting on clothes.'

b'. ta chuang- zhe yifu (continuous)  
he wear- ZHE clothes  
'He is wearing clothes.'

The distinction between nonprogressive and progressive forms, in some languages like English and TM, is obligatory. Namely, the nonprogressive and the progressive aspect generally are not interchangeable nor can be replaced by one another. Such a distinction in other languages, such as Italian, is optional. As shown in (107a,b), the nonprogressive form *Gianni canta* does not necessarily convey nonprogressive meaning; it is compatible with a progressive reading as well. In the cases of English and TM, the progressive meaning cannot be expressed by nonprogressive forms. *John is singing* means something different from *John sings*, and these two different meanings are linguistically manifested in both English and TM in (107c,d).

- (107) a. Gianni sta cantando  
           John is singing
- b. Gianni canta  
           John sings  
           ‘John is singing.’ (Italian, Comrie, 1976:33)
- c. Yuehan zai- changge  
           John ZAI- sing  
           ‘John is singing.’
- d. Yuehan pingchang hui changge  
           John usually would sing  
           ‘John usually sings/would sing.’

In terms of the imperfective viewpoint, in TM there is no (grammatical) aspectual means to convey the habitual aspect, which depends on lexical means like adverbials *yizhi* ‘always’ or *zongshi* ‘always’. The demarcation between progressive and continuous is manifested by the respective use of *zai* and *zhe*. This aspectual characteristic, namely, the distinction between continuous and progressive, has not been properly addressed in the literature. Some researchers suggest *zhe* as a progressive marker, indicating progressive actions (Chao, 1968; Comrie, 1976; Tsee, 1986; L. Zhang, 1995), and some conflate *zhe* with *zai* (L. L. S. Cheng, 1988; C. N.

Li & Thompson, 1981; Tjee, 1986; L. Zhang, 1995). Dai (1997), C. N. Li & Thompson (1981) and Xiao & McEnery (2004) focus on *zhe*'s durativity and claim that it denotes the durative aspect. I follow Comrie's scheme, treating *zhe* as a continuous marker and *zai* as a progressive marker. This approach does not merely reflect the aspectual and semantic differences between *zhe* and *zai*, but also can reveal TM's typological features regarding its aspectual system.

### 3.1.2.1 Continuous aspect

It is clear from the scheme (105) that progressive is a subdivision of continuous. Specifically, "progressiveness is the combination of continuousness with nonstativity" (Comrie, 1976:12). Mair (2012) holds a similar view that progressive is reserved for dynamic verbs and predicates, while continuous additionally covers stative verbs and predicates. Mair points out three features of continuous predication: 1) no volitional agent is involved, 2) usually it does not occur in imperatives and 3) it does not admit adverbial modification. He illustrates with two English verbs, dynamic *study* and stative *understand* in (108). It can be seen that the stative verb *understand*, as he predicts, is not volitional and consequently cannot occur in the imperative or be modified by an adverbial. The dynamic verb *study*, contrarily, is volitional and is compatible with imperative and adverbial modification.

- (108) a. I understand Mokilese.  
b. \*I am understanding Mokilese.  
c. \*Understand Mokilese.  
d. \*I understand Mokilese eagerly.  
a' I study Mokilese.  
b' I am studying Mokilese.  
c' Study Mokilese!  
d' I study/am studying Mokilese eagerly. (Mair, 2012:806)

Mair's view about the compatibility between the continuous aspect and verb types (dynamic or stative) implicitly suggests that the continuous aspect can co-occur with both dynamic and stative verbs or predicates. This can be supported by the data in



(109), with the dynamic verb *tiao*'s 'dance' being suffixed by *zhe*. Comrie (1976) points out that stative verbs lack progressive forms. Their having progressive forms would lead to an internal contradiction between their stativity and nonstativity essential to the progressive aspect. However, the example in (109) reveals that dynamic verbs' co-occurrence with the continuous aspect does not result in an internal contradiction between their dynamicity and the non-dynamicity of the continuous aspect, since *zhe* is capable of stativising dynamic verbs (or predicates), bestowing the situation it describes stativity.

(109) Hailun tiao- zhe tiao- zhe jiu shou- le  
 Helen dance ZHE dance- ZHE then lose weight- LE  
 'Helen keeps dancing and has lost some weight.'

Nevertheless, the three features Mair proposes for the continuous aspect may not hold across languages since they cannot apply to the continuous marker *zhe* in TM, shown in (110). The sentence in (110a) indicates that the action denoted by the predicate, aspectually marked by the continuous marker *zhe*, is carried out volitionally and can be modified by the adverbial *xiaoxindi* 'carefully'. In (110b), it can be seen that *zhe* is compatible with imperative force. Simply put, the continuous marker *zhe* can occur in the predicate, which is volitional, modified by an adverbial or with imperative force in TM.

(110) a. wo yizhi xiaoxin-di peng- zhe xiaoniao  
 I keep careful-ly hold up in both hands- ZHE bird  
 'I keep carefully holding up this bird in my hands.'

b. ni ting- zhe  
 you listen- ZHE  
 'Listen!'

There are several researchers holding the view that *zhe* signifies the resultative aspect (Du, 1999; Furuli, 1997; Haihua Pan, 1998; Smith, 1997; Yeh, 1991). Smith

terms this resultative imperfective viewpoint, which “presents a state that follows the final point of a telic event” and focuses on “the interval after the change of state” (Smith, 1997:76). She demonstrates this point by the sentences in (111). The predicates *gua-zhe* ‘keep hanging’ and *tang-zhe* ‘keep lying’ indicate the resultant states of the previous telic events denoted separately by *gua* ‘hang’ and *tang* ‘lie on one’s back’.

- (111) a. qiang shang gua- zhe ji- zhang hua  
 wall top hang- ZHE several- CLF painting  
 ‘Several paintings hung on the wall.’
- b. ta zai chuang shang tang- zhe  
 he on bed top lie- ZHE  
 ‘He keeps lying on the bed.’

I hold the view that a simplex verb in TM is unable to construct a simple situation-template in the sense of Declerck et al. (2006) (see 3.2.1). In other words, simplex verbs are devoid of ontological properties such as (a)telicity and durativity. Under this view, the resultative imperfective claim is dubious. For example, simplex verbs *gua* ‘hang’ and *tang* ‘lie on one’s back’ in (111) cannot form a simple situation-template on their own accord, because they lack ontological properties of (a)telicity and durativity. This casts doubts on Smith’s claim that *zhe* presents a state that follows the final point of a telic event, since simplex verbs do not have (a)telicity.

For simplex verbs such as *gua* ‘hang’ and *tang* ‘lie on one’s back’ to represent telic events, they have to combine with other elements. Partaking in RVCs (the suffixation of *le* cannot guarantee a telic event, since *le* is capable of bounding, rather than telicising, an event) is one way to do so, such as *gua-shang* ‘hang onto (something/somewhere)’ and *tang-xia* ‘lie down’. If *zhe* signifies resultative imperfectivity, then it should be able to mark an RVC. The telic point is explicitly expressed by its secondary predicate. According to Smith, *zhe* is supposed to mark the resultant state after the telic point.

In actual fact, RVCs cannot be marked by *zhe*, forming an abstract situation template like *\*gua-shang-zhe* ‘hang onto (something/somewhere) keep’ or *\*tang-xia-zhe* ‘lie down keep’. RVCs either denote achievements as *jian-dao* ‘find’ or accomplishments as *zou-dao gongyuan* ‘walk to the park’. The continuous marker *zhe* encodes durativity and does not encode termination. In Klein’s approach, an RVC signals that TT is bigger than TSit and TT contains TSit (perfectivity), whereas *zhe* represents the reverse — TSit is smaller than TT and TSit contains TT (imperfectivity). When representing a situation, the speaker needs to choose either one of them, the perfective or the imperfective viewpoint.

As such, if a TM speaker chooses to talk about the process or action of the painting-hanging or found a wallet, the predicate will be constructed by an RVC (e.g., *gua-shang* ‘hang onto (something/somewhere)’ and *jian-dao* ‘found’). Differently, if the speaker chooses to talk about the state of a painting’s hanging on the wall, then the continuous marker *zhe* will be chosen to construct the predicate, representing stativity. A predicate does not accommodate the co-occurrence of RVC and *zhe* (e.g., *\*gua-shang-zhe* ‘hang-onto-keep’) because of the actualisation-viewpoint constraint stated in (143), which will be presented and discussed in 3.2.1.

Labelling *zhe* as a resultative imperfective is not acceptable to Xiao & McEnery (2004:187) as well, for another reason. They point out that such view cannot account for the sentences in (112). In these two examples, there is no reference to an interval after the change of state or after the telic point. The continuous marker *zhe* simply signals the durative state denoted by the predicates. Up to now, it is quite clear that resultativity is not encoded in *zhe*.

- (112) a. dui anfan you- zhe shenke de yinxiang  
of criminal have- ZHE deep GEN impression  
‘(Zou) had a strong impression of the criminal.’

- b. liang ren zhongjian fangfu ge- zhe yi- ge  
 two person in-between as-if partition- ZHE one- CLF  
 Taipingyang  
 the-Pacific-Ocean  
 'As if the Pacific Ocean in between partitions them.'

As pointed out by several researchers (e.g., J.-W. Lin, 2004; Haihua Pan, 1996; Xiao & McEnery, 2004), *zhe* can occur in locative inversion sentences. This construction involves the reversal of a locative argument and a subject argument of a sentence, as in (113). In the canonical sentence (113a), *the ball* occupies the pre-verbal subject position and the locative PP *down the hill* stays in the post-verbal position. In the locative inversion construction (113b), the subject argument *the ball* is moved post-verbally and the locative PP *down the hill* is moved to the subject position.

- (113) a. The ball will roll down the hill. (Radford, 2004:355)  
 b. Down the hill will roll the ball. (Radford, 2004:355)

The TM sentences in (114a,c) and (115b,c), however, are not in fact locative inversion sentences, since neither reversing the two arguments of these sentences ((114a',c') and (115b',c')) nor moving the locative arguments back to the post-verbal position ((114a'',c'') and (115b'',c'')) can produce well-formed canonical sentences. Thereby, I will not follow the previous researchers calling such sentences 'locative inversion sentences', but, instead, I will use the term 'locative denoting subject sentence' (LDSS).

- (114) a. Zhuozi-shang fang<sup>37</sup>- zhe yi- ben shu  
 table-top leave- ZHE one- CLF book  
 'There is a book left on the table.' (Haihua Pan, 1996:410)

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<sup>37</sup> The verb *fang* in *fang-zhe* in (114) cannot be understood as 'put' as Pan suggests, but as 'leave (something) behind'.

- a' \*Yi- ben shu fang- zhe zhuozi-shang  
 one- CLF book leave- ZHE table-top  
 'There is a book left on the table.'
- a". \*fang- zhe yi- ben shu zhuozi-shang  
 leave- ZHE one- CLF book table-top  
 'There is a book left on the table.'
- b. \*Zhangsan zai zuozi-shang fang- zhe yi- ben shu  
 Zhangsan on table-top leave- ZHE one- CLF book  
 'Zhangsan put a book on the table.' (Haihua Pan, 1996:410)
- c. chuang-shang tang- zhe shoushui- de yinger  
 bed-top lie- ZHE sound asleep- DE baby  
 'There is a sound asleep baby lying on the bed.'  
 (Xiao & McEnery, 2004:207)
- c'. \*shoushui- de yinger tang- zhe chuang-shang  
 sound asleep- DE baby lie- ZHE bed-top  
 'There is a sound asleep baby lying on the bed.'
- c". \*tang- zhe shoushui- de yinger chuang-shang  
 lie- ZHE sound asleep- DE baby bed-top  
 'There is a sound asleep baby lying on the bed.'

Haihua Pan claims that only in LDSSs can *zhe* mark accomplishment verbs, and this can explain why (114a) is well-formed but (114b) is not. This claim is doubtful in that simplex verbs cannot be assigned for a situation type on their own, as they do not have two required qualities of (a)telicity and durativity. In the Vendlerian system, a situation type must have all the three qualities: dynamicity/staticness, (a)telicity and durativity/instantaneity. Simplex verbs in TM merely have one quality: dynamicity/staticness. They lack the other two necessary qualities of (a)telicity and durativity/instantaneity. So, they cannot be categorised into any one of the

Vendlerian system. I am not the first who observe that simplex verbs in TM lack (a)telicity. Some researchers, such as T.-H. J. Lin (2001), Sybesma, (1997) and Tai, (1984), have suggested that simplex verbs in Mandarin lack inherent telicity. I agree with them and go further claiming that simplex verbs also lack durativity/instantaneity.

Under this approach, a simplex verb, like *fang* in (114a), cannot be viewed as an accomplishment verb, since it lacks ontological properties of durativity/instantaneity and (a)telicity, and is unable to be assigned for a situation type on its own. It needs to combine with other elements, such as aspect indicators (e.g., the perfect *le* or continuous *zhe*) or direct objects, or to form an RVC with another verb so as to conceptualise a simple situation-template. For instance, when *fang* is suffixed by *zhe* (*fang-zhe*, meaning that something is left behind somewhere), it is expected that the situation represented is static, durative and atelic, viz. a state. Contrastively, if *fang* is marked by the perfect marker *le* (*fang-le*, meaning that something is put down somewhere), then the situation represented is dynamic, durative and telic, viz an accomplishment.

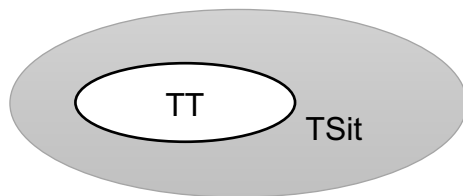
On the basis of Haihua Pan's proposals, J.-W. Lin (2004) puts forward an aspectual constraint on *zhe*: it must select an atelic situation as its complement. J.-W. Lin adopts this constraint to explain the difference in the acceptability of the sentences in (115). He mentions that (115) have three commonalities: 1) a human subject (Agent), 2) a predicate marked by *zhe* and 3) the object of the predicate is an indefinite NP. He suggests that the complement of *zhe* in (115a) is a telic event, violating the aspectual constraint on *zhe* whence results in the unacceptability of (115a). On the contrary, the two cases of *zhe* in (115b,c) have atelic events as their complements. The aspectual constraint of *zhe* is satisfied and thus these two sentences are well-formed.

- (115) a. \*Zhangsan gai- zhe yi- dong fangzi  
 Zhangsan build- ZHE one- CLF house  
 'Zhangsan is building a house/ Zhangsan has built a house.'  
 (J.-W. Lin, 2004:264)
- b. Ta tou-shang dai- zhe yi- ding maozi  
 he head-top wear- ZHE one- CLF hat  
 'He is wearing a hat on his head.' (J.-W. Lin, 2004:265)
- b'. \*yi- ding maozi dai- zhe ta tou-shang  
 one- CLF hat wear- ZHE he head-top  
 'He is wearing a hat on his head.'
- b''. \*dai- zhe yi- ding maozi ta tou-shang  
 wear- ZHE one- CLF hat he head-top  
 'He is wearing a hat on his head.'
- c. Ta shou-li zhua- zhe yi- gen gunzi  
 he hand-inside hold- ZHE one- CLF stick  
 'He is holding a stick in his hand.' (J.-W. Lin, 2004:265)
- c'. \*yi- gen gunzi zhua- zhe ta shou-li  
 one- CLF stick hold- ZHE he hand-inside  
 'He is holding a stick in his hand.'
- c''. \*zhua- zhe yi- gen gunzi ta shou-li  
 hold- ZHE one- CLF stick he hand-inside  
 'He is holding a stick in his hand.'

The aspectual constraint on *zhe* proposed by J.-W. Lin does not really hold. It states that *zhe* is compatible with atelic situations and incompatible with telic situations. It is different from *zhe*'s aspectual semantics. It is true that the situation *zhe* represents does not include the starting and the terminal points, but the situation represented by

*zhe* may be just a sub-part of the whole situation which has a terminus. More specifically, it represents the continuance of a situation in the stative manner, which entails that the terminus of a situation must not be included (TT must be contained by TSit between the starting and the final end of TSit, as demonstrated by Gvozdanović's imperfective diagram in (116)).<sup>38</sup> The continuous aspect represented by *zhe* must not include the final endpoint of TSit, no matter the final endpoint is actualisational or ontological. This can be evidenced by the following examples in (117).

(116) Imperfective



- (117) a. Agan            pao- zhe pao- zhe, pao- dao le jinianbei gu  
 Forrest Gump run- ZHE run- ZHE run- arrive LE monument valley  
 'Forrest Gump keeps running, and has arrived at the Monument Valley.'
- b. Agan            chi- zhe chi- zhe, ba yi- pan xiazi chi-wan le  
 Forrest Gump eat- ZHE eat- ZHE BA one- plate shrimp eat-finish Le  
 'Forrest Gump keeps eating and has eaten up a plate of shrimps.'

Both the above two sentences denote bounded (if the terminus is not pre-determined) or telic (if the terminus is pre-determined) events. Either kind has a final terminus. Notwithstanding, they are compatible with the continuous marker *zhe*. *Zhe* in both sentences occurs in the first clause, denoting in a stative way the durativity and continuousness of Forrest Gump's running and eating. Although the verbs *pao* 'run' and *chi* 'eat' per se are dynamic verbs, the suffixation with *zhe* stativises the situations they describe. It is clear that *zhe* is used to depict the middle part of the

<sup>38</sup> First mentioned in chapter 2.



bounded/telic situations of running to Monument Valley and eating up a plate of shrimps, with the beginning and terminal ends of TSit being left out of TT, as diagrammed in (116).

By contrast, the RVCs *pao-dao* 'run arrive' and *chi-wan* 'eaten up' in the second clauses alongside with the perfect marker *le* depict the realisation of the terminus of the two situations. As a result, TSit is contained in TT. This indicates that the use of *zhe* to construct the continuous aspect is not affected by the (non)boundedness or (a)telicity of a given situation. There is no conflict for bounded or telic situations to be represented by the continuous marker *zhe*, on condition that both ends of TSit are excluded in the representation.

Returning now to the different acceptability of (115a) and (115b,c), it is clear that J.-W. Lin's aspectual constraint on *zhe* fails to offer a proper account for the different acceptability of (115a) and (115b,c), as *zhe* can be used to represent the middle part of a bounded or telic situation. The question naturally arises of why *zhe* cannot be used to describe the middle part of the (115a).

Different from J.-W. Lin's resorting to (a)telicity, I propose a homogeneity constraint (HC), which means that only situations having homogeneity can be represented by *zhe*, stated in (118). Following Vendler's (1957) sense, an activity is homogeneous, but an accomplishment is not. Activities consist of successive phases following one another in time. For example, a person who is running lifts up the right leg one moment, then drops it, repeats on the left leg, and so on. Any part of the running is of the same nature as the whole. This is tantamount to Herweg's (1991) distributivity and subinterval property in (119) (Bennett & Partee, 2004; Desclés & Guentchéva, 1995), which is also known as 'density condition' (Bertinetto, 1994; Lenci, 1995).

(118) **Homogeneity constraint (HC)**

*Zhe* can only be used to mark situations which are homogeneous.

(119) A sentence S is said to have the subinterval property iff whenever S is true for an interval I it is also true for every subinterval of I.

(Bennett & Partee, 2004:72)

Accomplishments are not homogeneous, since they lack distributivity or the subinterval property. They are indivisible in that any sub-part of this situation is not the same as the whole situation. The situation *he ran to school this morning* can be decomposed into the preparatory phase *he ran* and the achievement part *arrived at school*.<sup>39 40</sup> Any sub-part of or the entire of the preparatory phase does not mean *he ran and arrived at school* (he may stop halfway); the achievement part alone does not mean *he ran and arrived at school* either (he may drive to school). In this regard, accomplishments are not homogeneous. In Herweg's sense, they are non-distributive, non-cumulative and countable; hence they are heterogeneous.

In the exemplified situation *he ran and arrived at school*, the preparatory phase is composed of an activity of running. I will term accomplishments with such preparatory phase 'simplex accomplishment' because it involves merely one activity. The accomplishment in (115a), 'Zhangsan is building a house', is not of the same kind (containing a simplex activity and an achievement). The achievement part of *building a house* refers to the very moment when the house is completed. Its preparatory phase, distinct from that in *he ran to school*, however, is complex, meaning that it is composed of various sub-activities. House building involves many sub-activities in the preparatory phase, such as framing, roofing, siding, plumbing, flooring, etc. The part of framing does not parallel to the other parts that are not framing. The part of roofing is not the same as other parts that are not roofing. So, each activity does not hold a homogeneous relation to any of other activities. The telic point of such accomplishments is attained by means of the cumulation of the completions of all the sub-activities. The telic point of simplex accomplishments is otherwise attained via the culmination of a single activity (e.g., run to school). For the

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<sup>39</sup> Also called 'preparatory process' in Moens & Steedman's (1988) sense, and 'preliminary stage' and 'activity' in Smith's (1997) theory.

<sup>40</sup> In Filip's (2012) words: a point of culmination, which is an instantaneous event.

ease of reference, I will call the former kind of accomplishment ‘complex accomplishment’ and the latter ‘simplex accomplishment’.

Recall Comrie’s diagram in (105), in which continuous contrasts with habitual and subsumes nonprogressive and progressive situations. Mair (2012) points out that nonprogressives are typically states. Following this, it can be said that in TM *zhe* is responsible for the nonprogressive the continuous aspect and *zai* the progressive aspect. Since nonprogressive continuous are states, they must be homogeneous. This again supports that *zhe* has a homogeneous constraint, meaning that the situation it represents must be homogeneous.

As aforementioned, neither (a)telicity nor (non)boundedness affects *zhe*’s marking, given that both ends are not included in the representation of *zhe*. *Zhe*’s incapability of representing the situation denoted by (115a) indicates its strong inclination to mark homogeneous situations. Specifically, *zhe* cannot mark the preparatory phase of complex accomplishments, such as *build a house*, but it can mark the preparatory phase of simplex accomplishments, as in (117). To better prove that the ill-formedness of (115a) does not result from an explicit terminus formed by a quantised nominal object (a house), but from the lack of homogeneity, consider the two examples in (120).

- (120) a. \*Zhangsan    gai-        zhe    fangzi  
         Zhangsan    build-    ZHE    house  
         ‘Zhangsan is building houses.’
- b. Zhangsan    hua-                zhe    shouji  
         Zhangsan    swipe/scroll-    ZHE    smartphone  
         ‘Zhangsan keeps swiping/scrolling his smartphone.’

As shown in (120a), converting the telic situation ‘build a house’ in (115a) into the atelic situation ‘build houses’ still cannot produce a good sentence. The situation denoted by (120a) is not homogeneous (composed of complex activities), and

because of that it cannot be represented by *zhe*. On the contrary, although the predicate *hua-shouji* ‘swipe/scroll (his) smartphone’ (120b) is dynamic, the situation it denotes is composed of single activity and thus homogeneous, which licenses its compatibility with *zhe*. So far, I have shown that the continuous *zhe* is subject to the homogeneity constraint (118).

Another feature of *zhe* is that it can occur in LDSSs, as mentioned in (115). A well-known existential construction in Mandarin is established by the existential verb *you* ‘have’ (121a,b), which is widely thought of as the closest counterpart to *there be*-sentences in English (C.-T. J. Huang, 1987). Other than the *you*-construction, LDSSs constructed by *zhe* are another kind of existential construction in Mandarin (Lei, 1993; J.-W. Lin, 2004; Song, 1988; Xiao & McEnery, 2004), as in (121c).

- (121) a. (gongyuan li)      you      qiaoqiaoban  
          park            inside have      seesaw  
          ‘There is a seesaw in the park.’
- b. Hailun you yi-      ben shu  
     Helen have one- CLF book  
     ‘Helen has a book.’
- c. \*(tian      li)      zhong- zhe yutou  
     farmland inside grow- ZHE taro  
     ‘There is taro growing in the farmland.’
- d. \*(Hailun xin- li)      zhuang- zhe ni  
     Helen heart- inside pack- ZHE you  
     ‘Helen has you in her heart.’
- e. \*Hailun zhuang- zhe ni  
     Helen pack- zhe you  
     ‘Helen has you in her heart.’

From these examples, it is clear that the existential *zhe*-construction is dissimilar to the *you*-construction in two respects. First, it does not allow the omission of the surface subject and the contrast is shown by (121a,c,d). Second, the *you*-construction admits a possessor NP occupying the subject position, but the *zhe*-construction does not. It must be a locative NP, as shown by (121b,e).

Xiao & McEnery (2004:200) use Dai's (1997) and Du's (1999) examples in (45) to suggest that *zhe* and *le* can be freely interchangeable in LDSSs that indicate existential status. However, their suggestion is not tenable for two reasons. First, *zhe* and *le* have their respective aspectual functions and semantics, with *zhe* being a continuous marker signalling continuousness and *le* being a perfect marker bounding situations. They are not interchangeable in the sense that replacing by the other would result in a change in meaning. Taking aspectual function or semantics into account, the two aspect markers are not interchangeable.

- (122) a. qiang shang gua- zhe/ le yi- fu hua  
 wall on hang- ZHE/ LE one- CLF picture  
 #‘On the wall was hung a painting.’ (Xiao & McEnery, 2004:200)  
*Zhe*: ‘On the wall is hung a painting.’ (My translation)  
*Le*: ‘A painting has been hung on the wall.’ (My translation)  
 (Dai, 1997)
- b. chuang shang fang- zhe/ le yi- ben shu  
 bed on put- ZHE LE one- CLF book  
 ‘On the bed lay a book.’ (Xiao & McEnery, 2004:200)  
 ‘On the bed was put a book.’ (Du, 1999:2)  
*Zhe*: ‘On the bed is lying a book.’ (My translation)  
*Le*: ‘A book has been left on the bed.’ (My translation)

Xiao & McEnery’s English translations to the exemplified sentences in (122) are not precise, and the semantic differences between *zhe* and *le* are not reflected from their

translations.<sup>41</sup> Nor does Du's English translation manifest the semantic distinction between *zhe* and *le*. To my informants and myself, the two sentences in isolation should not be interpreted in the past tense, since the painting is still on the wall and the book is on the bed when the utterance is made, regardless of either aspect marker being used. This is because the default orientation time is TU. Xiao & McEnery's past-tense translations imply that the painting is not on the wall and the book is not on the bed at speech time. This interpretation is not wrong, but it needs a context to set the orientation times of these two sentences in the past.

For (122a), the use of *zhe* and *le* have different aspectual significances. The continuous marker *zhe* denotes the continuance state of the painting's hanging on the wall, and there is no implication of limited duration or of change in the intensity of the state. The marking of *le* otherwise produces an eventive representation; by the same token, the orientation time is still TU, given that there is no specific context anchoring the situations in the past. Unlike *zhe*, *le* explicitly bounds an event at speech time, giving an event a temporal boundary at the actualisational level. It denotes indefinite past, meaning that the event occurred at a certain timing in the past, prior to speech time, if the timing is not specified. The English translations that I provide for (122a,b) reflect the differences between *zhe* and *le*.

Second, not all LDSSs admit the 'interchange' between *zhe* and *le* in Xiao & McEnery's sense, as in (123). These two examples are not compatible with perfect marker *le*.

- (123) a. wan li cheng- zhe / \*le xifan  
 bowl inside fill- ZHE/ \*LE congee  
 'The bowl is filled with congee.'
- b. guo li zhu- zhe / \*le digua tang  
 pot inside stew- ZHE/ \*LE sweet potato soup  
 'The sweet potato soup is simmering in the pot.'

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<sup>41</sup> Dai (1997) does not provide English translation for the sentence (122a).

Contrastively, the existential *zhe* can be replaced by the existential verb *you* ‘have’. All the cases of existential *zhe* in the LDSSs that I have demonstrated ((121c,d), (122a,b) and (123a,b)) can be substituted with *you* ‘have’, with their aspectual meanings unchanged, shown in (124). All these sentences are still stative, with no implication of the limits of duration nor any change in intensity.

- (124) a. tian li zhong- zhe/ you yutou  
 farmland inside grow- ZHE/ have taro  
 ‘There is taro growing in the farmland.’
- b. Hailun xin li zhuang- zhe/ you ni  
 Helen heart inside pack- ZHE/ have you  
 ‘Helen has you in her heart.’
- c. qiang shang gua- zhe/ you yi- fu hua  
 wall on hang- ZHE/ have one- CLF picture  
 ‘On the wall is hung a painting.’
- d. chuang shang fang- zhe/ you yi- ben shu  
 bed on put- ZHE/ have one- CLF book  
 ‘On the bed is lying a book.’
- e. wan li cheng- zhe / you xifan  
 bowl inside fill- ZHE/ have congee  
 ‘The bowl is filled with congee.’
- f. guo li zhu- zhe / you digua tang  
 pot inside stew- ZHE/ have sweet potato soup  
 ‘The sweet potato soup is simmering in the pot.’

To summarise, I use Comrie’s scheme in (105) to distinguish the aspectual functions of *zhe* and *zai*, with *zhe* marking continuousness and *zai* marking progressiveness. Thus, TM is like Cantonese regarding typology in that their

distinctions between continuousness and progressiveness are obligatory, while that of Italian is optional. The continuous marker *zhe* in TM can be suffixed to either stative verbs/predicates or dynamic ones, supporting Mair's view that other than stative predicates, the continuous aspect can be applied to dynamic predicates as well. In TM, when dynamic verbs are represented by *zhe*, their dynamicity will be eliminated and the whole predicate will denote stativity instead. *Zhe*'s compatibility with volitional, imperatives and adverbial modification indicates that Mair's three claims relating to the continuous aspect (no volition, incompatible with imperatives and adverbial modifications) do not hold cross-linguistically.

Additionally, I argue in opposition to the view that *zhe* signals resultative imperfectivity. I hold the view that *zhe* does not encode resultativeness, but simply signifies continuousness of a situation. I also argue against J.-W. Lin's aspectual constraint that *zhe* can only take atelic situations as its complement. I use TM data to show that *zhe*'s appearance does not depend on (a)telicity or (non)boundedness. *Zhe* can describe the continuousness of a telic or bounded situation as long as the starting and terminal points are excluded from the description. That is, TT is smaller than TSit and included in TSit, as the diagram (116) illustrates. Therefore, the middle part of accomplishments, viz. the preparatory phase, can be represented by *zhe*, but under the condition that the accomplishment is a simplex accomplishment. It means that the preparatory phase of the accomplishment is composed of one activity only. I term this underlying restriction the 'homogeneity constraint'. A situation is required to be homogenous so as to be marked by *zhe* in TM.

Finally, I discuss the existential *zhe*-sentences, also termed LDSSs. I first compare this construction with the *you*-construction. The *zhe*-construction differs from the *you*-construction in two respects: 1) the *you*-construction allows the ellipsis of the surface subject, but the *zhe*-construction does not, and 2) the *you*-construction admits a possessor NP taking up the subject position, yet the *zhe*-construction can only allow a locative NP occupying this position. Then, I argue against Xiao & McEnery's suggestion that *zhe* and *le* can be interchangeable in LDSSs, because not all such sentences can allow this change and they actually denote different



aspectual meanings. The replacement of *le* results in the change from stative reading to eventive reading, and from a nonbounded situation to a bounded situation.

On the contrary, the existential *zhe* and the existential verb *you* 'have' can be interchangeable without any aspectual changes. LDSSs marked by *zhe* retain their ontological features, being atelic, static and durative, and their situation type of states.

### 3.1.2.2 Progressive aspect

In the last section, I follow Comrie's scheme (105) defining *zhe* as a continuous marker and *zai* as a progressive marker. This classification of these two imperfective indicators indicates that TM is not a language which just grammatically distinguishes the opposition of the perfective aspect and the imperfective aspect, but also that of the continuous aspect and the progressive aspect. *Zhe*'s compatibility with types of verbs is more versatile than *zai*, as Mair suggests, with *zhe* being able to suffix to both stative and dynamic verbs, while *zai* to merely dynamic verbs.

Considering the morphosyntactic form of progressive, Blansitt (1975) separates inflectional progressive marking and four kinds of periphrastic/analytic construction, as in (125a,b). On the basis of Blansitt's classification, Bertinetto, Ebert, & de Groot, (2000:524) add another class: other types (125c). This class subsumes two subgroups, the use of particles and of word order. The progressive marker *zai* in TM, as *gán* in Cantonese, are classified as particles (125ci) (Klein et al., 2000; Mair, 2012). The examples of these two progressive indicators illustrated earlier in (106) are repeated in (126).

- (125) a. Affixal progressives  
 b. Complex verb phrases as progressive signals  
     i. verb phrases with a copula as auxiliary  
     ii. verb phrases with a motion or postural verb as auxiliary  
     iii. verb phrases with a pro-predicate (*do*-type) as auxiliary  
     iv. verb phrases with a special progressive auxiliary verb  
 c. Other types  
     i. the use of particles  
     ii. the use of word order

(126) a. ta   zai-   chuang   yifu                      (TM)  
       he   ZAI-   wear       clothes  
       'He is putting on clothes.'

b. kéuih   jeuk-   gán    sāam                    (Cantonese)  
       he       wear-   GÁN   clothes  
       'He is putting on clothes.'

Other than *zai*, there is another commonly used progressive marker *zhengzai* in TM. T.-C. Lin & Liu (2004) utilise these two markers' collocation with the three kinds of adverbials, modality adverbs, time adverbs and manner adverbs, to find out their functional contrasts. They found out that *zai* has no specific restrictions on collocating with these types of adverbials, but *zhengzai* has the following three restrictions. First, *zhengzai* can only occur with temporal adverbials which refer to a specific time point or a short period of time with a clear reference point. Second, *zhengzai* cannot co-occur with adverbials which encode the notions of iteration or habituality. Third, manner adverbs can appear prior to, but not posterior to, *zhengzai*.

T.-C. Lin & Liu illustrate point 1 with the example in (127a,b).<sup>42</sup> According to them, the temporal adverb *xianzai* 'now' in (127a) can be compatible with *zhengzai* for two reasons: 1) it has a clear reference point (the present moment 'now') and 2) it does

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<sup>42</sup> Some of my translations are different from T.-C. Lin & Liu 's in (49), (128) and (129).

not refer to a long period of time. The other temporal adverb *yibeizi* ‘a lifetime’ in (127b), contrarily, is not compatible with *zhengzai* because it refers to a long duration, rather than a specific short duration or a temporal point.

- (127) a. *darenmen hui bi xianzai meitian zai-/ \*zhengzai- yong*  
 adults will than now everyday ZAI-/ \*ZHENGZAI- use  
*deren haiyao dong ma?*  
 people more understand QM?

‘Will the adults understand more than those who use every day?’

(T.-C. Lin & Liu, 2004, [10])

- b. *ta bushi ge pianzi jiushi ge meiyou ganjue yibeizi*  
 he either a liar or a without feeling lifetime  
*dou zai-/ \*zhengzai- shuohuang de baichi*  
 all ZAI- \*ZHENGZAI- tell a lie DE idiot

‘He is either a liar or an idiot who is lying for a lifetime and unaware of it.’

(T.-C. Lin & Liu, 2004, [11])

Regarding point 2, frequency adverbs or aspectuality adverbs signalling iteration or habituality are incompatible with *zhengzai*. T.-C. Lin & Liu use the examples in (128) to show this incompatibility. Both the frequency adverb *changchang* ‘often’ and the aspectuality adverb *luxu* ‘continually’ convey the iteration of the depicted events in the two examples. As they predict, these two adverbs cannot co-occur with *zhengzai*. On the contrary, the notion of iteration and habituality does not inhibit *zai*’s co-occurrence with these two adverbs.

- (128) a. Frequency adverb

*jijinhui ye changchang zai-/ \*zhengzai- guanggao dachangai*  
 foundation also often ZAI-/ \*ZHENGZAI- advertise Colon Cancer

‘The foundation is also advertising Colon Cancer quite often.’

(T.-C. Lin & Liu, 2004, [12])

b. Aspectuality adverb

muqian quanguo ge yundong danxiang xiehui  
 currently national each exercise single-item association  
 luxu zai-/ \*zhengzai- zhaokai huiyuan dahui jinxing  
 continually ZAI-/ \*ZHENGZAI- hold member meeting carry-on  
 lijianshi ji lishizhang gaixuan  
 supervisor and director re-election

‘Currently each national association of single sport is continually holding the general meeting to carry on the re-election of the supervisor and the director.’ (T.-C. Lin & Liu, 2004, [13])

The final contrast between *zai* and *zhengzai* lies in the position of manner adverbs, if any. When a manner adverb co-occurs with *zhengzai*, it must appear between *zhengzai* and the verb, namely, it must follow *zhengzai* and meanwhile precede the verb, as the adverb *jijidi* ‘peep (an onomatopoeic adverb)’ in (129a). *Zhengzai* does not allow manner adverbs to take up other positions. For example, in (129b), the adverb *youxiandi*’s ‘lightheartedly’ taking precedence over *zhengzai* is not allowed. By contrast, manner adverbs can either precede *zai* (*youxiandi* ‘lightheartedly’ in (129b)) or follow *zai* (*butingdi* ‘keep doing something’ in (129c)). There is no particular restriction on manner adverbs’ position when they co-occur with *zai*.

- (129) a. tingjian xiauji zhengzai- jijidi chaunau  
 hear chick ZHENGZAI- peep make noise  
 ‘Hear the chicks is peeping and making noise.’

(T.-C. Lin & Liu, 2004, [15b])

- b. huajia youxiandi zai-/ \*zhengzai- xiesheng  
 painter lightheartedly ZAI-/ \*ZHENGZAI- sketch from nature  
 ‘The painter is lightheartedly sketching from nature.’

(T.-C. Lin & Liu, 2004, [14])

- c. zhengtian dou zai- buting-di jiao  
 all day all ZAI- continual-ly shout  
 '(She) is continually shouting all day.'

(T.-C. Lin & Liu, 2004, [15a])

Bertinetto et al. (2000) and Bertinetto (2000) distinguish between the focalised progressive (henceforth Foc-PROG) and the durative progressive (Dur-PROG). They found that in some European languages, these two kinds of progressives are morphosyntactically distinguished. As the names themselves suggest, Foc-PROG denotes that an event is viewed as ongoing at a single time point, which is termed 'focalisation point'. It can be overtly expressed in a sentence or recovered through the context. Dur-PROG refers to a period of time, rather than a time point. Among the languages they examined, Italian is one of the languages having the opposition of progressives, shown in (130). Recall that in (125) Blansitt identifies four kinds of periphrastic/analytic progressive constructions. In Italian, Foc-PROG is constructed by a copula auxiliary ((125bi)) in (130a) and Dur-PROG by a motion verb ((125bii)) in (130b).

(130) Foc-PROG (copula auxiliary)

- a. Lei sta lavorando  
 she is work:GER  
 'She is working.' (Bertinetto et al., 2000:521)

Dur-PROG (motion verb as auxiliary)

- b. Va dimenticando  
 goes forget:GER  
 'He is forgetting (names).' (Bertinetto et al., 2000: 523)

The differences in the aspectual meanings of the two progressive markers *zhengzai* and *zai* indicate that TM also has the progressive opposition. T.-C. Lin & Liu's two observations that *zhengzai* can merely refer to a time point or a short interval, and is incompatible with iterative or habitual adverbials shows that *zhengzai* is a marker

for Foc-PROG. *Zai* is responsible for Dur-PROG, shown in (131). It is clear that what (131a) describes is a focalisation point, which is overtly expressed by the first clause ‘when the lamp fell off’. The example (131b) refers to an interval ‘all day’, and in this case the appearance of *zhengzai* is unacceptable. These two sentences demonstrate that *zhengzai* can mark only Foc-PROG, but *zai* can mark both Foc-PROG and Dur-PROG.

- (131) a. deng diao-xialai shi, wo zai-/ zhengzai- chi wancan  
 lamp fall-off when, I ZAI-/ ZHENGZAI- eat dinner  
 ‘When the lamp fell off, I was having dinner.’
- b. wo zhengtian dou zai-/ \*zhengzai- huahua  
 I all day continually ZAI-/ \*ZHENGZAI- draw  
 ‘I have been drawing all day.’

It can be seen that *zai* can cover *zhengzai*’s aspectual function, but not vice versa. This supports Bertinetto et al.’s observation that the opposition of Foc-PROG and Dur-PROG is not consistently reflected by a morphological difference. A progressive device may be able to denote both Foc-PROG and Dur-PROG. *Zai* is a case of such versatile progressive device in that it can express the two kinds of progressives.

Bertinetto et al. assume that if a PROG form can be used in the present tense in a language, then it can be used in the past tense as well. The two progressive markers in TM support this assumption. The two markers *zai* and *zhengzai* can be used in the present tense as shown in (132), and they can appear in the past tense as shown in (131a).

- (132) wo xianzai zai-/ zhengzai- huahua  
 I now ZAI-/ ZHENGZAI- draw  
 ‘I am drawing right now.’

Also, Bertinetto et al. suggest that in principle the progressive aspect is compatible with both the perfective and the imperfective aspect in European languages, but clearly favours the imperfective aspect, especially in those languages which has the opposition of the perfective and imperfective aspects. This suggestion is substantiated by the TM data in (133).

- (133) a. ni yao de baogao ta yijing zai-/ \*zhengzai- xie- le  
 you request DE report he already ZAI-/ \*ZHENGZAI- write- LE  
 ‘He has already been writing the report that you requestd.’
- b. youren zai-/ \*zhengzai- zuo- le, buyong danxin  
 someone ZAI-/ \*ZHENGZAI- do- LE, no worry  
 ‘There has been someone doing (something), no worries.’

Both examples in (133) illustrate the co-occurrence of the progressive *zai* and the perfect marker *le* (the perfect aspect is a sub-domain of the perfective domain). However, *zhengzai* is not compatible with the perfect marker *le*. This indicates that in TM, Dur-PROG is compatible with the perfect aspect, but Foc-PROG is not.

Summing up, in this section, I use Bertinetto et al.’s and Bertinetto’s approach to distinguish the aspectual functions of the two progressive indicators *zhengzai* and *zai* in TM. *Zhengzai* exclusively denotes Foc-PROG and *zai* conveys both Foc-PROG and Dur-PROG. That is to say, *zhengzai* is used to describe a situation’s ongoingness at a specific time point or in a short interval; it cannot be used to describe a long duration of a situation. *Zai*, contrastively, can be utilised to express the ongoingness at a specific time point or for a long duration.

The uses of *zhengzai* and *zai* indicate that the three observations made by Bertinetto et al. from European languages are also valid for TM. First, the opposition of the progressives (Foc-PROG and Dur-PROG) is not always manifested by morphosyntactic devices. In the case of TM, both Foc-PROG and Dur-PROG can be expressed by the the same morphosyntactic form *zai*. Second, if a progressive

device can be used in the present tense, it can be used in the past tense as well. From the examples illustrated above, it is clear that both *zhengzai* and *zai* can be used in these two tenses. Finally, although in languages which has the viewpoint opposition (perfective vs. imperfective), progressive occurs most often with the imperfective aspect, it can be compatible with the perfective aspect as well. In TM, as shown in (133), only *zai*, rather than *zhengzai*, can co-occur with the perfect marker *le*.

### **3.2 Ontological aspect**

The ontological aspect is also known as Aktionsart, actionality, lexical aspect, eventuality type, internal aspect or Vendler's class. It is a semantic category concerning situation's properties, namely, the internal temporal constituency of a situation represented by the verb. I will borrow the term 'situation-template' from Declerck et al. (2006), to refer to the mental construct that can be assigned for a situation type in accordance with the Vendlerian system. Situation-templates do not necessarily encode actualisational information. In other words, they do not necessarily relate to (non)boundedness.

In this section, I will show that the introduction of the notion of situation-template offers a useful perspective to analyse how a situation is conceptualised in TM, and how simplex verbs contribute to the situation conceptualisation in TM. Also, I will argue that the (non)inclusive-duration-adverbial test and the completion entailment test are not for ontological (a)telicity distinction, but for actualisational (non)boundedness distinction.

#### **3.2.1 The situation conceptualisation in TM**

Declerck et al. put forward a notion of 'situation-template', whose nature pivots on the lexical contents of a verb or verb phrase. According to them, a situation-template refers to an abstract situation type. A situation-template denotes a rather abstract schema for a situation and a schematic type of situation. That is, a situation-template has particular semantic characteristics so that it can be classified on the basis of, for instance, the Vendlerian classification of situation, presented in (134) based on



Smith (1997:20).<sup>43</sup> For example, the verb *drink* and the verb phrase *drink your juice* signal their own respective situation-templates, with the former denoting an activity and the latter an accomplishment. As shown in (134), each situation type has its specific values for the three ontological features. It means that the verb *drink* encodes [+dynamic], [+durative] and [-telic] in its lexical content, and the compositional semantic content of the verb phrase *drink your juice* is [+dynamic], [+durative] and [+telic]. We can see that either the simplex verb *drink* or the VP *drink your juice* contains actualisational information.

(134)

	<i>Dynamic</i>	<i>Durative</i>	<i>Telic</i>
<i>State</i>	-	+	-
<i>Activity</i>	+	+	-
<i>Accomplishment</i>	+	+	+
<i>Achievement</i>	+	-	+

According to Declerck et al., a verb like *drink* denotes a simple situation-template, and the verb phrase like *drink your juice* an enriched situation-template, which can be further enriched by elements not part of the verb phrase per se, but of the predicate constituent (e.g., *drink your juice slowly*). The simple situation-template is the smallest mental construct that can be assigned to a situation type in line with the Vendlerian system. So far, it is clear that the three features, [±durative], [±telic] and [±dynamic], are necessary to conceptualise a simple situation-template in the Vendlerian system.

Situation-template is an important notion for analysing how situation is mentally and linguistically conceptualised in TM. Separate from previous approaches, it decomposes the constitution of a situation in the way that is irrelevant to temporality. It establishes a unit-wise system, which is in line with our mental construct and linguistic units, for the conceptualisation of a situation. Metaphorically speaking,

<sup>43</sup> Some post-Vendlerians such as Dowty (1972) utilise the four features to classify Vendler's classes: [±punctual], [±durative], [±telic] and [±dynamic]. I adopt Smith's (1997) three features: [±durative], [±telic] and [±dynamic].

simple situation-templates are like the foundation of a house building, and other additional constituents are like bricks. Adding bricks on the foundation step by step is like conceptualising an enriched situation-template and a further enriched situation-template. Along the way, we will have established a house at the end. A situation denoted at sentential level is like the final outcome of a house-building process, a house. It is possible for newly added constituents to alter one or more value (+/-) of the three ontological qualities, and thus change the situation type. Situation-templates of each layer, viz. simple, enriched, further enriched and so on, must have the three essential qualities associated with dynamicity/staticness, durativity/instantaneity and (a)telicity, so that they can be assigned for a situation type. In other words, if a denotation happens to lack one or more of the three qualities, it cannot be assigned for a situation type and therefore is not qualified to be a situation-template. So, a denotation needs to meet the situation-template criterion (abbreviated as 'STC') in (135) to be a situation-template.

(135) **Situation-template criterion (STC)**

A denotation must have all the three ontological qualities of dynamicity/staticness, durativity/instantaneity and (a)telicity to be a situation-template.

In view of the approach of Declerck et al., simplex verbs in TM (e.g., *he* 'drink, shout') are unable to conceptualise a simple situation-template, because their denotations have only one property of dynamicity/staticness and lack the other two required temporal properties of durativity and (a)telicity. Simply put, simplex verbs in TM do not meet the STC. To be assigned to a particular situation type in terms of the Vendlerian system, a situation-template needs to have a specific value for each of the three ontological features in connection with dynamicity, durativity and (a)telicity. The lexical content of the simplex verb *drink* in English has a value for each of the three features; it is dynamic, durative and atelic. Contrastively, in TM the lexical content of the simplex verb *he* 'drink, shout' has merely a positive value for dynamicity (viz. [+dynamic]) but has no values for durativity and (a)telicity. Having just one definite value for one of the three necessary temporal features is not enough to be assigned to one of the Vendlerian situation types, and thus, simplex verbs like

*he* 'drink, shout' cannot conceptualise a mental construct that represents a simple situation-template. This simplex verbs' ontological characteristic in TM is stated in (136).

(136) **Simplex verbs' ontological characteristic**

Simplex verbs' denotations in TM have only the quality of dynamicity/staticness and lack the qualities of durativity/instantaneity and (a)telicity. Thereby, they cannot conceptualise a simple situation-template.

To form a simple situation-template, the verb *he* needs at least another element, alongside which it can form an RVC like *he-guang* 'drink-empty', a complex verb like *he-chi* 'snap at someone', or a verb phrase like *he-guozhi* 'drink-juice', so that there are definite values for the features of durativity and (a)telicity. The RVC *he-guang* 'drink-empty' expresses an accomplishment, and the complex verb *he-chi* 'snap at someone' and the verb phrase *he-guozhi* 'drink-juice' are activities. Additionally, simplex verbs' being affixed by an aspect marker can form a simple situation-template, such as *he-zhe* 'be drinking', which is a state. Note that the continuous *zhe* stativises the dynamic verb *he* 'drink'. For the ease of reference, I term this 'simple situation-template constraint', abbreviated as SSTC in (137).

(137) **Simple situation-template constraint (SSTC)**

A simplex verb in TM must combine with another element to conceptualise a simple situation-template.

In English, simplex verbs such as *drink* meets the STC and so it can conceptualise a simple situation-template. Simplex verbs such as *he* 'drink, shout' in TM otherwise do not meet the STC, and thus fail to conceptualise a simple situation-template. This accounts for why simplex verbs in TM require to combine with other constituents to form the smallest unit of situation, namely, the SSTC. This characteristic of the situation conceptualisation of TM will be used to explain the licensing of SVO sentences and *ba*-sentences in chapter 4.

There are more examples demonstrating the simplex verbs' inability to conceptualise a simple situation-template. The verb *zhua* 'grab, get hold of' is dynamic, but without cooperating with another constituent it cannot conceptualise a simple situation-template, since it does not have the other two required qualities of durativity and (a)telicity. If it combines with a manner adverb *jin* 'tight', forming the new verb phrase *zhua-jin* 'hold tight', then the verb phrase acquires durativity and atelicity, and can be categorised as an activity. If it combines with the object *hudie* 'butterfly' forming the dynamic, durative and atelic verb phrase *zhua hudie* 'catch butterfly', it is an activity. The addition of the secondary predicate *dao* 'arrive, successfully' right after the verb *zhua* 'grab, get hold of' creates the newly formed verb phrase *zhua-dao* 'successfully grab or capture'. It is dynamic, instantaneous, and telic, signalling an achievement.

In TM, the addition of a secondary predicate to a simplex verb can form an RVC like the example *zhua-dao* 'successfully grab or capture'. Compound verbs like this, namely RVCs, do not just encode ontological telicity, but also actualisational boundedness. So, in the case of *zhua-dao* 'successfully grab or capture', it denotes a bounded achievement. The contrast between the verb phrase *zhua hudie* 'catch butterfly' which does not encode actualisational information and the bounded RVC 'successfully grab or capture' is illustrated in (138).

- (138) a. Tim    *zhua*    *hudie*  
           Tim    catch   butterfly  
           'Tim catches/is catching butterfly.'
- b. Timu    *zhua-*    *le*    *hudie*  
           Tim    catch-   LE   butterfly  
           'Tim has caught butterflies.'
- c. Timu    *zhua-*    *dao*            *hudie*  
           Tim    catch-   successfully   butterfly  
           'Tim successfully caught a butterfly.'

The activity verb phrase *zhua hudie* ‘catch butterfly’ does not encode any actualisational information, and so can be used in either a nonbounded sentence like (138a) or a bounded sentence like (138b). The bounding information is not provided by the verb phrase per se, but from the perfect *le*. In view of this, (138b) represents a bounded activity, and (138c) is a bounded achievement. It is similar to (138b) in that they are both bounded, but they differ in their contributors of boundedness. The boundedness of (138b) comes from the perfect marker *le*, and that of (138c) from the RVC *zhua-dao* ‘catch-successfully’ itself.

Declerck et al. (2006:81) also suggest that the viewpoint aspect may overrule the ontological aspect. For example, the verb *be* normally refers to a state, which is normally incompatible with the progressive aspect. That said, in the sentence *He is being quiet*, *be* is used in the progressive form. In this case, the verb *be* does not relate to a state nor have the ontological feature of staticness; it represents a dynamic (non-static) situation instead.

Similar overruling can be found in TM as well. Recall that the continuous indicator *zhe* can impart staticness to dynamic verbs in (117). Another example can be utilised to instantiate this in (139). The verb *he* ‘drink’ is a dynamic verb; with the marking of *zhe*, the dynamic situation *he-jiu* ‘drink liquor’ is converted into a state, and its dynamicity thereby is turned into staticness. In this case, the viewpoint aspect overrides the ontological aspect of the situation described in (139). The use of *zhe* turns a dynamic predicate into a stative one, because the continuous *zhe* is a stativiser.

(139) ta zai fangjian he- zhe jiu  
 he in room drink- ZHE liquor  
 ‘He is drinking liquor in his room.’

The two-dimension model neutralises the interaction between the viewpoint aspect and the actualisation aspect, since there is no distinction between ontological (a)telicity and actualisational (non)boundedness. Final endpoints in this model are

classified into two kinds: created by the viewpoint aspect and not by the viewpoint aspect. Those belonging to the latter kind are categorised as telic points. Following this model, telic and nonbounded predicates are classified as telic, telic and bounded predicates are classified as telic, atelic and nonbounded predicates are classified as atelic, and finally, atelic and bounded predicates are classified as atelic. For the ease of understanding, these four conditions are encapsulated in (140).

(140)

3-dimension model	2-dimension model	Examples
Telic Nonbounded	Telic	catch this butterfly zhua zhe- zhi hudie catch this- CLF butterfly
Telic Bounded	Telic	(someone) caught this butterfly zhua- dao zhe- zhi hudie catch- successfully this- CLF butterfly
Atelic Nonbounded	Atelic	catch butterflies zhua hudie catch butterfly
Atelic Bounded	Atelic	(someone) has caught butterflies zhua- le hudie catch- LE butterfly

It can be seen that the difference in the actualisation aspect in the two-dimension model is neutralised. In English, the interaction between the viewpoint aspect and the ontological aspect may not be different from that between the viewpoint aspect and the actualisation aspect, since except for telic and bounded predicates, other three types of predicates can be expressed with both perfective and imperfective viewpoints without changing their (a)telicity and (non)boundedness. Examples are shown in (141). The imperfective viewpoint changes (141b) into the past tense version of (141a'). The boundedness of (141b) is converted to nonboundedness. Telic predicates' completion can be entailed by the perfective past as (141b).

(141) Telic + nonbounded

- a. Tim catches this butterfly
- a'. Tim is/was catching this butterfly.

Telic + bounded

- b. Tim caught this butterfly.

Atelic + nonbounded

- c. Tim catches butterflies.
- c'. Tim is/was catching butterflies.

Atelic + bounded

- d. Tim has caught butterflies.
- d'. Tim has been catching butterflies.

However, in TM bounded predicates are incompatible with the progressive and continuous viewpoints, as in (142), and this constraint cannot be manifested by the two-dimension model. Consider (142b) and (142d). These two examples are different in the ontological parameter, with (142b) being telic and (142d) being atelic, and both are incompatible with the continuous aspect (*zhe*) and progressive aspect (*zai*), shown in (142b',d'). Their incompatibility with the two imperfective aspects cannot be explained by the two-dimension approach, since it neutralises the difference caused by the actualisational parameter ((non)boundedness). It is clear that progressivity and continuousness are infelicitous with boundedness, regardless whether the boundedness is contributed by an RVC as in (142b') or by the perfect marker *le* as in (142d'). According to the English and TM data that I illustrate in (141) and (142), (a)telicity of predicates does not affect predicates' compatibility with either the imperfective or the perfective viewpoints. Yet, in TM, actualisational boundedness rejects the progressive and continuous viewpoints. I call this 'actualisation-viewpoint constraint' (AVC), stated in (143).

(142) Telic + nonbounded

a. Timu zhua zhe- zhi hudie  
Tim catch this- CLF butterfly  
'Tim catches this butterfly'

a'. Timu zai- zhua zhe- zhi hudie  
Tim ZAI- catch this- CLF butterfly  
'Tim is catching this butterfly'

a''. Timu zhua- zhe zhe- zhi hudie  
Tim catch- ZHE this- CLF butterfly  
'Tim is catching this butterfly'

Telic + bounded

b. Timu zhua- dao zhe- zhi hudie  
Tim catch- successfully this- CLF butterfly  
'Tim successfully caught this butterfly.'

b'. Timu (\*zai) zhua- dao (\*zhe) zhe- zhi hudie  
Tim (\*ZAI) catch- successfully (\*ZHE) zhe- CLF butterfly  
'\*Tim is/was successfully catching this butterfly.'

Atelic + nonbounded

c. Timu zhua hudie  
Tim catch butterfly  
'Tim catches butterfly.'

c'. Timu zai- zhua hudie  
Tim ZAI- catch butterfly  
'Tim is catching butterfly.'

c''. Timu zhua- zhe hudie  
Tim catch- ZHE butterfly  
'Tim is catching butterfly.'



Atelic + bounded

d. Timu zhua- le hudie  
Tim catch- LE butterfly  
'Tim has caught butterflies.'

d'. Timu (\*zai) zhua- le (\*zhe) hudie  
Tim (\*ZAI) catch- LE (\*ZHE) butterfly  
'Tim has been catching butterflies.'

(143) **Actualisation-viewpoint constraint (AVC)**

In TM, bounded predicates are incompatible with the progressive and continuous viewpoints.

The necessity of the (a)telicity-(non)boundedness demarcation is not only justified by the AVC in TM, but also by the temporal interpretation of TM. (Non)boundedness concerns the temporal interpretation of SVO sentences and *ba*-sentences. The discussion will be presented in chapter 4.

**3.2.2 Two diagnostics of (a)telicity?**

The ontological division between telic verbs and atelic verbs has been a basic and important issue. In the literature (e.g., Filip, 2012), the compatibility with (non)inclusive duration adverbials and the completion entailment are two commonly used tests to distinguish between telic and atelic verbs. I am going to demonstrate that these two diagnostics are not for (a)telicity. They are, as a matter of fact, tests for (non)boundedness.

In the two-dimension model, telic verbs have been reported being compatible with the inclusive duration adverbial modifier *in X time*, whereas atelic verbs with *for X time* as shown in (144). In (144a) the adverbial *in X time* measures the interval within which the situation described by the telic verb phrase *wrote the letter* culminates. In contrast, the *for X time* adverbial measures the duration of the situation described by the atelic verb *ran*.

- (144) a. Tim wrote the letter in an hour/\*for an hour. (Telic)  
 b. Tim ran for an hour/\*in an hour. (Atelic)

In TM, this test does not work as effectively as in English, seeing that telic predicates in TM are compatible with both types of duration adverbials. The corresponding inclusive adverbial of the *in X time* adverbial in TM is the modifier *zai NP (zhi) nei*, and that of the *for X time* adverbial is more complicated, paralleling to the construction *V le NP (zhijiu)*.<sup>44</sup> In (145), the telic verb phrase *xie nafeng-xin* ‘write that letter’ can be combined with both the inclusive adverbial *zai NP (zhi) nei* ‘in X time’ and the noninclusive adverbial *V le NP (zhijiu)* ‘for X time’, as in (145a,b). When the verb phrase *xie nafeng-xin* ‘write that letter’ collocates with inclusive modifier *zai NP (zhi) nei* ‘in X time’ (*zai yixiaoshi (zhi)nei* ‘in one hour’) in (145a), the overt expression signalling the attainment of the telic point is required. In this case, it is expressed by the secondary predicate *wan* ‘finish’, with which the simplex verb *xie* ‘write’ constructs an RVC. Contrastively, when the verb phrase collocates with noninclusive *V le NP (zhijiu)* ‘for X time’ (*xie-le yixiaoshi zhijiu* ‘have written for an hour’), the completion is not entailed. The sentence (145b) includes termination, rather than culmination. It takes contextual information to guarantee the culmination significance.

- (145) a. Timu zai yi- xiaoshi nei xie- wan nafeng xin  
 Tim in one- hour within write- finish that letter  
 ‘Tim wrote that letter in an hour.’  
 (Telic + completely bounded + inclusive modifier)
- b. Timu nafeng xin xie- le yi- xiaoshi (zhijiu)  
 Tim that letter write- LE one- hour (that long)  
 ‘Tim has been writing that letter for an hour.’  
 (Telic + arbitrarily bounded + noninclusive modifier)

<sup>44</sup> The NP denotes a temporal interval.

- c. \*Timu zai yi- xiaoshi zhinei pao  
 Tim in one- hour within run  
 ‘\*Tim ran in an hour.’

(Atelic + inclusive modifier)

- d. Timu pao- le yi- xiaoshi (zhijiu)  
 Tim run- LE one- hour (that long)  
 ‘Tim has run for an hour.’

(Atelic + arbitrarily bounded + noninclusive modifier)

As (145a,b) demonstrate, telic predicates are felicitous with both inclusive and noninclusive modifiers in TM. Differently, the collocation of atelic verbs like *pao* ‘run’ is more restricted in that they can only co-occur with the noninclusive adverbial *V le NP (zhijiu)* ‘for X time’, yet they cannot co-occur with the inclusive adverbial *zai NP (zhi) nei* ‘in X time’, as shown in (145c,d). The TM sentences (145a,b) cast doubt on the traditional view that (non)inclusive duration adverbials can be used to demarcate between telic and atelic predicates. The example in (146) further casts doubt on whether the telic/atelic demarcation is reliable in English.

(146) Tim was writing the letter \*in an hour / for an hour.

The sentence (146) shares the telic predicate *write the letter* with that in (144a). If (non)inclusive duration adverbials are really a test for (a)telicity, then the telic predicate is supposed to be compatible with the inclusive modifier *in an hour*, just as (144a). However, when the predicate is expressed imperfectively in (146), it cannot be modified by the inclusive modifier *in an hour*, but can be modified by the noninclusive modifier *for an hour* instead. This indicates that the (non)inclusive-duration-adverbial test cannot make correct predication of a predicate’s (a)telicity.

Taking the actualisation aspect into consideration, on the other hand, can make correct predictions of the compatibility between the types of predicates and duration adverbials. In my analysis, this is a diagnostic for actualisational (non)boundedness,

specifically, it is a test for completive boundedness. Inclusive duration adverbials select completely bounded predicates, and noninclusive adverbials refuse such predicates. The selectional restriction of (non)inclusive duration adverbials is stated below (147):

(147) **Selectional restriction of (non)inclusive duration adverbials**

Inclusive duration adverbials select completely bounded predicates, and noninclusive duration adverbials select non-completely bounded predicates.

The predicate *write the letter* is telic, and it can be represented as bounded or nonbounded. Nonbounded representations of this predicate is like *Tim is writing the letter*, in which there is no final endpoint presented at the actualisational level. In English, when telic predicates are expressed in the perfective past, their completion are entailed. The sentence (144a) is a case of this, denoting completive boundedness. If telic predicates are expressed in the perfect progressive aspect *Tim has been writing the letter*, then they denote arbitrary boundedness. When the same predicate is used in an imperfective past sentence like (146), the telicity of the predicate remains unchanged. What is changed is the actualisational feature of the predicate. Without any duration adverbial, in (144a), it is represented as completely bounded, and in (146) as nonbounded because of the use of the progressive form. The representation of the predicate in (146) does not satisfy the selectional restriction of inclusive duration adverbials (147), and thus cannot be modified by *in an hour*. Contrarily, it meets the selectional restriction of noninclusive duration adverbials, and so it is compatible with *for an hour*.

The selectional restriction (147) is not exclusively for English, (non)inclusive duration adverbials in TM are subject to this restriction as well. I am going to use the corresponding telic predicate *xie zhe-feng xin* 'write this letter' to demonstrate this point. The sentence in (148a) is perfective, telic and nonbounded at the actualisational level. Adding the inclusive modifier to (148a) produces an unacceptable sentence (148b), which illustrates again that the (non)inclusive-

adverbial test cannot make correct predictions of a predicate's ontological (a)telicity. The addition of the secondary predicate *wan* 'finish' to the verb turns the predicate from a nonbounded to a completely bounded predicate in (148c). The complete boundedness licenses the inclusive modifier. In (148d,e), the telic predicate are respectively marked by the progressive marker *zai* and the continuous marker *zhe*, which impart nonboundedness to the predicate. Thereby, the inclusive modifier cannot occur in these two sentences because of the AVC in (143). The examples in (148) show that in TM the inclusive modifier *zai NP (zhi) nei* 'in X time' selects completely bounded predicates.

- (148) a. Timu xie zhe- feng xin  
 Tim write this- CLF letter  
 'Tim writes this letter.'
- b. \*Timu zai yi- xiaoshi nei xie zhe- feng xin  
 Tim in one- hour inside write this- CLF letter  
 'Tim writes this letter in an hour.'
- c. Timu zai yi- xiaoshi nei xie- wan zhe- feng xin  
 Tim in one- hour inside write- finish this- CLF letter  
 'Tim finished writing this letter in an hour.'
- d. \*Timu zai yi- xiaoshi nei zai- xie zhe- feng xin  
 Tim in one- hour inside ZAI- write this- CLF letter  
 'Tim was writing this letter in an hour.'
- e. \*Timu zai yi- xiaoshi nei xie- zhe zhe- feng xin  
 Tim in one- hour inside write- ZHE this- CLF letter  
 'Tim was writing this letter in an hour.'

The noninclusive modifier *for X time* and its counterpart in TM *V le NP (zhijiu)* are bounding modifiers themselves, because their appearance gives a situation a temporal boundary at the actualisational level. For example, in (144b), the verb *run* is

atelic. Without the noninclusive modifier *for an hour*, the sentence *Tim ran* does not have a clear temporal boundary at either the ontological level or the actualisational level. The addition of the modifier does not make the predicate telic, since its lexical content does not have an inherent final endpoint. So, it still lacks a temporal boundary at the ontological level. However, the modifier gives the predicate a temporal boundary and a final endpoint at the actualisational level.

By the same token, the noninclusive modifier *V le NP (zhijiu)* ‘for X time’ in TM functions to bound a situation, rather than telicise a situation. It gives a situation a temporal boundary and a final endpoint at the actualisational level only. The modifier per se contains the perfect marker, also a bounding marker,<sup>45</sup> *le* in it. When the same telic predicate *xie zhe-feng xin* ‘write this letter’ is used here, with the object *zhe-feng xin* ‘this letter’ being mandatorily preposed. As the selectional restriction predicts, the non-completely bounded predicate *xie zhe-feng xin* ‘write this letter’ is compatible with the noninclusive modifier, as in (149a). The completely bounded predicate *xie-wan zhe-feng xin* ‘finish writing this letter’ is incompatible with the noninclusive modifier, as the selectional restriction predicts in (149b).

The other two imperfective representations of the predicate in (149c,d) satisfy the selectional restriction, representing the predicate as non-completely bounded. According to the restriction (147), they should be compatible with noninclusive modifiers, but they are not. This is due to the AVC in (143). As mentioned before, the noninclusive modifier *V le NP (zhijiu)* ‘for X time’ is a bounding phrase since it contains the bounding perfect marker *le*. The AVC forbids bounded predicates’ co-occurrence with the progressive and the continuous viewpoints in TM.

- (149) a. Timu zhe- feng xin xie- le yi- xiaoshi  
 Tim this- CLF letter write- LE one- hour  
 ‘Tim has been writing this letter for an hour.’

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<sup>45</sup> It bounds a situation at orientation time, usually TU.

- b. \*Timu zhe- feng xin xie- wan- le yi- xiaoshi  
 Tim this- CLF letter write- finish- LE one- hour  
 ‘\*Tim has finished writing this letter for an hour.’
- c. \*Timu zhe- feng xin zai- xie- le yi- xiaoshi  
 Tim this- CLF letter ZAI- write- LE one- hour  
 ‘Tim has been writing this letter for an hour.’
- d. \*Timu zhe- feng xin xie- zhe- le yi- xiaoshi  
 Tim this- CLF letter write- ZHE- LE one- hour  
 ‘Tim has been writing this letter for an hour.’

Thus far, I have demonstrated that the (non)inclusive duration adverbials cannot be used for testing ontological (a)telicity of a predicate. They are, in fact, a diagnostic for actualisational (non)boundedness. The two-dimension model neutralises the difference in the actualisation aspect, and so overlooks the fact that the selectional restrictions of (non)inclusive duration adverbials concerns the actualisation aspect, rather than the ontological aspect. Yet, the three-dimension model acknowledges actualisational qualities of predicates, and makes further correct predictions.

Completion entailment is the other test for lexical (a)telicity in the two-dimension model. In English, telic verbs in the perfective past ( $x \phi$ -ed) never sanction the conclusion from their past progressive forms ( $x$  was  $\phi$ -ing), yet atelic verbs do. For instance, *Tim was eating an apple* does not entail *Tim ate an apple*, but *Tim was walking* does entail *Tim walked*. Dowty (1979:133) labels this ‘imperfective paradox’ and Bach (1986:12) ‘partitive puzzle’.

In the three-dimension model, (a)telicity is ontological while termination and culmination are actualisational. Following this, the completion entailment test naturally concerns the actualisation aspect instead of the ontological aspect. Sentences with specification of termination and culmination are bounded, with the former being arbitrarily bounded and the latter completely bounded. In English, the

completion of telic predicates is entailed when expressed in the perfective past. In other words, the completion entailment in English takes three requirements: a predicate's telicity, perfectivity and being represented in the past tense. The example is shown in (150b). If the predicate is atelic, then the sentence denotes no termination at all, as in (150c). Atelic predicates can denote termination (arbitrary boundedness) with the use of the perfect aspect, as (150a), but atelic predicates can never denote culmination (completive boundedness) since they lack a telos.

(150)

<b>Perfective</b>		
	<b>English</b>	<b>TM</b>
<b>Termination</b>	a. Tim has drunk juice.	a'. Timu he- le (zhe- ping) guozhi Tim drink- LE (this- CLF) juice
<b>Culmination</b>	b. Tim drank a bottle of juice.	b'. Timu he- wan (zhe- ping) guozhi Tim drink-finish (this- CLF) juice
<b>No termination</b>	c. Tim drank juice.	c'. Timu (zuotian) he (zhe- ping) Tim (yesterday) drink (this- bottle) guozhi juice
<b>Imperfective</b>		
<b>Termination</b>	d. Tim has been drinking (this bottle of) juice.	N/A
<b>Culmination</b>	N/A	N/A
<b>No termination</b>	e. Tim was/is drinking (this bottle of) juice.  f. Tim drinks juice.	e'. Timu (zuotian) he- zhe (zhe- Tim (yesterday) drink- ZHE (this- ping) guozhi CLF juice  f'. Timu hui he guozhi Tim would drink juice

It can be seen that imperfective viewpoints cannot denote culmination. Termination in English needs only one requirement: the perfect aspect. The viewpoint aspect,



ontological telicity and tense do not matter, as shown in (150d). Progressive and habitual in English denotes no termination, as (150e,f).

From the table (150), we can see three characteristics of TM. First, termination is signalled by the perfect marker *le*, no matter the (a)telicity of the predicate *he (zhe-ping) guozhi* 'drink (this bottle of) juice', as in (150a'). Second, culmination needs explicitly specifying, such as the RVC *he-wan* 'drink-finish' in (150b'), regardless the (a)telicity of the predicate (compare (150b',c')). Third, boundedness, termination and culmination, is not compatible with the progressive/continuous viewpoints, which, again, supports the AVC in (143).

The aspect and tense of the sentences exemplified in (150) are summarised in (151). It can be seen that the actualisation aspect in TM is not sensitive to ontological (a)telicity, but otherwise in English. By contrast, the actualisation aspect in TM is more sensitive to the viewpoint aspect than English, as TM has the AVC banning the co-occurrence of boundedness and the progressive/continuous viewpoints, but English can admit the co-occurrence of combination of the progressive form of verbs and the perfect aspect to denote termination.

It can be concluded that English relies on the perfect aspect to convey termination, regardless ontological (a)telicity and the viewpoint aspect. Similarly, TM pivots on the perfect marker *le* to signal termination, which is insensitive to ontological (a)telicity. So, termination in both languages does not concern ontological (a)telicity. As to culmination, English needs predicates to be telic and represented perfectly in the past tense. In TM, the overt specification of culmination is required and imperfective viewpoints are refused due to the AVC; ontological (a)telicity does not matter at all.

(151)

<b>Perfective</b>		
	<b>English</b>	<b>TM</b>
<b>Termination</b>	Perfect aspect + atelic predicate	Perfect aspect + telic/atelic predicate
<b>Culmination</b>	Past + telic predicate	RVC + telic/atelic predicate
<b>No termination</b>	Past + atelic	Past + telic/atelic predicate
<b>Imperfective</b>		
<b>Termination</b>	Perfect aspect + telic/atelic predicate	N/A
<b>Culmination</b>	N/A	N/A
<b>No termination</b>	Past/present + telic/atelic predicate	Past/present + telic/atelic predicate

From the discussion, it is clear that ontological (a)telicity is just a factor that affects the completion entailment of a predicate in English. The three temporal requirements (perfectivity, telicity and past tense) must be all satisfied to trigger the completive reading and (a)telicity is just one of them. The TM data clearly show that (a)telicity and culmination are two different concepts and justifies the need to take the actualisation aspect into consideration. In TM, the completive reading demands overt representation, and (a)telicity does not even play a role in such reading. In English, telicity is a prerequisite to the completive reading (completive boundedness), but in TM the overt completive representation implies telicity.

All in all, the two-dimension model fails to characterise the compatibility between predicates' temporality and (non)inclusive duration adverbials as well as predicates' temporality and completion entailment. It can be seen that the actualisation aspect is more salient in TM than in English, which will be discussed in more detail in the next section.

### **3.3 Actualisation aspect**

The actualisation aspect is the dimension that is not acknowledged in the two-dimension model. In this section, I will first modify the definition of the actualisation aspect given by Declerck et al., making it more applicable to TM. Then, I will follow F.-H. Liu (1997) using the telic structure 'V + specific NP' to demonstrate the

characteristics of verbal predicates and the salience of the actualisation aspect in TM.

Smith (1997) points out that termination and culmination are distinguished in Mandarin. In the aspect system of Mandarin, different devices are used to represent these two concepts. Although Smith does not use the term 'actualisation aspect', it is the actualisation aspect that she refers to. Also, Smith's observation indicates that the actualisation aspect in Mandarin is salient and visible/observable, which is also true in TM. In the case of TM, this can be explained by my two claims: 1) boundedness requires overt specification and 2) arbitrary boundedness is signalled by the perfect marker *le*, and completive boundedness by RVCs. These two claims were mentioned earlier and will be presented in more detail in this section.

Smith thinks of the perfective viewpoint as representing a situation as closed, while the imperfective viewpoint as open. That is to say, if a situation is represented as having a temporal boundary, with the presence of the final endpoint, it is closed. If the representation of a situation does not have a temporal boundary, without a final endpoint, it is open. I will apply the notion of openness/closedness to the actualisation aspect, with boundedness signifying closedness and nonboundedness signifying openness.

In the two-dimension model made up of the viewpoint aspect and the ontological aspect, the notion of temporal boundary can apply to both levels. At the viewpoint level, perfectivity is the viewpoint that represents a situation as having a temporal boundary, and imperfectivity as not having a temporal boundary. At the ontological level, telicity is the feature that characterises a situation's having a temporal boundary, while atelicity the reverse. In the three-dimensional model that I employ, boundedness means that a situation is expressed as having a temporal boundary, and nonboundedness as having no temporal boundary.

The two-dimension model can present four combinations of the closedness/openness at the viewpoint and the ontological levels. The three-dimension model can present eight combinations of closedness/openness. It can be expected that the three-dimension model can characterise a situation's temporality in

a more detailed and precise manner. The combinations that the two models can reflect are shown in (152).

(152) a. Two-dimension model

<b>Viewpoint aspect</b>	+	+	-	-
<b>Ontological aspect</b>	+	-	+	-

b. Three-dimension model

<b>Viewpoint aspect</b>	+	+	+	+	-	-	-	-
<b>Ontological aspect</b>	+	-	+	-	+	-	+	-
<b>Actualisation aspect</b>	+	+	-	-	+	+	-	-

+ means closedness = presence of a final endpoint = having a temporal boundary

- means openness = absence of a final endpoint = lacking a temporal boundary

\* habitual situations are not included in this table

In the two-dimension model, there is a kind of situation represented as closed at both the viewpoint and the ontological levels, which refers to a telic situation's being represented perfectly, and a kind of situation represented as open at both levels, which refers to an atelic situation's being represented imperfectly. There are two kinds of situations which is closed at only one level. An atelic situation represented perfectly and a telic situation represented imperfectly.

In the three-dimension model, there is a kind of situation represented as closed at all the three levels, referring to a perfective, telic and bounded situation, and a kind of situation represented as open at all levels, referring to an imperfective, atelic and nonbounded situation. There are three kinds of situations represented as closed at two levels and open at one level, and three kinds of situations represented as closed at one level and open at two levels. Note that only the progressive and the continuous viewpoints are included in the discussion of imperfective viewpoints. All the eight types of situations can find examples in English, but only six types of situations can find examples in TM. Owing to the AVC, there is no acceptable example for a predicate represented as imperfective and bounded in TM.

### 3.3.1 Actualisation aspect at VP level

The distinction between (non)boundedness and (a)telicity has been put forward and developed by Declerck (1989, 1991) and Depraetere (1995). Declerck et al. (2006) add the actualisation aspect as the third aspect parameter, pivoting on the distinction between boundedness and nonboundedness, in their three-dimension aspect theory. (Non)boundedness is similar to (a)telicity in that they both involve the reference to a final endpoint of a situation. They have two differences. First, the final endpoints they refer to belong to separate levels, with telicity referring to the endpoint at the ontological level and boundedness at the actualisational level. Second, the nature of the endpoints they refer to are not the same. The final endpoint that telicity refers to is a non-arbitrary point of completion, whereas boundedness refers to a terminal point, which can be an arbitrary point or a non-arbitrary point of completion.

The bounding point and telic point do not have to coincide. Only telic situations have a telos, but both telic and atelic situations can have a bounding point. Note that any time point prior to, but not posterior to, the telos can be an arbitrary terminal point, seeing that a telic situation cannot continue beyond the telos.

In the theory proposed by Declerck et al., (a)telicity is a question of verb phrases (situation-templates), and (non)boundedness is a question of clauses. A VP like *eat an apple* is a telic VP because *an apple* implies a natural endpoint of completion. This telic VP can be used either in a bounded clause (*Tim ate an apple*) or in a nonbounded clause (*Tim was eating an apple*). This shows how the viewpoint aspect can interact with the ontological aspect to determine the actualisation aspect, and boundedness is kind of invisible, that is, requires no overt representation.

The actualisation aspect in TM can be determined at a level lower than clause — VP. The corresponding VP of *eat an apple* in TM is *chi yi-ke pingguo*. It is telic and just like the English VP, can be used in both a bounded clause (*Timu chi-le yi-ke pingguo* ‘Tim has eaten an apple’) and a nonbounded clause (*Timu chi-zhe yi-ke pingguo* ‘Tim is eating an apple’). This is the case, like English, indicating how the viewpoint aspect interacts with the ontological aspect to determine the actualisation aspect of a situation. Nonetheless, there is a sort of VP which denotes both telicity

and boundedness in TM. Such VPs can be used in a bounded clause, but not in a nonbounded clause as the AVC predicts, shown in (153).

- (153) a. Timu chi- wan (\*zhe) yi- ke pingguo  
 Tim eat- finish (\*ZHE) one- CLF apple  
 ‘Tim ate an apple.’ (without *zhe*)  
 ‘Tim is eating up an apple.’ (with *zhe*)
- b. Timu (\*zhengzai-) chi- wan yi- ke pingguo  
 Tim (\*ZHENGZAI-) eat- finish one- CLF apple  
 ‘Tim ate an apple.’ (without *zhengzai*)  
 ‘Tim is eating up an apple.’ (*with zhengzai*)

The boundedness of the RVC *chi-wan* ‘eat-finish’ is denoted by the secondary predicate *wan* ‘finish’. The VP *chi-wan yi-ke pingguo* ‘finish eating an apple’ is bounded as well as telic. Owing to its boundedness, it is not compatible with the progressive viewpoint in (153b) and the continuous viewpoint in (153a). Different from English, this is a case indicating that the viewpoint aspect cannot interact with the ontological aspect to determine the actualisation aspect of a situation. The actualisation aspect of the sentence (153a,b) is determined at VP level by the RVC *chi-wan* ‘eat-finish’.

From the examples in (153), it is clear that the actualisation aspect in TM is not a question of clauses as Declerck et al. claim, but rather it is a question of VPs, which conceptualise simple situation-templates. Telic VPs in TM, as those in English, can occur in both the perfective and the imperfective viewpoints, as the pairs of counterpart sentences shown in (154a,a’,a’’,b,b’). However, there is a contrast between English and TM, if a VP is telic and bounded like *eat up my apples/chi-wan wode pingguo*. As shown in (154c,c’), the VP is compatible with the perfective viewpoint in both languages, yet only English can allow a bounded VP expressed with the imperfective viewpoint of progressivity in (154d). The corresponding TM examples are not grammatical in (154d’,d’’) where the bounded predicate *chi-wan*

*wode pingguo* ‘eat up my apples’ is separately represented as continuous and progressive. This indicates that English does not have the AVC, but TM does.

(154) a. Tim ate an apple yesterday.

a'. Timu zuotian chi yi- ke pingguo  
Tim yesterday eat one- CLF apple

a''. Timu zuotian chi- le yi- ke pingguo  
Tim yesterday eat- LE one- CLF apple  
'Tim has eaten an apple yesterday.'

b. Tim was eating an apple yesterday.

b'. Timu zuotian chi- zhe yi- ke pingguo  
Tim yesterday eat- ZHE one- CLF apple

c. Tim ate up my apples yesterday.

c'. Timu zuotian chi- wan wode pingguo  
Tim yesterday eat- finish my apples

d. Tim was eating up my apples yesterday.

d'. \*Timu zuotian chi- wan- zhe wode pingguo  
Tim yesterday eat- finish- ZHE my apple

d''. \*Timu zuotian zai- chi- wan- wode pingguo  
Tim yesterday ZAI- eat- finish- my apple

### 3.3.2 (Non)boundedness of 'V+ specific NP'

That the notion of (a)telicity is not enough to account for some VPs' aspectual behaviours in Mandarin has been noticed by F.-H. Liu (1997). Simple situation-templates conceptualised by the structure 'V + specific NP', such as *chang zhe-shou ge* 'sing this song' or *du zhe-ben shu* 'read this book', are traditionally viewed as telic but their actualisational qualities have never been considered. F.-H. Liu noticed that such telic predicates have two characteristics that other telic predicates do not have:

1) they cannot be modified by inclusive adverbials like *zai NP (zhi) nei* 'in X time', and 2) they can be marked by the continuous marker *zhe*. These two peculiarities can be properly accounted for on the basis of actualisational (non)boundedness.

The two characteristics are illustrated in (155): the telic predicate *du zhe-ben shu* 'read this book' is infelicitous with the inclusive adverbial *zai NP (zhi) nei* 'in X time' in (155a) and felicitous with the continuous marker *zhe* in (155b). Recall that inclusive duration adverbials in the literature are used to diagnose telic/atelic predicates. Those felicitous with inclusive adverbials are telic predicates and those felicitous with noninclusive adverbials (*for X time*) are atelic predicates. I have shown that this test is not for ontological (a)telicity, but for actualisational (non)boundedness in 3.2.2. To be specific, this test is for completive boundedness.

The behaviour of 'V + specific NP' predicates can support my analysis that (non)inclusive modifiers should be used to demarcate completely bounded predicates from non-completely bounded predicates. Predicates structured this way are telic but incompatible with the inclusive modifier *zai NP (zhi) nei* ((155a)), which indicates that (a)telicity and (non)boundedness are two different concepts. Inclusive modifiers such as *zai NP (zhi) nei* is not really sensitive to (a)telicity, but to (non)boundedness. The incompatibility between *zai NP (zhi) nei* and 'V + specific NP' suggests that predicates structured by 'V + specific NP' in TM do not denote completive boundedness. Predicates structured this way in English (e.g., read this book) otherwise are felicitous with the inclusive modifier *in X time*, as shown in (155d). The contrast between these two sentences (155a,d) lies in that the completion (completive boundedness) is included in the meaning of (155d) in English, but not of (155a) in TM (both describe the same past occurrence perfectly). That is, when telic predicates are expressed in the perfective past, the culminating reading arises in English, but not in TM.

This asymmetry also indicates that the inclusive modifiers (*in X time* in English and *zai NP (zhi) nei* in TM) do not just require the predicates they modify to be telic but also be completely bounded. The telic predicate in TM *du zhe-ben shu* 'read this



book' needs to be changed into a completely bounded predicate by adding the secondary predicate *wan* 'finish' to license the inclusive adverbial, see (155a). Again, this shows that the overt specification of completive boundedness is indispensable in TM.

- (155) a. Timu zuotian zai yi- xiaoshi zhinei du- \*(wan)  
 Tim yesterday in one- hour within read- \*(finish)  
 zhe- ben shu  
 this- CLF book  
 'Tim read this book in an hour yesterday.'
- b. Timu yukuaidi du- zhe zhe- ben shu  
 Tim pleasantly read- ZHE this- CLF book  
 'Tim was pleasantly reading this book.'
- b'. Timu yukuai-di zai- du- zhe- ben shu  
 Tim pleasant-ly ZAI- read- this- CLF book  
 'Tim was pleasantly reading this book.'
- c. \*Timu zuotian du- wan- zhe zhe- ben shu  
 Tim yesterday read- finish- ZHE this- CLF book  
 'Tim was finishing reading this book yesterday.'
- c'. \*Timu zuotian zai- du- wan zhe- ben shu  
 Tim yesterday ZAI- read- finish this- CLF book  
 'Tim was finishing reading this book yesterday.'
- d. Tim read this book in an hour yesterday.

The 'V + specific NP' predicates such as *du zhe-ben shu* 'read this book' is telic, but nonbounded, because there is no indication of its termination or the attainment of its telos in the predicate per se. Similarly, in English the predicate *read this book* does not have the specification of the attainment of its telos, yet, the use of the perfective

past verb form guarantees the completion. On the contrary, in TM the use of the perfective past (the past tense is denoted by the appearance of *zuotian* 'yesterday') does not bring about the same effect, signalling the completion of the event. The completion is not included in the meaning of (155a) without the completive boundedness indicator *wan* 'finish'. The telic predicate *du zhe-ben shu* 'read this book' fails to license the inclusive adverbial modifier *zai NP (zhi) nei*. The inclusive adverbial needs the telic and completely bounded predicate *du-wan zhe-ben shu* 'finish reading this book' to license its occurrence.

The second characteristic that 'V + specific NP', but not 'RVC + specific NP', can be marked by the continuous *zhe* can be properly accounted for by the three-dimension model by the AVC (143) and the (non)inclusive-adverbial diagnostic. Recall that the AVC characterises boundedness's infelicitousness with the progressive and the continuous viewpoints in TM. Inclusive adverbials can only be admitted in completely bounded telic predicates in TM. The example (155a) shows that the selectional restriction of inclusive modifiers in (147) can make the correct prediction, and meanwhile classifies 'V + specific NP' as a non-completely bounded structure, while 'RVC + specific NP' as a completely bounded structure. The AVC otherwise can define 'V + specific NP' structure as nonbounded, whereas 'RVC + specific NP' as bounded, since the former can be represented with the progressive and the continuous viewpoint in (155b,b'), but the latter cannot be represented with the progressive and the continuous viewpoints in (155c,c').

The two structures of predicates are both telic, but they are different in the actualisation aspect. The predicates constituted by the structure 'V + specific NP' are nonbounded. As mentioned earlier, such predicates can be used in both bounded and nonbounded clauses. However, the 'RVC + specific NP' is a bounded predicate structure, according to the AVC, such predicates are incompatible with the progressive and the continuous viewpoints in TM. The dissimilarity of aspectual compatibility between these two sorts of predicates cannot be properly explained by the two-dimension model, as it neutralises actualisational differences.

So far, we can see that the (non)inclusive-adverbial test correctly predicts that the ‘V + specific NP’ structure is non-completively bounded and the AVC correctly predicts that it is nonbounded. The TM data also show that boundedness needs explicit specification, since the only difference between ‘V + specific NP’ predicates and ‘RVC + specific NP’ predicates lies in that the latter has an overt specification of completion. This contrast does not cause ontological dissimilarity because they both are telic, but does cause a difference in actualisational (non)boundedness. The ‘V + specific NP’ structure denotes telic and nonbounded predicates, whereas the ‘RVC + specific NP’ structure denotes telic and bounded predicates.

I showed that completion entailment is a diagnostic for completive boundedness, rather than for (a)telicity in English in 3.2.2. It follows that the ‘V + specific NP’ structure cannot have completion entailment, since it only has a telos but lacks an explicit expression of boundedness. As I mentioned in the last section, termination and culmination in TM have to be explicitly signified. The ‘V + specific NP’ predicate *du zhe-ben shu* ‘read this book’ and ‘RVC + specific NP’ one *du-wan zhe-ben shu* ‘read-finish this book’ in (155a) confirms the culmination part of the feature. The termination part can be supported by (156). So, it can be certain that the actualisation aspect in TM has this characteristic. I call this ‘boundedness constraint’ (BC), stated in (157).

(156) Timu du- le zhe- ben shu  
 Tim read- LE this- CLF book  
 ‘Tim has read this book (without culmination).’

(157) **Boundedness constraint (BC)**

In TM, boundedness demands to be overtly expressed. Arbitrary boundedness is signified by the perfect *le* and completive boundedness is signified by the secondary predicate of RVCs.

The feature (157) indicates TM and English have one thing in common and one difference in their aspect system. They both resort to the perfect aspect to denote

arbitrary boundedness. However, culmination/completion can be implied in English (i.e. the past perfective representation of telic predicates), and yet cannot be implied in TM. It needs overt representation. In addition to that, TM is subject to the AVC, and thus bounded representations do not co-occur with progressivity and continuousness. On the contrary, English is not subject to the AVC, so bounded representations are allowed to co-occur with progressivity, as shown in (150). All these lead to a conclusion that TM does not show the imperfective paradox.

The contrast in the culminating reading between TM and English is presented in (158). All the four examples are represented in the perfective past. Without any completive expression, the culmination of the telic event *read this book/ du zhe-ben shu* can be implied in English ((158a)), but not so in TM ((158b)). With completive expressions, *read through* in English and *du-wan* 'read-finish' in TM, (158c,d) denote the culminative readings. It is clear that completive expressions are not required in English to denote completion, since it can be implied under specific conditions. In TM, completive expressions are indispensable to denote completion. The imperfective paradox is established on the entailment of completion of the past perfective representation of telic predicates. Since the completion of telic predicates is not 'entailed' but explicitly represented due to the BC, there is no imperfective paradox in TM. The two actualisational constraints, the AVC and the BC, would not be observed and acknowledged in the two-dimension model, since (non)boundedness does not operate at either the ontological level or the viewpoint level.

- (158) a. Tim read this book yesterday. (culminated)  
 b. Timu zuotian du zhe- ben shu (no culmination)  
 Tim yesterday read this- CLF book  
 'Tim read this book yesterday (without culmination).'

- c. Tim read through this book yesterday. (culminated)
- d. Timu zuotian du- wan zhe- ben shu (culminated)  
 Tim yesterday read- finish this- CLF book  
 'Tim finished reading this book yesterday'

### 3.3.3 Actualisation aspect and temporal interpretation in TM

In Klein's (1994) system, temporal interpretation/tense is defined by the sequential relation between TT and TU, while aspect by the containment of TT and TSit.

Mandarin is widely acknowledged as a language lacking morphological devices expressing the relation between TT and TU, but it resorts to other means, such as temporal adverbials, pragmatic reasoning and etc.

J.-W. Lin (2003a) proposes that in Mandarin the viewpoint aspect determines the temporal interpretation: imperfectivity leads to the present tense interpretation and perfectivity to the past tense interpretation. J.-W. Lin (2006) further adopts Bohnemeyer & Swift's (2004) default aspect theory to argue that aspect markers in Mandarin play the same role that tense plays in a tensed language. This basically says that aspect markers function as tense markers in Mandarin.

Bohnemeyer & Swift observe that some languages' (e.g., German, Inuktitut and Russian) aspectual reference of clauses or verb phrases depends on the telicity of the predicates. Without overt marking for the viewpoint aspect, the telicity of a situation correlates to their viewpoint aspect. Put simply, the default aspect of a telic predicate is perfective, since the realisation of such events can be entailed (the event culminates) only when it is represented perfectly; the default aspect of an atelic predicate is imperfective, since situations of this kind are realised when it is imperfectively represented. As such, the default aspect theory basically can be captured by the notion of the imperfective paradox. The progressive version of a situation's description can entail the realisation of the situation only when the described situation is atelic. Thereby, (159b) entails (159a) but (159d) does not entail (159c).

- (159) a. Tim sang.  
 b. Tim was singing.  
 c. Tim sung the song.  
 d. Tim was singing the song.

Based on the default aspect theory, J.-W. Lin claims that the perfective aspect in Mandarin always activates the past tense reading. Yet, the TM sentences in (160) are inconsistent with his claim. According to J.-W. Lin, these sentences should have past tense interpretations, but none of them does as J.-W. Lin predicts. Instead, they all have present tense interpretations, which falls outside J.-W. Lin's prediction.

- (160) a. Timu chi zhe- ke pingguo  
 Tim eat this- CLF apple  
 'Tim eats this apple.'
- b. Timu pao yi- bei kafei  
 Tim make one- cup coffee  
 'Tim makes a coffee.'

For the temporal interpretation of Mandarin, Sun (2014) suggests five generalisations ( $G_1$ - $G_5$  in (161)) given that a root clause contains a bare predicate (henceforth "BP") in the sense that the predicate has no explicit aspect markers and no particles that can contribute the temporal interpretation to a sentence. The generalisations regarding eventive BPs ( $G_2$ ,  $G_4$  and  $G_5$ ) and stative BPs ( $G_3$ ) are problematic. In this section, I am going to deal with  $G_2$ ,  $G_4$  and  $G_5$ . I postpone the discussion of  $G_3$  to chapter 4 (section 4.3), where I show that it does not hold of the *ba*-construction.

(161) **G<sub>1</sub>**

Root clauses with stative BPs yield stative readings.

**G<sub>2</sub>**

Root clauses with eventive BPs (accomplishment, achievement, activity) yield generic construals.

**G<sub>3</sub>**

All stative predicates can appear without viewpoint aspect markers.

**G<sub>4</sub>**

All episodic uses of eventive predicates in root clauses involve overt viewpoint aspect marking.

**G<sub>5</sub>**

Time adverbials cannot by themselves fix the temporal reference of sentences with eventive BPs, yielding episodic readings.

Sun uses the examples in (162) to justify G<sub>2</sub>. (162a,b,c) are demonstrating the necessity of the appearance of an overt aspect marker to license an achievement sentence. Similarly, (162d,e) respectively show the indispensability for an overt aspect marker to license an accomplishment and an activity.

(162) Achievement

a. jintian Lisi ying- \*(le)

today Lisi win- \*(LE)

'Lisi won today.' (Sun, 2014:47)

b. zuotian na- tiao yu si- \*(le)

yesterday that- CLF fish die- \*(LE)

'That fish died yesterday.' (Sun, 2014:47)

c. keren gangcai dao- \*(le)

visitor just now arrive- \*(LE)

'The visitor arrived just now.' (Sun, 2014:47)

### Accomplishment

- d. Moyan kan- \*(le) San- Guo- Yanyi  
Moyan read- \*(LE) three- kingdom- romance  
'Moyan has read Romance of the Three Kingdoms.' (Sun, 2014:49)

### Activity

- e. Mali \*(zai)- xiao  
Mary \*(ZAI)- smile  
'Mary is smiling.' (Sun, 2014:47)

I agree with Sun that (162a,b,c,e) are ungrammatical without an overt aspect marker, but I disagree with her on the reason for their ungrammaticality. In my analysis, these four sentences' ungrammaticality is due to the simplex verbs' inability to conceptualise a simple situation-template, which ultimately leads to the failure to conceptualise a proposition for a sentence.

Sun claims that it is *le* that licenses (162d). However, this may not be true to TM speakers. The native TM speakers that I consulted all think whether *le* appears or not does not affect the sentence's grammaticality, but the occurrence of *le* does activate a different semantics of this sentence. With the appearance of *le*, Moyan's reading *San-Guo-Yanyi* has been terminated, and Moyan may or may not have finished reading the book.

To TM speakers, (162d) without *le* is an acceptable sentence (different from Sun's judgement) and there are two scenarios that the sentence can be uttered. For one, it can be uttered in a task-assigning scenario, in which someone is assigning tasks to the members of a study group. This person may utter (162d) as a request to Moyan. In the circumstances, the situation has not yet happened at the time of statement. For another, after the assigning when the members are doing their tasks, this sentence can be an answer to the question: what does Moyan do? In that case, the present tense interpretation arises. This indicates that *le* does not license the



sentence in TM as Sun claims, since *le*'s appearance is optional to the grammaticality of this sentence.

Moreover, the TM data in (163) cast doubt on both her  $G_2$  and  $G_4$ . All these examples contain bare eventive predicates in Sun's sense, but none of them have generic readings as she asserts. In contrast, they all have past tense interpretations and episodic readings. The episodic interpretations of (163) also challenge Sun's  $G_4$ , since they all have bare eventive predicates, and they are aspectually unmarked. They contradict Sun's  $G_4$  in that they do not need to be aspectually marked to have an episodic reading.

(163) Achievement

- a. Timu ren-chu wo lai  
Tim recognise I come  
'Tim recognised me.'

Accomplishment

- b. Timu zai wo qu youleyuan  
Tim drive I go amusement park  
'Tim drove me to the amusement park.'

Activity

- c. Timu zhua wode jianbang  
Tim grab my shoulder  
'Tim grabbed my my shoulders.'

Finally,  $G_5$  states that temporal adverbials alone cannot determine the temporal reference of sentences containing eventive BPs; they still need viewpoint aspect markers' licensing to obtain episodic readings. Sun uses the sentence (162b), repeated in (164a), to support this point. The perfect *le* in this case indeed licenses this sentence. Nonetheless, in my analysis, the ungrammaticality of this sentence results from the inability for simplex verbs, in this case *si* 'die', to conceptualise a

simple situation-template. That is, without *le* this sentence violates the SSTC in (137).

As long as *si* 'die' can combine with another predicate constituent forming a simple situation-template, the sentence can be licensed. The combined constituent does not necessarily be an aspect marker, illustrated in (164b). *Si* 'die' can work with the manner indicator *can* 'brutally', and they together form a situation-template of *brutally killed*, which licences the sentence too. The new predicate *cansi* 'brutally killed' is an eventive BP in Sun's sense. In this regard, this sentence does not just contradict Sun's G<sub>5</sub>, but also her G<sub>2</sub> in that the generic reading is not accessible and G<sub>4</sub> in that the sentence conveys an episodic reading without a viewpoint aspect marker.

(164) a. zuotian na- tiao yu si- \*(le)  
 yesterday that- CLF fish die- \*(LE)  
 'That fish has died yesterday.'

b. zuotian na- tiao yu cansi  
 yesterday that- CLF fish brutally killed  
 'That fish was brutally killed yesterday.'

Sun's G<sub>5</sub> can be invalidated by more TM examples, like those in (165). The two sentences have their respective temporal adverbials, *nashi* 'at that time' and *gangcai* 'just now', and the verbal predicates are not marked by any viewpoint aspect marker. They are eventive BPs, yet under the conditions the two sentences obtain episodic readings. Again, like (164b), they also contradict Sun's G<sub>2</sub> because they do not yield generic readings and G<sub>4</sub> because they do not involve overt viewpoint aspect markers.

(165) a. Timu nashi zai zheli pa- shang- pa- xia  
 Tim at that time in here clamber- up- clamber- down  
 'At that time, Tim was clambering around here.'

- b. Timu gangcai zhu paomian  
 Tim just now cook instant noodles  
 ‘Just now, Tim cooked instant noodles.’

As we have seen, the theories from the aspectual perspective that J.-W. Lin and Sun put forward to characterise the temporal interpretation of Mandarin do not, however, work as effectively as expected in TM. Neither of their theories succeed in characterising the temporal reference of TM. The temporal interpretations of examples in (160), (162d), (163), (164b) and (165) fall outside their predictions. I agree with them on that temporal interpretation correlates to aspect, but I have a different proposal. I argue that the temporal reference of TM is not directly determined by the (a)telicity or the viewpoint aspect of a situation. Instead, it is the actualisation aspect that determines the temporal interpretation of TM.

Recall that in 3.3.2 I demonstrated that telic situations represented in the perfective past (simple past) have different effects in English and in TM. In English, the culmination of a situation is entailed in such representation, while in TM it is not. The exemplified sentences in that section are repeated below. In (166a), the culmination of Tim’s reading this book is reached, yet not in (166b). Whether the telos of the described situation is reached or whether the situation has been terminated are underspecified in (166b). Without further information, the hearer has no clue about whether the situation has been culminated/terminated or not. In daily conversation, *na ta du-wan-le ma?* ‘Has he finished it?’ would be asked by the hearer as a follow-up question to request more information about the actualisation aspect of the situation of Tim’s reading this book. Briefly, the actualisation aspect in (166b) is underspecified, and so nonbounded.

- (166) a. Tim read this book.  
 b. zuotian Timu du zhe- ben shu  
 yesterday Tim read this- CLF book  
 ‘Tim read this book yesterday.’ (termination/culmination is not specified)

- c. zuotian Timu du- le zhe- ben shu  
 yesterday Tim read- LE this- CLF book  
 'Tim has read this book yesterday.' (culmination is not guaranteed)
- d. zuotian Timu du- wan zhe- ben shu  
 yesterday Tim read- finish this- CLF book  
 'Tim finished reading this book yesterday.'

With the marking of *le*, (166c) reveals that the accomplishment of Tim's reading this book has been terminated, but still does not unambiguously state if the telos has been reached. On the other hand, the secondary predicate *wan* 'finish' in (166d) clearly expresses that the telos has been reached. There is no room for ambiguity in this representation. Although (166c,d) are both bounded representations, they have a difference in the encoding of the reaching of culmination. The perfect marker *le* lacks while *wan* 'finish' has such encoding. If the culmination is included in the meaning of a sentence, it is completely bounded, otherwise arbitrarily bounded. It can be seen that in TM termination and culmination has to be overtly expressed. It cannot be entailed by the use of the perfective past. Compared with English, the actualisation aspect in TM is more visible, since it has to be superficially overt.

The viewpoint aspect, ontological aspect and actualisation aspect all concern whether a situation is represented as having a temporal boundary. If a temporal boundary is set at the viewpoint level, the representation is perfective, otherwise imperfective. If a temporal boundary is set at the ontological level, the situation is telic; if not, atelic. If it is set at the actualisational level, the situation is bounded, if not, nonbounded. J.-W. Lin (2003b, 2006) attempts to characterise the temporal interpretation of Mandarin according to the combination of ontological (a)telicity and the viewpoint aspect. Sun takes another approach, trying to correlate the temporal interpretation of Mandarin to the combination of (non)stativity and the viewpoint aspect. However, (160), (162d), (163), (164b) and (165) show that both their approaches are not correct.

Different from J.-W. Lin's and Sun's approach, my characterisation of the temporal interpretation of TM pivots on the actualisation aspect. Without temporal adverbials or a context conducive to the temporal reference of a sentence, the actualisation aspect is the determinant. The temporal interpretation is demarcated by (non)boundedness. Bounded representations give rise to the past tense interpretation, whereas nonbounded representations activate the present tense interpretation. The temporal interpretation rule (TIR) is stated in (167). This rule is immune to the situation type of a situation, since telic situations can be either represented as bounded or nonbounded and so can atelic situations. No matter (a)telicity and (non)stativity of a situation, nonboundedness triggers the present tense interpretation, whereas boundedness activates the past tense interpretation.

(167) **Temporal interpretation rule (TIR)**

In TM, if a sentence in isolation contains no temporal adverbials, its temporal interpretation hinges on its actualisation aspect. Nonbounded representations lead to present interpretations, and bounded representations lead to past interpretations.

Examples including all the four situation types in (168) are used to illustrate this point. Their behaviours reflect a pattern: (non)bounded sentences are taken as present occurrences and bounded ones are understood as past occurrences. States are atelic in nature. When a temporal adverbial or bounding expression (i.e. expressions that can bound a situation at the actualisational level) is absent, states are nonbounded and the present tense interpretation arises, shown in (168a). When it is marked by the continuous *zhe*, it denotes a present static continuous situation as in (168b). Adding a bounding adverbial phrase (*changda yi-nian* 'for a year') to a state can create a bounding point as in (168c), and the situation is consequently taken as a past occurrence. Similarly, the addition of the perfect *le* bounds the situation (168d). *Le* relates the TSit of the described situation to TU, and bounds the situation at TU. Thereby, the state of Tim's secretly loving Helen is understood as a past state, having a terminal point at TU. However, this does not mean that Tim stopped secretly loving Helen. It just means that the representation gives the

situation (Tim's secretly loving Helen) a temporal boundary, whose terminal point overlaps TU.

(168) States

a. Timu anlian Hailun  
 Tim secretly love Helen  
 'Tim secretly loves Helen.' (atelic, nonbounded, present)

b. Timu anlian- zhe Hailun  
 Tim secretly love- ZHE Helen  
 'Tim is secretly loving Helen.' (atelic, nonbounded, present)

c. Timu anlian Hailun changda yi- nian  
 Tim secretly love Helen for one- year  
 'Tim secretly loved Helen for a year.' (atelic, bounded, past)

d. Timu anlian- le Hailun yi- nian  
 Tim secretly love- LE Helen one- year  
 'Tim has secretly loved Helen for a year.' (atelic, bounded, past)

Activity

e. Timu (zai-) shai taiyang  
 Tim (ZAI-) bask sun  
 'Tim takes a sunbath (is sunbathing).' (atelic, nonbounded, present)

f. Timu shai- le taiyang  
 Tim bask- LE sun  
 'Tim has sunbathed (termination only).' (atelic, bounded, past)

Accomplishment

g. Timu ting na- shou ge  
 Tim listen that- CLF song  
 'Tim listens to that song.' (telic, nonbounded, present)

- h. Timu ting- le na- shou ge  
 Tim listen- LE that- CLF song  
 'Tim has listened to that song.' (termination)  
 (telic, bounded, past)
- i. Timu ting- wan na- shou ge  
 Tim listen- finish that- CLF song  
 'Tim finished listening to that song (culmination).'  
 (telic, bounded, past)
- j. Timu zai- ting na- shou ge  
 Tim ZAI- listen that- CLF song  
 'Tim is listening to that song.' (telic, nonbounded, present)

Achievement

- k. Timu kanjian- (le) xiaotou  
 Tim spot- (LE) thief  
 'Tim (has) spotted the thief.' (telic, bounded, past)

Activities are like states in that they lack *teloi*. Because of this nature, if they have a temporal boundary, it can only occur at the actualisational level, rather than the ontological level. When they are not temporally anchored by temporal adverbials or contextual clues, they have present tense readings. When they are marked by imperfective markers, they too have present tense readings, as illustrated in (168e). When bounded by the perfect *le*, the terminal point of the described situation overlaps TU, which is the terminal end of the temporal boundary given by *le*. Hence, this leads to the past tense reading.

Accomplishment and achievement sentences are telic. The former are durative and the latter are momentary. Contradicting Sun's suggestion, overt marking of the viewpoint aspect is unnecessary for licensing episodic achievement sentences. No matter whether the perfect *le* is absent or not, the example (168k) is acceptable, the

situation is a one-off occurrence and anchored in the past because the momentary predicate *kanjian* + NP ‘spot NP’ is bounded in nature.

Accomplishments such as (168g) are telic but nonbounded because termination or culmination is not specified. Thus, it has the present tense interpretation. Adding on the perfect *le* in (168h) bounds the song-listening situation at TU, but is ambiguous in whether the situation culminates or not at TU. The ambiguity is removed by substituting *le* with the secondary predicate *wan* ‘finish’ in (168i), which signals the culmination and the completive boundedness of the event. The temporal boundary that the RVC *ting-wan* ‘listen-finish’ provides locates the situation in the past. The progressive marker *zai* in (168j) unbounds the song-listening and activates the present tense reading.

A phenomenon relevant to (non)boundedness and temporal interpretation is the foreground and the background of a narration or text. The foreground of a text is defined “constituted by the sequence of chronologically ordered situations” (Depraetere, 1995:15). In Depraetere’s sense, to be the foreground of a text is to appear on the time line. The situation type of a situation is said to be a criterion to determine a situation’s belonging to the foreground or background. (Hinrichs, 1986) postulates three suggestions in (169), in case there are two past sentences.

- (169)
- a. If both sentences contain events that can be identified as either an achievement or an accomplishment, the two events are taken as happening in succession.
  - b. If one of them contains an activity or a state, then the two events can be taken as either happening in succession or as overlapping each other in time.
  - c. If both of them contain activities or states, then they overlap each other.



Hinrichs uses the discourse (170) to instantiate his point. According to Hinrichs, only the events subsuming in the first sentence are understood as being in a temporal sequence. The events described by the remaining sentences are interpreted as obtaining at the same time when the events described by the first sentence occur. Following Hinrichs, achievements and accomplishments belong to the foreground of a discourse while activities and states belong to the background.

(170) He went to the window and pulled aside the soft drapes. It was a casement window and both panels were cranked out to let in the night air. The apartment was on the second floor. The window itself was a scant five feet above the roof. (Hinrichs, 1986:67)

Similarly, Hataav (1989) notices that the reference to the temporal boundary of a situation determines whether a situation can appear on the time line (i.e. be the foreground of a text) or not. States can be located on the time line if their duration is restricted by overt marking, such as 'for three hours'. Temporally restricted states are referred to as bounded states in my analysis. On this basis, Depraetere (1995) suggests that it is (non)boundedness, rather than (a)telicity or the Vendlerian situation types, that determines a situation's candidacy for the time line or being the foreground of a text. Depraetere also points out that Aristar Dry (1983) holds the same view, although Aristar Dry does not use the terms of (a)telicity or (non)bounded to express the idea. Depraetere quoted the text in (171) to illustrate the idea that only bounded situations can appear on the time line or be the foreground, which are italicised.

(171) [Dozing a little, Alleyn sat slumped forward in his seat] *A violent jerk woke him.* The train had slowed down. He wiped the misty windowpane, shaded his eyes, and tried to look out into this new country. The moon had risen. He saw arching hills, stumps of burnt trees, some misty white flowering scrub, and a lonely road. It was very remote and strange...He turned to see Susan dab at her eyes *with a handkerchief. She gave him a deprecatory smile.* (Dry, 1981:234)

These italicised sentences are telic and expressed in the perfective past, that is, representing the situations as bounded. Thus, it is the bounded situations that are put forward in the discourse and appear on the time line. Nonbounded situations are functioning as the background of the discourse.

The same logic and reasoning can apply to the temporal interpretation of TM sentences. In a discourse, at least two situations are needed to sequentially define a temporal relation. By doing so, we are relating two times of situations. To define a sentence's temporal reference, we need to narrow down a discourse to just an isolated sentence. Since the temporal relation in question is relational, we need an orientation time functioning as the origin, by which we evaluate the temporal reference of a sentence. The orientation time is assumed TU. Then we relate the time of the sentence to TU. If the time of the sentence is prior to TU, then the sentence receives the past tense reading. If it overlaps TU, then it receives the present tense reading. In TM, sentences containing BPs do not receive the future tense reading, since it takes explicit temporal adverbials or modal verbs (e.g., *neng* 能, *jiang* 將, *hui* 會) to anchor a sentence in the future tense. As such, they can receive either the past or the present tense reading.

The foregoing shows that only bounded sentences can have sequential relations. By the same token, only a bounded sentence can be understood as having a sequential relation to TU. In TM, the pattern is that situations represented as bounded are interpreted as prior to TU, thereby acquire the past tense reading. Contrastively, nonbounded situations are interpreted as overlapping TU, thus receive the present tense reading. It is unlikely for sentences with BPs to describe situations which can be taken as posterior to TU and acquire the future tense reading.

It follows that there are two relations between the time of sentences containing BPs and TU: the time of a sentence either precedes TU or overlaps TU. (A)telicity or the situation type can play a role in the tense in English, but not so in TM. As I

mentioned earlier, the teloi of telic situations like achievements and accomplishments can be represented as attained if they are expressed in the perfective past in English, but the perfective past cannot do so in TM under the same conditions. TM is subject to the BC, demanding boundedness to be explicitly expressed.

That is why we can see four types of ontological and actualisational combinations in (168) — telic + bounded, telic + non-bounded, atelic + bounded and atelic + nonbounded — by means of the superficial expressions (e.g., the perfect marker and the secondary predicate of RVCs). Regardless of ontological (a)telicity, the temporal interpretation in TM follows the TIR stated in (167): nonbounded representations lead to present tense interpretations and bounded representations lead to the past tense interpretation.

### **3.3.4 The salience of the actualisation aspect in TM**

After all the foregoing discussion, I am going to argue that the actualisation aspect is the most visible and dominant aspect among all the three aspect parameters. This claim is based on six phenomena that TM data show.

First, boundedness requires overt specification in TM, which I term ‘boundedness constraint’ (BC) in (157). Boundedness in TM can be divided into arbitrary boundedness and completive boundedness. The former means that the situation terminates at a non-completion time point, which must be prior to the telos in telic situations. The latter means that the situation culminates, that is, the telos is represented as attained. Either kind of boundedness cannot be implied. Arbitrary boundedness can be signalled by the perfect marker *le*, and completive boundedness can be signalled by the secondary predicate of RVCs, such as *wan* ‘finish’ or *guang* ‘empty’.

The fact that Mandarin (at least TM) is subject to the BC visualises the actualisation aspect. That is why Smith can make the observation that termination and completion

are different concepts in Mandarin. Telic predicates represented without overt specification of boundedness cannot be understood as bounded, as in (158b). This is different from boundedness in English, which is not subject to the BC. Although in English there are phrasal verbs such as *read through*, *eat up* indicating boundedness of telic predicates, the appearance of the adverbs, *through* or *up*, is not required. Boundedness can be implied as long as telic predicates are represented perfectly in the past tense like (158a).

So, we can see in English both (158a) and (158c) denote complete boundedness. The same telic predicate and representations in TM otherwise lead to contrast in the semantic connotations of (158b) and (158d). Without specification of boundedness, (158b) is a nonbounded sentence, signifying no termination and culmination at all. With *wan* 'finish', (158d) is a completely bounded sentence, conveying completion of the telic situation. This suggests that boundedness must be visible in TM, while it can be invisible in English.

Second, related to the first point, in TM bounded predicates can imply telicity but not vice versa. The predicate *du-wan zhe-ben shu* 'read-finish this book' in (158d) is telic and bounded. The telicity is expressed by the definite determiner *zhe-ben* 'this-CLF', and boundedness by *wan* 'finish'. Omitting the determiner *zhe-ben* 'this-CLF' telicising the predicate, the new predicate *du-wan shu* 'read-finish book' would still be telic. The new predicate remains its being completely bounded, which naturally implies that the object *shu* 'book' is quantitatively delimited, as only telic situations can be completely bounded/completed. However, telicity cannot imply boundedness. This can be seen in (158b), the telic predicate *du zhe-ben shu* 'read this book' is telic but nonbounded.

This naturally leads to the third point that telic situation-templates can be made up by bounded situation-templates, but not vice versa. The predicates *du zhe-ben shu* 'read this book', *chi zhe-ke pingguo* 'eat this apple' are telic but nonbounded situation-templates. Predicates constituted by RVCs like *du-wan zhe-ben shu* 'read

through this book' and *chi-wan zhe-ke pingguo* 'eat up this apple' are telic and bounded.

Fourth, bounded predicates cannot be represented with the progressive and the continuous viewpoints. This is the AVC in (143). This constraint indicates that in TM, if a representation has a temporal boundary at the actualisational level, it must have a temporal boundary at the viewpoint level. The viewpoint aspect of a representation has to agree with the actualisation aspect of the same representation in terms of closedness.

Recall that I present the possible combinations of all the aspect parameters in (152), which is repeated below (172) with added labels for each combination. According to the AVC, it is expected that the situations of type E and of type F do not exist in TM, since such situations' viewpoint aspect is not in line with their actualisation aspect. They are represented as closed at the actualisational level, but as open at the viewpoint level, which violates the AVC.

(172)

	A	B	C	D	E	F	G	H
<b>Viewpoint aspect</b>	+	+	+	+	-	-	-	-
<b>Ontological aspect</b>	+	-	+	-	+	-	+	-
<b>Actualisation aspect</b>	+	+	-	-	+	+	-	-

+ means closedness = presence of a final endpoint = having a temporal boundary

- means openness = absence of a final endpoint = lacking a temporal boundary

\* habitual situations are not included in this table

By contrast, English, which is not subject to the AVC, have all the eight sorts of situations, examples shown in (173a-h). TM has only six sorts of situations (A,B,C,D,G,H in (172)). There exist no imperfective and bounded situations in TM (E,F in (172)). Examples of these two kinds are ill-formed, as shown in (173e',e'',f,f').

(173) A: Perfective + telic + bounded

a. Tim ate these apples yesterday.

a'. Timu zuotian chi- wan- (le) zhexie pingguo  
Tim yesterday eat- finish- (LE) these apple  
'Tim ate/(has eaten) these apples yesterday.'

B: Perfective + atelic + bounded

b. Tim has eaten apples.

b'. Timu chi- le pingguo  
Tim eat- LE apple

C: Perfective + telic + nonbounded

c. Tim eats this apple.

c'. Timu chi zhe- ke pingguo  
Tim eat this- CLF apple

D: Perfective + atelic + nonbounded

d. Tim ate apples yesterday.

d'. Timu zuotian chi pingguo  
Tim yesterday eat apple

E: Imperfective + telic + bounded

e. Tim has been eating these apples.

e'. \*Timu zai- chi- le zhexie pingguo (progressive)  
Tim ZAI- eat- LE these apple

e''. \*Timu chi- zhe- le zhexie pingguo (continuous)  
Tim eat- ZHE- LE these apple

F: Imperfective + atelic + bounded

f. Tim has been eating apples.

f'. \*Timu zai- chi- le pingguo (progressive)  
Tim ZAI- eat- LE apple

f'. \*Timu chi- zhe- le pingguo (continuous)  
 Tim eat- ZHE- LE apple

G: Imperfective + telic + nonbounded

g. Tim was eating these apples yesterday.

g'. Timu zuotain chi- zhe zhexie pingguo  
 Tim yesterday eat- ZHE these apple

H: Imperfective + atelic + nonbounded

h. Tim was eating apples yesterday.

h'. Timu zuotian chi- zhe pingguo  
 Tim yesterday eat- ZHE apple

Since the lack of type E and type F situations results from the AVC, these two gaps are systematic, rather than accidental. This constraint forbids the co-occurrence of bounded predicates and the progressive/continuous viewpoints, no matter what kind of bounded predicates (i.e. arbitrarily or completely bounded). The ill-formed examples in (173e',e'',f',f'') illustrate the infelicitousness between arbitrary boundedness and the progressive/continuous viewpoints. The infelicitousness between completive boundedness and the progressive/continuous viewpoints can be demonstrated in (174) by replacing the perfect *le* (173e',e'',f',f'') with the secondary predicate *wan* 'finish', forming a completely bounded RVC with the primary verb.

(174) a. \*Timu zai- chi- wan (zhexie) pingguo (progressive)  
 Tim ZAI- eat- finish (these) apple  
 'Tim is/was finishing eating these apples'

b. \*Timu chi- wan- zhe (zhexie) pingguo (continuous)  
 Tim eat- finish- ZHE (these) apple

Fifth, in both TM and English, the perfect aspect can be used to denote arbitrary boundedness, as in (175a,c), regardless the (a)telicity of the predicates. In English,

the progressive form of the verb can be admitted in the perfect aspect and does not affect the bounding ability of the perfect aspect, as in (175b). This indicates that in English the actualisational function of the perfect aspect is more dominant than the viewpoint aspect and the ontological aspect. In TM, in the same representation, actualisational boundedness forbids the occurrence of the progressive/continuous viewpoints as in (173e',e'',f',f'') and (174). The actualisation aspect in TM further demands the viewpoint aspect to agree with it as of closedness. This indicates that the closedness at the actualisational level does not just sometimes imply the closedness at the ontological level, but also definitely entails the closedness at the viewpoint level. The actualisational closedness in English is not so powerful.

- (175) a. Tim has eaten (the) apples.  
 b. Tim has been eating (the) apples.  
 c. Timu chi- le (zhexie) pingguo  
 Tim eat- LE (these) apple  
 'Tim has eaten these apples.' (no culmination)

Last but not least, the actualisation aspect plays a decisive role in the temporal interpretation in TM, provided that a sentence does not contain any temporal adverbials. As the TIR stated in (167), in TM bounded situations are interpreted as past occurrences, and nonbounded ones are interpreted as present occurrences. Contrastively, the actualisation aspect has no part in the tense of English; moreover, this aspect parameter can be implied by a certain combination of the viewpoint aspect, the ontological aspect and tense: telic predicates' perfective past representation. The actualisation aspect obviously has a much more influential position in the aspect system and temporal interpretation system in TM.

The acknowledgement of the actualisation aspect is crucial in the understanding and analysis of the aspect and temporal interpretation of TM. The closedness of this aspect parameter demands overt representation (the BC (157)), the agreement of the viewpoint aspect (the AVC (143)), and can imply the delimitedness of an object. Other than that, its closedness and openness directly determines the temporal



interpretation of sentences without temporal adverbials (the TIR (167)). All these signify that this aspect parameter cannot be neglected, and it is the most influential parameter in the aspect system of TM. Therefore, it is the three-dimension model, rather than the two-dimension model, that can correctly analyse the aspect system and temporal interpretation of TM, as it admits the existence of the actualisation aspect while the two-dimension model does not.

### 3.4 Summary

In this chapter, I offer a big picture of the aspect system in TM in light of the three levels: viewpoint level, ontological level and actualisational level. I have suggested that *le* and *guo* are perfect markers, with the former denoting the perfect of result, the perfect of persistent situation and the perfect of recent past and the latter denoting the experiential perfect. They also contribute to the actualisation aspect by bounding situations, and therefore they are bounding markers. Although they are capable of creating a terminus at an orientation time (usually TU), they cannot function at the ontological level, telicising situations.

Another bounding tool is the reduplicative verb construction V-*yi*-V. Similar to the perfect markers, the construction gives information about the viewpoint aspect and the actualisation aspect of a situation. Situations represented by V-*yi*-V denotes perfectivity and boundedness. They can be used to convey mild requests. Different from the perfect markers and V-*yi*-V, RVCs make contributions to all the three parameters. They represent situations as closed at all levels. In other words, they denote perfectivity, telicity and boundedness.

As concerns imperfectives, TM demarcates between the continuous aspect and the progressive aspect. The continuous aspect is marked by *zhe*, and the progressive aspect is marked by *zai*. They are not interchangeable. Other than the continuous *zhe*, there is the existential *zhe*. The former cannot be replaced by the existential verb *you*, but the latter can. Only the continuous *zhe* can appear in the *ba*-construction.

I have also shown how simple situation-templates are conceptualised in TM. A characteristic of simplex verbs lies in that they are unable to conceptualise simple situation-templates alone. They have the semantic feature of dynamicity/stativity, but lack the other two features of (a)telicity and durativity. It is necessary for them to combine with other elements like object NPs, PP or secondary predicates to form simple situation-templates.

Lastly, I have modified the definition of the actualisation aspect proposed by Declerck et al. by suggesting that this parameter can be determined at VP level, as observed from TM data. I have shown that the actualisation aspect is the most salient aspect in TM for three reasons. First, the boundedness of situations must be overtly presented. Second, the AVC indicates that if the actualisation aspect is represented as closed, then the viewpoint aspect must agree with it, being closed. Third, this aspect parameter determines the temporal interpretation of TM sentences.

## Chapter 4

### Aspectual analysis of the *ba*-construction in TM

In this chapter, I will deal with four issues about the *ba*-construction in TM from the perspective of aspect, on the basis of the aspect system I developed in chapter 3. To begin with, I will first briefly discuss how the definiteness/specificity of the *ba*-construction affects the aspectual interpretation of *ba*-sentences. Then I will explain from the ontological perspective why the *ba*-construction has the verbal complement constraint (VCC) (Lipenkova, 2011). Afterwards, I will analyse the temporal (non)delimitedness of the predicate of the *ba*-construction. Finally, I will show that the actualisation aspect determines the temporal interpretation of the *ba*-construction and *ba*-sentences are subject to the temporal interpretation rule (TIR), just as non-*ba*-sentences.

The *ba*-sentences that are to be discussed are restricted to those temporally unspecified or unmarked, in the sense that they do not have expressions related to temporal reference, such as temporal adverbials (e.g., *zuotian* ‘yesterday’) and modal auxiliaries (e.g., *yao* ‘want’ or *hui* ‘will’). If not specified, the orientation time of the sentences instantiated here is TU. Also, if not specified, (non)delimitedness is used as an umbrella term covering both (a)telicity and (non)boundedness.

#### 4.1 The definiteness/specificity of the *ba*-construction

In the literature, there has been no agreement regarding the property of the *ba*-NP. Some contend that it has to be definite (e.g., Hashimoto, 1971:65), to be specific (e.g., Lü, 1984:50) or denoting a definite or specific referent (e.g., Tsee, 1986:285).<sup>46</sup>

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<sup>46</sup> Some scholars (e.g., Y.-H. A. Li, 2006; Sybesma, 1999) assume that all *ba*-sentences have non-*ba*-counterparts. I do not take the stance as there are some *ba*-sentences that do not have non-*ba*-counterparts in TM. For example:

ta	ba	nitu	biancheng	huangjin
she	BA	soil	turn into	gold

‘She turned soil into gold.’

By contrast, others (e.g., C. N. Li & Thompson, 1981; M.-Q. Wang, 1987) think that it is too much to claim that the *ba*-NP needs to be definite. F.-H. Liu (1990) suggests that the *ba*-NP must be G(eneralised)-specific in the sense that only the NP that can occur with the universal quantifier *dou* ‘all’ can be the *ba*-NP. In light of the different observations, Barwise & Cooper’s (1981) terminology can be the best description: the *ba*-NP must be strong. For the ease of discussion, I adopt Barwise & Cooper’s stance, and use ‘definiteness/specificity’ to refer to the ‘strong’ property of the *ba*-NP.

The definiteness/specificity of the *ba*-NP is also recognised by many researchers (e.g., Lü, 1955; Sybesma, 1999). As can be seen in (176), the object *shu* ‘tree’ is indefinite in the SVO sentence (176a). When it serves as the *ba*-NP in the *ba*-construction (176b), it is definite/specific. The definiteness/specificity of the *ba*-NP, as I am going to demonstrate in this section, is of aspectual importance in two ways: telicising the situation depicted by the *ba*-construction and determining the episodicity of the *ba*-construction.

Jing-Schmidt (2005) justifies the definiteness/specificity from the semantic-pragmatic perspective. She suggests that the *ba*-construction encodes the communicative quality: high discourse dramaticity. Other non-*ba* syntactic variations otherwise have low discourse dramaticity. Following Jing-Schmidt, (176a,a’) have low dramaticity and (176b) has high dramaticity.

(176) a. SVO pattern

ta kan shu  
 he chop tree  
 ‘He chops trees.’

a’. ta kan na-/ yi- ke shu  
 he chop that-/ one- CLF shu  
 ‘He chops that/a tree.’

b. ba-construction

ta ba (na-/ \*yi- ke) shu kan- \*(le)/ \*(duan)  
 he BA (that-/ \*one- CLF) tree chop- \*(LE)/ \*(broken)  
 'He (has) chopped the tree(s).'

The speaker chooses the *ba*-construction to represent a situation because the speaker considers the situation dramatic and would like to draw the hearer's attention to the situation. Under the circumstances, the speaker must have in mind a particular entity as a participant of the situation. If the speaker cannot differentiate a particular entity from a possible set of entities as the participant, the speaker cannot successfully draw attention from people to the described situation. Thus, Jing-Schmidt proposes the prediction (177). The contrast between the sentences (176a',b) supports this prediction. In the canonical, viz. low-dramatic, representation (176a'), both the definite (marked by *na-ke* 'that- CLF') and indefinite (marked by *yi-ke* 'that- CLF') objects are acceptable, but in the *ba*-construction, viz. high-dramatic representation (176b), only the definite object is admitted. The definiteness/specificity of the *ba*-NP can be viewed as the prerequisite for the *ba*-construction to perform its semantic-pragmatic function: conveying high dramaticity.

(177) The *ba*-NP will be overwhelmingly specific than non-specific.

(Jing-Schmidt, 2005:169)

Sun (2014: 84-85) uses the examples in (178) to show that no matter what kind the object (*ba*-NP) is, the aspect marker *le* is necessary to license these sentences. She demonstrates three kinds of objects: indefinite noun (*yi-ge huaping* 'a vase'), a demonstrative noun (*na-ge huaping* 'that vase') and a noun marked by a possessive pronoun (*tade huaping* 'his vase'). Before discussing the definiteness/specificity of the *ba*-NP, I would like to point out that these *ba*-sentences do not need *le*'s licensing in TM and so I do not mark the parentheses of *le* with an asterisk as Sun does. The discussion of *le*'s appearance will be discussed in 4.4.

- (178) a. Zhangsan ba (\*yi/ na- ge) huaping dapo- (le)  
 Zhangsan BA (\*one/ that- CLF) vase break- (LE)  
 ‘Zhangsan broke a/that vase / Zhangsan has broken a/that vase (with le).’
- b. Zhangsan ba (tade) huaping dapo- (le)  
 Zhangsan BA (his) vase break- (LE)  
 ‘Zhangsan broke his vase / Zhangsan has broken his vase (with le).’

To TM speakers, the indefinite *ba*-NP, *yi-ge huaping* ‘a vase’ is not acceptable in the *ba*-construction. The other two definite *ba*-NPs marked by *na-ge* ‘that’ and *tade* ‘his’ are acceptable in TM. This is in line with Jing-Schmidt’s prediction (177), but contradicts Sun’s judgement. Superficially, the two objects are represented differently with the appearance of different kinds of determiners: *na-ge* ‘that-CLF’ or *tade* ‘his’, but the determiners are not actually of much importance because the *ba*-NP must be strong, no matter if there is an overt determiner modifying the *ba*-NP or not. The two determiners can even be omitted, which causes no difference in the grammaticality of the two sentences. That is to say, the ‘different types of the object’ that Sun refers to are actually of the same type in terms of licensing — they are definite/specific — although they have different superficial representations.

The definiteness/specificity of the *ba*-NP has two meanings in aspect: telicising a situation and giving the *ba*-construction episodicity. In the canonical SVO pattern, the bare object *shu* ‘tree’ in (176a) combines with the verb *kan* ‘chop’, forming an activity of chopping trees (dynamic, durative and atelic), because the object *shu* ‘tree’ is not quantitatively delimited. The addition of the quantised expression *yi-ge* ‘a-CLF’ and the demonstrative determiner *na-ge* ‘that-CLF’ delimits the object *shu* ‘tree’ in its quantity and thus telicises the situation. Either expressions, *na-ge* ‘that-CLF’ and *yi-ge* ‘a-CLF’, of (176a’) can telicise the situation, constituting an accomplishment. Note that telicising differs from bounding. Although the two versions of the sentence (176a’) are telic, there is no overt specification of their boundedness. Consequently, they are nonbounded.

The object *shu* 'tree' in the *ba*-sentence (176b) is strong, and the appearance of the quantitatively delimiting expressions such as *na-ge* 'that-CLF' is not required. When the object appears in the *ba*-NP position, it is quantitatively delimited by the construction. The tree-chopping event is telicised by the object. By the same token, the sentences Sun exemplifies, except for the indefinite version marked by *yi-ge* 'one-CLF', are also telicised by the definite/specific *ba*-NPs. The vase-breaking situations described in (178) are therefore accomplishments, rather than activities, because they have a natural final endpoint. The perfect *le* or the secondary predicate *duan* 'break' are necessary to license all these *ba*-sentences in (176b) and (178). Yet, in the case of the perfect *le*, it is not because a viewpoint aspect marker is necessary for a sentence containing an eventive predicate, as Sun suggests. In fact, this relates to the conceptualisation of a simple situation-template at the ontological level, which is going to be discussed in 4.2.

As discussed, the definiteness/specificity directly delimits the *ba*-NP quantitatively and telicises a situation. Other than telicisation, the definiteness/specificity exerts influence on the episodicity and habituality of the *ba*-construction: it forbids iterative readings of *ba*-sentences, if there is no presence of frequency adverbs (henceforth 'freq-adverbs') like *yizhi* 'all the time', *changchang* 'often', *zongshi* 'always', etc.

Habitual sentences can be divided into two classes: those refer to generalisations about a kind and those refer to characteristics of a single individual (Krifka et al., 1995; Rimell, 2004).<sup>47</sup> The former is instantiated in (179a) and the latter in (179b). In the following discussion, I will only include sentences like (179b), which are called 'characterising sentences' in the sense of Krifka et al., since it is the kind of habitual sentences related to the definiteness/specificity of the *ba*-NP. Episodic sentences relate to finite irregular situations, which obtain in a specific temporal interval (Carlson, 1988), as instantiated in (180a). This situation described by this sentence can only obtain in the interval of 'this afternoon', and it cannot in other intervals such as 'tonight' or 'after breakfast'.

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<sup>47</sup> Also called generic sentences.

- (179) a. Cats usually eat fish.  
 b. Tim smokes cigarettes.
- (180) a. Tim smoked a cigarette this afternoon.  
 b. Tim smoked cigarettes.  
 c. Tim smoked a cigarette.

Several factors can influence the categorisation (habitual vs. episodic) of a sentence. The addition of freq-adverbs (e.g., usually, typically), quantificational adverbs (Q-adverbs, e.g., every night) and habitual past modifiers (e.g., used to, would) trigger habituality, whereas definite temporal modifiers (e.g., tonight) activates episodicity. The number of the grammatical object NP can determine the categorisation as well. The indefinite plural form of the object *cigarettes* in (180b) triggers the habitual reading and the indefinite singular form of *cigarette* in (180c) triggers the episodic reading.

*Ba*-sentences without freq-adverbs (e.g., *changchang* ‘often’, *zongshi* ‘always’) strongly favour the episodic reading as (181a,b), which can be ascribed to the definiteness/specificity of the *ba*-NP (the grammatical object of the construction). It quantitatively delimits the *ba*-NP, and telicises situations. If the telos is reached (completely bounded), the situation cannot continue beyond the telos. This means that the completely bounded situation obtains only in a certain temporal interval. It involves no iteration of the situation in other temporal intervals, and thus cannot lead to the habitual reading. Under the circumstances, the definite/specific *ba*-NP is an object-referring NP in the sense of Krifka et al. (1995).<sup>48</sup> The *ba*-NPs *shiqing* ‘thing’ and *mingzi* ‘name’ in (181a,b) refer to definite/specific matter(s) and name(s) that are known between conversers. The two situations of (181a,b) can only obtain when the two *ba*-NPs refer to the definite/specific matter(s) and name(s) that the conversers

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<sup>48</sup> “‘Object’ is a semantic notion here describing the ontological status of what is being referred to and does not have anything to do with ‘object’ as a syntactic notion” (Krifka et al., 1995:2) .



are talking about. They cannot obtain when the *ba*-NPs refer to other matter(s) and name(s) that the conversers are not referring to.

(181) a. Timu ba shiqing xiang de hen zao  
Tim BA thing think DE very bad  
'Tim takes this matter too hard.'

a'. Timu changchang ba shiqing xiang de hen zao  
Tim often BA thing think DE very bad  
'Tim often takes things too hard.'

b. Timu ba mingzi xie cuo  
Tim BA name write wrong  
'Tim wrote the name wrong.'

b'. Timu zongshi ba mingzi xie cuo  
Tim always BA name write wrong  
'Tim always writes names wrong.'

However, it can be seen in (181a',b') that the presence of freq-adverbs (*changchang* 'often', *zongshi* 'always') removes the definiteness/specificity of the *ba*-NP. The two *ba*-NPs (*shiqing* 'thing' and *mingzi* 'name') are turned into generic NPs, in the sense that they refer to a kind, rather than to an 'ordinary' individual or object. The addition of the freq-adverbs and the change in the definiteness/specificity of the *ba*-NPs lead to the change in episodicity. The resulting sentences (181a',b') are habitual sentences. They report a regularity summarising a set of episodes or facts. The comparison of the two types of *ba*-sentences (with and without freq-adverbs) is presented in (182).

(182)

	Without freq-adverbs	With freq-adverbs
<b>Definiteness/specificity of the <i>ba</i>-NP</b>	Definite/specific	Indefinite/nonspecific
<b>Genericity of the <i>ba</i>-NP</b>	Object-referring NP	Generic NP
<b>Episodicity vs. habituality</b>	Episodic reading	Habitual reading
<b>Predicate type</b>	Eventive predicate	Eventive predicate

So far, it can be seen that the definiteness/specificity of the *ba*-NP plays a decisive role in determining the episodicity of *ba*-sentences. Without habitual indicators such as freq-adverbs, the *ba*-NP is the object-referring NP, which directly leads to the episodicity of the *ba*-construction. This will be considered again when discussing the temporal interpretation of the *ba*-construction in 4.4.

#### 4.2 The *ba*-construction's verbal complement constraint

It is widely known that simplex verbs are not possible in the *ba*-construction (exemplified in (183)), and there have been various accounts put forward, in an attempt to justify the phenomenon. Lipenkova (2011) terms it the 'verbal complement constraint' (VCC), repeated in (184):

(183) \*ta ba ren da  
he BA person beat

#### (184) Verbal complement constraint (VCC)

the *ba*-construction cannot be formed with a bare verb; the verb must combine with an additional element:

\*[...[ba NP V]]

Regarding lexical semantics and event structure, various approaches have been developed for the formulation of this constraint. L. Wang (1947) characterises the *ba*-construction as a device to express the concept of disposal; Hashimoto (1971) and

Tenny (1987) focus on affectedness and Sybesma (1999) on causation. Aspectually, researchers such as F.-H. Liu (1997) and Rhys (1996) claim that this constraint associates with the delimitedness of the situation denoted by the predicate.

Nonetheless, the need for a satisfactory explanation is still in demand. Different from the foregoing approaches, I am going to argue that this constraint can be ascribed to simplex verbs' inability to conceptualise a simple situation-template. That is, simplex verbs in TM have a semantic deficiency to conceptualise a simple situation-template at the ontological level.

As I demonstrated in 3.2.1, simplex verbs in TM are devoid of the ontological properties of (a)telicity and durativity/instantaneity. In view of that, they are unable to conceptualise a simple situation-template and can be assigned for a situation type according to the Vendlerian system. They need to combine with other elements to remedy this semantic deficiency so as to form a simple situation-template, which can be further enriched and developed into a proposition at clausal or sentential level. This is termed the SSTC and stated in (137).

The combination of other constituents, in most cases, occurs posterior to the verb, as shown in (185). Also, there are some cases in which the combination occurs prior to the verb, as in (186). The different ways for a simplex verb to form a simple situation-template illustrated below are not exhaustive, but they indicate one important fact that in TM simplex verbs alone cannot form a simple situation-template, and it is necessary for them to conceptualise a situation-template through working with another element, either to the right or to the left of the verb.

- (185) a. V + secondary predicate (RVC)  
*da-si* 'beat-die, beat someone to death'
- b. V + *de* (resultative)  
*da-de-tou-po-xie-liu* 'beat-de-head-broken-blood-flow, beat someone's head off'
- c. V + *dao* (resultative)  
*da-dao-si* 'beat-until-die'

- d. V + object  
*da-maoxian* 'knit woollen yarn'
- e. V + yi + V (reduplicative construction)  
*da-yi-da* 'beat for a short while'
- f. V + PP  
*na-gei-meimei* 'give-to-sister, give it to your sister'

- (186) PP + V  
*wang-fangjian-li-ban* 'towards-room-inside-move, move towards the room'

The simplex verbs' semantic deficiency in conceptualising a simple situation-template is not triggered by a certain syntactic construction. In other words, the *ba*-construction is not the only construction that reflects this characteristic, as the canonical SVO pattern does likewise. For instance, all the simplex verbs *da* 'beat', *kan* 'chop' and *na* 'take' in (187) fail to conceptualise their own simple situation-templates (basic mental constructs) to license a sentence in the SVO pattern, in case the sentences are uttered out of the blue. They do not successfully convey a proposition nor even make any sense. Hence, combination with another element is a necessary means to conceptualise a basic mental construct, and on the basis of this mental construct, the speaker can add on other elements (e.g., predicate constituents, modifiers and etc.) to form an enriched or further enriched mental construct and ultimately a proposition. The combinations illustrated in (185) successfully license the SVO sentences in (188). In this regard, the VCC is not just exclusively for the *ba*-construction, but also for the SVO pattern.

- (187) a. \*ta     da  
          he     beat
- b. \*ta     kan  
          he     chop
- c. \*ta     na  
          he     take

- (188) a. ta da- si ren  
 he beat- die person  
 'He beat the person(s) to death.'
- b. ta da de na jiahuo tou- puo- xie- liu  
 he beat DE that guy head- broken-blood- flow  
 'He beat the guy's head off.'
- c. ta ba ren da- dao- si  
 he BA person beat- until- die  
 'He beat the person to death.'
- d. ta da maoxian  
 he knit woollen yarn  
 'He knits.'
- e. zhe- ge jiaotadian da-yi-da  
 this- CLF mat beat a bit  
 'Beat the carpet (mild request).'
- f. ta na beizi gei meimei  
 he take cup to sister  
 'He gave the cup to his sister.'

As mentioned in 4.1, when the postverbal object is not situated in the postverbal position but occupies the preverbal position (*ba*-NP position), the verb has to conceptualise a new simple situation-template with another element. Consider the examples (189a,b). The verb *da* 'beat' and the object *ren* 'people' in the canonical sentence (189a) constitutes a simple situation-template of a people-beating activity. As shown by (189b), the people-beating activity conceptualised by the verb *da* 'beat' and the object *ren* 'people' in the canonical sentence (189a) is broken up when the postverbal object occupies the *ba*-NP position. The resulting *ba*-sentence (189b) has the verb *da* 'beat' dangling at the end of the sentence, which by itself fails to

conceptualise a simple situation-template and directly leads to the ill-formedness of the sentence.

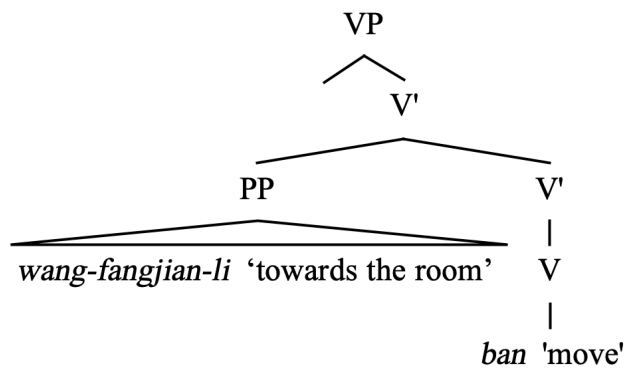
- (189) a. Timu da ren  
Tim beat people  
'Tim beats people.'
- b. \*Timu ba ren da  
Tim BA people beat
- c. Timu ba ren da- si  
Tim BA people beat- die  
'Tim beat the person to death.'
- d. Timu ba ren wang- si- li- da  
Tim BA people towards- death-inside- beat  
'Tim beats the person towards death.'

To license (189b), the verb *da* 'beat' needs to combine with other elements to form a simple situation-template. The secondary predicate *si* 'die' in (189c) can remedy the semantic deficiency of *da* 'beat', conceptualising an accomplishment RVC *da-si* 'beat-die'. The preverbal PP *wang-si-li* 'towards-death-inside' can do likewise, conceptualising an activity with *da* 'beat'. The two simple situation-templates respectively involve extra elements to the right and to the left of the verb *da* 'beat'.

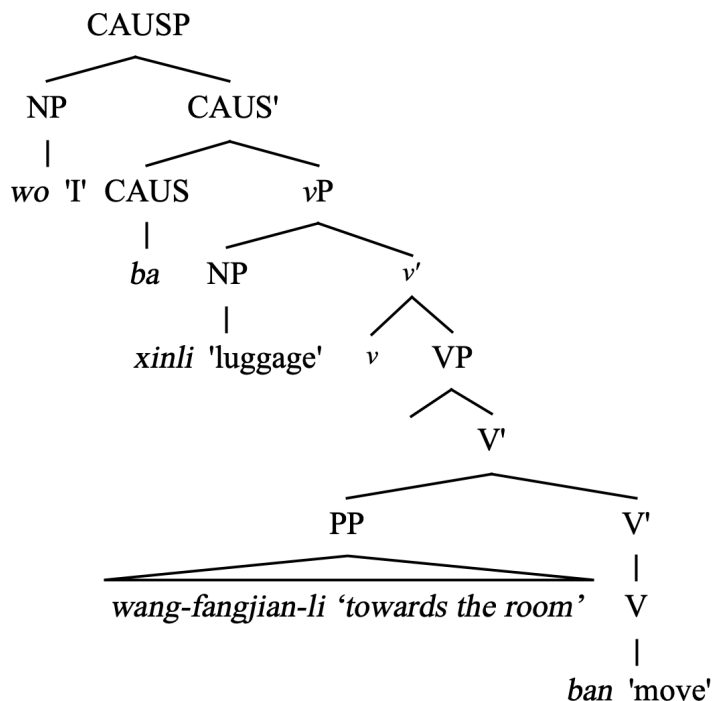
Although the *ba*-NP can be formally indefinite, it must be semantically strong. Both the two cases of the (grammatical) object NP *ren* 'people/person' in (189c,d) are not modified by a definite determiner, they are object-referring NPs, making reference to at least a specific person. Thus, these two *ba*-sentences have episodic readings. The same (grammatical) object NP *ren* 'people/person' in the non-*ba*-example (189a), without being modified by a determiner, otherwise is a generic NP. As a result, the sentence (189a) has the habitual reading.

Notably, (189b) is effectively like (187a) as they are both ungrammatical. Comparing *ba ren da* ‘BA people beat’ in (189b) with the preverbal PP *wang-fangjian-li-ban* ‘move towards the room’ in (186) will find that *ba* cannot be treated as a preposition, since a preverbal PP can license *ba*-sentences, but not the phrase headed by *ba*. Following C.-T. J. Huang et al. (2009), the preverbal PP has the structure in (190). This can directly fit into the structure (66) I proposed in chapter 2. As can be seen in (191), seeing *ba* as a functional head, rather than a preposition, can correctly predict the *ba*-example with a preverbal PP. The *ba*-example again confirms the structure (66).

(190)



(191) wo ba xinli wang- fangjian- li ban  
 I BA luggage towards- room- inside move  
 'I am moving the luggage towards the room.'



(176b) shows that the perfect *le* and the secondary predicate *duan* 'break' can be proper candidates to license the *ba*-sentence by conceptualising a simple situation-template with the verb *kan* 'chop'. Both of these candidates do not just remedy the ontological deficiency of *kan* 'chop' by providing ontological information but also actualisational information. The addition of the perfect marker *le* conceptualises an activity with *kan* 'chop'. The quantitative delimitedness of the object imparted from the *ba*-construction contributes to telicity, turning the activity into an accomplishment. The perfect *le* bounds the accomplishment at the actualisational level, and also gives the accomplishment a perfective representation. In short, the perfect *le* contributes to all the three parameters of aspect.

Aspect markers such as the perfect *le* and the continuous *zhe* can be helpful for conceptualising a simple situation-template. As shown in (192), the verb *zhuan* 'earn' alone cannot license the canonical sentence (192a) nor the *ba*-sentence (192b),



because it cannot provide a basic mental construct. In (192a), combining with the object *qian* ‘money’ can conceptualise an activity of earning money, which licenses the sentence. As usual, when the postverbal object *qian* ‘money’ takes up the preverbal *ba*-NP position, the activity situation-template of earning money breaks up. Consequently, the verb *zhuan* ‘earn’ has to combine with another element to conceptualise a new simple situation-template, and the perfect *le* is a proper candidate.

- (192) a. Timu zhuan- \*(qian)  
 Tim earn \*(money)  
 ‘Tim earns money.’
- b. Timu ba qian zhuan- \*(le)  
 Tim BA money earn- \*(LE)  
 ‘Tim has earned the money.’

The *ba*-construction per se imparts definiteness/specificity onto the *ba*-NP, telicising the possible situation-template. So far, the two necessary ontological features, dynamicity and telicity, are met. That leaves one ontological feature of durativity for *le* to remedy. As mentioned earlier, the perfect *le* is a bounding marker, bounding the possible telic situation-template at TU. It can contribute to the possible situation-template directly at the actualisational level. The boundedness coming from *le* implies the ontological durativity. The termination at TU implies that the situation-template is durative, rather than instantaneous, since instantaneous situations do not allow termination. This indicates that ontological telicity can be determined by the actualisation aspect. In the case of (192b), the accomplishment situation-template is contributed by the verb’s dynamicity, the *ba*-construction’s definiteness/specificity (telicity) and the bounding marker *le*’s implying durativity.

The continuous marker *zhe* licenses the *ba*-sentence (193b) in a similar way. The verb *zhua* ‘grab’ needs to work with the object *wode jianbang* ‘my shoulder’ to conceptualise the simple situation-template, the activity of grabbing my shoulder, to

license the canonical sentence (193a). When the object *wode jianbang* ‘my shoulder’ serves as the *ba*-NP in the *ba*-sentence (193b), the activity situation-template breaks up. The verb *zhua* ‘grab’ has the ontological feature of dynamicity, and the definite object *wode jianbang* ‘my shoulder’ has the ontological feature of telicity. The continuous marker *zhe* is like the perfect *le*, providing actualisational quality. In the case of *zhe*, it offers nonboundedness, which means the situation has not yet terminated up to TU. This implies the possible situation-template is durative.

- (193) a. Timu zhua \*(wode jianbang)  
 Tim grab \*(my shoulder)  
 ‘Tim grabs my shoulder.’
- b. Timu ba wode jianbang zhua- \*(zhe)  
 Tim BA my shoulder grab- \*(ZHE)  
 ‘Tim is grabbing my shoulder.’

At the first glance, it looks like the situation-template that is going to be conceptualised in (193b) is an accomplishment as (192b), since the verbs are dynamic, the objects are quantitatively delimited and the viewpoint markers imply ontological durativity. However, the simple situation-template in (193b) is a state. Recall that *zhe* is a stativiser. As such, the marked verb *zhua-zhe* denotes a state, which is durative and atelic. The sentence (193b) denotes a nonbounded state.

The reduplicative *V-yi-V* construction is conducive to conceptualising a simple situation-template and licensing *ba*-sentences, as illustrated in (194) by *zhua-yi-zhua* ‘massage for a short while’. The reduplicative construction have mild imperative force (C. N. Li & Thompson, 1981; Smith, 1997; Xiao & McEnery, 2004), leading to the imperative nature of (194). Ontologically, the reduplicative construction have two features: durative and telicity. The compositional semantic content of the reduplicative construction *zhua-yi-zhua* ‘massage for a short while’ is thus durative, telic and dynamic. The accomplishment situation-template conceptualised by *zhua-yi-zhua* ‘massage for a short while’ licenses the *ba*-sentence (194).

(194) *ba wode jianbang zhua- yi- zhua*  
BA my shoulder massage for a short while  
'Give my shoulder a little massage.'

Hitherto, the demonstrated data show that combination with other elements is required for a simplex verb in TM to conceptualise a simple situation-template. The combination generally occurs to the right of the verb as (189c), (192b), (193b) and (194), but there are some cases having the combination to the left of the verb, as shown in (189d). Both kinds of predicates are acceptable in the *ba*-construction. Although the simplex verb itself has the property of dynamicity/staticness, this in-built ontological feature may be altered by the stativiser *zhe*, as *zhua-zhe* 'grab-ZHE' in (193b). The definiteness/specificity of the *ba*-NP can contribute telicity to a predicate, and the actualisational function of the perfect maker *le* (signalling termination) can imply durativity to a predicate, as (192b) shows. It can be said that the VCC reflects the ontological semantic deficiency of simplex verbs in TM, and the need to combine with other elements to conceptualise a basic mental construct for a proposition.

### 4.3 Temporal delimitedness of the predicate

Temporal delimitedness, tantamount to Smith's (1997) closedness, has been used to characterise the well-formedness of the *ba*-construction. Previous researchers have put forward various hypotheses related to this notion in an attempt to characterise the aspectual properties of this construction. Although previous hypotheses differ in the aspect level that closedness occurs, they have one thing in common: closedness is the crucial factor for licensing the *ba*-construction. In the following, I will show that in TM closedness actually does not play a role in licensing *ba*-sentences, and the *ba*-construction does not favour closed/open representations for any of the three aspect parameters.

Mei (1978) claims that the verb must be able to be marked by the perfective *le* to occur in this construction. Hopper & Thompson (1980) hold the view that this construction demands a situation-template whose temporal boundary is specified by a perfective particle, a phrase or a clause. Szeto (1988) suggests that this

construction represents a total and temporally delimited event, namely, a perfective event. L. L. S. Cheng (1988) proposes that this construction only accommodates the types of aspect markers and verbs that can temporally delimit an event. Rhys (1996) and Tenny (1987) think of that the event depicted by the *ba*-construction must be temporally delimited. Compare with all the mentioned proposals, F.-H. Liu's (1997) proposal is the strictest. She asserts that only a telic and completely bounded event can license a *ba*-sentence.

Xiao & McEnery (2004) define the *ba*-construction as a delimiting device in the sense that *ba*-sentences always denote temporally delimited situations with the implication of the successful attainment of the result. This is equivalent to F.-H. Liu's (1997) view that situations expressed by the *ba*-construction must be telic and completely bounded. If it were the case, then all the expressions that can unbound a situation would be incompatible with the *ba*-construction. Such expressions include the progressive markers *zailzhengzai* and the continuous marker *zhe*. Also, atelic verb phrases like *diu-lai-diu-qu* 'toss back and forth' would not be allowed in this construction. However, the progressive marker *zai* and *zhengzai* can be seen in (195a,b), the continuous marker *zhe* can be seen in (198e), and the atelic verb phrases (*dun caitou* 'daikon stew', *wang si-li da* 'beat towards death') can be seen in (198b,c). These *ba*-sentences accommodating these non-delimiting expressions are undoubtedly well-formed.

It is clear that all the researchers try to use the notion of aspectual closedness to characterise the grammaticality of *ba*-sentences. Mei's, Szeto's and Hopper and Thompson's suggestions associate with the closedness of the viewpoint aspect. L. L. S. Cheng relates the licensing to the closedness of the viewpoint aspect and the ontological aspect. F.-H. Liu's and Xiao & McEnery's claims involve the closedness of the ontological aspect and of the actualisation aspect. In a nutshell, these researchers attribute the grammaticality of *ba*-sentences to the closedness of different aspect parameters.

However, after investigating into TM *ba*-sentences, I find that open representations are allowed, there is no restriction on which parameter that openness can occur and on the number of openness. For instance, the sentence (195a) demonstrates openness at all the three parameter levels: imperfectivity of the viewpoint aspect, atelicity of the ontological aspect and nonboundedness of the actualisation aspect. The sentence (195b) shows openness of the viewpoint aspect (imperfective) and the actualisation aspect (nonbounded). The example (196) illustrates openness of the ontological aspect (atelic). It is clear that these three *ba*-sentences disprove all the aforesaid claims requiring closedness at one or two aspect levels for licensing, since the three sentences show that openness is not a factor that affects the grammaticality of the *ba*-construction.

(195) a. Timu zhengzai- ba xingli wang- fanjian- yi  
 Tim ZHENGZAI- BA luggage towards- room- move  
 'Tim is moving the luggage towards the room.'

b. ta jiushi zai- ba heide shuo- cheng baide  
 he simply ZAI- BA black describe- as white  
 'He is simply swearing black is white.'

(196) Timu ba caitou dun- le yi- xiaoshi  
 Tim BA daikon stew- LE one- hour  
 'Tim has stewed the daikon for one hour.'

In more detail, if the predicate of the construction can be marked by the progressive markers *zai*, *zhengzai* or the continuous marker *zhe*, then closedness of the viewpoint aspect is not a required criterion to license *ba*-sentences. This is shown by (195a,b), in which the progressive markers are allowed. As to the ontological aspect, if atelic predicates are admitted, then ontological closedness cannot be used to guarantee the acceptability of *ba*-sentences. This can be indicated by (195a) and (196), in which the predicates denote activities (moving the luggage towards the room in (195a) and stewing daikon in (196)). Finally, if nonbounded (open)

representations can be accepted in the *ba*-construction, then closedness of the actualisation aspect is not a useful criterion for licensing *ba*-sentences. For example, (195a,b) are nonbounded representations, and they are well-formed *ba*-sentences.

Recall that I present the eight combinations of the three aspect parameters in terms of closedness/openness in (172), and the non-*ba* examples in (173). TM has only six types of the combinations (lacks type E and F) because it is subject to the AVC stated in (143). For the ease of reference, the table (172) is repeated here in (197).

(197)

	A	B	C	D	E	F	G	H
<b>Viewpoint aspect</b>	+	+	+	+	-	-	-	-
<b>Ontological aspect</b>	+	-	+	-	+	-	+	-
<b>Actualisation aspect</b>	+	+	-	-	+	+	-	-

+ means closedness = presence of a final endpoint = having a temporal boundary

- means openess = absence of a final endpoint = lacking a temporal boundary

\* habitual situations are not included in this table

Among the six types of TM, the *ba*-construction can allow five of them: type A, B, D, G and H (see (199) below). All these five types can be instantiated by the examples that I illustrated earlier. Type A can be instantiated by (176b), type B by (196), type D by (189d), type G by (195b) and type H by (193b). All these sentences are repeated below in (198).

(198) A: Perfective + telic + bounded

- a. ta ba na- ke shu kan- le  
 he BA that- CLF tree chop- LE  
 'He has chopped the tree.'

B: Perfective + atelic + bounded

- b. Timu ba caitou dun- le yi- xiaoshi  
Tim BA daikon stew- LE one- hour  
'Tim has stewed the daikon for one hour.'

D: Perfective + atelic + nonbounded

- c. Timu ba ren wang- si- li- da  
Tim BA people towards- death- inside- beat  
'Tim beats the person towards death.'

G: Imperfective + telic + nonbounded

- d. ta jiushi zai- ba heide shuo- cheng baide  
he simply ZAI- BA black describe- as white  
'He is simply swearing black is white.'

H: Imperfective + atelic + nonbounded

- e. Timu ba wode jianbang zhua- zhe  
Tim BA my shoulder grab- ZHE  
'Tim is grabbing my shoulder.'

As can be seen from the five examples, previous studies claiming that closedness of the viewpoint aspect (perfective), of the ontological aspect (telicity) or of the actualisation aspect (boundedness) licenses *ba*-sentences do not succeed in aspectually characterising the *ba*-construction. The five acceptable aspectual combinations of the construction are encapsulated in (199). Openness is admitted at any of the three levels. The representation of *ba*-sentences can be open at one level (type B), two levels (type D,G) or all the three levels (type H).

(199) The aspectual combinations of the *ba*-construction

	A	B	D	G	H
<b>Viewpoint aspect</b>	+	+	+	-	-
<b>Ontological aspect</b>	+	-	-	+	-
<b>Actualisation aspect</b>	+	+	-	-	-
<b>Example</b>	(198a)	(198b)	(198c)	(198d)	(198e)

+ means closedness = presence of a final endpoint = having a temporal boundary

- means openness = absence of a final endpoint = lacking a temporal boundary

\* habitual situations are not included in this table

It is noteworthy that the *ba*-construction lacks type C (perfective + telic + nonbounded), but non-*ba* sentences in TM have this type as shown in (160c') repeated below in (200a). The perfectivity of this sentence is established because TT contains TSit. The telicity of this sentence is contributed by the quantised object NP *zhe-ke pingguo* 'this apple', as *chi pingguo* 'eat apples' denotes an activity (which is atelic in nature). The quantitatively delimited object gives the activity a telos, making it an accomplishment. Although the sentence is telic, it does not meet the boundedness constraint in (157) (boundedness must be overtly specified) and therefore is nonbounded.

(200) a. Timu chi zhe- ke pingguo  
 Tim eat this- CLF apple  
 'Tim eats this apple.'

b. Timu gun zhe- ke pingguo  
 Tim roll this- CLF apple  
 'Tim rolls this apple (on the ground).'

Other than the quantity of the object, (a)telicity can be determined by the other two factors: the verb and directional PPs. In (200b), although the object *zhe-ke pingguo* 'this apple' is quantised, the verb *gun* 'roll' determines the atelicity of the sentence because the activity of rolling this apple does not have a telos. The directional PPs play a role in determining the (a)telicity of a situation as well. Compare the sentences



in (201). The RVC *dai-dao* ‘lead-arrive’ makes (201a) telic, while the PP *wang-fangjiang* ‘towards the room’ makes (201b) atelic. The former has a goal to reach, whereas the latter does not.

- (201) a. Timu ba ren dai- dao fangjiang  
 Tim BA people lead- arrive room  
 ‘Tim led the people to the room.’
- b. Timu ba ren dai- wang- fangjiang  
 Tim BA people lead- towards room  
 ‘Tim leads the people towards the room.’
- c. Timu ba pingguo diu- jin dahai  
 Tim BA apple throw- enter sea  
 ‘Tim threw the apple into the sea.’
- d. Timu ba pingguo diu- xiang- dahai  
 Tim BA apple throw- towards- sea  
 ‘Tim throws the apple towards the sea.’

From the above illustration, it is clear that both the object and the predicate can be responsible for the (a)telicity of a situation. A salient contrast between canonical sentences and *ba*-sentences lies in that the preverbal occurrence of the object (in the *ba*-NP position) breaks up the simple situation-template conceptualised by the normal sequence with the verb preceding the object, as *chi zhe-ke pingguo* ‘eat this apple’ in (200a). So, as seen in (201c,d), the verb cannot conceptualise a simple situation-template with the preverbal object, the verb must combine with other elements to re-conceptualise a new simple situation-template.

The *ba*-construction, without habitual modifiers like freq-adverbs, encodes the definiteness/specificity of the object (*ba*-NP). However, this cannot guarantee the telicity of a situation, as (201b,d) show that directional PPs (*dai-wang* ‘lead-towards’

and *diu-xiang* 'throw-towards') make the sentences atelic. Directional PPs cannot re-conceptualise a telic situation-template with either the verb *diu* 'throw' or the verb *dai* 'lead'. Instead, they create activities. The atelicity of activities contradicts the ontological requirement of type C, which requires situations to be telic. In other words, the combined element must create an achievement or accomplishment situation-template with the verb. As shown in (201a,c), RVCs (*dai-dao* 'lead-arrive' and *diu-jin* 'throw-enter') are able to do this. They successfully re-conceptualise accomplishments with the verb *diu* 'throw' and *dai* 'lead'.

Recall that the secondary predicates of RVCs denote boundedness. The object (*ba*-NP) in the *ba*-construction is quantised. These two conditions in the *ba*-construction together result in completive boundedness. This means that *ba*-sentences with predicates constituting RVCs are telic, bounded and perfective (RVCs denote telic perfectivity). Without imperfective markers, it is not possible to find such sentences telic but nonbounded, since the secondary predicate of RVCs denote boundedness.

The viewpoint aspect can affect the actualisation aspect as (198d) shows. As (201a,c), the *ba*-sentence (198d) contains an accomplishment predicate constituted by an RVC *shuo-cheng* 'describe as'. Without the progressive marker *zai*, the sentence is represented as perfective and completely bounded. It is *zai*'s marking that turns the bounded representation into a nonbounded representation. In other words, RVCs can be represented imperfectively if marked by imperfective markers. In this case, the boundedness of RVCs is suspended. Following this, without resorting to imperfective marking, *ba*-sentences constituted with RVCs would have the type A combination, represented a situation as closed at all the three aspect levels. With imperfective markings, such *ba*-sentences would have open representations at both the viewpoint level and the actualisational level, but have a closed representation at the ontological level. There is no room for the type C representation, having closed representations at the viewpoint level and the ontological level but an open representation at the actualisational level.

Type H is the other notable combination, since all the three aspect parameters are represented as open, which invalidates all the previous claims suggesting closedness (temporal delimitedness) as being necessary to license *ba*-sentences. Ongoing states have this kind of representation. Some previous studies (e.g., F.-H. Liu, 1997) suggest that the *ba*-construction is incompatible with states, since they are not temporally delimited. The example of an ongoing state (198e) refutes such claims. The continuous *zhe* denotes imperfectivity. Ontologically, the continuous marker *zhe* stativises the dynamic predicate *zhua wode jianbang* ‘grab my shoulder’, converting it into a state, which is atelic in nature. Actualisationally, *zhe* represents a situation as nonbounded.

Although the *ba*-construction admits states which are marked by *zhe* (e.g., (198e)), it does not accept genuine stative predicates, such as *xihuan* ‘like’, *anlian* ‘secretly love’, *you* ‘have’, *zhidao* ‘know’, etc. As can be seen in (202a,b,c), none of these *ba*-sentences can be licensed by a genuine stative predicate. Even though they are marked by the continuous *zhe*, the ungrammaticality of these sentences is still unchanged, shown in (202a’,b’,c’). It can be seen that there are two kinds of stative predicates in TM. The first kind refers to predicates constituted by dynamic verbs and are marked by the continuous *zhe*. The stativity of such predicates is not lexically encoded but imparted to by the stativiser *zhe*. I will term this kind of stative predicates ‘stativised stative predicates’ (SSPs). The second kind refers to predicates whose stativity is inherently encoded, and I will term these predicates ‘genuine stative predicates’ (GSPs).

- (202) a. \*Timu ba Hailun xihuan/ anlian  
 Tim BA Helen like/ secretly love  
 ‘Tim secretly loves Helen.’
- a’. \*Timu ba Hailun xihuan- / anlian- zhe  
 Tim BA Helen like- / secretly love- ZHE

- b. \*Timu ba na- tai che you  
 Tim BA that- CLF car have  
 'Tim has that car.'
- b'. \*Timu ba na- tai che you- zhe  
 Tim BA that- CLF car have- ZHE
- c. \*Timu ba zhe- ge mimi zhidao  
 Tim BA this- CLF secret know  
 'Tim knows this secret.'
- c'. \*Timu ba zhe- ge mimi zhidao- zhe  
 Tim BA this- CLF secret know- ZHE

The data in TM indicate that the *ba*-construction is sensitive to the inherent dynamicity/staticness of the verb. It refuses GSPs and accept SSPs. I call this 'stative predicate constraint' (SPC) stated in (203). In addition to the SSTC (137), this is the second constraint on the predicate of *ba*-sentences.

(203) **Stative predicate constraint (SPC)**

Only stativised stative predicates can be allowed to occur in the *ba*-construction. Genuine stative predicates are disallowed.

Other than states, activities make up another situation type that lacks a telos, which means that such situations are open at the ontological level. Activity predicates can be acceptable in the *ba*-construction as shown in (204). The ball-tossing is represented as open (atelic) at the ontological level, as closed (perfective) at the viewpoint level and as open (nonbounded) at the actualisation level in (204). This representation manifests the aspect combination of type D.

(204) Timu han Hailun ba qiu diu- lai- diu- qu  
 Tim and Helen BA ball toss- back- toss- forth  
 ‘Tim and Helen are tossing the ball back and forth.’

After applying the three-dimensional approach to analysing *ba*-sentences, it is clear that the notion of closedness (temporal delimitedness) — (im)perfectivity, (a)telicity and (non)boundedness — cannot be used as a criterion or diagnostic of the well-formedness of *ba*-sentences, seeing that the *ba*-construction admits perfective and imperfective representations, telic and atelic representations, and bounded and nonbounded representations. This indicates that the *ba*-construction does not have particular constraints related to temporal closedness of its predicate at any aspect level. There is no evidence showing that the *ba*-construction has specific inclination towards a certain type of predicates regarding temporal closedness. However, due to the definiteness/specificity of the *ba*-NP and the telic and bounded nature of RVCs, it is not possible to find *ba*-sentences that have the type C combination of the three aspect parameters. Although the *ba*-construction accepts ontologically atelic predicates, it is subject to the SPC. It accepts SSPs, but refuses GSPs.

#### 4.4 The temporal interpretation of the *ba*-construction

In 3.3.3, I showed that the temporal interpretation in TM relies on the actualisation aspect. As described by the temporal interpretation rule (TIR) in (167), situations described by bounded sentences are interpreted as past occurrences and situations described by nonbounded sentences are interpreted as present occurrences, given that there are no temporal adverbials present. In this section, I am going to deal with three issues. First, I will continue the discussion of 3.3.3, showing that Sun’s  $G_3$  (see below) does not hold of the *ba*-construction. Second, I consider Sun’s claim that the *ba*-construction needs the perfect *le* for licensing and will demonstrate that in fact *le* is not required for the well-formedness of the *ba*-construction. Finally, I will show that the TIR is applicable to the *ba*-construction and can make correct predictions of the temporal interpretation of this construction in TM.

Sun proposes five generalisations of temporal interpretation in Mandarin. Among the five generalisations, G<sub>1</sub> and G<sub>3</sub> concern stative BPs and G<sub>2</sub>, G<sub>4</sub> and G<sub>5</sub> concern eventive BPs (see (161)). In 3.3.3 I demonstrated that, on the whole, G<sub>2</sub>, G<sub>4</sub> and G<sub>5</sub> cannot correctly characterise the temporal reference in TM, and I postpone the discussion of G<sub>3</sub> to this section because it cannot reflect the temporal reference of *ba*-sentences. Sun's G<sub>3</sub> is repeated in (205). This may be true to non-*ba*-sentences as exemplified in (206). As can be seen, both examples do not need viewpoint markers for licensing.

(205) **G<sub>3</sub>**

All stative predicates can appear without viewpoint aspect markers

- (206) a. Lulu    hen    jusang  
           Lulu    very   frustrated  
           'Lulu is very frustrated.' (Sun, 2014:43)
- b. Yichen   xihuan   luxing  
           Yichen   like        travel  
           'Yichen like travelling.' (Sun, 2014:43)

However, G<sub>3</sub> fails to characterise the temporal interpretation of *ba*-sentences with stative predicates. The two stative verbs *jusang* 'frustrated' and *xihuan* 'like' that Sun exemplified concern emotions and are GSPs in my analysis. In (207a,b), I use another two GSPs *hanyou* 'contain' and *xuyiao* 'need' which are not about emotions. These two GSPs also support Sun's G<sub>3</sub> in the canonical SVO pattern, but contradict G<sub>3</sub> in the *ba*-construction, as shown in (207a',b'). Adding viewpoint markers still (e.g., *zhe* or *le*) cannot better the ill-formed *ba*-sentences, as instantiated in (207a'',b'').

- (207) a. mianbao    hanyou    mianfen  
           bread        contain    flour  
           'Bread contains flour.'

a'. \*mainbao    ba    mianfen    hanyou  
       bread        BA    flour        contain

a''. \*mainbao    ba    mianfen    hanyou-    zhe/le  
       bread        BA    flour        contain-    ZHE/LE

b. Timu    xuyiao    Hailun  
       Tim    need    Helen  
       'Tim needs Helen.'

b'. \*Timu    ba    Hailun    xuyiao  
       Tim    BA    Helen    need

b''. \*Timu    ba    Hailun    xuyiao-    zhe/le  
       Tim    BA    Helen    need-        ZHE/LE

As I proposed in the last section, stative predicates can be divided into two sorts: SSPs and GSPs. The *ba*-construction is susceptible to the staticness of verbs. If the staticness is inherent, it would be refused by the *ba*-construction. On the other hand, the staticness would be admitted if it is derived from the stativisation by the continuous *zhe*. The former refers to GSPs, which would not be allowed in the *ba*-construction, and the latter refers to SSPs, which is the only kind of stative predicates that is allowed in the *ba*-construction. This indicates that the *ba*-construction is subject to the SPC (203). Examples showing that the *ba*-construction is compatible with SSPs are instantiated in (208).

(208) a. Hailun    ba    men    kai-    zhe  
           Helen    BA    door    open-    ZHE  
           'Helen has the door open.'

b. Hailun    ba    haibao    ju-    zhe  
       Helen    BA    poster    lift-    ZHE  
       'Helen is lifting the poster.'

Both the verbs *kai* ‘open’ and *ju* ‘lift’ are dynamic. In the above two sentences, they are stativised by the continuous *zhe*, resulting in SSPs. The derived staticness meets the requirement of the SPC and thus license the two *ba*-sentences. In other words, the *ba*-construction can admit stative predicates that are stativised by the continuous *zhe*.

The contrast between the ungrammaticality of (207a’,a”,b’,b”) and the grammaticality of (208) indicate that  $G_3$  cannot be used to generalise the temporal reference of the *ba*-construction. The SPC, contrastively, can characterise the compatibility between the *ba*-construction and stative predicates in the correct fashion.

In terms of the *ba*-construction, Sun claims that no matter what kind of object the verb takes, the perfect *le* is always required to license the episodic reading, as instantiated in (178) and repeated below in (209). In 4.1, I specified that *le* is not required in TM, and so I do not put an asterisk before the parentheses of *le* as Sun does. That is, the perfect *le* is omissible in TM. Also, I demonstrated that the definiteness/specificity of the *ba*-NP is conducive to telicising the described situation and the episodicity of the *ba*-construction. Now I am going to return to an issue mentioned in 4.1, concerning the occurrence of the perfect *le* in the *ba*-construction.

- (209) a. Zhangsan ba (na- ge) huaping dapo- (le)  
 Zhangsan BA (that - CLF) vase break- (LE)  
 ‘Zhangsan broke that vase / Zhangsan has broken that vase (with *le*).’
- b. Zhangsan ba (tade) huaping dapo- (le)  
 Zhangsan BA (his) vase break- (LE)  
 ‘Zhangsan broke his vase / Zhangsan has broken his vase (with *le*).’

In TM, the perfect *le* in (209) is not necessary, since the verb *dapo* ‘break’ can conceptualise a simple situation-template of accomplishment. According to the SSTC (137), the predicate does not require other element(s) to license the *ba*-sentences. Without the perfect *le*, the *ba*-sentences are represented as perfective at



the viewpoint level, telic at the ontological level and bounded at the actualisational level. Simply put, they are represented as bounded accomplishments. In this case, a question naturally arises: what role does *le* play in these sentences? My treating *le* as a perfect marker can answer this question properly.

As a perfect marker, *le*'s occurrence is to relate TSit to an orientation time (TU), in the way that TSit is prior to the orientation time. So, the situation of Zhangsan's breaking that/his vase takes place prior to TU. This follows that the situations described in the two sentences are interpreted as past occurrences. As I have mentioned, the perfect *le* is not necessary as long as a given *ba*-sentence's predicate complies with the SSTC. If so, it appears that there is no means that is conducive to the temporal reference of the sentences in (209). How can the temporal interpretation of the *ba*-construction be determined?

I suggest that the temporal interpretation of the *ba*-construction follows the TIR (167), as other non-*ba*-sentences. This is to say, the *ba*-construction's temporal interpretation hinges on the actualisation aspect: situations described by nonbounded *ba*-sentences have present tense interpretations, and those depicted by bounded *ba*-sentences have past tense interpretations. The examples in (209) indeed follow the TIR, being interpreted as past occurrences, since they are both represented as bounded.

The boundedness of these two sentences is not determined merely by the bounded expression, the RVC *dapo* 'break'. Similar to telicity, it needs quantitative delimitedness of the object (the *ba*-NP) to ensure the boundedness. The definiteness/specificity of the *ba*-NP quantises the object of the verb. It follows that if the predicate of the *ba*-construction is constituted by an RVC and there is no freq-adverbs/Q-adverbs (quantificational adverbs) present, the *ba*-sentence would be bounded by default. Apart from the instantiation of (209), there are more data in TM that can support this, as in (210).

- (210) a. Timu ba qiqiu ci- po  
 Tim BA balloon pop- break  
 'Tim popped the balloon.'
- b. Timu ba miantuan ya- bian  
 Tim BA dough press- flat  
 'Tim pressed the dough flat.'

The *ba*-NPs, *qiqiu* 'balloon' and *miantuan* 'dough', in (210) refer to some specific balloon and dough that are known between the conversers. Their quantities are delimited, although there is no quantificational expression specifying the exact quantities. The predicates, *ci-po* 'pop-break' and *ya-bian* 'press-flat', are both RVCs, with the secondary predicates denoting the resultant state of the *ba*-NPs. Both sentences are bounded accomplishments. Their boundedness leads to the past tense interpretations.

As I argued in 4.1, the presence of freq-adverbs or Q-adverbs can remove the definiteness/specificity of the *ba*-NP, rendering the *ba*-NP a generic NP. This also removes the episodicity of the *ba*-construction and gives habituality to the *ba*-construction instead. The sentences in (211) can illustrate the change brought about by freq-adverbs. The *ba*-NPs *qiqiu* 'balloon' and *miantuan* 'dough' in (210) are object-referring NPs, but in (211) they are generic NPs. The two *ba*-sentences in (211) do not have the episodic readings but have habitual readings. All these changes result from the addition of the two freq-adverbs, *changchang* 'often' and *zongshi* 'always'.

- (211) a. Timu changchang ba qiqiu ci- po  
 Tim often BA balloon pop- break  
 'Tim often pops balloons.'

- b. Timu zongshi ba miantuan ya- bian  
 Tim always BA dough press- flat  
 'Tim always presses doughs flat.'

Additionally, the presence of the freq-adverbs also alters the actualisation aspect and the temporal reference of the *ba*-sentences. The sentences in (210) are bounded and refer to past occurrences. In (211), they are nonbounded because the freq-adverbs unbound the situations and there is no specification of termination imposed on the habitual readings. The nonboundedness activates the present tense interpretations of the described situations. This again supports the TIR.

Other than accomplishment *ba*-sentences, the TIR is applicable to the other three situation types: activities, states and achievements. The predicate *gun-lai-gun-qu* 'roll back and forth' denotes an activity in (212a), and there is no bounding expression to bound the activity. The sentence is nonbounded and has the present tense interpretation. The predicate *bao-zhe* 'be holding' in (212b) is an SSP, denoting a state. The sentence is not bounded by any bounding expression. The nonboundedness leads to the present tense reading of (212b). (212c) denotes an achievement, contributed by the RVC *ren-chulai* 'recognise-out', which is also a bounding expression. The *ba*-sentence is represented as bounded, and thereby has the past tense interpretation.

- (212) a. Timu ba qiu gun- lai- gun- qu  
 Tim BA ball roll- back- roll- forth  
 'Tim is rolling the ball back and forth.'
- b. Timu ba qiu bao- zhe  
 Tim BA ball hold- ZHE  
 'Tim is holding the ball.'

- c. Timu ba Hailun ren- chulai  
 Tim BA Helen recognise- out  
 'Tim recognised Helen.'

According to Depraetere (1995), telic situations can be represented as bounded and nonbounded and atelic situations too can be represented as bounded and nonbounded. This is the same with the *ba*-construction. The *ba*-sentences in (210) indicate that telic situations can be represented as bounded, while those in (211) show that freq-adverbs can unbound telic situations, represented as nonbounded. The *ba*-sentences in (213) otherwise illustrate that atelic situations can be represented as bounded, with the addition of the perfect *le* along with temporal modifiers.

- (213) a. Timu ba qiu gun- le ban- xiaoshi  
 Tim BA ball roll- LE half- hour  
 'Tim has rolled the ball for half an hour.'

- b. Timu ba qiu bao- le ji- miao  
 Tim BA ball hold- LE several- second  
 'Tim has held the ball for several seconds.'

The activity of ball-rolling in (213a) can be bounded by the perfect *le* and the duration phrase *ban-xiaoshi* 'half hour'. The other one of ball-holding in (213b) similarly can be bounded by the perfect *le* and the duration phrase *ji-miao* 'several seconds'. The bounding expressions bound the two activities and render them bounded situations. The boundedness changes the described situations of ball-rolling and ball-holding from present occurrences to past occurrences, as the perfect *le* relates the described situations to the orientation time (TU), in the way that the situations occur prior to TU. So, the situations are understood as past occurrences.

In this section, I have shown that, in addition to non-*ba*-sentences, the actualisation aspect plays a decisive part in determining the temporal interpretation of *ba*-

sentences in TM, in case there is no temporal adverbial. The TIR does not just correctly characterise the temporal reference of non-*ba*-sentences but also works well for the *ba*-construction. Adopting the traditional two-dimensional approach cannot make the correct observations and predictions of the temporal interpretation in TM, since it does not acknowledge the existence of the actualisation aspect.

#### 4.5 Summary

In this section, I accept Barwise & Cooper's (1981) claim that only strong NPs can take up the *ba*-NP position. This property affects the aspectual interpretation of the *ba*-construction in three ways. It is conducive to telicising a situation and give episodicity to a *ba*-sentence. Additionally, it disallows iterative readings without the presence of freq-adverbs in a *ba*-sentence.

After that, I give an account for the VCC in light of the notion of situation-template postulated by Declerck et al. (2006). The constraint results from simplex verbs' inability to conceptualise a simple situation-template on their own. If the postverbal object NP occupies the preverbal *ba*-NP position, the verb must combine with other elements, either to the right or to the left of the verb, to conceptualise a new simple situation-template to license *ba*-sentences.

I then apply the three-dimension model I developed in the previous chapter to analyse the aspect of the *ba*-construction. I find that this construction does not require a delimited predicate at any aspect level for licensing as reported in the literature. In other words, the predicate need not be perfective, telic nor bounded. Ongoing states, for example, are imperfective, atelic and nonbounded, and are admitted in this construction. However, the construction is subject to the stative predicate constraint (SPC). Only stativised stative predicates are allowed.

Finally, I show that the construction, as the canonical SVO pattern, depends on the actualisation aspect of a sentence for temporal reference. It is subject to the temporal interpretation rule (TIR). Without the presence of expressions that specify

the relation between TT and TU, boundedness leads to the past tense reading and nonboundedness leads to the present tense reading.

## Chapter 5

### Conclusion

This thesis started with five research questions: 1) what the big picture of the aspect system in TM is, 2) how to account for the behaviours of *le* in TM, 3) what the differences between *zai* and *zhe* are in TM, 4) how aspect interacts with the temporal interpretation in TM and 5) what roles aspect plays in licensing *ba*-sentences. The purpose of this chapter is to conclude by summing up the discussions with respect to these research questions.

In the first part I outline the key arguments and findings of this study. I then give an outlook for further research.

#### 5.1 Synopsis

As concerns the aspect system in TM, I have advocated a three-dimensional account put forward by Declerck et al. (2006). On this account, *le* and *guo* are analysed as perfect markers, together denoting the four perfect meanings — the perfect of result, the perfect of persistent situation, the perfect of recent past and the experiential perfect — drawn from Comrie (1976). The other two imperfective markers *zhe* and *zai* are respectively treated as the continuous marker and the progressive marker. The reduplicative verb construction *V-yi-V* and RVCs are the other two constructions that denote the perfective viewpoint.

Under this approach, as discussed in 3.1, the four particles and the two constructions provide aspectual information on more than one level. All the four particles and *V-yi-V* give information on the viewpoint level and the actualisational level. The perfect marker treatment offers a unified account for *le*'s and *guo*'s versatility. They do not just denote perfectivity, but also relate the time of an occurrence to an orientation time, contributing to define the relation between TT and TU. At the actualisational level, they bound situations at an orientation time by

coinciding the final endpoint of TT with the orientation time. Likewise, *zhe* and *zai* mark imperfectivity and nonboundedness. The construction V-*yi*-V denotes perfectivity and boundedness. Different from the above, RVCs contribute to all the three levels by conveying perfectivity, telicity and boundedness.

My analysis reflects three typological characteristics of the aspect system in TM. It is a language that has the usual dichotomous perfective/imperfective opposition, rather than the trichotomous opposition (perfective, imperfective and neutral viewpoints claimed by Smith (1997)), and makes a distinction between the continuous aspect and the progressive aspect. As other languages that have such a distinction (e.g., Cantonese), these two aspects are not interchangeable. It is also a language that allows explicit temporal specifications in the present perfect.

I also suggest that in TM the actualisation aspect is the most salient parameter among the three parameters in 3.3. Closedness at this level must be explicitly expressed, but closedness at the ontological level can be implied. Compared to the ontological aspect, the actualisation aspect is more visible and noticeable. Additionally, if situations are represented as closed at the actualisational level, they must also be represented as closed at the viewpoint level. The value of the actualisation aspect determines the temporal interpretation for sentences without temporal expressions. Boundedness leads to the past tense interpretation and nonboundedness leads to the present tense interpretation.

Regarding the *ba*-construction, I first proposed a syntactic structure (72) in chapter 2, with AspP dominating CAUSP headed by *ba*. This structure can correctly predict the linear sequence of *ba*-sentences for both the suffixal aspect markers (*le* and *guo*) and the aspect markers (*zhe* and *zai*) preceding verbs. It also makes the right prediction of *ba*-sentences accommodating preverbal PPs in (191).

I use the conceptualisation of situation-templates proposed by Declerck et al. (2006) to show the semantic deficiency of simplex verbs in TM, and successfully account for



the VCC of the *ba*-construction. This approach gives better accounts for the *ba*-construction than previous views in that it characterises the construction more correctly and gives the right predictions. For example, it has been suggested that the predicate of this construction must be perfective or temporally delimited, but such claims are not supported by the data presented in this study. The key finding is that the grammaticality of this construction is not affected by the viewpoint aspect, the ontological aspect (situation types) and the actualisation aspect. Although it allows stative predicates, it accepts those constituted by stativised stative predicates but rejects those constituted by genuine stative predicates. In other words, only predicates stativised by the continuous *zhe* can appear in the construction. The temporal reference of the construction is subject to the temporal interpretation rule, as non-*ba*-sentences.

## 5.2 Further Research

This study has left some gaps unexplored, and therefore raises questions for further research. First, I treat *le* as a bounding marker, which marks a terminus at an orientation time. It does not telicise situations or marks a telos. However, there is a subtle difference between its occurrence in non-*ba*-sentences and its occurrence in *ba*-sentences. When it appears in *ba*-sentences, the interpretation strongly favours completion rather than termination, as shown below. What causes this difference merits attention by future research.

- (214) a. Timu kan- le na- ben shu  
 Tim read- LE that- CLF book  
 'Tim has read that book (may be unfinished).'
- b. Timu ba na- ben shu kan- le  
 Tim BA that- CLF book read- LE  
 'Tim has read that book.'

Second, there seems to be some interesting interaction between the *ba*-NP and (frequency) adverbs. As I suggested in 4.1 that the definiteness/specificity of the *ba*-

NP gives episodic readings and disallows iterative readings of *ba*-sentences. However, the addition of such adverbs in the *ba*-construction triggers generic or habitual readings instead. This need to be further studied in future research.

## Abbreviations

AVC	the actualisation-viewpoint constraint
BC	the boundedness constraint
BP	bare predicate
DP	distinguished phase
Dur-PROG	the durative progressive
FE	final endpoint
Foc-PROG	the focalised progressive
freq-adverbs	frequency adverbs
GSP	genuine stative predicate
HC	the homogeneity constraint
KMT	Kuomingtang
LDSS	locative denoting subject sentence
Q-adverbs	quantificational adverbs
ROC	Republic of China
RVC	resultative verb construction
S- <i>le</i>	sentence-final <i>le</i>
SM	Southern Min
SPC	the stative predicate constraint
SSP	stativised stative predicate
SSTC	the simple situation-template constraint
STC	the situation-template criterion
TIR	the temporal interpretation rule
TM	Taiwanese Mandarin
TSit	time of situation

TSP	the temporal sequencing principle
TT	topic time
TU	time of utterance
V- <i>le</i>	verb-final <i>le</i>
VCC	the verbal complement constraint

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