THE SYNTAX OF LE IN MANDARIN CHINESE

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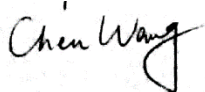
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Abstract

This thesis focuses on the syntax of the structures with the particle *le* in Mandarin Chinese. The particle *le* has two uses: verbal *le* and sentential *le*. I will argue the verbal *le* in Mandarin has a dual function: it is used primarily as a quantity marker and secondarily as a perfectivity marker. This leads to a result that most of the cases with *le* are both telic and perfective. Others, with the lack of (im)perfectivity, only extend a quantity reading. Meanwhile, I assume the perfective reading in Mandarin solely depends on verbal *le*, except in negative and interrogative situations. This means in a sentence with a perfective viewpoint, even if *le* occurs after the object at the end of the clause, it should also be a verbal *le*. I argue that such a structure is result of VP-fronting.

On the other hand, a real sentential *le* is not directly related to perfectivity. I propose that sentential *le* is a focus marker that scopes high in the hierarchy and yields flexible readings depending on which structure enters the focus domain under different contexts. In this sense, the configuration with both verbal and sentential *le* extends an assertion of a perfective event, which, I propose, functionally corresponds to the perfect aspect in English.

In short, although there are two uses of the particle *le* in Mandarin, they should be distinguished by their grammatical functions instead of their linear positions.

Dedication

To my father, who, I think, should be very happy to see the accomplishment of this thesis, if he could.

Acknowledgements

Contents

1. Introduction

1.1 The syntactic configuration of Mandarin Chinese

Unlike tense, whose existence in Mandarin is dubious due to the lack of overt morphological evidence, aspect elements show a significant presence in this language, as is displayed in the full-fledged system of aspectual markers.

In this dissertation, I will examine the aspectual marker *le*. Before getting to this, it may be useful to give a brief view on the predicate structure in this language first. Mandarin Chinese is a language without overt tense marking system. That means verbs in Chinese do not have inflectional morphologies like past tense[1]. Past interpretations depend heavily on time adverbials and speech time context, and sentences without any time indicating phrases or relevant information from the context generally only have a habitual reading. For instance[2]:

(1) Zhangsan wu dian   zuo   fan.

    Zhangsan five o'clock cook meal.

    Zhangsan cooks at five.

(2) Zhangsan tan gang-qin.

    Zhangsan play piano

    Zhangsan plays piano.

(1) and (2) only mean "Zhangsan usually cooks at five o'clock" and "Zhangsan often plays piano". They do not refer to any specific event which has happened or is about to happen. On the other hand, certain predicate phrases cannot be used without any

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[1] For studies that supports this view, see Huang (1982), Lin (2003, 2007, 2010) etc. For different views, see Sybesma (2007), Tsai (2008), etc.

[2] The data in this thesis are collected in mainland China, including Beijing, Shandong, Henan, Shanxi, Anhui and Jiangxi, etc. from several native speaker informants. But it is possible that dialect variations may lead to different judgements. About the marks used in this thesis: ? means the sentence is acceptable to most native informants, although there are a few objections. ?? means the sentence is marginal and usually requires some special contexts. # means the sentence is grammatically correct but is semantically weird (or not contextually appropriate).

aspectual markers, as in (3a, b), because they are typically not interpreted habitually. This is referred to as the Incompleteness problem (Wu 2005, Tsai 2008), which I will revisit in Chapter 3.

(3) a.??Zhangsan chi san-ge   pingguo.[3]

   Zhangsan eat three-CL apple.

   Intended reading: Zhangsan ate three apples.

b.??Zhangsan sha na-tiao jingyu.

   Zhangsan kill that-CLwhale

   Intended reading: Zhangsan killed that whale.

But both (3a) and (3b) can be repaired with a minimum modification, that is, the insertion of the particle *le*, as shown in (4a) and (4b).

(4) a. Zhangsan chi *le*   san-ge   pingguo.

   Zhangsan eat LE three-CL apple.

   Zhangsan ate three apples.

b. Zhangsan sha *le*   na-tiao   jingyu.

   Zhangsan kill LE that-CL whale

   Zhangsan killed that whale.

The sentences are rendered grammatical with an episodic reading. In general, we are now talking about specific events instead of an everyday habit. In other words, they denote a perfective viewpoint with the presence of *le* (I will discuss the definition of perfective and imperfective viewpoint in 1.2).

VPs after modal auxiliaries do not need aspectual markers to express an episodic reading, such as (5a, b). This is probably because modals and auxiliaries can take over the job of aspectual markers and semantically (instead of grammatically) contribute aspectual information to the sentence. But that does not mean aspectual markers cannot

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[3] (3a) is acceptable under a habitual reading, as "Zhangsan eats three apples every time/day".

co-occur with modals. I will talk about the restrictions on the coexistence between modals and aspectual markers in Chapter 3.

(5) a. Zhangsan bixu qu Beijing.

Zhangsan must go Beijing.

Zhangsan must go to Beijing.

b. Zhangsan yao qu Beijing.

Zhangsan will go Beijing.

Zhangsan will go to Beijing.

However, there are also some puzzling facts in the distribution of *le* which call for further explanations. For example, in some circumstances we cannot have a *le* after the main verb, as shown in (6) and (7). (6) cannot be used to express the meaning shown in the English translation. It is only acceptable if the bare noun *pingguo* (apple) here is contextually interpreted as a specific apple or a certain number of apples. But the unbounded existential reading is unavailable. This restriction in the use of *le* serves as the departure point of this dissertation.

(6) ??Zhangsan zuotian   chi *le* pingguo.

Zhangsan yesterday eat LE apple.

Intended reading: Zhangsan ate apples yesterday.

(7) ??Zhangsan tan   *le*   gang-qin.

Zhangsan play LE piano

Intended reading: Zhangsan played piano.

Apart from *le*, there are other particles that play the role of aspectual markers in Mandarin Chinese. Huang et al (2009) proposes that aspectual information in modern Chinese is realized as five aspectual markers, which can be further classified into two categories according to their positions in the sentence. The first category includes *you* (有) and *zai* (在), which appear pre-verbally as free morphemes. The second category includes

the other three morphemes—*le* (了) and *guo* (过) and *zhe* (着), which always occur linearly after the verb. In this dissertation I will focus only on the syntax and semantics associated with the aspectual marker *le*. Other aspectual markers will appear in the text mainly as comparisons and their detailed analysis is left to future studies.

1.2 About particle *le*

The particle *le* in Mandarin occurs in two positions in the sentence. First, *le* may appear immediately after the verb and before the object, as shown in (8a). Such a *le* is usually called verbal *le*. In the second case, *le* follows the object at the right edge of the clause, as in (8b). Here it is called sentence-final *le,* or sentential *le*.

> (8) a. Zhangsan qu le Beijing.
>
>   Zhangsan go LE Beijing.
>
>   Zhangsan has gone/went to Beijing.
>
>   b. Zhangsan he   jiu   le.
>
>   Zhangsan drink alcohol LE.
>
>   Zhangsan drinks alcohol (now)./ Zhangsan drank alcohol.

Note that (8b) has two possible interpretations: a continuous reading that it is now that case that Zhangsan has the habit of drinking alcohol, and an episodic reading that Zhangsan drank some alcohol. Following the consensus in the literature, I assume these two readings should be attributed to separate types of *le*. But in the following analysis, I make a deviation by distinghuishing the two le's by their function instead of position: I will regard the *le* that goes with non-perfective situations as the real sentential *le*, while the *le* that takes an eventive situation and yields a perfective reading is always a verbal *le*, wherever it occurs. In other words, in literature it is often assumed that the *le* occurs at a certain (linear) position and thus has certain function, but I will assume that the le with a certain function should be a certain type of *le*, regardless of the linear position. The *le*

responsible for the second reading of (8b) thus should be the verbal *le*. It appears at the end only because the object has moved (together with the verb). The detailed discussion will come in Chapter 7.

As to the function of this particle, verbal *le* is often analysed as a perfective aspect marker (Smith 1997; Huang et al 2009) or a resultative predicate (Sybesma 1997 1999). In contrast, it has been suggested that sentence-final *le* is a discourse marker encoding current relevance (Li and Thompson 1981), or a presupposition trigger (Soh & Gao 2006, Soh 2009). But what I'm going to propose is different. I will argue that the verbal *le* is a quantity marker in Mandarin, and its perfectivity-marking function is more like a side-effect. I will discuss the definition of quantity and perfectivity in the next section, but will not come to the analysis of verbal *le* until Chapter 2. In Chapter 3 and 4, I will show that the proposal of verbal *le* has a series of advantages over the previous analyses in dealing with certain syntactic constructions.[4]

The function of sentential *le* is not directly connected to (im)perfectivity in my analysis. I argue the sentential *le* is a contrastive focus marker. It scopes over most of the lexical and functional categories and create a reading of assertion. The interpretation related to sentential *le* is always flexible because the interpretation of focus is contextually variant. In this sense, it is also a discourse marker. The sentential *le* will be discussed in Chapter 5.

Sometimes, however, the distinction between these two versions of *le* is not very clear-cut, as in the case of intransitive verbs, the verbs which take no objects. In these

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[4] Some previous studies (Tang & Lee 2000, Wu 2005, Tsai 2008) report that subordination and coordination can license a sentence with verbal *le*. To be specific, the bare nouns in Mandarin are generally not accepted in perfective situations, but are licensed when we have a coordinate or subordinate clause behind the matrix clause. However, in spite of my respect to the efforts put into the relevant works, I will not talk about these examples. In other words, the data I will take into consideration is restricted to simple clauses, namely the clauses without any subordination and coordination. There may be a few cases where I need coordinate clauses to provide an unusual context, but I will try to avoid examples which may have a direct impact on the grammaticality of the sentence as a whole. This is meant to provide a clearer view on the function of the particle *le* in the grammatical structure of Mandarin.

cases the position right after the verb is also the position at the end of the clause. Therefore, it is difficult to label a *le* appearing in such a position as verbal or sentential, as shown in (9a) and (9b).

(9) a. Zhangsan pang *le*.

   Zhangsan fat LE.

   Zhangsan became fat/is fat (now).

 b. Zhangsan si *le*.

   Zhangsan die LE.

   Zhangsan died/is dead.

As far as I know, currently there is no reliable way to test whether the *le* here is verbal or sentential (Soh 2009 and Erlwine 2017 propose some tests, which I will examine in Chapter 5). Throughout the thesis, I will give separate treatments according to the intended reading: I assume in the reading with a dynamic process as *became fat* in (9a), the *le* is verbal *le*; in the reading that is totally stative, such as *is fat* in (9a), the *le* is sentential *le*.

Since the two versions of *le* have different functions, we can expect them to occur in the same sentence, as in (10).[5]

(10) Zhangsan chi le   san-ge   pingguo le.

   Zhangsan eat LE three-CL apple   LE.

   Zhangsan has eaten three apples.

Although the functions of the two versions of *le* have been discussed separately for a long time, there are relatively fewer attempts to give an analysis directly to the structure with both verbal *le* and sentential *le*, namely the Double Le Configuration. In Chapter 6 I will propose a focus approach to the Double Le Configuration and show that

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[5] Since verbal *le* and sentential *le* have identical form, there are also attempts to treat the two versions of *le* as instances of the same morpheme (Shi 1990, Huang & Davis 1989, Wang 2014, etc). But I will not discuss them in this dissertation, because the two versions of *le* have different counterparts in many varieties of Chinese, as I will show in Chapter 5 and 7.

the function of this special structure is similar to the perfect aspect in English, which is typically represented as the auxiliary *have* and the past participle inflection of the verb.

1.3 About aspect

Given that this dissertation is a study of aspect in Mandarin, in this section I will take some time to introduce the grammatical role of aspect, since the term tends to be less familiar compared with other categories such as tense. In addition, as the definitions of certain terms vary greatly, I will also clarify whose approach I'm following in this thesis.

From a linguistic perspective, it is important to distinguish tense from aspect in a language. Briefly, tense marks the time at which the event happens relative to the speech time, whereas aspect signals the speaker's viewpoint on the progress of the event. Comrie (1976) notes that aspects are different ways of viewing the internal temporal constituency of a situation.

Traditionally, there are two uses of the term "aspect", which are known as viewpoint aspect and situation aspect as in Smith (1997). Viewpoint aspect (also called outer aspect) locates events relative to a point-of-view, or reference time in the sense of Reichenbach (1947). Viewpoint aspect is typically represented by a head in the inflectional domain that houses relevant morphological material that would feed into the semantic component, so it is also called grammatical aspect, syntactically represented as [$_{AspP}$ Viewpoint Aspect [$_{vP}$ event-predicate]]. According to Smith (1997), there are three typical viewpoint types, which include: perfective, imperfective and neutral. Perfective viewpoints focus on a situation on the whole, including both initial and final points. Imperfective viewpoints focus on part of the event, which includes neither the initial nor the final points. And neutral viewpoints are flexible, including the initial point and at least one internal stage. In this dissertation I won't talk much about the neutral aspect, but simply regard it as unspecified in terms of perfectivity.

Comire (1976) describes the perfective aspect as in (11):

(11) " (the perfective aspect) presents the totality of the situation referred to without reference to its internal temporal constituency: the whole of the situation is presented as a single unanalysable whole, with beginning, middle, and end rolled into one; no attempt is made to divide this situation up into the various individual phases that make up the action of entry."

Gueron (2008) offers a more concise version: the perfective viewpoint spans the time interval of the event as a whole. It "characterizes the bounded Assertion time interval in T of which the configuration(s) that vP denotes is predicated".

The imperfective aspect looks at the situation from inside and is crucially concerned with the internal structure of the situation. The imperfective viewpoint excludes the final point of the time interval and focuses on part of the situation, so it is informationally open (Smith 1997).

Many European languages have distinct grammatical forms to represent these two aspects on the verb. For example, in Russian both (12a) and (12b) mean "Ivan read", but the perfective form in (12a) indicates that the activity of reading has come to an end under such a viewpoint, while the imperfective form in (12b) suggests that Ivan was still reading by the end of the selected time interval.

(12) a. Ivan procital

     Ivan read-PFV.

     Ivan read.

  b. Ivan cital

     Ivan read.

     Ivan was reading.

English simple past form has no specific distinction of aspect. (13a) therefore can be interpreted either as perfective or imperfective: it can be either the case that John

finished his work and left, or that the state of John working here continued. There is also a separate Progressive inflection as in (13b), which is clearly a type of imperfective aspect.

(13) a. John worked here.

b. John was working (when I entered).

Meanwhile, situation aspect (also inner aspect) is not related to the temporal domain. Situation types are semantic categories of language, "classes of idealized situations with distinctive temporal features" (Smith 1997). Situation aspect is also referred to as Aktionsart or event structure in some circumstances. Features in situation aspect include telic/atelic. Since there are many different definitions of telicity, I will briefly review some of the discussion in the following.

Based on the description of Vendler (1967), predicates can be distinguished into four classes according to two features: process and definite, as represented in (14).

(14)

	-Process	+Process
-DEFINITE	State	Activity
+DEFINITE	Achievement	Accomplishment

Vendler's classification had a far-reaching influence on the following studies (such as Carlson 1981, Hoeksema 1983, Moens 1987 and Verkuyl 1993), because they all inherit the way of binary value split of two parameters. The difference mainly lies in the terms they use. In Vendler's own words, the feature [+/-definite] refers to the definiteness in time span, while the feature [+/-process] correlates with the use of time periods vs. time instants". In other words, the feature PROCESS is related to durativity while the feature DEFINITENESS is related to telicity. *Pushing a cart* may go on for a time, but it does not take any definite time; the activity of *drawing* may also go on for a time, but it takes a certain time t$_Q$ *draw a circle*.

In these works, the distinction between telic and atelic events is based on whether

an event results in a change of state. Events are claimed to be telic if they involve a certain point in time (the telos) at which the process that they undergo reaches some result. Telic events have a natural final endpoint which constitutes the goal or outcome. In other words, they culminate. In contrast, atelic events do not have any fixed final endpoint and can stop at any time. This is illustrated in the following examples:

(15) a. John made a piano. [Telic]

b. John played a piano. [Atelic]

(16) a. John pushed a cart. [Atelic]

b. John pushed a cart to the park. [Telic]

(17) a. John hammered the nail. [Atelic]

b. John hammered the nail flat. [Telic]

(18) a. John ran. [Atelic]

b. John ran a mile. [Telic]

(19) a. John ate two apples. [Telic]

b. John ate apples. [Atelic]

However, event classification in itself is not explanatory in that it neither addresses how events are represented in the grammar nor tries to determine whether events are encoded within the lexicon, the semantics, or the syntax (Rosen, 1999).

Through the minimal pair comparison, it is shown that the presence of an internal object and the type of this object is also crucial to telicity, as noted by Verkuyl (1972). *Run* in (18a) is an activity, thus atelic, but *run a mile* in (28b) becomes an accomplishment and is telic. While (19a) is telic, (19b), which has a bare plural object without number, is atelic. It seems that certain numeral properties of the internal argument have a significant influence on interpretations of Aktionsart. This property is captured by Verkuyl (1972) as [+SQA] (Specified Quantity of Argument). And hereafter I will refer to this discovery as Verkuyl's Generalization:

(20) *Verkuyl's Generalization*

Verbs taking a direct argument with specified quantity yield a telic interpretation. Otherwise they construct atelic predicate. Telicity only emerges in the context of a direct argument with property [+SQA].

But there is a problem with what the "specified quantity" really is. Arguments like *piano* in (15b) and *cart* in (16a) are arguments with specified quantity, but we still have an atelic interpretation in the end. This is contradictory to Verkuyl's Generalization. So we know that quantified objects do not give rise to telicity by themselves.

To fix this problem, Krifka (1992) proposed a pair of complementary features of *cumulative* and *quantized* to differentiate telic and atelic eventualities. A predicate of entities has *cumulative* meaning if for any number of things that have the properties denoted by the predicate, they would maintain the property when joined together. So *apples* as a predicate object counts as *cumulative* under this definitions in that if we join two piles of apples together, the result group would also count be *apples*. This also applies to predicate. Two events of *playing a piano*, when joined together, are still *playing a piano*. So we know the event in (15b) is *cumulative* and *atelic*. On the other hand, we get *quantized* entities if for any number of entities that satisfy the same property, one cannot be viewed as the subpart of the other. So *three apples* as a whole is *quantized* because its subparts, namely one or two apples, are not "three apples". In the same sense, *eating three apples* is a *quantized* event simply for the fact that no sub-event of it is "eating three apples". Krifka's approach fixes the problems mentioned above, since here telicity is defined as a feature of the whole predicate.

However, Krifka's mereological way of looking at eventualities may face some problems, particularly in the dichotomy of cumulative and quantized. It turns out that the two features do not cover all possible circumstances. There are some events which belong to neither the cumulative nor the quantized category, such as *eating fewer than three*

apples, as pointed out by Borer (2005a, b). Such an event is usually regarded as telic, because there is indeed a culmination in the event. We just don't know the accurate number of the apples being eaten. The situation is not cumulative in that two events of eating fewer than three apples like, say, eating one apple and eating two apples respectively, would no longer be eating fewer than three apples when put together (in this case it will be eating *exactly* three apples, not *fewer* than three). But it is not quantized either since any subpart of eating fewer than three apples, such as eating one or two apples, would remain eating fewer than three apples.

Moreover, sometimes a cumulative event does not lead to an atelic reading, but a telic one instead, such as in *eating more than three apples*. The event is cumulative because if we merge two events of eating more than three apples, the result would still satisfy the property of *eating more than three apples*. And it is not necessarily quantized because if one is engaged in eating more than three apples, say five, there could be some part of it, like eating four apples, which is *eating more than three apples*. But the event is still telic nonetheless. This problem is also found with quantifiers like *many* and *some*. Therefore, we know that Krifka's approach at best captures only some of the situations of (a)telicity.

Here I would like to follow the basic idea of telicity in Krifka's work and define telicity as a feature of the predicate rather than a feature in the lexical entry of any particular kinds of verbs. And atelicity is just the lack of telicity. But as to the specific definition, I will adopt the idea of *quantity* in Borer (2005b) and consider telicity-atelicity distinction the same as the distinction between *homogeneity* and *quantity*. In other words, I assume quantity events are the same as telic events.

Borer suggests that telic events involve quantification over event divisions, while atelic events are homogeneous. This basic idea is not too far from that of Krifka, but Borer adds the notion of divisiveness to the definition of homogeneity. The definition is given

below:[6]

> (21) a. P is homogeneous iff P is cumulative and divisive.
>
> i. P is divisive iff $\forall x, y\ [P(x) \wedge (y < x) \rightarrow P(y)]$
>
> ii. P is cumulative iff $\forall x, y\ [P(x) \wedge P(y) \rightarrow P(x \cup y)]$
>
> b. P is quantity iff P is not homogeneous.

To paraphrase, the definition in (21ai) says: if a predicate P is true of something and is true of any of its parts, then P refers divisively. The thought is, if there's, say, something that can be described by the noun *water*, and any part of it also counts as water, then *water* as a noun is divisive. This also applies to abstract entities such as *time*. On the other hand, *three apples* is neither divisive nor cumulative, as part of it, sat *two apples*, is not *three apples*, and, two groups of *three apples* together is *six apples*. Therefore, *three apples* is a quantity DP.

Borer's definition in (21) extends it to the domain of events, just as Krifka did with the feature of cumulative above. So an activity like *running* is homogeneous not only because it is cumulative, which allows us to put two activities of *running* together and still get *running*, but also because it is divisive, which means any subpart of *running* can also be defined as *running*. Both cumulative and divisive are required conditions to define homogeneity. So we come to a solution to the problem that Krifka's theory faces: the events of eating fewer/more than three apples are telic because they are not homogeneous. They are not homogenous because they are either not cumulative or not divisive. *Eating fewer than three apples* is not cumulative as we have discussed. Eating more than three apples is cumulative, but not divisive, since some subparts involved in eating more than three apples do not satisfy the characteristic of *eating three apples*. So failure of either of the two conditions is sufficient to render the event non-homogenous, or *quantity*.

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[6] The definition of *divisiveness* in (21ai) is a simplified version. The original version in Borer (2005a, b) is meant to avoid the problem of minimal particles, which I will not discuss in this thesis.

One important result from this definition of telicity is that a natural endpoint is no longer necessary in a telic event. The specification of an endpoint contributes to the reading of telicity by establishing some sub-intervals that do not satisfy the property of the event as a whole. In other words, the existence of an endpoint suggests that the event is not divisive, which gives rise to telicity directly. But having an endpoint is only a sufficient condition for telicity, not a necessary one. In principle, any stage that is different from the rest of the event will trigger failure of divisiveness and it does not have to be the final point. It is expected that culmination or change of state in some intermediate point will also lead to a telic reading. This is what happened in the event of *eating more than three apples*. Although we don't know exactly how many apples are eaten in the end, the event becomes non-homogenous as soon as three apples have been consumed and the eater proceeds to the fourth. So events with an endpoint are only a special situation of telicity in which the culmination appears at the very end.

1.4 Framework and Methodology

The traditional approach to minimalist syntax is based on the projection of properties of a head from its lexical entry. That is why it is sometimes called endo-skeletal approach. The analysis I'm going to propose in this dissertation, however, will be carried out in the exo-skeletal framework outlined in Borer (2005a, b), where the structure is independent of lexical specifications. In this approach the final meaning of a phrase is shouldered by two components: one is the syntactic structure and its interpretation in the formal semantic component; the other one is the value assigned to substantive vocabulary by the conceptual system and world knowledge. In other words, substantive vocabulary is no more than decoration of the structure in this system. The basic scheme then should be (22a), instead of (22b), which is the general logic behind the traditional approach.

(22) a. Exo-skeletal framework:

Structure → predicate-argument structure/event structure;

(Category → event interpretation → meaning assignment to structure.)

b. Endo-skeletal (Projectionist) framework

Lexical-semantics of a verb → predicate-argument structure;

(Category → structure)

The exo-skeletal approach makes use of range assignment instead of feature checking: functional structures are headed by categorially labelled open values which must be assigned range by the appropriate functional operator (Borer 2005a). A categorial head consists of a pair of two members, in which one provides the category label and the open value, and the other one, sometimes optional, provides the range to be assigned. This is illustrated in (23), in which $<e>_F$ is the open value while R(F) is the range assigner. They both constitute the head of the functional projection F.

(23)
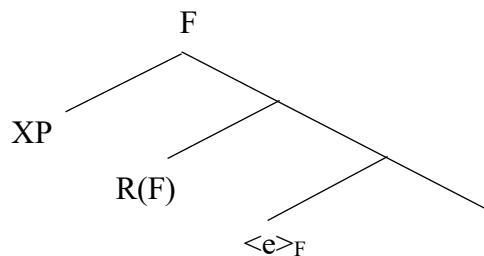
For a specific open value, there will be a series of possible range assigners available in the functional lexicon of a particular language. Such range assigners primarily include two varieties: f-morphs, which refer to the independent free morphemes that are phonologically indexed, and abstract head features, which require the support of some head. The latter often triggers obligatory head movement or Agree in certain contexts. The derivation converges when the combination of *head—head feature* has got an appropriate representation from the phonology component. It should be noted that each open value can only have one range assigner, but a particular functional item can assign range to more than one open value.

There are also two modes of indirect range assignment: first, range can be assigned by elements which are not heads and are hence not specified as range assigners for any open value in the functional lexicon (such as adverbs and particles); second, a quantity DP, an adverb of quantification, and a discourse operator can also serve as range assigner, and the process often involves specifier-head agreement.

This framework is chosen because of its flexibility in dealing with telic predicate structure. Cross-linguistically there are many ways to assign a telic value to a VP—via quantity objects, resultative predicates, grammatical affixes, or even locative phrases. I will discuss some of these in Chapter 2 and 3. Here I will only show how this exo-skeletal frameworks in dealing with the verbs with varied behaviours.

It has been observed that intransitive verbs show a usage varying between unaccusative and unergative. This unstable alternation has been reported in many languages, such as in (24) and (25), (both from Borer 2005b: 32):.

(24) a. Jan heeft gesprongen.   (Dutch)

 Jan AUX jumped.

 Jan has jumped.

 b. Jan is   in de sloot gesprongen.

 Jan COP in the ditch jumped

 Jan jumped into the ditch.

(25) a. Gianni ha   corso. (Italian)

 Gianni AUX run

 b. Gianni e   corso a casa.

 Gianni COP run   to home.

 Gianni has run to home.

This unaccusative-unergative distinction is linked to interpretational correlations. Specifically, syntactic unaccusatives are associated with telic and non-agentive situations.

Unergatives, on the other hand, are typically interpreted as atelic and agentive (Perlmutter 1978, Van Valin 1991, Dowty 1991). It is generally assumed that this correlation results from the different roles/positions of the subject in intransitives. In the unaccusative case the argument originates as the object of the verb and thus assumes the role of theme. It moves to the subject position for independent reasons (case or EPP). On the other hand, in the unergative case the argument is merged as the subject and takes an agentive role. This difference in structural position leads to distinctions in interpretation.

There is a similar pattern, however, with transitive verbs. Mittwoch (1991) notes that all accomplishment verbs in English are actually ambiguous between an accomplishment and an activity reading, as in (26a, b).

(26) a. John built the houses (in three months/for three months).

b. John built houses (*in three months/for three months).

(26a), with a definite object, has either has a telic accomplishment reading or an atelic activity reading. (26b), with a bare-plural object, can only be interpreted as an atelic activity[7]. If we follow the traditional projectionist approach and assume the feature of telicity is based in the lexicon of the verb, then it follows that *build* would have at least two distinct lexical entries: a telic entry and an atelic entry. But as shown in (26a), in both cases the verb can select a quantity DP as its object, which makes it unclear what causes the telic/atelic distinction.

The exo-skeletal approach offers a better solution here. It assumes that the distinction between telic and atelic readings comes from the structural difference of the object, as in the intransitives cases in (24) and (25). As is discussed in the previously section, telicity is not a property of any particular verb. Rather, it is determined by predicate structure. Therefore, we do not need to assume the systematic existence of two distinct entries for variable-behaviour verbs, as we no longer need the syntax of argument

---

[7] (28b) also has an iterative reading, as John built houses one after another. I will ignore this interpretation for such examples throughout the dissertation.

structure to be projected from the lexicon. Instead, we can assume that there is an independent functional structure responsible for the interpretation of telicity in the semantic component. Therefore, even if the object argument is the same, the interpretation varies as to whether the object is merged in a telic structure or not.

To Borer, who proposed the notion of quantity, the functional projection responsible for telicity is termed Aspect of Quantity. So relative to the scheme of functional structure in (23), F is labelled as Asp_Q, and its specifier position, which is XP in (23), is interpreted as measurement of quantity. The architecture of Asp_Q is actually optional in the predicate domain (VP), because it only appears when we need a telic reading. The relation between the specifier and quantity head is in a Spec-head configuration, allowing a quantity DP in the specifier to assign range to the open value in the head. But the head can also be assigned value by other phrases such as functional morphemes (in the place of R(F)), adverbs of quantification, particles and locatives. No matter what plays the role of range assigner, quantity/telicity emerges only when such a range assignment is successful.

The telic interpretation of (26a) results from the structure in (27a), where the object *the houses* is merged as the specifier of the Asp_QP and assign range to the open value $<e>_Q$. It is a legitimate range assigner because the DP itself has got a quantity feature—the definiteness makes it non-homogenous. The head position which is in pair with $<e>_Q$ is empty, because in English there is no functional item specific for quantity/telicity.

The atelic interpretation of (26a) has a structure like (27b), in which there is no Asp_QP to give the telic interpretation. Instead, the position structurally corresponding to Asp_QP is occupied by a FP, which, as Borer (2005b) claims, is devoid of any semantic properties but only preserves the function of Case-assigning. This is based on the belief that there is no particular atelic structure in the grammar—atelic interpretation is entailed

in the absence of a telic structure, or specifically, Asp$_Q$P.

The structure of (26b) is close to (27b) instead of (27a), because the bare plural noun in English is not a quantity DP and thus is unable to assign range to <e>$_Q$ in Asp$_Q$P. This is the reason why (26b) only has a strictly atelic interpretation. The structure is in (27c).

(27) a.

```
                TP
              /    \
          Spec      \
           |     T   Asp_QP
          John      /      \
                 Spec       \
                  |        /    \
              the houses  <e>_Q  VP
                                 |
                               built
```

b.

```
                TP
              /    \
          Spec      \
           |     T    FP
          John      /    \
                 Spec      \
                  |       /    \
              the houses <e>   VP
                                |
                              built
```

c.

```
                TP
              /    \
          Spec      \
           |     T    FP
          John      /    \
                 Spec      \
                  |       /    \
               houses    <e>   VP
                                |
                              built
```
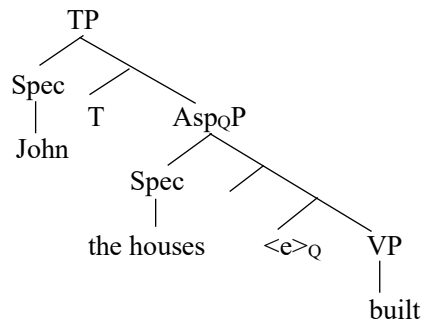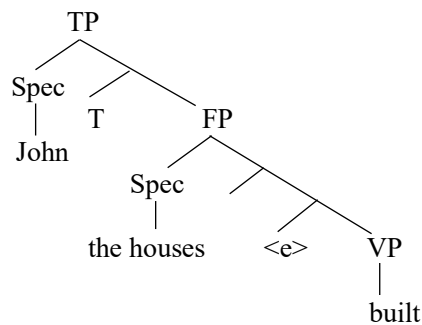
Note that in the representations in (27a-c), not only the external argument is severed from the verb, but also the internal argument, which implies that the object does not take any thematic roles from the verb. All the roles labelled are computed on the basis of the relevant functional structure. This idea is much in line with the Neo-Davidsonian

approach, as in Parsons (1990). Since neither internal nor external arguments are selected by the verb, we need a different style of semantic representation for the telic and atelic situations, as shown in (28a, b).

(28) a. ∃e [Quantity(e) & Originator(John, e) & S-o-q(the houses, e) & BUILT(e)]

b. ∃e [Originator(John, e) & Participant(houses, e) & BUILT(e)]

Quantity here stands for the core feature of a telic predicate. It roughly equals *Telic*. S-o-q is short for *subject-of-quantity* and refers to the entity that undergoes this quantifiable modification. Both of them are associated with telic events only, so we do not expect to find them in atelic situations, as in (28b). An atelic event is homogenous, so it does not have the feature *Quantity*. The object therefore only plays the role of a default participant. Its interpretation is calculated on the basis of other fully specified components of the event. Although *houses* can be as affected 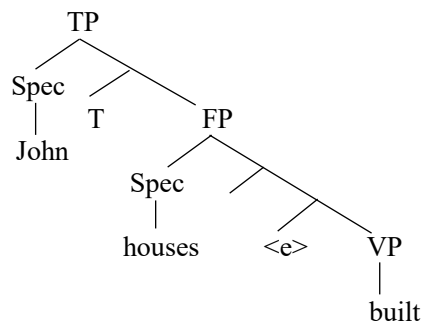by the action of *built* in the general interpretation, it does not suffice to give rise to a telic interpretation, as telic reading is only licensed by the assignment of range to Asp_Q.

1.5 The proposal

This dissertation focuses on the grammatical function and syntactic structure associated with the particle *le*. I will propose separate analyses for verbal *le* and sentential *le*. First, verbal *le* in this analysis is a free morpheme which appears as a pair with the open value $<e>_Q$ and assigns range to the latter. It occurs between the light verb v and the lexical verb V, as the head of Asp_QP, the phrase for quantity.

Furthermore, I propose that under normal circumstances, verbal *le* as a quantity marker is also responsible for the marking of perfectivity. This function is realized via long-distance Agree with the open value $<e>_{PFV}$ under the viewpoint AspP for perfective phrases ($AspP_{PFV}$). This accounts for the fact that a sentence such as (29a) is usually both perfective and telic. A typical verbal *le* sentence such as (29a) is supposed to have the

structure in (29b) under this analysis.

(29) a. Zhangsan chi *le* san-ge pingguo.

Zhangsan eat LE three-CL apple.

Zhangsan ate three apples.

b.
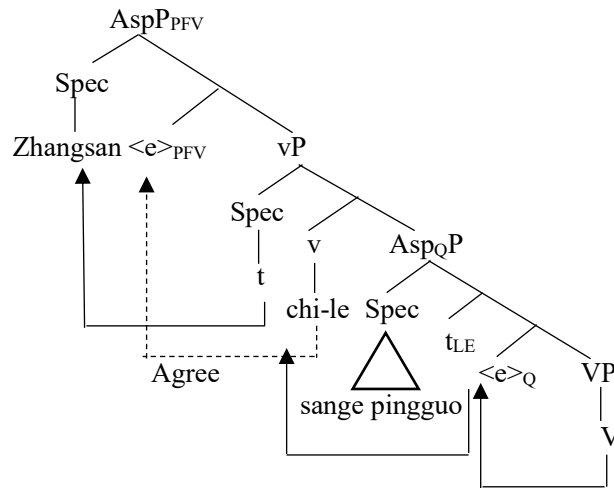
Telicity tests adapted to fit Mandarin will show that verbal *le* sentences always have a telic interpretation. The analysis of verbal *le* and the telicity tests will be presented in Chapter 2.

Chapter 3 is also devoted to verbal *le*. In that chapter I will review previous studies, and show that the proposed analysis in this thesis is preferred. Such previous analyses include the perfective analysis in Smith (1997) and Huang et al (2009), the resultative predicate analysis in Sybesma (1997 1999), and the temporal anchor analysis in Lin (2003 2010) and Tsai (2008). The main advantage of the proposed analysis in this thesis, as I will show, is that it can explain why verbal *le* is sometimes used in non-perfective situations like (30a) and (30b) (as is obverved in Chen 1957, Shao 1988, Sybesma 1999, etc) but never occurs in explicitly imperfective cases like (30c).

(30) a. Zhangsan bixu chi le na-ge pingguo.

Zhangsan must eat LE that-CL apple.

Zhangsan must eat that apple.

b. Zhangsan (bi   Lisi) gao le   san   yingcun.

Zhangsan than Lisi   tall LE three inch.

Zhangsan is three inches taller (than Lisi).

c. Zhangsan zai   chi (*le) na-ge   pingguo.

Zhangsan ZAI eat   LE that-CL apple.

Zhangsan is eating that apple.

As I will show, the separation of the perfective marking function from *le* is the key to this problem. In my proposal the presence of verbal *le* may be associated with the perfective meaning which comes from the assignment of range to $<e>_{PFV}$, but at least in principle, verbal *le* can occur without triggering any perfective meaning in examples such as (30a) and (30b), which do not include $<e>_{PFV}$. I assume (30a, b) have the structure in (31a, b).

(31) a.

```
                IntP
              /      \
          Spec         \
           |    F       vP
       Zhangsan |      /    \
              bixu   v      AspQP
                     |      /    \
                  chi-le  Spec    \
                     |     tLE     \
                na-ge pingguo    <e>Q   VP
                                        |
                                        V
```

b.

```
          FP
        /    \
  Zhangsan   TopP
            /    \
         Top      PredP
         /\      /    \
      bi Lisi  Pred   AspQP
               |     /    \
             gao-le Spec    \
                     |  tLE  DegP
                    san      /   \
                  yingcun  Deg    AP
                           |      |
                           t      t
```

22

c.

AspP_IPFV

Spec

zai

Zhangsan   <e>_IPFV   vP

Spec

v   Asp_QP

t

chi   Spec

na-ge
pingguo   <e>_Q   VP

V
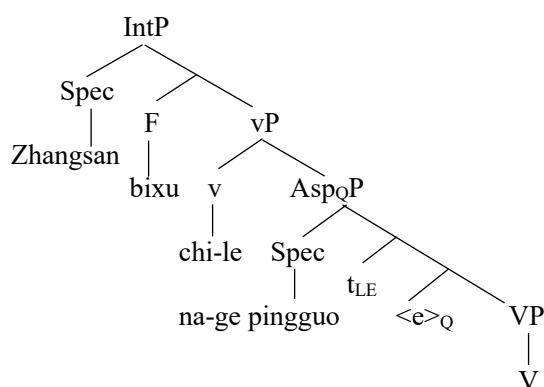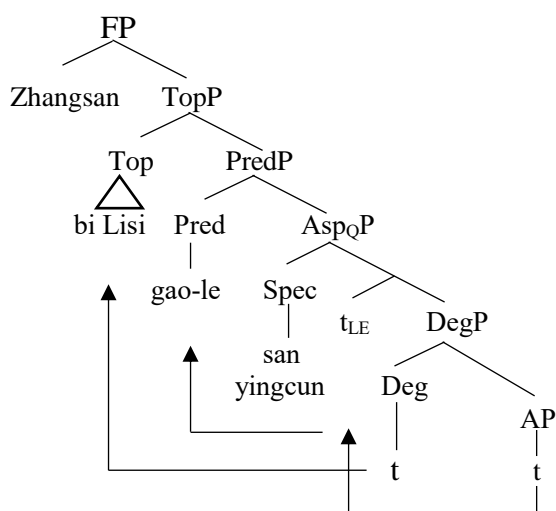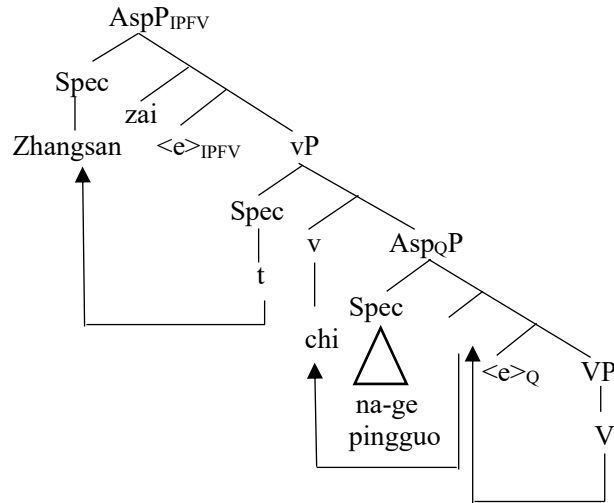
On the other hand, *le* has Agree relation with the head of AspP even in the imperfective situation. So if the sentence contains an imperfective marker, such as the progressive marker zai in (30c), the *le* cannot be used in this case even if it is a quantity/telic event. I assume (30c) has the structure in (31c).

In Chapter 4, I will examine the use of verbal *le* with time duration phrases. I will propose that these phrases behave as object arguments in Mandarin syntax, so they may, and mostly do occur as [Spec, Asp_QP] to measure the event. This often leads to the dislocation of the real object argument, as in (32a-c). Possible consequent operations include verb duplication as in (33a), object merge as in (33b) and topicalization as in (33c).

(32) a. Zhangsan tan gangqin tan le san-ge   xiaoshi.

Zhangsan play piano   play LE three-CL hour.

Zhangsan played the piano for three hours.

b. Zhangsan tan   le   san-ge   xiaoshi (de) gangqin.

Zhangsan play LE three-CL hour   (DE) piano.

Literally: Zhangsan played three hours of piano.

c. Zhangsan gangqin tan   le   san-ge   xiaoshi.

Zhangsan piano   play LE three-CL hour.

As for the piano, Zhangsan played it for three hours.

(33) a.

AspP
Zhangsan TopicP
VP vP
tan-gangqin
v
tan-le
Asp$_Q$P
Spec
t$_{LE}$
san-ge xiaoshi
<e>$_Q$ VP
V

b.

AspP
Zhangsan vP
v
tan-le
Asp$_Q$P
Spec
t$_{LE}$
DP
san-ge xiaoshi
(de) gangqin
<e>$_Q$ VP
V

c.

FP
Zhangsan C-TopicP
DP vP
gangqin
v
tan-le
Asp$_Q$P
Spec
t$_{LE}$
san-ge xiaoshi
<e>$_Q$ VP
V
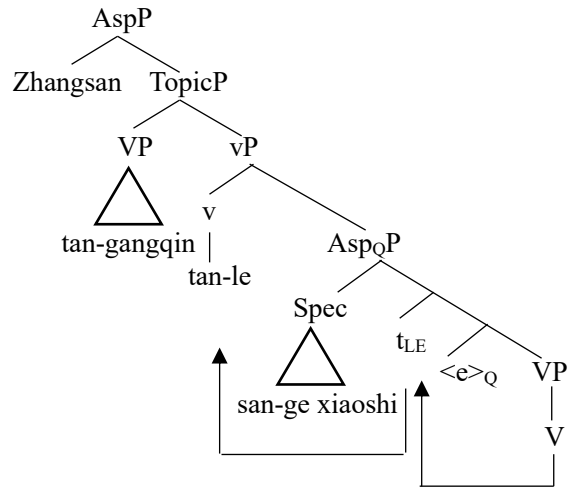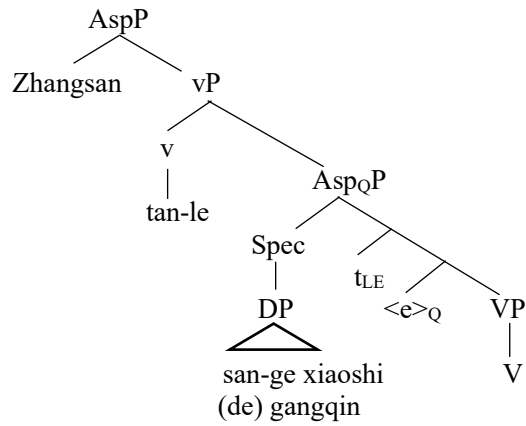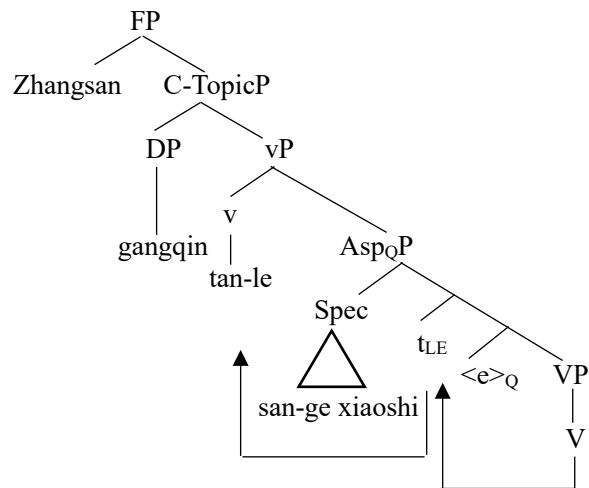
In Chapter 5, I will turn to the discussion of sentential *le* by re-examining the different types of interpretation typically related to this sentential particle, as in (34). I will show that all these meanings come from the assertion of the structure under sentential

le, which leads to the idea that sentential *le* is actually a focus marker. I assume the sentential *le* is a head-final particle which occurs higher than the subject but lower than CP, as in (35).

(34) Hua   hen hong le.

Flower very red   LE.

1. The flower is very red now. (It was not very red before.)

2. The flower *is* very red. (Contrary to what you said/assume.)

3. The flower is very red now. (I will then become yellow/Let's pick it)

4. The flower is indeed very red. (Exclamation)

(35)

```
                    CP
                   /  \
                FocP    C
                / \     |
              /    Foc (ma)
            /      |
         AspP      le
         /  \
       Asp   vP
```
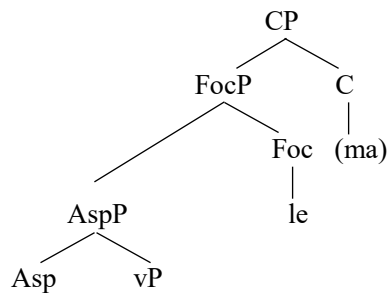
In Chapter 6, I will discuss cases which involve both kinds of *le,* namely the Double Le Configuration (DLC). Following the conclusion that sentential *le* is a contrastive marker, I argue that the DLC also extends an assertion of a perfective telic event, as in (36a, b).

(36) a. Zhangsan chi le   san-ge   pingguo le.

Zhangsan eat LE three-CL apple   LE.

Zhangsan *has* eaten three apples.

b.
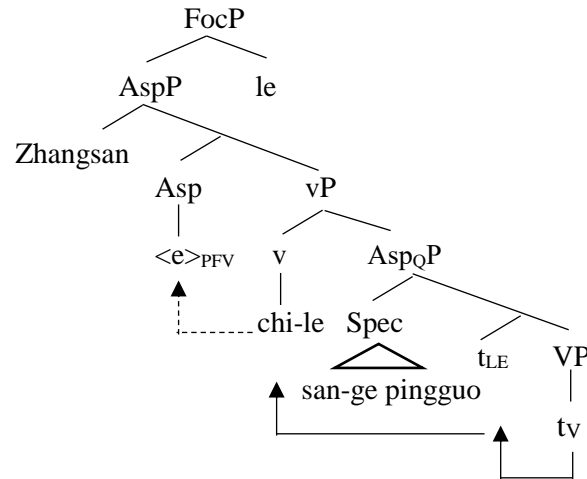
This leads to some restrictions on the use of the DLC, such as the incompatibility with manner and locative adverbials out of blue as in (37a), and the unavailability of interpretations resulting from quantifier raising, as in (37b).

(37) a. Zhangsan feikuai-de/zai huayuan-li guanshang le   chuanghu (??le).

　　　Zhangsan quick-DE/in garden-in   close   LE window   LE.

　　　Zhangsan has closed the window (??quickly/in the garden).

　　b. Mei-ge   xuesheng dou kan   le yi-bu   dianying le.

　　　Every-CL student   all   watch LE one-CL film   LE.

　　　Every student has watched a film. (∀>∃; *∃>∀)

I argue that the first restriction should be attributed to the difficulty of asserting an event depicted in a specific way without contexts, and the second restriction is a result of focus intervention effect, in which the sentential *le* blocks the quantifier raising because of its status as a focus marker, as in (38).

(38)
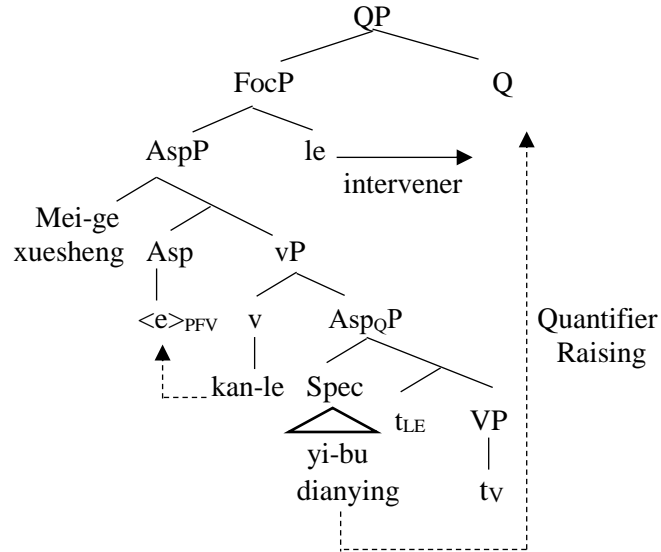
A cross-linguistic comparison will reveal that the Double Le Configuration expresses a meaning similar to that of the perfect in English, which also shows these two restrictions in syntax.

Finally, in Chapter 7, I will discuss some apparent mismatches between the function of *le* and its position in the sentence, as in (39). For these cases which have *le* after the object but still get perfective reading, I will argue the *le* here is not a sentential *le*, but just a verbal *le*. Its position in the linear order is the result of pseudo-noun incorporation and VP-fronting to [Spec, Asp_QP], since this position must be filled to measure the quantity of the event. The structure is in (40).

(39) a. Zhangsan he   jiu   *le*.

     Zhangsan drink alcohol LE.

     Zhangsan drinks alcohol (habitually)./Zhangsan drank alcohol (episodic).

   b. Zhangsan mai fang   le.

     Zhangsan buy house   LE

     Zhangsan buys houses (regularly). /Zhangsan bought a house (episodic).

(40)

```
                        AspP
                     /        \
                  Spec          \
                   |     <e>PFV   vP
               Zhangsanᵢ         /  \
                              Spec    \
                               |   v   AspQP
                               tᵢ     /    \
                                   Spec     \
                                    |    le   VP
                                    VP        |
                                    △         t
                               he jiu/mai fang
```
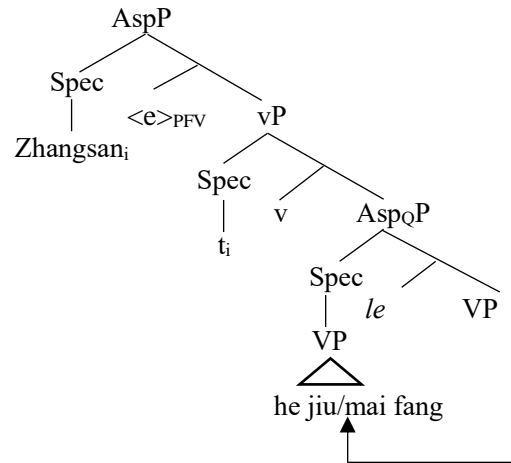
Chapter 7 also conducts an open discussion on what kind of role phonology plays in the structure of *le*. The perfective VO-le structure sometimes exhibits some features of the sentential *le*, or, the DLC, which suggests that it may in fact contain two versions of *le*. There is only one *le* in the end because one of the two *le*'s is deleted on the PF level since they have the same pronunciation.

2. On Verbal Le

With the background knowledge of *le* in Mandarin, I move to specific problems with *le*-marked sentences and this chapter is dedicated to the syntax and semantics of verb *le*. I will argue that the Chinese aspectual marker verbal *le* is in essence a marker of quantity. In the case of eventive (non-stative) structures, such a quantity of event often (but not always) means telicity, a notion relevant to aktionsart or inner aspect. In the stative cases the quantity means something else, usually the quantity of degree in a comparative reading, which I will discuss in the next chapter. The particle also has a function of perfectivity marking in many occasions, which, in the analysis I'm going to propose, can be explained through the interaction between inner and outer aspect (Agree).

2.1 The dual function of verbal *le*

Overall, *le* has a restricted distribution in sentences. Some of its behaviors calls for a more careful examination. For examples, it can occur in a typical example like (1a), which describes an event that happened in the past and thus acquires a simple past tense form in the English translation. But just as Wu (2005) notes, a sentence with *le* like (1b) is not completely acceptable to many native speakers, despite the fact that its translation in simple past is perfect in English. It is not clear why *le* is disqualified in constructing the intended meaning in (1b) as it does in (1a).

(1) a. Zhangsan chi *le* san-ge pingguo.

Zhangsan eat LE three-CL apple.

Zhangsan ate three apples.

b.??Zhangsan tan *le* gang-qin.

Zhangsan play LE piano

Intended reading: Zhangsan played the piano.

Another interesting problem is provided by (2), which is an example with bare noun object. Generally, Chinese bare nouns are ambiguous between definite and indefinite readings, since there is no definite article in Chinese (Cheng&Sybesma, 1999). In fact, both readings are available in a sentence like (3).

(2) Zhangsan chi *le* pingguo.

Zhangsan eat LE apple.

Intended reading: Zhangsan ate the apple(s). / ??Zhangsan ate apples.

(3) Zhangsan zai   chi pingguo.

Zhangsan ZAI eat apple.

Zhangsan is eating apple(s). / Zhangsan is eating *the* apple(s).

However, the indefinite reading is banned with the presence of *le* in (2), although the definite reading is still felicitous. This problem lacks a proper explanation, if *le* is only assumed to be perfective (but see Sybesma 1999).

Based on these observations, in this paper I will propose a new analysis concerning the grammatical function and distribution of verbal *le* in Mandarin Chinese. I will argue that the difference between (2) and (3) lies in the fact that verbal *le* requires a quantity situation, while the progressive marker *zai* does not. Here I follow Sybesma (1999), who claims that objects occurring in telic ("perfective") contexts tend to be definite or specific (i.e. bounded). The indefinite reading is banned in (2) because an event such as "Zhangsan ate apples" is homogenous and should be homogenous in nature. On the other hand, the interpretation is quantified with a definite object because it makes the event non-homogenous: the number of the apples eaten, although not specified, is fixed and supposed to be known to the conversational participants, so the event is quantifiable through how many apples Zhangsan ate.

This is also the case with other situations which are typically associated with a

homogenous interpretation, as in (4) and (5).

(4) ??Zhangsan tan *le* gang-qin.[8]

Zhangsan play LE piano

Intended reading: Zhangsan played the piano.

(5) ??Zhangsan tui *le* che.

Zhangsan push LE cart.

Intended reading: Zhangsan pushed the cart.

(4) and (5) are homogenous because both of the situations meet the definition in Borer (2005b): each of them are both cumulative and divisive. In (4), an event as *playing the piano* when joined by another event of *playing the piano* remains *playing the piano*. And any interval within it also counts as *playing the piano*. This applies to *pushing the cart* in (5), too. If no aspectual markers are present, these sentences are grammatical with a habitual reading as discussed in Chapter 1, but we can see that they all got ruled out with the insertion of *le* under the intended reading. This is in line with the observation in Sybesma (1999) and Yang (2011), both of which report that the verbal *le* is only compatible with telic/completion situations. But other than that, these examples are not often discussed in the literature[9]. They definitely deserve more attention

On the other hand, verbal *le* also seems to have some characteristics that are outside the traditional domain of aktionsart. As we can see, a range of categories that is conventionally thought to be outside this domain have an influence on the occurrence of *le* between the verb and object, as in (6)-(8).

(6) Zhangsan mei-tian chi (*le) san-ge pingguo.

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[8] (4) may be acceptable under the context that Zhangsan plays the piano for a certain period of time every day as a practice, and he did so (today). However, this requires too much extra information out of the sentence itself, and the result reading is certainly not equivalent to the English simple past sentence in the translation. Besides, the interpretation under this special context is obviously a quantity one, which is in line with the proposal here.

[9] The Incompleteness Puzzle discussed in Lin (2003, 2006, 2011) and Tsai (2008) is a different question as it does not focus on the aktionsart of the predicate. I will review them in Chapter 3.

Zhangsan everyday eat LE three-CL apple.

Zhangsan eats/ate three apples every day.

(7) Zhangsan neng/yinggai/yao chi (*le) san-ge   pingguo.

Zhangsan can/should/will   eat LE   three-CL apple.

Zhangsan can/should/ will eat three apples.

(8) Zhangsan zai   chi (*le) yi-ge   pingguo.

Zhangsan ZAI eat   LE   one-CL apple.

Zhangsan is eating an apple.

(6) indicates that verbal *le* is not allowed to appear when a strong habitual reading is forced by the insertion of a frequency adverbial phrase *mei-tian* (every day). (7) illustrates the fact that a sentence generally cannot accommodate deontic modals and *le* at the same time.[10] (8) shows that verbal *le* is also illegitimate in a sentence with progressive aspect. All these seem to suggest that verbal *le* is incompatible with imperfective situations, as (6)-(8) all describes the event with a viewpoint that does not take the event as a whole.

Based on these observations, I'm going to propose that verbal *le* is in nature a quantity marker in Mandarin Chinese. It must appear in a quantity predicate context, although a quantity predicate does not always need an overtly realized *le*. When overt, verbal *le* can assume the function of perfectivity marking in some circumstances, but this is not obligatory. Syntactically, *le* is the head of the projection Asp$_Q$P, which is responsible for quantity structures. When verbal *le* is present, this particle can assign range to outer aspect phrase via Agree, which gives rise to a perfective interpretation. . That *le* can be responsible for two different heads through Agree is the major analytical proposal in this paper to account for the behavior of verbal *le*.

Specifically, verbal *le* in this analysis is just a free morpheme or f-morph in Borer

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[10] But deontic modals and verbal *le* is allowed to co-occur in some circumstances where the object is a definite DP. I will talk about this case in the next chapter.

(2005b), which appears as a pair with the open value of at $<e>_Q$ and assigns range to the latter. The basic structure follows Travis (2010), in which the outer aspect head is projected above VP and below TP, while the inner aspect is sandwiched between the two verbal heads of Larsonian Shell (in the sense of Larson 1988). This inner aspect projection is the Asp_QP proposed by Borer (2005b), which responsible for quantity phrase, and the lack of such a phrase leads to a homogenous interpretation.

In the proposed structure *le* is an f-morph and one of the head pairs for the aspect of quantity. It assigns range to the open value $<e>_Q$ when it is present and gives rise to a quantity interpretation. It agrees with the outer aspect projection in charge of perfective aspect and further assigns range to the open value $<e>_{PFV}$. Therefore, in many cases with *le*, the sentence assumes a reading both perfective and quantity. As a last step, the verb has to undergo short V-to-v raising to the light verb position via the head of Asp_QP to ensure the right word order of V-le-O. This means *le* is taken to the head of light verb position together with the verb. The whole process is similar to that proposed in Tsai (2008) (although Tsai has a different opinion about the nature of *le*). The syntactic structure for a sentence like (9a) illustrated in (10).

(9) a. Zhangsan chi *le* san-ge pingguo.

Zhangsan eat LE three-CL apple.

Zhangsan ate three apples.

b.??Zhangsan tan *le* gang-qin.

Zhangsan play LE piano

Intended reading: Zhangsan played the piano.

(10)
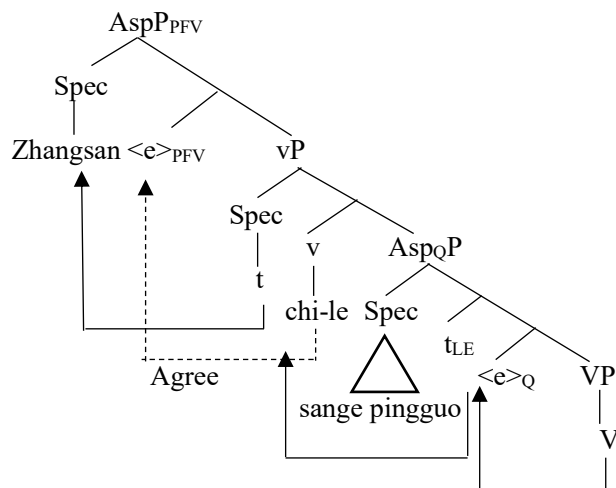
Meanwhile, a sentence like (9b) is generally unacceptable because the VP [*tan gangqin*] typically has a homogenous reading. The combination of such a predicate with a quantity structure Asp_QP does not yield a legitimate interpretation with the common world knowledge, unless the homogenous predicate is allowed to be coerced into a quantity reading under certain context, e.g. when playing the piano for a certain period of time is construed as contextually given.

I also propose that the [Spec, Asp_QP] position in the configuration of *le* must always be licensed in order to give a proper measurement to the quantity of the situation. In other words, the verbal le indicates that the situation has a boundary, and the filler of [Spec, Asp_QP] specifies where the boundary is. In the following chapters, I will show that [Spec, Asp_QP] can be licensed by various phrases other than a quantity DP.

However, when the head position of the higher AspP is already occupied by an overt marker, such as the progressive *zai*, then *le* is not allowed to appear, such as in (8). I assume this is because the range assignment to outer aspect open value via Agree by verbal *le* somehow enjoys priority. This means when there is overt *le*, $<e>_{\text{PFV}}$ will definitely take range from *le* and only consider other markers when *le* is not realized, otherwise that will result in two morphemes assigning different ranges to one open value, hence double marking. As I have mentioned in the previous chapter, in the exo-skeletal

approach one open value can only get range from one range assigner. It is also bad to have *le* and *zai* in the same sentence, since they assign conflicting range to the open value: verbal *le* offers perfective range while *zai* gives imperfective range. Therefore, *le* actually does not have to occur even when Asp_QP projects in the structure. In that case, the quantity object at the specifier of Asp_QP can assign range to the open value via Spec-head agreement as the subject of quantity. As a result, we get imperfective telic events in Mandarin Chinese. This is shown in (11a, b).

(11) a. Zhangsan zai chi yi-ge   pingguo.

Zhangsan ZAI eat one-CL apple.

Zhangsan is eating an apple.

b.
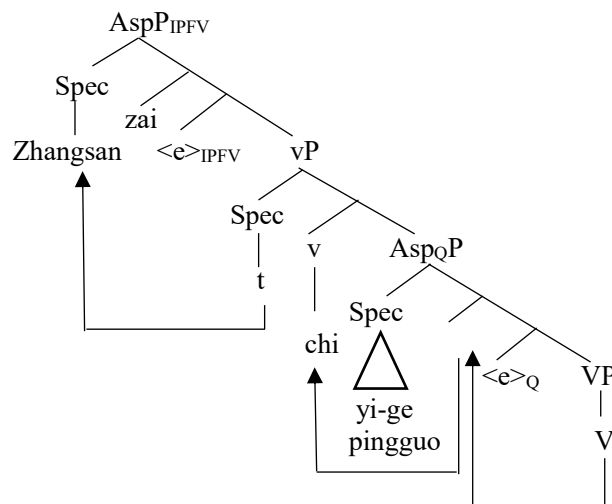
An interesting result from this claim is that Chinese in unable to express perfective atelic situations with an episodic reading, but only habitual ones. The reason lies in the fact that it is a language which make use of telicity markers to express perfective meanings. The marker *le* is in nature a telicity marker, which is definitely incompatible with atelic situations. The optional projection of Asp_QP is designed to capture this phenomenon, because the perfective interpretation relies on the range assignment from *le* at Asp_QP. This means when Asp_QP is not projected, there won't be any legitimate perfective range assigner for the open value in the higher AspP, and no perfective interpretation will come up. When there is no other range assigner, the outer aspect head

can probably get a default value from the context, which invariably leads to an imperfective habitual reading in Mandarin. Then we get imperfective homogenous interpretations, such as (12a). Even if Asp$_Q$P is projected, if *le* is not realized overtly, we still get no perfective marker, since a range assigner must have an overt phonological form. The difference is that in this case we get imperfective telic events, like in (12b). The structures for these two examples are shown respectively in (13a, b)[11].

(12) a. Zhangsan (mei-tian)   chi pingguo.

Zhangsan (every-day) eat apple.

Zhangsan eats apples (everyday).

b. Zhangsan (mei-tian)   chi san-ge   pingguo.

Zhangsan (every-day) eat three-CL apple.

Zhangsan eat three apples everyday.

(13) a.

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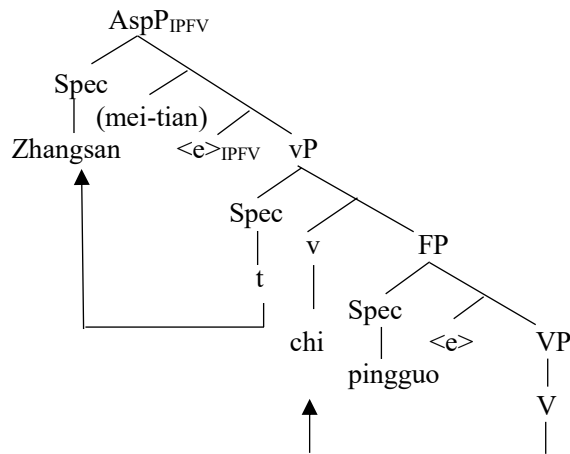
[11] Note that in (13a, b), the frequency adverbial phrase mei-tian (everyday) does not play the role of range assigner to <e>$_{IPFV}$. The habitual range for this open value is default in this situation.

b.

AspP_{IPFV} ... Spec (mei-tian) Zhangsan <e>_{IPFV} vP Spec t v AspQP chi Spec <e>_Q VP san-ge pingguo V

(syntactic tree diagram: AspP_IPFV with Spec "Zhangsan" and (mei-tian), branching to <e>_IPFV and vP; vP has Spec "t" and v "chi" with AspQP; AspQP has Spec "san-ge pingguo", <e>_Q, and VP with V; movement arrows from t to Zhangsan and from V to chi to san-ge pingguo)
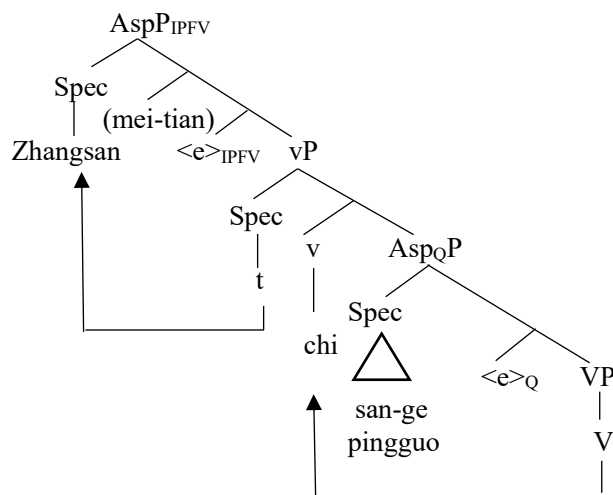
Another necessary result from this analysis is that although in Chinese perfective affirmative sentences with verbal *le* all have a quantity predicate, it does not extend to negative contexts because negative perfective sentences in Chinese have to make use of an outer aspect marker *you* (有) and its exclusive negative marker *mei* (没)[12]. This negative marking strategy does not distinguish quantity and homogenous situations, as shown in (14a) and (14b).

(14) a. Zhangsan mei-you   chi san-ge   pingguo.

　　　Zhangsan NEG-YOU eat three-CL apple.

　　　Zhangsan didn't eat three apples.

　　b. Zhangsan mei-you   tan gangqin.

　　　Zhangsan NEG-YOU play piano.

　　　Zhangsan didn't play the piano.

Furthermore, the verbal *le* never co-occur in the same sentence with *mei-you*, as shown in (15)[13]

(15) Zhangsan mei-you   chi (*le) san-ge   pingguo.

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[12] Another negative marker *bu* (不) in Mandarin has an unboundedness requirement (Ernst, 1995), which is incompatible with a perfective viewpoint. I will come to this soon.
[13] This is one exception to this restriction: with the verb *wang* (forget), as follows. I don't have anything particular to say about his exception.
Zhangsan mei-you   wang le ta-de hua.
Zhangsan NEG-YOU forget LE he-DE word.
Zhangsan didn't forget his words.

Zhangsan NEG-YOU eat LE three-CL apple.

Zhangsan didn't eat three apples.

Huang et al (2009) argues that since both morphemes reflect the same aspectual information, it is natural that the same information does not get manifested twice. I will follow this claim in dealing with this incompatibility. In the proposed framework, verbal *le* enjoys the priority in assigning range to $<e>_{PFV}$, which can only get range from one assigner. So *mei-you* will have no open value to bind if *le* is present.

Another piece of evidence can be found in the fact that *you* is also used to form the *or-not* tag questions of *le*, which indicate that they are informationally and structurally substitutive, as shown in (16).

(16) Zhangsan chi *le* san-ge   pingguo mei-you?

Zhangsan eat LE three-CL apple   NEG-YOU?

Did Zhangsan eat three apples or not?

Moreover, I argue that Mandarin can express a quantity meaning with a bare noun phrase as the object because the quantity reading of the event comes from the structure, or specifically, the open value $<e>_Q$. Although this is also the case with English, English still needs a quantity DP object because the range assignment to this open value depends on this object. However, in Mandarin we have the morpheme *le*, which can assume the job of range assigner. Although the object does not have to carry the quantity feature, the final interpretation of the event with verbal *le* is always telic, unless the common world knowledge does not support a telic reading, in which case we may need a special context and extra information to coerce it into a telic one. In a syntactic view, bare nouns in Mandarin include an open value for quantity, which can get a quantity range with the presence of *le* as they stay in a local Spec-head relation with the head of AspQP, as in (17).

(17)

AspQP

bare noun

le

$<e>_Q$
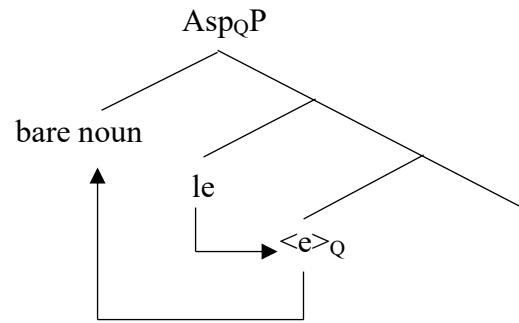
In (17), *le* assigns range to the open value $<e>_Q$, which in turn licenses the quantity interpretation of the bare noun at [Spec, AspQP], and the noun, as the subject of quantity, specifies the participant in the structural change. So (2) (repeated as (18)) can interpreted as a quantity event with a bare noun object.

(18) Zhangsan chi *le*   pingguo.

Zhangsan eat LE apple.

Zhangsan ate the apple(s).

Therefore, I stick to the claim that the function of *le* as a perfective marker is derived from its basic function as a quantity marker, not the other way around, because otherwise we will lose the explanation why *le* can only be found in quantity eventualities.

It has to be noted that sometimes *le* can occur in events that have not actually happened at the speech time, such as (17a) and (17b).

(17) a wo du   *le* baozhi   jiu   shui.

I   read LE newspaper then sleep.

I will go to bed when I have read the newspaper.

b. bie   gaosu ta   wo chi *le* ta de   dangao.

Don't tell   him I   eat LE he DE cake .

Don't tell him that I have eaten his cake.

It is obvious that when uttering a sentence like (17a), the speaker has not read the newspaper. (17b) can also be used when the speaker has not eaten the cake in question.

These may seem to be counter examples to the assumption that *le* marks both quantity and perfectivity. However, I believe that in such cases, the speaker actually constructs an imagined situation in which they have finished the event. So what matters here is not the speech time but the reference time.

Finally, since the perfective marking function is argued to be a side-job of verbal *le* here, we expect to find this particle in in aspect situations other than perfective. Such situations includes cases with deontic modals as in (18a), imperative structures as in (18b), non-finite clauses as in (18c), and comparative statives in (18d).

(18) a. wo yao sha le   na-ge   ren.

I   will kill LE that-CL person.

I will kill that person.

b. chi le   na-ge   pingguo!

Eat LE that-CL apple.

Eat that apple!

c. Wo zhunbei chi le   na-ge   pingguo.

I   plan   eat LE that-CL apple.

I planned to eat that apple.

d. Zhangsan (bi   Lisi) gao le   san   yingcun.

Zhangsan than Lisi   tall LE three inch.

Zhangsan is three inches taller (than Lisi).

Examples such as (18a-d) have been discussed frequently in literature, e.g. in Chen (1957), Ma (1983), Sybesma (1999), etc. Although analyses vary, there is one thing for sure: in all of these situations, the event has not happened (there is even no event in 18d), so the interpretation cannot be put under a perfective viewpoint. This is the evidence that the function of perfectivity can be severed from verbal *le*. However, all of the situations are quantity situations, including the comparative stative, which expresses a

quantity of the degree of being taller. This suggests that quantity marking if the core function of verbal le. I will revisit these structures in the next Chapter.

Moreover, there is also evidence showing that the verbal *le* actually imposes a quantity value on the predicate, instead of just presupposing a bounded time span of the event. Both (19a) and (19b) have a quantity object, but only the former one is acceptable, which shows that the value of telicity is independent of the object. Furthermore, both of the examples make use of the verb *kan*, which is the general word for *look/see/watch* etc. (19a) is good because *watch a film* is interpreted as telic. (19b) is not acceptable since *watch a cat* does not make sense in general. But (19b) can be coerced if Zhangsan is a vet, and it means Zhangsan treated/diagnosed a cat, which is a telic interpretation.

(19) a. Zhangsan kan   le   yi-chang dianying.

Zhangsan watch LE one-CL   film.

Zhangsan watched a film.

b.*Zhangsan kan   le yi-zhi   mao.

Zhangsan watch LE one-CL cat.

Overall, in the four combinations with perfectivity and quantity, only perfective homogenous event is banned in Mandarin, if we ignore the possible support from other aspectual markers and context. As a result, we come up with the Table 1:

Table 1:

Mandarin Chinese	Perfective	Imperfective
Quantity	+	+
Homogenous	--	+

There is one last thing that has to be mentioned here. Since verbal *le* originates as the head of the quantity aspect phrase and assigns range to perfective value via long distance Agree, we may expect to find cases where a verbal *le* only has its core function as a telic marker but does not show its side-effect as a perfective marker, if the relation based on Agree is disrupted. Such cases do exist, and I will discuss them in Chapter 3.

2.2 Telicity tests

In this section I will discuss some classic tests of telicity proposed in the literature and see if they can be applied to Mandarin, especially to *le*-marked sentences.[14] The aim of these tests is to show that all perfective sentences with verbal *le* are also telic, and perfective atelic sentences, if possible, are never compatible with *le*. We will see a predicate with verb *le* can pass many telicity tests, while atelic situations generally do not go well with *le*. This shows that this verbal particle as a quantity marker often gives rise to telic interpretations to when it takes an eventive (non-stative) VP, and analyzing *le* only as a perfective marker cannot explain this phenomenon.

Test 1: Progressive test

The first test I would like to review is the progressive test, which is classically attributed to Dowty (1979). It is based on the asymmetry in the behavior of telic and atelic eventualities in the entailment of progressive aspect, as shown in (20a, b) and (21a, b).

(20) a. John was putting a cup on the table.

   b. John put a cup on the table.

(21) a. John was running.

   b. John ran.

The telic eventuality in the past progressive does not entail its own full realization, so (20a) does not entail (20b). John was putting the cup on the table does not necessarily mean that the cup was already on the table. The entailment in atelic eventualities, however, obviously holds. If it is true that John was running at some point before the speech time, it is surely the case that he ran. So (21a) entails (21b). This test captures the non-divisive

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[14] As is mentioned in Chapter 1, telic event is a subset of quantity event, which means having an end point (telo) is a sufficient but not necessary condition for being quantity. But most of the tests reviewed in this section are proposed as tests of telicity. Therefore, I will use the term telic and quantity interchangeably just for this section.

feature of a quantity event, namely, no part of it can represent the full predicate as a whole. Since the progressive aspect only locates a certain interval within an eventuality in progress, this small part definitely cannot stand for the whole quantity eventuality. However, for an atelic situation which is homogenous, every slice of it is the same.

When applied in Chinese, this test gives the desirable result with verbal *le* cases, as shown in (22a) and (22b). (22a) does not entail (22b) for exactly the same reason (20a) does not entail (20b). This clearly shows that *le*-marked predicates pattern with telic situations.

(22) a. Zhangsan dangshi zai chi yi-ge   pingguo.

Zhangsan then   ZAI eat one-CL apple.

Zhangsan was eating an apple then.

b. Zhangsan dangshi chi *le*   yi-ge   pingguo.

Zhangsan then   eat LE one-CL apple.

Zhangsan ate an apple then.

But unfortunately, in examples without verbal *le*, we cannot get the successful entailment, either. The main problem is that in Mandarin sentences without any aspectual markers cannot have episodic meaning but only habitual readings, as we have seen in Chapter 1. (23b) is unacceptable whether *le* appears in it or not. If *le* is present, (23b) is grammatical only when *pingguo* (apple) gets a definite reading from the context, which makes it a telic event; if *le* does not show up, (23b) will be acceptable under the reading that Zhangsan had the habit of eating apples at that time, which is not the one we want.

(23) a. Zhangsan dangshi zai   chi pingguo.

Zhangsan then   ZAI eat apple.

Zhangsan was eating apples then.

b.??Zhangsan dangshi chi (*le*)   pingguo.

Zhangsan then   eat (LE) apple.

Intended reading: Zhangsan ate apples then.

Test 2: Coordination test

The second test makes use of Chinese conjunction structure with *you* (又), which will generate a sequential reading when used to connect two verb phrases with *le* *(VP+you+VP)* but a simultaneous or stative reading when used with VPs without *le*. The test is presented in the following.

(24) a. Pingguo hong le   you liu   le.

      Apple   red   LE Conj green LE.

      The apple reddened and (then) greened.

   b. Pingguo hong you   liu.

      Apple   red   Conj green.

      The apple is red and green (at the same time).

(24a) describes that the apple underwent the event of reddening and greening sequentially. (24b), which has no *le*, is also acceptable under a purely stative reading. But it is impossible for the two predicates in (24b) to be interpreted as simultaneous activities. Meanwhile, (25a) patterns with (24a): it is grammatical only with a reading that Zhangsan did the singing and the dancing (as he was asked) one after the other. On the other hand, (25b) only extends the meaning that the dancing and singing occurred at the same time or repeatedly, without a specification of the order.

(25) a.?Zhangsan chang le ge   you tiao   le wu.

      Zhangsan sing   LE song Conj dance LE dance.

      Zhangsan sang the song and (then) did the dance.

   b. Zhangsan chang ge   you tiao   wu.

      Zhangsan sing   song Conj dance dance.

      Zhangsan sang and danced (at the same time).

The basic idea of this test is in line with the coordination test from Kamp (1979) and Partee (1984) for English. The test is based on the idea that when coordinated, two telic verbs give rise to a sequential interpretation while two coordinated atelic verbs will allow a simultaneous interpretation. For this reason, the truth condition of a proposition involving two atelic events will remain the same regardless of the order in which they are coordinated. But the truth condition of a proposition with two telic events may change since the coordination order does play a role in it. Just like in Mandarin, we have the conjunction word *and* in English, which could extend both sequential and simultaneous reading while keeping the syntactic structure maximally alike. This contrast is illustrated in (26)-(28).

(26) a. The vase broke and fell.

b. The vase fell and broke.

(27) a. The apple dropped and reddened,

b. The apple reddened and dropped.

(28) a. Kim ran and sang,

b. Kim sang and ran.

(Borer 2005b: 51)

(26a) and (26b) have different truth conditions, and that is also the case with (27a) and (27b), because they coordinate telic eventualities and thus have a sequential reading. (28a) and (28b) are different. The events coordinated are atelic, so they can have a simultaneous interpretation that Kim ran while singing, hence truth-conditionally the same thing.

However, Borer (2005b) argues that the coordinated events in (26) and (27) has a causal implication in addition to the sequential interpretation, with the first causing the second. This causal relation will have an influence on the truth condition. Therefore, she considers the occasion of two verbs without such a causal connection, specifically the pair of verbs *redden* and *yellow*, which are semantically parallel. So, in an utterance such

as (29), where one event does not normally cause the other, it is plausible to have a simultaneity of *reddening* and *yellowing*, and the truth conditions of (29a) and (29b) could be identical:

(29) a. The apple yellowed and reddened.

    b. The apple reddened and yellowed.

But she also clarifies that the coordination is in fact a valid test for telicity, because the two eventualities in (29) are interpreted as activities instead of accomplishments or achievements. To be exact, the apple in (29) cannot simultaneously become both yellow and red, but underwent some yellowing and reddening. Furthermore, under circumstances where an activity reading becomes unavailable, the events will be forced to have a sequential reading, whether they have a causal relation or not, as in (30a) and (30b).

Borer (2005b: 52)

(30) a. The guest understood the solution and left.

    b. The guest left and understood the solution.

    c. The asteroid dropped/fell (through the atmosphere) and burnt/broke apart for several minutes.

    d. The asteroid burnt/broke apart and dropped/fell (through the atmosphere) for several minutes.

In this sense, the verbs *redden* and *yellow* here are variable-behavior verbs in the sense of Borer (2005b). Borer also discusses verbs such as *drop* and *burn,* which strongly imply a natural endpoint. It turns out that with an appropriate context, *burn* and *drop,* and even *fall* and *break apart,* can have a simultaneous interpretation as an atelic process, as shown in (30c) and (30d). As long as the asteroid hasn't fell apart or burned up completely, we can get the simultaneous reading.

Test 3: Insertion test of *jihu*

This test on aktionsart involves the degree adverb *jihu*, the Chinese equivalent of *almost*. In this language only telic predicates are compatible with *jihu*, while atelic situations and states are not. This test has been applied in the literature, such as Yang (2011). So, I propose it is an effective way to distinguish telicity and atelicity, as shown in (31) and (32).

(31) a. Zhangsan jihu   sha le Lisi.

Zhangsan almost kill LE Lisi.

Zhangsan almost killed Lisi.

b. Zhangsan jihu   dao   le   Beijing.

Zhangsan almost arrive LE Beijing.

Zhangsan almost arrived at Beijing.

(32) a. ??Zhangsan jihu   tan   gang-qin.

Zhangsan almost play piano

Intended reading: Zhangsan almost played the piano.

b. ??Zhangsan jihu   renshi Lisi.

Zhangsan almost know Lisi.

The examples in (31a, b) are grammatical with the degree modifier because the predicates are made quantifiable by their quantity nature. To be specific, verbal *le* here indicates that there is a special stage that is different from others in the temporal span of the process, and the adverb *jihu* depicts how close the process is to that stage. But in the ungrammatical contexts as (32a, b), every stage of the process is the same because of the requirement for homogeneity in definition of atelic activities. In this occasion, we cannot locate a specific degree in the scale through the adverb *jihu*, since there is no marked standard in the first place.

It must be noted that the test of *jihu* is based on its ability to modify the degree of development in a dynamic process, but in fact this adverb has a much more flexible use

in Mandarin. For example, it can target a quantified noun phrase or a gradable adjective and generate an interpretation accordingly, as in (33a, b).

(33) a. Zhangsan jihu   renshi suoyou ren.

Zhangsan almost know all   people.

Zhangsan almost knows everybody.

b. Qiang jihu   shi   hei-de.

Wall almost COP black-DE.

The wall is almost black.

The examples without verbal *le* in (33a, b) are obviously not quantity situations, but the sentences are still grammatical with *jihu*. But I argue that here the adverb is not used to modify the degree of development. Rather, it compares the event in question with some potential alternatives and the degree reading is based on the result of the comparison. Specifically, (33a) locates a degree on the scale of Zhangsan's acquaintance with a certain group of people. Such a scale ranges from the situation that Zhangsan knows nobody, to the situation that Zhangsan knows everybody, and the situation in (33a) is somewhere close to the higher end. In other words, instead of "almost knew", the interpretation of (33a) is constructed on "almost all". Similarly, (33b) calls for an implied color scale from white to black, and the actual color of the wall is close to black. In short, the interpretation of these examples implies the existence of multiple situations, which is the very reason *jihu* is licensed. The definition of telicity, however, is based on the assumption that we are talking about a single event. The insertion of the adverb *jihu*, if not used to describe the development of successive stages of a single event, cannot serve as a telicity test. This is also the case with (34).

(34) Zhangsan jihu   zai pao.

Zhangsan almost ZAI run.

Zhangsan is almost running.

The event described by (34) is neither perfective nor telic, but *jihu* is legitimate here. This is because the interpretation should be elaborate as "Zhangsan is walking so fast that he is almost running". In this case, the adverb *jihu* is associated with a range of moving speed that distinguishes *walking* and *running*, instead of the homogenous stages of *running* itself. Such an association comes from not only the semantics of the predicate phrase, but also the common world knowledge. Therefore, I think examples like (33a, b) as well as (34) do not undermine the claim that *jihu* can be used to test telicity, although we have to be careful about its target in interpretation.

In English, the insertion of *almost* is also a test on telicity. It is developed by Dowty (1979) as the adverbial scope test to show the *leading to result* and e*ncoding result* difference. The difference is that a telic structure with the adverbial adjunct *almost* gives two readings, while an atelic structure has only one, as shown in (35) and (36).

(35) John almost reached the top.

(36) John almost walked.

Just as what we got from the Mandarin examples, (35) can mean that John arrived at a height close to the top when he was climbing up a mountain, a reading based on the degree of completion. But it can also convey that John planned to reach the top of the mountain but gave up the idea before he even started the climbing. On the other hand, (36) has only one reading: John planned to walk but he didn't really do it at last, since this is the only reading in which the event can be measured by *almost*. This difference in reading underlies the mechanism of *almost* insertion test.

Test 4: Time adverbial test

The most famous and perhaps also the most frequently used test in literature is the adverbial modification test proposed in Vendler (1967). It involves the attachment of a

temporal adverbial phrase *in x time* or *for x time* to a given sentence. These phrases measure the temporal interval of the eventuality, but behave differently with telic and atelic situations. It has been observed that *in x time* is well compatible with telic constructions but not with atelic constructions, while *for x time* co-exist perfectly with atelic phrases but usually gives an odd reading to telic ones. This is shown below:

(37) a. John ate three apples.

b. John ate three apples in ten minutes

c. *John ate three apples for ten minutes.

(38) a. John ate apples.

b.*John ate apples in ten minutes.[15]

c. John ate apples for ten minutes.

(37a) describes a telic situation in which the event is completed when all three apples are consumed by John, because the event as a whole is non-homogenous as defined in Borer (2005b). The sentence, although perfect with *in*-phrase in (37b), sounds quite odd if combined with a *for*-phrase. As is expected, if we switch to the atelic example in (38), we see the opposite pattern: measuring the eventuality with the *for*-phrase is perfect, while the *in*-phrase sounds quite bad.

This adverbial modification test can also be introduced to the study of Mandarin with some adjustment, since the phrases equivalent to *in x time/for x time* in Chinese does not seem to have the same categorial feature as they do in English. The closest structure to the English time-frame phrase in Chinese, *x nei*, literally *within x time*, behaves quite similarly with its English counterpart, which means its insertion into telic structures yields natural readings, but not in the case of atelic ones, as shown in (39a-c).

(39) a. Zhangsan shi fenzhong nei   chi *le* san-ge   pingguo.

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[15] Strictly speaking, (38b) can be fine in some contexts, e.g. when the interpretation goes like "John ate (some) apples, with each of them being eaten in ten minutes". In this sense, the sentence involves multiple events of *John eating an apple*, but each of them is actually telic. Since we only discuss telicity in a single event, this interpretation is set aside in this thesis.

Zhangsan ten minute　　within eat LE three-CL apple.

Zhangsan ate three apples in ten minutes.

b.??Zhangsan shi fenzhong nei　　chi le　pingguo.

Zhangsan ten minute　　within eat LE apple.

Intended reading: Zhangsan ate apples in ten minutes.

c. Zhangsan shi fenzhong nei　　tan　gangqin.

Zhangsan ten minute　　within play piano.

Zhangsan is going to play the piano in ten minutes.

(39b) is ungrammatical under the intended atelic reading. It will be grammatical when the bare noun *pingguo* (apple) is interpreted as definite, as has been discussed previously, but in that case the whole sentence will describe a telic situation. (39c), although grammatical, should be interpreted as "Zhangsan will start to play the piano in ten minutes", which is not of interest here since the time-frame is not set to the event itself. Therefore, the time-frame test with *x nei*, works well in Chinese and gives the same result as previous tests—that eventives with verbal *le* are always telic.

The problem, however, lies in the time-span phrase. It seems that in Mandarin we cannot find a preposition like *nei* in *x nei* that is equivalent to the preposition *for* in English. Noun phrases that is semantically associated with time can be used directly to represent a time interval, such as in (40).

(40) a. Zhangsan pao *le*　shi fenzhong.

Zhangsan run LE ten minutes.

Zhangsan ran for ten minutes.

b. *Zhangsan chi *le*　san-ge　　pingguo shi fenzhong.

Zhangsan eat LE three-CL apple　　ten minutes.

Intended reading: Zhangsan ate three apples for ten minutes.

We can see that (40a), which involves a verb *pao* (run) that is typically associated with atelicity, is perfectly measured by *shi fenzhong* (ten minutes), which is supposed to be equivalent to *for ten minutes* in English. On the other hand, it doesn't work very well with situations with strong telic reading such as (40b). Therefore, it seems *for x time* can also distinguish telicity from atelicity. But here's the problem. In (40a) we also have a *le* following the verb, so if (40a) is truly an atelic situation, it will be a strong counter example against my assumption that *le* is a quantity marker and always leads to telic interpretations. Therefore, we have to go back and examine closely whether (40a) really describe an atelic situation.

In fact the time phrase *shi fenzhong* cannot always occur with atelic predicates, as shown in (41).

(41) *Zhangsan chi (le)   pingguo shi fenzhong.

   Zhangsan eat (LE) apple   ten minutes.

   Intended reading: Zhangsan ate apples for ten minutes.

Sentences whose verb takes an object in their predicates part such as (41) do not allow *shi fenzhong* as an attachment. This is kind of unexpected because an object with a bare plural reading often leads to a typical atelic structure without the intervention of the context. In order to render (41) grammatical, we have to link the time phrase and the object *pingguo* (apple) with a *de* (的), forming a compound construction *shi fenzhong de pingguo* (ten minutes of apples), as in (42a). Otherwise we have to duplicate the main verb *chi* (eat) before the time-span phrase *shi fenzhong*, with only one *le* occurring after the second verb, like in (42b).

(42) a. Zhangsan chi *le*   shi fenzhong de pingguo.

   Zhangsan eat LE ten minute   of apple.

   Zhangsan ate apples for ten minutes.

   b. Zhangsan chi pingguo chi *le*   shi fenzhong.

Zhangsan eat apple   eat LE ten minute.

Reading: the same as above.

I argue that the time phrase *shi fenzhong* in Chinese may not be an adverbial adjunct in the syntactic structure as its English counterpart *for ten minutes*. Rather, it occupies the position of the direct object, namely [Spec, Asp$_Q$P], if put in the framework of this paper. This is also in line with the well-known generalization that in Chinese syntax adverbial adjuncts invariably occur linearly to the left of the verb, so anything on the right side of the verb is not an adjunct. Therefore, in the cases where there is already an object taken by the verb, the two phrases will compete for one direct object position, resulting in the ungrammaticality of the sentence. As a result, a felicitous structure will either require that the two arguments be formed as one, or the verb be duplicated so that it will make room to accommodate the time phrase. I will leave the detailed syntactic analysis to the discussion in Chapter 4.

However, although the computation of aktionsart/quantity/telicity depends on the range assigned by verbal *le* in the proposal of this paper, the interpretation is sensitive to the property of the predicate—an event, if semantically not associated with a culmination under common sense, does not go well with *le*, unless the context allows a certain kind of coercion. So the time span phrase in Mandarin actually changes the properties of the predicate, which is different from time adverbials in English. Just like *run* in English is an activity when used alone but *run a mile* is an accomplishment, those predicates with time span phrases in Mandarin are necessarily interpreted as accomplishments instead of activities, thus telic, which is not contradictory to the fact that *le* can appear in it. In this sense, the time span phrase measures the quantity of the event, whose existence is marked by the verbal *le*.

It is worthwhile to note that when bare time interval phrases appear linearly before the verb, they are not part of the argument, but only a result of the omission of the preposition *nei* (within), so example (43) extends exactly the same meaning as (39a).

(54) Zhangsan shi fenzhong chi *le* san-ge pingguo.

Zhangsan ten minute eat LE three-CL apple.

Zhangsan ate three apples in ten minutes.

To summarize, I have reviewed four tests of telicity (quantity) and atelicity (homogeneity) in this section and it is good to see that almost all of them point to an identical result: predicates marked by verbal *le*, when they are grammatical, invariably have a telic reading, hence a strong piece of evidence to support the claim the *le* is a quantity marker that gives rise to telicity in eventive situations.

However, there seems to be some examples showing that verb *le* is compatible with stative, or even homogenous event. Some informants point out that verbs such as *xihuan* and *zhu* are legitimate with verbal *le*, when the speaker is specific about the time duration, as shown in (55a, b).

(55) a. Zhangsan xihuan le Lisi shi-nian

Zhangsan like LE Lisi ten-year

Zhangsan liked Lisi for ten years.

b. Ta zai Lundun zhu le hen-jiu

He at London live LE very-long.

He lived in London for a long time.

I argue these examples here do not go against my claim. First, it is obvious their predicate part are not homogenous: for (55a), if *Zhangsan likes Lisi for ten years* is added to the same event, the result would be *Zhangsan likes Lisi for twenty years*, which suggests such an event is not cumulative. It is not divisive either since part of *ten years* is not really *ten-years*.; for (55b), although *living in London for a long time* will remain the

same if Zhangsan lives there even longer, it is not the case when he had not lived there for that long, which suggest the situation is not divisive. This alone proves that (55b) is non-homogenous. Second, although (55a) is grammatical with a proper noun phrase as the object (or at least one of the objects, which I will elaborate in the next chapter), it is not the case if the verb *xihuan* (like) takes an indefinite object, as in (56), even with a specific time duration. This indicates that (55a) and (55b) may not have the same structure as their English counterparts.

> (56)??Zhangsan xihuan le gangqin shi-nian
>
> Zhangsan like   LE piano   ten-year
>
> Zhangsan likes piano for ten years.

Third, since (55a) and (55b) would not be grammatical without the time duration phrase, it is easy to see the time duration phrase plays a vital role here. It has probably changed the structure of the predicate and altered the type of the event despite the fact that its prepositional counterpart in English does not have such an effect. I will propose later in the dissertation that time duration phrase occupies the object position in Mandarin, and the situations described in (55a, b) are not only dynamic, but also telic (quantity). Detailed analysis will come up in Chapter 4.

More complicated issues come from the fact that *le* is actually compatible with a present continuative interpretation, as is observed in a series of previous researches (Liu 1988, Lin 2000, Lin 2003, Soh & Gao 2006, etc).

> (57) Zhansgan yang-le   yi-tiao gou.
>
> Zhangsan raise-LE one-CL dog.
>
> Zhangsan keeps a dog.

Although keeping a dog as pet may not be a purely stative situation, the reading of (57) in Mandarin intuitively does not have to involve a dynamic process of adopting the animal. Therefore, sentences such as (57) seem to pose a challenge to the proposal

that verbal *le* expresses quantity meaning, as the activity of keeping a dog does not come to an end or any kind of culmination. But I will argue these situations are quantity situations, and they are subject to some unexplained restrictions if they are analysed as homogenous activities. The grammaticality of verbal *le* is not unexpected in these cases, since the particle in my proposal is a quantity marker which is found with a series of situations, including stative ones. I will come back to this issue in 3.1.3.

So far I have been looking for evidence internal to the language to support the claim, but in the next section, I will turn to data outside Mandarin to see if the assumptions are well motivated.

2.3 Cross-linguistic comparison

The analysis so far is based on a critical assumption, that is, the verb *le* is originally merged as the head of an aspectual quantity phrase within the predicate domain, but it can have an impact on the value of perfectivity, which is generally assumed to be a grammatical function outside the VP. Therefore, there are a few points that need to be motivated here: 1) whether there is a functional category of quantity within the predicate domain; 2) whether a morpheme under vP can be responsible for a viewpoint function of outer aspect phrase above vP; 3) whether a grammatical form can assume more than one grammatical functions. These questions are of theoretical importance as they establish the very feasibility of the analysis as well as the potential applicability of the theory to data in other languages. In this section, I'm going to examine some cross-linguistic phenomena that are parallel to (at least part of) what verbal *le* does in Mandarin, which possibly underlies the motivation of the proposed analysis in the dissertation.

In fact, a functional projection within predicate domain is not really a new idea. For example, Chomsky (1995) discusses the well-known AgrO category, whose specifier

provides a position for the derived objects for sake of agreement. But we need separate reasons to argue this inflectional category is Aspect.

To begin with, I will argue that the function and position of *le* is quite similar to some quantificational prefixes Slavic languages. Filip (1996) and Bach (1995) report the existence of markers which typically occur on the verb and but control the interpretation for the object DP.

(58) a. Ngapa O-ju   puta-nga-nja.   (Walpiri; Filip 1996)

     Water AUX-ISG PART-drink-IPV

     Drink some (not all) of my water.

   b. Q'i-utl John miai-xi.   (Haisla; Bach 1995)

     Much-catch John flsh.

     John caught much fish.

A particularly informative illustration of the relations between verbal markers and the interpretation of DP objects is found in Filip (1996) for Czech. Filip argues explicitly that a salient function of Slavic verbal morpheme is to provide certain nominal arguments with quantificational force, as in (59).

(59) Petr na-pekl   housky.

     Petr NA-baked rolls.

     Peter baked a lot of rolls/a batch of rolls.

Czech, like most Slavic languages, has neither definite nor indefinite articles. With a bare noun object in (59), the prefix *na* plays a double role: first, it gives rise to a quantity-telic interpretation, and second, it binds a variable in the DP object. The binding of the direct object, in turn, results in the interpretation "a lot", or "a batch of".

In addition to *na* we find the prefix *u,* which is usually interpreted as "all (the-)". Similarly, *u* also accomplishes the double role of giving rise to quantity-telicity within the event domain, and a quantity interpretation to the DP:

(60) Petr u-pekl   housky

Petr U-baked rolls.

Peter baked all the rolls.

Based on these observations, Borer (2005b) reasonably assumes that these structures instantiate the derivation process in (61).

(61) [$_{\text{ASPQP}}$ [$_{\text{DP}}$ <e>$_Q$] [$_{\text{ASPQ}}$ *puta* <e>$_Q$]]
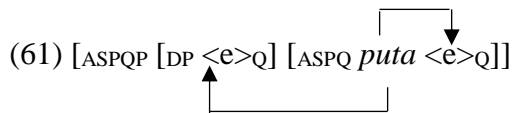
(61) illustrates the case of (58a), with the prefix *puta* (part) assigning range to the object DP. Specifically, the open value <e>$_Q$ as the head of Asp$_Q$ is assigned range by *puta*. In turn, that very same value is assigned to the open value of quantity in DP through agreement with the value in Asp$_Q$. As a result, the object gets a reading of quantity and the event is interpreted as telic (also quantity).

However, Filip explicitly refuses to call these prefixes telicity marker, but rather refers to the verbal forms as perfective, following traditional classifications. This is because she believes that the paradigm in (62) from Russian does not show quantized output by the definition of Krifka (1992), so that the function of prefixes such as *na* and *po* cannot be equated with semantic perfectivity, where by semantic perfectivity she means, in essence, telicity.

Fillip (2000):

(62) a. Ivan na-guljalsjap   po   gorodu.

Ivan NA-walk-PST around town.

Ivan walked a lot/enough/to his heart's content around the town.

b. Ivan po-guljalp   po   gorodu.

Ivan po-walk-PST around town.

Ivan took a (short) walk around the town.

But since I have already discussed the problem with the notion "quantized" and adopted the definition of quantity instead, the issue in (62) will no longer be a problem.

"Walk a lot" (*na-guljdlsja* in 62a), as Filip (2000) points out, is indeed cumulative, as "walk a lot" added to "walk a lot" is still "walk a lot". However, it is clearly not divisive, as part of "walk a lot" may be referred to as "walk a little". *Na-guljdlsja* is thus non-homogeneous, which is enough to make it quantity by our definition. This logic also applies to (62b), since "take a short walk" is divisive but not cumulative.

I will not go into more details here, but simply assume the quantificational prefixes in Slavic languages are morphological forms responsible for quantity within the predicate domain, and verbal *le* in Mandarin also occupies a similar position with similar function, except that the particle *le* is attached to the right of the verb.

In fact, besides the works in Slavic, the idea that there is an aspect related phrase articulated in the predicate domain can also be found in Diesing (1998), who argues that the stem construction in Yiddish is a type of light verb construction in which a light verb takes an aspect phrase complement that is headed by an aspectual operator, yielding a "diminutivized event" interpretation. It is observed that the stem construction in Yiddish consists of three parts: a light verb, an aspectual marker, and a verb stem. Diesing claims the basic effect of the stem construction is perfectivization. For example, verbs extending activities (like *work, play, travel*) end up having a bounded interpretaion when put in this construction, as in (63). Lexically telic predicates can also occur in the stem construction, suggesting that some sort of perfectivization is at stake. In this case it expresses a "sped-up" action, as in (64).

Diesing (1998: 126):

(63) Dos kind hot a   shpil geton.

　　　The child has ASP play LV.

　　　The child played a little bit.

(64) Maks ken a   lern oys gebn a lid   in tsen minut.

　　　Max can ASP learn-out LV   a song in tem minutes

Max can memorize a song in ten minutes flat.

A puzzling fact about the stem construction is that the verbal elements seem to reflect an OV (complement-head) order, while Yiddish is basically a VO language. (63) and (64) both have a surface order ASP-stem-LV, but in the normal order the verb appears to the right of the light verb. To account for this, Diesing argues that this reversed ordering is a consequence of head movement and pied-piping. The ASP-stem-LV is a formed head, so the adjacent parts by no means can be separated, as shown in (65a, b).

(65) a.*An   efn   hot zi   geton di   oygn.

ASP open has she LV   the eyes.

b. *Zi   hot an   efn   nekhtn   geton di   oygn.

She has ASP open yesterday done the eyes.

In Diesing's syntactic analysis the ASP head that hosts the aspectual marker in the stem construction is between the projection of vP and VP, the same position as verbal *le* in Mandarin in the analysis of this thesis. The verb stem raises from the head of VP to adjoin the head of Asp to form ASP+stem. The trigger for this movement, in Diesing's words, is pure morphological. The compound then raises again to adjoin to the light verb, yielding the final order ASP+stem+LV. The process is shown in (66). This shows the derivation process of Yiddish stem construction is completely in parallel with that of the standard verbal *le* structure in Mandarin, expect that there is no overt grammatical form representing the light verb in the latter case.

(66)
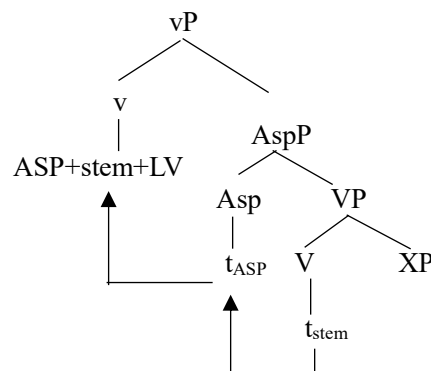
The last question is concerned about whether a grammatical form can be responsible for two different grammatical functions. As a matter of fact, this is also a frequently discussed topic in the literature. For examples, Gueron (2008) argues that telicity and perfectivity are often identified for two reasons: 1. both of them refer to boundedness; 2. the grammatical morpheme that marks telicity in the predicate can also induce perfectivity in TP if it merges with Tense in syntax of LF[16]. The latter choice may render the aspect system of the language sensitive to more restrictions, since the raised operator usually preserves its basic aktionsart functions. This leads to the generalization that a grammatical form can be responsible for more than one functional projections, even these functional projections are not adjacent to each other as required in the span theory and distributed separately in the traditional lexical domain under vP/PredP and in the inflectional domain above it.

For instance, Arabic uses the same verbal morphology for an embedded perfect structure and for a matrix past tense. Gueron (2008) shows that the morphology particular to KATABA in (67a), which functions in VP as an aktionsart operator that focuses on the last of the series of spatial states involved in writing a letter, is raised to Tense in (67b), creating a boundary between past and present time. In short, the same verbal form KATABA is construed as non-finite in (67a) and as finite in (67b), since aspect necessarily combines with finite tense.

(67) a. Kaana   KATABA al   rissalata

(he) was.PAST (he) write-PFV the letter

He had written the letter.

b. KATABA al   rissalata

---

[16] In Gueron (2008), aspect has nothing to do with the internal structure of events, as is often assumed. Rather, aspect pluralizes the point of time T denotes, deriving a series of points, or interval, of time. To do this, the event time morpheme in T must merge with an aspect morpheme. I hesitate to adopt the full picture of T-merge in this analysis, but simply focus on the logic that tense and aspect as two separate categories can share the same morpheme.

(he) wrote.PAST the letter

He wrote the letter.

Gueron also argues that the suffix –*ed* of verbs in English has the same double function, as it clearly indicates a perfective viewpoint in (68a), but is interpreted as neutral in terms of perfectivity in (68b).

(68) a. John has walked to the town.

b. John walked to the town.

This also predicts that in a language which makes use of morphemes responsible for both telicity and perfectivity, a morpheme which loses its ability to mark telicity within VP is expected to lose its ability to mark perfectivity outside VP, too. Gueron argues that both the Russian past tense and the modal verb in Old English evolved from past participles, which are basically verbal roots merged with telic operators. But when the grammatical affix was deprived of its ability to mark telicity and became part of the verbal root, both forms came to denote an imperfective aspect, as in (69a, b).

Gueron (2008: 1827)

(69) a. Masha chitala   knigu. (Russian)

Masha read.IPV.PST. book.

Masha was reading a book.

b. Na bu   minne bearft   hafalan hydan (Old English)

Not you my   need.IPV.PRES head   hide

You do not need to hide my head.

Note that these are not the only languages that behaves like this. From a cross-linguistic view there are other cases where the language seems to be "handicapped" in dealing with perfective atelic events, such as Scottish Gaelic. Ramchand (1997) observes that Scottish Gaelic past tense turns out to be invariably telic, while the calculation of aktionsart in Romance and English depends on the interpretations of internal arguments

and adjuncts as we have seen. She claims that regardless of the nature of the argument, predicates in simple past form in Scottish Gaelic are always telic, so the sentence "how long did you drink beer for?" is as bad as "how long did you drink the cup of tea for?", as shown in (70a, b).

Ramchand (1997: 42)

(70) a.*De   cho fada's a   dh'ol   thu   leann?

How long   REL drink-PAST you-DIR beer

Intended reading: How long did you drink beer for?

b.*De   cho fada's a   dh'ol   thu   an cupa ti?

How long   REL drink-PAST you-DIR the cup of tea

Intended reading: How long did you drink the cup of tea for?

In addition, phrases like "*to run*" with simple past tense in Scottish Gaelic will be infelicitous but for the support of some phrases indicating measurement or a definite bounded reading inferred from context, as in (71a). The past tense form of the verb *run* is only used in telic situations, like in (71b), where the event becomes non-homogeneous since it involves a change of state when the boy ran past a certain point. Stative verbs, when put into simple past, all get dynamic completive readings, as in (72a) and (72b).

(71) a.*Ruith   e.

Run-PAST he-DIR

Intended reading: He ran.

b. Ruith   gille   seachad.

Run-PAST boy-DIR past.

A boy ran past.

(72) a. Dh'iarr Alasdair biscaid.

Dot   Alasdair a biscuit.

Reading: Alasdair got/asked for a biscuit./ *Alasdair wanted a biscuit.

b. Chreid   mi   e.

   Believe-PAST I-DIR he-DIR.

   I came to believe him.

It appears that languages like Scottish Gaelic are systematically deprived of the ability to express simple past atelic situations, just like Mandarin. Homogeneous atelic events in Scottish Gaelic must be put into periphrastic tense, which is the counterpart of progressive in English. So do statives. This is shown in (73-75).

Ramchand (1997: 167)

(73) Bha   mi   ag ol   leann fad da   uair a thide.

     Be-PAST I-DIR *ag* drink-VN beer   for two hours.

     I drank beer for two hours.

(74) Bha   e   a'fuireach   'san Oban.

     Be-PAST he-DIR *ag* stay-VN in   Oban.

     He lived in Oban.

(75) Bha   mi   'ga   chreidsinn

     Be-PAST I-DIR ag+he-GEN believe-VN

     I believed him. (as stative)

Therefore, I assume that the past tense form in Scottish Gaelic is similar to verbal *le* in Chinese in that it marks both telicity and perfectivity. So it is infelicitous in atelic situations regardless of the viewpoint. And anything that is incompatible with a telic reading has to take advantage of the periphrastic (progressive) viewpoint to get manifested. But different from *le*, this special form further assumes the function of past tense marking, whereas in Chinese the use of *le* is not restricted to past tense, and the past tense reading of *le*-marked sentences seems to be an inference from the context instead of a grammatical requirement as the default reference time is set to be the same as speech time when not specified. It is even different from English simple past tense because it

invariably selects telic situations, while the latter is insensitive to telicity, as in (76a, b). As a result, we come up with a tiny cross-linguistic typological distribution about the marking system of telicity, perfectivity and tense, as shown in (77).

(76) a. John ate apples.

b. John ate three apples.

(77)	Telic	Perfective	Past tense
English simple past	--	+	+
Mandarin *le*	+	+	--
S-Gaelic past tense	+	+	+

Scottish Gaelic is different in that it does not have an f-morph range assigner to Asp$_Q$P, as the verbal *le* in Mandarin. The simple past forms are just the spell-out of feature complex on the verbal stems. I argue that this feature complex at least includes three different head features: [quantity], [perfective] and [past]. The verb, carrying all the features, moves (either overtly or covertly) through the heads of different functional projections and assigns range to each of the open values. This is illustrated in (78).

(78)

65
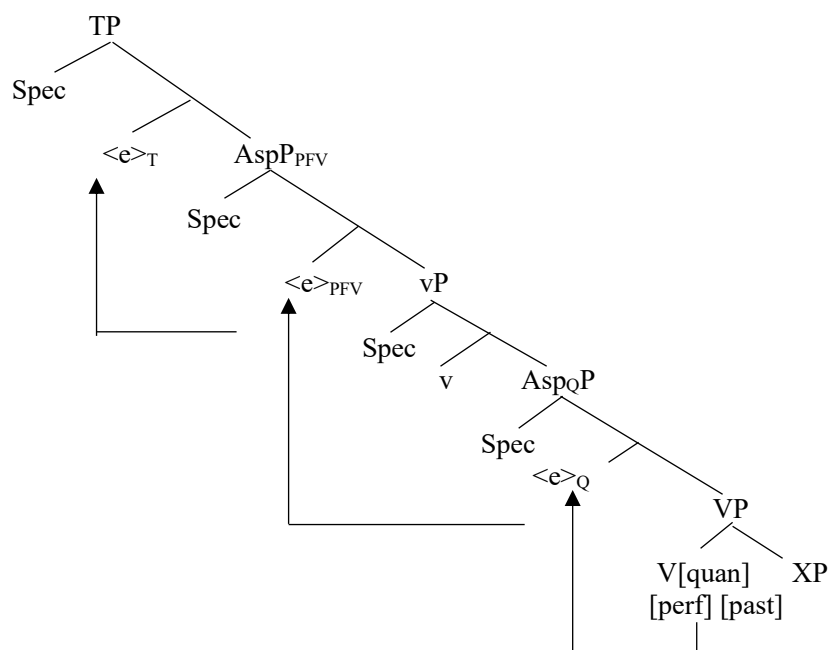
On the other hand, English simple past differs from its counterpart in Scottish Gaelic in that it does not include the [quantity] feature. The verb as a feature carrier just moves through the head of Asp_QP without assigning range to its open value, so no telic interpretation will result from this step. A possible telic reading relies on other range assigners available, such as the quantity object, particles and locatives. The internal argument is merged as the subject of quantity under the specifier of Asp_QP and probably gets case from the latter, if it projects. Meanwhile, there is no specific projection of viewpoint aspect above VP, since a simple past sentence in English can be interpreted freely as either perfective or imperfective. Finally, the range assignment for $<e>_T$ below the tense projection is most likely to be achieved via Agree. The structure for English is shown in (79).

(79)
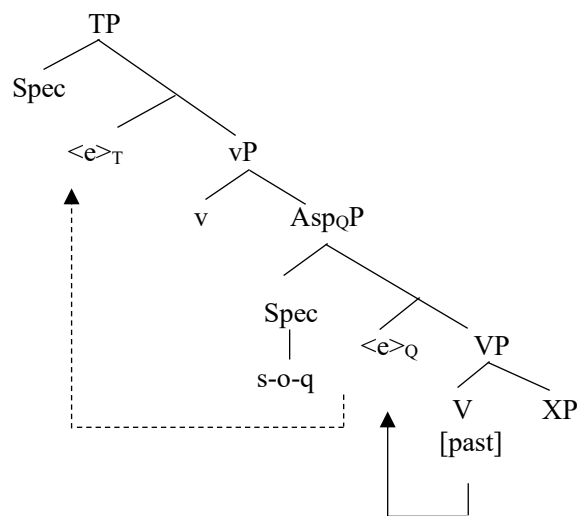
In this section, I have examined the motivation for the main proposal that verb *le* is relevant to both quantity (telicity) and perfectivity. The case studies of Slavic languages and Yiddish examples provide answers to the first and second question raised at the beginning of this section: theoretically speaking, it is legitimate to have a functional category occurring within the predicate domain, and such a functional category can be aspectually encoded and is likely to be related to the viewpoint aspect phrase. In addition, the derivation through head movement and pied-piping can also find a precedent in the

analysis of Yiddish. Finally, the plausibility of the claim that a morpheme can carry out more than one grammatical functions is supported by data from a series of languages, especially Scottish Gaelic, in which we can find a quite similar restriction on the imperfective telic expressions.

2.4 Summary of Chapter

In this chapter, I have discussed the grammatical function of verb *le* based on some irregular behaviours of it, and argued that *le* with its core function as a quantity (telicity) marker is also responsible for perfective marking in some circumstances. This provides account for the phenomenon that without further support from aspectual markers, atelic (homogenous) structures cannot have perfective meaning in Mandarin, which I believe is unexpected within the precedent ideas. A structure from exo-skeletal approach is then proposed to capture this behaviour of *le*, in which the availability of telic and perfective readings can just be derived from the range assignment to a series of open values at functional heads. The open value $<e>_Q$, which is the one carrying out the function that structurally quantifies the predicate, appears in pair with the particle *le*, with the latter assigning a proper range to the former through a local relation. The verbal *le*, however, is also able to perform the function of perfectivity marking via long distance Agree with the open value $<e>_{PFV}$ at the phrase responsible for the viewpoint aspect.

This dual function of verbal *le* is supported by the evidence that *le*-marked sentences generally cannot accommodate phrases that strongly require an imperfective viewpoint, and that the particle *le* never co-occurs with the perfective marker *you*. Furthermore, different tests of telicity also show that sentences with verbal *le* are always telic, and atelic readings are only available without this particle. These tests include the

coordination of predicates with *you*, degree modification with *jihu*, and the compatibility of time frame or span adverbials as adapted from tests for other languages.

In addition, the motivation of this proposal is justified by cross-linguistic data such as Slavic, Yiddish, Arabic and Scottish Gaelic, which shows that the assumptions are at least theoretically valid. This also hints that it might be a universal phenomenon that one grammatical form can assume more than one grammatical functions.

There are a few predictions born out if we assume the proposal in this chapter is true. As I have mentioned in 2.1, since the marking of perfectivity is somehow a "side-effect" enabled by long distance Agree, we may expect the absence of this relation under certain circumstances. In other words, there is supposed to be cases of *le* which are only quantity but not perfective found in Mandarin. Besides, analyzing telicity as a predicate structure may also have an impact on the interpretation of intransitive constructions, as there is a general correlation between telicity and intransitive semantics as I have mentioned in the first chapter. In the next chapter, I will make some reviews on the previous studies about verbal particle *le*, re-examine their major arguments and see if they can also capture the predictions born from the proposal in this thesis.

3. Previously on Verbal *Le*: Old Problems and New Solutions

In this chapter, I will continue to focus on problems concerning the verbal particle *le* in Mandarin. As a frequently trodden topic in the study of Mandarin, the verbal *le* has attracted continuous attention in the past few decades. Some of the proposals manage to unveil at least part of the picture, thus gaining a far-reaching impact in the literature. Some of the ideas, although not very successful in dealing with certain issues, report interesting observations and raise insightful questions that deserve more attention and effort than what has actually been given to them.

In the following, I will first review some influential ideas about the nature of verbal *le* and compare them with the proposal in this thesis. All these previous ideas claim to have empirical evidence to support their views, and the major aim of this chapter is to see how these empirical data can be accommodated in the analysis I have argued for in the previous chapter. I will also show why my proposal, that is, verbal *le* is primarily quantity and secondarily perfective, is a better solution is dealing with some problems to which those ideas fail to offer a proper account. In short, this chapter not only conducts a literature review, but also proposes theoretical claims regarding the additional facts brought to light by these alternative analyses.

Many claims have been made concerning this mysterious particle of *le*. Here I will re-examine three major claims: 1. Verbal *le* is a perfective marker; 2. Verbal *le* is a resultative predicate; 3. Verbal *le* is a realization marker—which means it gives perfective interpretation with telic situations but imperfective interpretation with atelic situations. I will focus on the linguistic phenomena that underlie these claims and argue that most of them can also find a reasonable account in my analysis, but some data predictable under my theory is not covered by these analyses.

To be specific, I will argue that the perfective view of verbal *le* is problematic because of two reasons: 1. *le* is not acceptable in certain perfective situations; 2. *le* can be

used in some non-perfective situations, such as cases with deontic modals and comparative adjective structures. Both of the two problems will disappear if we assume the perfective reading comes from a perfective phrase instead of le, and *le* is primarily responsible for quantity, which is in principle not associated with perfectivity.

Meanwhile, analysing *le* as a resultative predicate does not solve the problem either, because the verbal *le* has a different distribution compared with most resultative predicates, e.g. it does not occur in progressive and habitual situations. I argue the distributional restrictions suggest *le* is sensitive to perfective and imperfective phrases, but it can also occur when there is no phrase for perfectivity.

Finally, I do not accept the claim that verbal *le* is a realization marker which binds the event variable to temporally anchor the events. The analysis wrongly predicts that time adverbials are sufficient to license the use of *le* in atelic (non-quantity) situations. Furthermore, the fact that Locative Existential Construction is able to license *le*, which is supposedly an argument in support of this view, can also be attributed to the ability of the locative phrase to existentially bind the open values in the object and the quantity phrase.

The chapter consists of three sections. In each of the section, I will first present an alternative analysis of verbal *le* in literature and its major arguments, and then provide my critique of the analysis and show how to account for the data under the proposal of this thesis.

3.1 Verbal *le* as a perfective marker

3.1.1 The perfective theory

The analysis of verbal *le* as a perfective marker in Mandarin is wide-spread. Such an idea can be found in a range of works as Smith (1997), Soh & Gao (2006), Huang et al (2009),

etc. The idea obviously captures the fact that a *le*-marked sentence, at least in most of the cases, denote an event under a perfective viewpoint. Since aspectual inflection is typically thought to head an independent projection AspP above VP, *le* as an aspect marker in principle should have a close relation with this position. The most direct assumption is that verbal *le* is the head of this aspect projection, and since *le* always follows the verb like a suffix, the latter needs to raise out of the predicate domain and merge with the particle at the head of AspP. Under this assumption, a sentence like (1a) should have a derivation process as shown in (1b).

(1) a. Zhangsan qu le   Beijing.

Zhangsan go LE Beijing.

Zhangsan went to Beijing.

b.
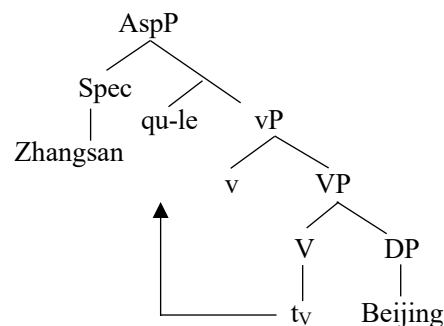
However, Cheng & Li (1991) argue that *le* cannot directly occupy the head position of AspP, based on the observation in (2) and (3).

(2) a. ta   zai   dasheng-de chang ge

He Asp loud-DE   sing   song.

He is/was singing loudly.

b. *ta dasheng-de zai chang ge.

He loud-DE   Asp sing   song.

Intended reading: the same as (5a)

(3) a. wo mei-you qiaoqiao-de hui   jia.

I   Neg-Asp quiet-DE   return home.

I did not return home quietly.

b. *wo qiaoqiaode mei-you hui   jia

    I   quiet-DE   Neg-Asp return home.

    Intended reading: the same as (6a).

(2) and (3) shows that descriptively the adverbial modifiers *dashengde* (loudly) and *qiaoqiaode* (quietly) cannot occur higher than the aspect phrase in Mandarin. Such adverbials are only allowed to occur before the verb and after the outer aspect marker, when the latter is a free morpheme. This indicates that they are most likely to be adjuncts to vP, and specifically below the aspect phrase.

Furthermore, (4a) and (4b) show that unlike English, in Mandarin a manner adverb is only allowed to appear to the left of the verb. Since a manner adverb is analyzed as adjunct to vP, these examples make it difficult to argue that the verbal *le* is at the Asp head which takes vP as its complement. Given the adjacent position relation between the verb and the particle *le*, if the latter is merged above vP, the verb must raise overtly (probably through the light verb head) to Asp to incorporate into it, as in (5), similar to the V-to-T raising in French. But this movement would leave the adverbial phrase lower than the verb and thus to the right of it in PF, which is a forbidden word order as discussed.

(4) a. Zhangsan qiaoqiao-de hui   le jia.

    Zhangsan quiet-DE   return LE home.

    Zhangsan quietly went back home.

b. *Zhangsan hui   le jia   qiaoqiao-de.

    Zhangsan return LE home quiet-DE.

    Zhangsan went back home quietly.

(5)
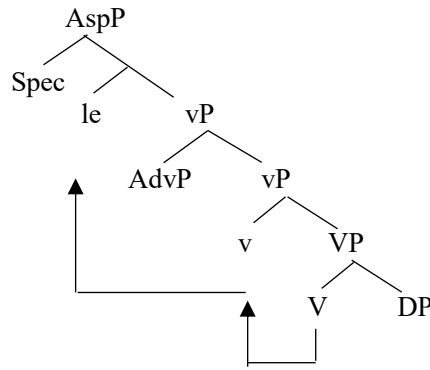
To solve this problem, many linguists (Ernst 1995, Gu 1995, Li & Zhao 2008, Huang et al 2009 etc.) propose that *le* is not merged as the head of Asp, but only represents an inflectional variation of the verb. The verb is merged fully inflected with all relevant features in the first place and moves to perfective Asp covertly to check the perfective feature, as in (6).

(6)
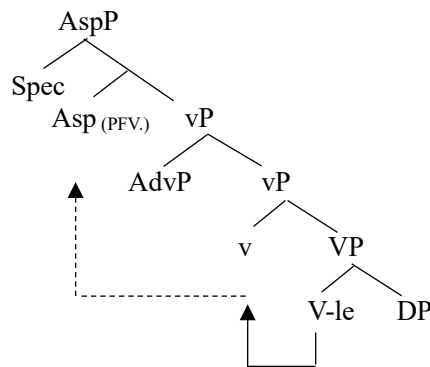
In other words, *le* is introduced with the verb itself so overt V-to-Asp raising is no longer necessary to bring V and *le* together. V-le combination does move covertly to Asp, however, to check the relevant feature without any change in word order, when there is a manner adverb adjoining to the predicate. In the current Minimalism framework, this solution can be simplified further: there's no need to move, the V-le form can just check the perfective feature on the head of Asp via Agree since they satisfy the Locality Condition. However, I have several reasons to believe that the perfective analysis is not an ideal solution to the verbal *le* problem. These reasons are discussed in the following sections together with my own theoretical claims about certain structures.

3.1.2 The quantity restriction

First, the fundamental claim of this analysis, that verbal *le* offers a perspective viewpoint as held by Smith (1997) and others, fails to give a reasonable account for the difference captured under the perfective column in the typological graph in 2.1, which is repeated here as (7). To be specific, simply analyzing the particle *le* as a perfective marker cannot explain why we find it difficult to express a pure perfective homogenous meaning with *le* in Mandarin, as in (8) and (9), which are examples never discussed in works analyzing *le* as a perfective marker.

(7)

Mandarin Chinese	Perfective	Imperfective
Quantity	+	+
Homogenous	--	+

(8) ??Zhangsan tan *le* gang-qin.

   Zhangsan play LE piano

   Intended reading: Zhangsan played the piano.

(9) ??Zhangsan tui *le* che.

   Zhangsan push LE cart.

   Intended reading: Zhangsan pushed the cart.

Further, I find the examples used to support the perfective view in Smith (1997) as well as other works problematic. The following examples are taken as they are from Smith (1997). Smith uses them to show that *le* can occur in all situations except state. some judgements and interpretations shown here are not accurate.

   Smith (1994: 112)

   (10) a. Tamen zuotian   zai gongyuan chao   *le* yi jia (Activity)

       They   yesterday in park   quarrel LE one fight

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They quarreled yesterday in the park.

  b. Wo zuotian xie *le* yi-feng xin (Accomplishment)

   I yesterday write LE one-CL letter.

   I wrote a letter yesterday.

  c. Lisi huran kesou *le* (Semelfactive)

   Lisi suddenly cough LE

   Lisi coughed suddenly.

  d. Zhangsan zhongwu jiu pa-dao   *le* shanding (Achievement)

   Zhangsan noon then climb-arrive LE hilltop

   Zhangsan reached the top at noon.

  e.*Wangping congming *le* (Stative)

   Wangping intelligent LE.

   Intended reading: Wangping is intelligent.

First in (10a), the word *yi*, which is interpreted as the number "*one*" in English, is an indispensable part of the sentence. The numeral *yi* here really has a contentful meaning, since it can be replaced by other numerals like *liang* (two) or *san* (three) and generate different meanings, as in (11a). In such a case, the event is no longer an activity. A more accurate translation should be "They had a quarrel yesterday in the park". (10a) gives an accomplishment situation rather than an activity. A real atelic reading is only available without the presence of *le*, in which case it becomes a habitual situation, as in (11b).

  (11) a. Tamen zai gongyuan chao *le* liang/san jia

     They in park   quarrel LE two/three fight

     They had two/three quarrels in the park.

   b. Tamen zai gongyuan chao jia

     They in park   quarrel fight

     They (usually) have quarrels in the park.

Some informants note that even without a specific numeral, the phrase *chao jia* (quarrel) is still acceptable with verbal *le*, as in (12), although not everyone agree with this judgement.

(12) ?Tamen zaoshang chao *le* jia.

They morning quarrel LE fight

Intended reading: they quarreled in the morning.

But even if we accept the judgement, it is possible to show that (12) is actually quantity (telic). The fundamental definition of quantity adopted in this thesis is that a quantity event is non-homogenous. If we have two events described as (12) and put them together, the result reading can only be that they quarreled *twice* in the morning, which is not exactly the same situation described in (12). Furthermore, if we have another case with different time specification, as in (13), it cannot be the same event as in (12). In other words, (13) cannot denote a single quarrel that starts in the morning and extends to the afternoon without any stop. It has to be distinguished from the one in (12) as a separate quarrel, which suggests that the quarrel does have an unspecified endpoint.

(13) ?Tamen xiawu chao *le* jia.

They afternnon quarrel LE fight.

Intended reading: they quarreled in the afternoon.

However, a typical atelic activity does not behave like this. (14a) and (14b), when taken into consideration at the same time, will generate an ambiguous reading between one quarrel and two quarrels, because as atelic events, we do not know whether they have come to an end in the given time frame. This is different with telic events, as in (14c) and (14d), which have to be interpreted as two separate actions, although we do not really know how long each of them lasted.

(14) a. They quarreled in the morning.

b. They quarreled in the afternoon.

c. they had a quarrel in the morning.

d. they had a quarrel in the afternoon.

The coordination test discussed in 2.2.3 yields the same result. It is clear that (15a) with the conjunctive word *you* can only have a sequential reading, with the drinking action following the quarrel. But a real atelic situation allows the two actions to happen simultaneously, as in (15b), which cannot accommodate verbal *le*.

(15) a. Tamen chao   le   jia   you he   le jiu.

   They   quarrel LE fight and drink LE alcohol.

   They had a quarrel and (then) drank some alcohol.

   b. Tamen chao   jia   you he   jiu.

    They   quarrel fight and drink alcohol.

    They quarreled and drunk.

Therefore, we know that (12) in fact describes a quantity (telic) event. The proper translation should be "they had a quarrel in the morning" or "they burst into quarrel in the morning", instead of "they quarreled in the morning" as in English.

Also problematic for Smith is (10c), which is purely ungrammatical under the intended atelic reading that Lisi as a participant of the event is involved in an action of coughing with homogenous stages. The only possible meaning we can get from it is "Zhangsan began to cough" where cough is taken as a symptom of illness. But with this interpretation the event under discussion is actually an achievement. Achievements are telic because they always involve a change of state, which makes them non-homogeneous. Therefore, Smith's conclusion that *le* occurs with activities remains unsupported.

Another fact which is unexpected from the perfective analysis of *le*, but falls within the predictions of the proposal in this thesis, is that intransitive structures with *le* are always restricted to a telic interpretation (unaccusative reading) although the verb

itself can be used in atelic situations (unergative reading) in other aspectual environment.[17] This is exemplified below.

(16) a. Zhangsan zai   pao.

Zhangsan ZAI run.

Zhangsan is running.

b. Zhangsan yinggai/bixu/yao   pao.

Zhangsan should/must/will   run.

Zhangsan should/must/will [run/run away].

c. Zhangsan pao le.

Zhangsan run LE.

Zhangsan ran away/escaped. /*Zhangsan ran.

(17) a. Zhangsan zai   zou.

Zhangsan ZAI walk.

Zhangsan is walking.

b. Zhangsan yinggai/bixu/yao zou.

Zhangsan should/must/will walk.

Zhansgan should/must/will [walk/leave].

c. Zhangsan zou le

Zhangsan walk LE.

Zhangsan left. /*Zhangsan walked

It is hard to find an account for this restriction if we assume the verbal *le* only contributes a perfective viewpoint to the sentence, because we won't have any reason to exclude the reading like "Zhangsan ran", considering it can be fully perfective. But this

---

[17] it is hard to say whether the *le* in (17c) and (18c) is verbal or sentential, as the position is linearly identical. But in this thesis, I distinguish verbal *le* and sentential *le* with their functions instead of their positions in the sentence. I will argue verbal *le* is a quantity marker, while sentential *le* is only a focus marker that has no direct link with perfectivity. Therefore, the particle *le* in (16c) and (17c) is the verbal *le* under this assumption, since it gives a perfective telic reading. More details will come up in Chapter 5.

constraint in reading is closely related to quantity (telicity). The systematic correlation between telicity/atelicity and unaccusative/unergative readings has already been captured by Dowty (1991) in the following:

(18) *Dowty's correlations*

Agentive, Atelic: definitely unergative

Non-Agentive, Telic: definitely unaccusative

Then the restriction in (16) and (17) is quite expected within my framework because *le* marks quantity-telic events, and according to Dowty (1979), telic intransitives are always unaccusatives. In other words, the presence of verbal *le* entails the presence of Asp_QP, which always gives the predicate a quantity interpretation, therefore, the atelic readings based on the unergative structure are out in this occasion. But in the case of unaccusative structure, the subject originates at [Spec, Asp_QP] as the subject of quantity and finally reaches the edge of the outer aspect phrase, while *le* assigns range to the opens values in both inner and outer aspects, creating a perfective telic (unaccusitive) reading. For example, the structure for (16c) should be (19).

(19)
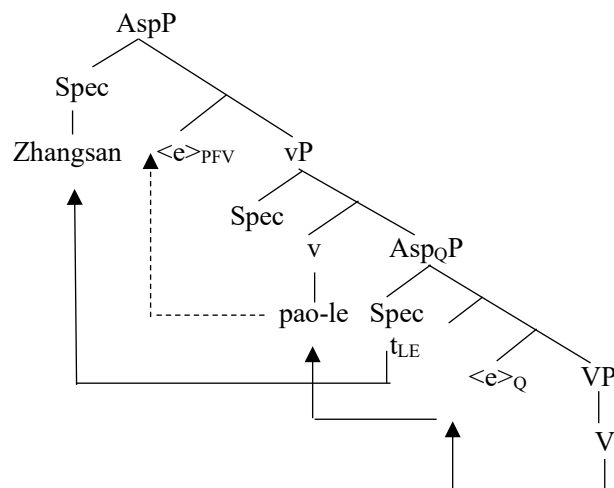
It is also expected that verbs like *pao/zou* (run/walk) can maintain their basic meaning under the structure of *le* if we allow certain degrees of context-intervention. For example, if there is a PE test of running 1km and there are a number of students who are supposed to take the test, then it is possible to use *Zhangsan pao le* to mean Zhangsan has

taken the test or Zhangsan ran 1km. But it has to be noted that in such cases the situation is always telic. This further proves that it is the structure with particle *le* that determines the telic nature of the predicate, and we do not really need a quantity object to get quantity interpretation, unless *le* does not occur.

3.1.3 The non-perfective verbal *le*

A more serious problem with analyzing *le* as a perfective marker analysis lies with the simple fact that verbal *le* can actually occur in sentences under a non-perfective viewpoint, as I have mentioned before. Such examples can first be found in cases with deontic modals shown in (20a-c). These deontic modals offers a viewpoint under which the event is not finished, so the final point is not included in the time span in focus.

(20) a. wo yao sha le   na-ge   ren.

   I   will kill LE that-CL person.

   I will kill that person.

  b. ni   bixu chi le na   san-ge   pingguo.

   you must eat LE that three-CL apple.

   You must eat those three apples.

  c. wo keyi mai le   na-ge   nongchang.

   I   can sell LE that-CL farm.

   I can sell that farm.

This suggests that the function as a quantity marker is the "core" function of *le*, and the perfective marking is a "side effect" that can be blocked. This is a phenomenon that falls in line with the proposal in this thesis, but cannot be explained if the function of verbal *le* is primarily that of perfectivity. However, there are also efforts to explain this co-existence of *le* and the non-perfective aspect from other perspectives.

Chen (1957) and Ma (1983) believe that the *le* in a non-perfective aspect is a

different kind of *le* from either verbal *le* or sentential *le*. They thus term it as *le3*. They argue that this *le3* is a complement of the predicate and it represents the final stage of the predicate itself rather than carrying out the grammatical function of marking the existence of such a stage as a real verbal *le* does. Their main argument is based on the observation in (21a, b).

(21) a. ? wo yao hua le na-fu hua.

　　　I   will paint LE that-CL picture.

　　　I will paint that picture.

b.? wo keyi xie le na-feng xin.

　　　I   can write LE that-CL letter.

　　　Intended reading: I can write that letter.

(21) shows that if we want the verbal *le* to occur in an non-perfective sentence, the semantics of the verb must be of certain type. Some verbs are just incompatible with this structure and the reason seems to lie in the semantics instead of syntax. Shao (1988) conducted a further study on the semantics of the verbs in front of *le3* and came to the conclusion that they all share a semantic component [+Delete]. According to Shao, this category of verb also include *ji* (寄 post), *guan* (关 shut), *shao* (烧 burn), *reng* (扔 throw), *fang* (放 release), *huan* (还 return), *hui* (毁 destroy) etc, which all result in a state that the affected argument is no longer in its previous condition. Therefore, verbs associated with meanings of "creation", as *hua* (paint) in (22a) and *xie* (write) in (21b), are not able to license this special use.

However, there are several problems with this analysis. First, in many cases a *le*-marked verb that occurs with a deontic modal does not seem to have a [+Delete] semantic component as Shao claims, as in (22a-c), where verbs like *xiu* (fix), *mai* (buy) and *qu* (marry) are semantically closer to the process of creation instead of deletion.

(22) a. Zhangsan wu dian   qian   bixu xiu le na-liang che.

Zhangsan five o'clock before must repair LE that-CL car.

Zhangsan must repair that car before five o'clock.

b. Ni   yinggai mai le na-ge   nongchang.

You should buy LE that-CL farm.

You should buy that farm.

c. wo yiding   hui qu   le na-ge   guniang.

I   definitely will marry LE that-CL girl.

I will definitely marry that girl.

Second, the non-perfective *le* never occurs in other aspectual environment with an overt aspect marker, as shown in (23a, b). This restriction is the same with verbal *le*, but is not expected with a real predicate that specifies a resultative state, which *le3* is claimed to be. As is shown in (24a, b), the predicate *bai* (white), which indicates the final stage of the wall, is free to occur with different aspect markers.

(23) a. Zhangsan zai   shua (*le) na-mian qiang.

Zhangsan ZAI paint LE   that-CL   wall.

Intended reading: Zhangsan is painting that wall.

b. Zhangsan shua (*le) guo   na-mian wall.

Zhangsan paint LE   GUO that-CL wall.

Intended reading: Zhangsan used to paint that wall.

(24) a. Zhangsan zai   shua bai   na-mian qiang.

Zhangsan ZAI paint white that-CL wall.

Zhangsan is painting that wall white.

b. Zhangsan shua bai   guo   na-mian wall.

Zhangsan paint white GUO that-CL wall.

Zhangsan used to paint that wall white.

Third, the verb after a deontic modal can be followed by both *le* and an overt

resultative predicate, suggesting these two are different, as in (25a, b).[18]

(25) a. Ni   bixu chi guang le   panzi-li de   pingguo.

You must eat up   LE plate-in DE apple.

You must eat up the apple(s) in the plate.

b. Zhangsan keyi shua   bai   le   na-mian qiang.

Zhangsan can   brush white LE that-CL wall.

Zhangsan can brush that wall white.

These problems give rise to the possibility that there may not be a separate class of *le* as *le3*, and the *le* occurring in this situation is still verbal *le*. This assumption leads us to a further question: what it is on earth that prevents *le* from marking perfectivity in this case.

I will argue in this thesis that the co-occurrence of *le* and deontic modals under an imperfective viewpoint is licensed by a special structure that is used to express the strong intention/will of the subject. Actually, verbs with a creation type of meaning are not completely illegitimate. Examples in (21a, b) are not completely excluded, but only needs a stronger context to license. For instance, when the speaker is facing difficulty in painting the picture or buying the farm and intends to show his or her determination in doing it, these examples become quite acceptable. Therefore, to most of the native speakers I consulted, truth-conditionally there is very little difference between (26a) and (26b), except that (26b) sounds a little more "strongly voiced".

(26) a. Zhangsan bixu chi na-ge   pingguo.

Zhangsan must eat that-CL apple.

Zhangsan must eat that apple.

---

[18] Although the co-occuence of le and resultative predicate is wide-spread in many occasions, there are some exceptions to this obvervation:
*Zhangsan bixu sha si   le   Lisi.
 Zhangsan must kill dead LE Lisi.
 Intended reading: Zhangsan must kill Lisi dead.

b. Zhangsan bixu chi le na-ge   pingguo.

Zhangsan must eat LE that-CL apple.

Zhangsan must eat that apple.

As to (21a, b), I assume the restriction with creation verbs result from the aspect of semantics, or, more specificly, from the world knowledge. In (21a), "the picture" does not exist before "I" paint it, so it sounds strange when referring it with "that" in this occasion. This is also the case in (21b). In other words, these sentences presuppose the existence of the object, which, without context, may not be true. On the other hand, the verbs in (23a-c) are semantically associated with neither creation nor deletion. This means they do not affect the existence their objects, so these examples does not trigger the strangeness in reading as in (21a, b).

Imperative structure is another typical case in which a strong will and force is expressed in Mandarin Chinese, as the speaker gives an order or urge the listener(s) to do something. Such a non-perfective use of verbal *le* is also expected in these cases, as in (27a, b).

(27) a. chi le na-ge   pingguo!

Eat LE that-CL apple.

Eat that apple!

b. mai le   na-ge   nongchang!

Buy LE that-CL farm.

Buy that farm!

I will assume the phrase for (im)perfectivity does not project in the case of non-perfective *le* due to the existence of a IntP (Int is short for *Intention*), which is responsible for the sense of strong voice. The imperfective interpretation is an inferred information based on the semantics of deontic modals, imperative structure, etc., which always express that the event is yet to be done. This is supported by the fact that deontic modals

are not compatible with other imperfective aspect markers, as shown in (28a, b).

(28) a.*Zhangsan yao/bixu/keyi zai   chi pingguo.

Zhangsan will/must/can ZAI eat apple.

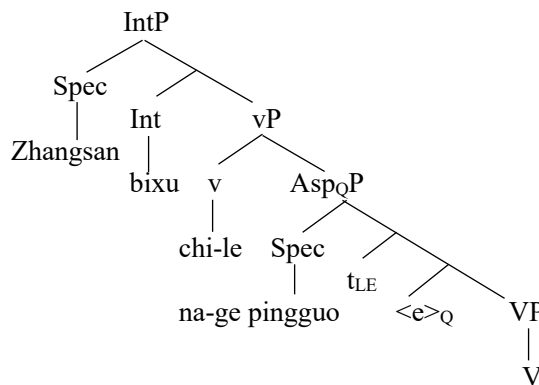Intended reading: Zhangsan will/must/can be eating apples.

b.*Zhangsan yao/bixu/keyi chi guo   pingguo.

Zhangsan will/must/can eat GUO apple.

Intended reading: Zhangsan will/must/can have eaten apples.

Since I assume the perfective component in the exo-skeletal structure is not carried by verbal *le* itself, but by the open value $<e>_{PFV}$ under the AspP projection above the predicate domain, and that *le* is only responsible for perfective reading in the sense that it assigns range to $<e>_{PFV}$ via long distance Agree, it is only natural to see verbal *le* is used in non-perfective situations if the perfective phrase does not project and there is no open value that need range from *le*. Therefore, I propose the structure for (26b) should be (29a), while an imperative sentence as (27a) is like (29b).

(29) a.

```
                    IntP
                   /    \
               Spec      \
                |       Int    vP
            Zhangsan     |    /  \
                       bixu  v   Asp_QP
                             |    /   \
                          chi-le Spec  \
                                  |    t_LE
                            na-ge pingguo   \
                                           <e>_Q   VP
                                                   |
                                                   V
```

b.

```
                    IntP
                   /    \
               Spec      \
                |       Int    vP
                0        |    /  \
                      impr^0 v   Asp_QP
                             |    /   \
                          chi-le Spec  \
                                  |    t_LE
                                na-ge    \
                               pingguo  <e>_Q   VP
                                               |
                                               V
```
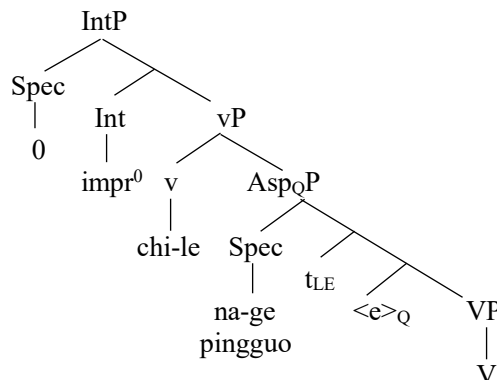
It has to be noted that the imperfective habitual cases are quite different from the cases we are talking about here. In the habitual readings there is indeed a projection with an imperfective value, although there is no overt marker for it, so verbal *le* can never occur in this occasion as it will assign conflicting range to the open value. In other words, perfective and imperfective situations both have an aspectual category for the value of (im)perfectivity, to which the verbal *le* is sensitive. But the cases with deontic modals and imperatives are actually non-perfective situations, which means such an aspect category is missing.

In fact, there is another interesting restriction of the non-perfective use of *le*, that is, the object must be definite in this construction. Indefinite objects always lead to ungrammaticality of the sentence in this case, as shown in (30a, b).

(30) a.*wo yao sha le   yi-ge   ren.

I   will kill LE one-CL person.

Intended reading: I will kill a person.

b.*ni   bixu chi le san-ge   pingguo.

You must eat LE three-CL apple.

Intended reading: You must eat three apples.

In addition, imperative sentences are also sensitive to the definiteness restriction on the object, as in (31a, b).

(31) a.*hua le   yi-fu   hua!

Paint LE one-CL picture.

Intended reading: Paint a picture!

b.*mai le   yi-ge   nongchang!

Buy LE that-CL farm.

Intended reading: Buy a farm!

I have to say I have no explanation for this restriction on the object within my

proposed analysis. But the introduction of *le3* as a separate category and the semantic filter of [+Delete] do not provide any kind of explanation for this problem, either. So I will set aside this issue for future research.

The discussion above reveals the nature of the non-perfective verbal *le* that it can be licensed as long as there is no perfective open value or imperfective open value waiting for range. In other words, in these non-perfective situations with verbal *le,* the imperfective viewpoint is inferred from meaning rather than given as a grammatical value. This predicts that we can also expect this kind of *le* in non-finite clauses, which is verified by the empirical data.

Huang (1982, 1991) argues that there is a distinction between finiteness and non-finiteness in Mandarin in spite of the lack of systemic tense marking, because we can make use of modal verbs and aspectual markers to test it: the clauses which can accommodate these categories are finite, and those which are incompatible with them are non-finite[19]. Following Chomsky (1981, 1986), Huang points out that there are certain types of Control verbs in Mandarin which select a non-finite clause, while other verbs go with finite clauses. For example, in (32a) *zhunbei* (plan) is a Control verb, which does not allow the modal *hui/yao* (will) to appear in the subordinate clause. On the other hand, verbs such as *xiangxin* (believe) in (32c) and *renwei* (think) in (32d) do not have this restriction. Based on this observation, Huang claims the clause in (32a) is a non-finite clause while those in (32c, d) are both finite clauses.

(32) a. wo zhunbei mingtian   lai.

    I   plan   tomorrow come.

    I plan to come tomorrow.

  b.*wo zhunbei mingtian hui/yao lai.

---

[19] There is a continuing debate on the existence of finiteness in Mandarin. Li (1985, 1991) and Shi (1995, 2001) align with Huang and argue we are able to distinguish finiteness and non-finiteness in Mandarin. Those who argue against it include Y. Li (1985), Y. Huang (1992), Xu (1994) etc. I will not go over their arguments in this thesis, but simply assume the finite and non-finite structures are distinguishable.

I   plan   tomorrow will   come.

Intended reading: the same as (32a).

c. wo xiangxin ta mingtian   hui/yao lai.

I   believe   he tomorrow will   come.

I believe he will come tomorrow.

d. wo renwei ta mingtian   hui/yao lai.

I   think   he tomorrow will   come.

I think he will come tomorrow.

However, Li (1985) and Xu (1994) have a different opinion. They argue that in fact we can have an aspectual marker in the clause following a Control verb, such as in (33). The verb *zhunbei* (plan) is a Control verb according to Huang's classification, so the clause it selects should be a non-finite clause. But the embedded clause in (33) has an aspectual marker *le* and is still grammatical, which appears to go against Huang's claim that these are non-finite clauses.

(33) Wo zhunbei chi le   na-ge   pingguo.

I   plan   eat LE that-CL apple.

I planned to eat that apple.

But the grammaticality of (33) follows directly from my analysis. Note that the particle *le* is special here, since no other aspectual markers and modals are allowed in this occasion, as shown in (34a, b).

(34) a.*Wo zhunbei zai   chi na-ge   pingguo.

I   plan   ZAI eat that-CL apple.

Intended reading: I planned to be eating that apple.

b.*Wo zhunbei hui chi na-ge   pingguo.

I   plan   will eat that-CL apple.

Intended reading: I planned that I would eat that apple.

I agree with Huang's proposal that the clause following Control verbs in Mandarin is required to be a non-finite clause. But finiteness is generally thought to be a feature belonging to the functional domain above vP. Meanwhile, verbal *le* in the analysis of this thesis is embedded within the predicate domain, so the restriction on (non)-finiteness should not have an influence on the occurrence of this particle to mark quantity. However, the verb in a non-finite clause should not have an inflection for the viewpoint either, since the outer aspect phrase is above vP. Given that no open value for (im)perfectivity is merged, we won't get a perfective interpretation even if *le* is present. Nor will we get a clash if *le* is present together with an open value for imperfectivity.

The structure for (33) is hence as in (35), where the head of the Finite phrase is just an empty value. The verbal *le* does not assign range to $<e>_{PFV}$, so no perfective reading will arise. The subject in the matrix clause controls the empty PRO in the subordinate clause.[20]

(35)
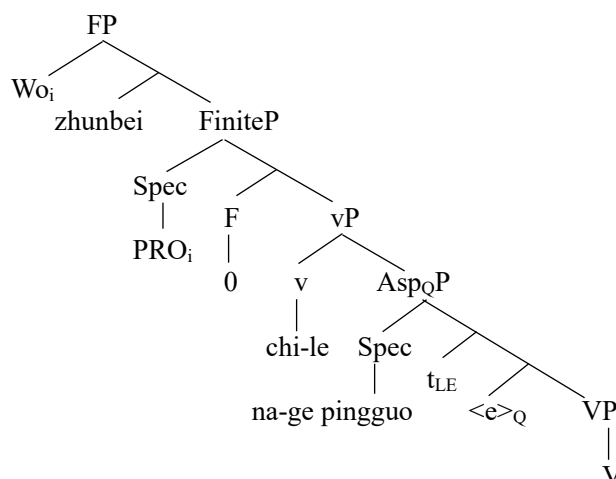
As in the cases of deontic modals, the imperfective verbal *le* in non-finite clauses also put an indefiniteness restriction on the object, as shown in (36), which suggests that there is a similar mechanism in effect here. Such a constraint is not found with control verbs in English, as shown by the translation of (36). Unfortunately, I do not have an

---

[20] But I don't have anything to say whether the control verb *zhunbei* (plan) extends an event under perfective viewpoint or not, since as I mentioned in Chapter 1, the aspect anchoring based on the interdependence of the clauses are complex, so the matrix phrase is simply labelled as XP.

appropriate account for this problem. I will set it aside here and leave it for future research.

(36)*Wo zhunbei chi le   yi-ge   pingguo.

I   plan   eat LE one-CL apple.

Intended reading: I planned to eat an apple.

The last case of non-perfective *le* I'm going to discuss is found with comparative adjective structures. This phenomenon is reported by Huang (1987) as a counter example to the traditional idea that verbal *le* is a perfective marker. See examples in (37a, b).

(37) a. Zhangsan (bi   Lisi) gao le   san   yingcun.

Zhangsan than Lisi   tall LE three inch.

Zhangsan is three inches taller (than Lisi).

b. Chenyi da   le   liang-hao.

Shirt   large LE two-size.
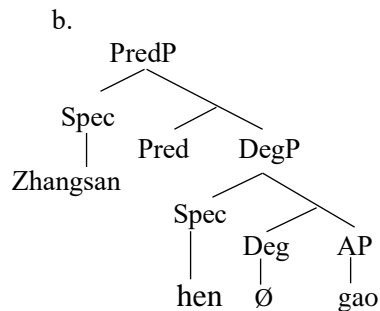
The shirt is two-size larger.

(37a) only describes the tallness of Zhangsan compared with that of Lisi. (37b) expresses the meaning that the shirt is larger than the size of a potential wearer by two size. In both cases, the particle *le* cannot be interpreted as a perfective aspect marker as it has been treated in Smith (1997) and Huang et al (2009), because no specific event happened. These two examples obviously describe stative situations.

But this can also be captured by the proposed analysis in this thesis. Similar to the discussion of cases with deontic modals, I assume there is no (im)perfective phrase in this comparative adjective structure. To be specific, I assume states do not exhibit the value for perfectivity, so structurally there is no phrase for viewpoint aspect in states. But this does not mean states are incompatible with the quantity phrase headed by *le*, as long as there is a proper way to measure their quantity.

Here I propose a structure for comparatives which is very similar to that of a telic (quantity) predicate. I assume the adjectival predicate phrase always include a degree
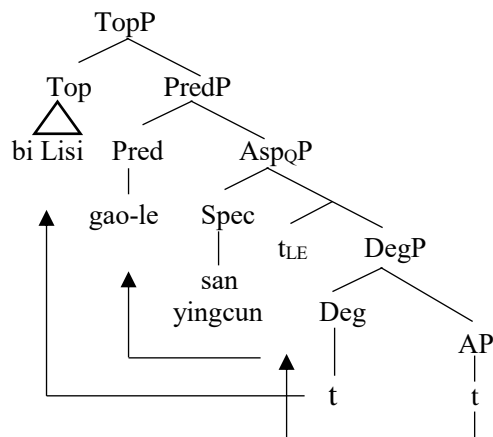
phrase (DegP) above the adjective phrase (AP)(Grano 2012, Niu 2015, Paul 2015, etc).

Such a DegP can accommodate degree adverbs such as *hen* (very), with part of the

structure shown in (38a, b)[21].

(38) a. Zhangsan hen   gao.

Zhangsan very tall.

Zhangsan is very tall.

b.

```
           PredP
          /    \
      Spec      \
       |      Pred    DegP
   Zhangsan        /    \
               Spec      \
                |      Deg    AP
               hen      Ø     gao
```

But in a comparative construction as (37a) or (37b), there is an extra quantity

phrase measuring the degree of the adjective. This quantity phrase, as in the case of the

eventive situations, is headed by the verbal particle *le*. The DPs *san yingcun* (three inches)

and *liang hao* (two size), which specifies the quantity, are merged as the specifier of the

quantity phrase. In eventive telic structures, this position is taken by the direct argument

which measures the predicate. The adjective then undergoes a V-to-v type movement,

taking the verbal *le* along to a higher position.

(39) a.

```
           TopP
          /    \
       Top      PredP
       /\       /    \
    bi Lisi  Pred    Asp_QP
           gao-le   /    \
                 Spec      \
                  |      t_LE   DegP
                 san           /    \
               yingcun      Deg      AP
                             |        |
                             t        t
```

---

b.

```
                    PredP
                   /    \
               Pred      Asp_QP
                |       /    \
              da-le   Spec    \
                       |    t_LE   DegP
                      san        /    \
                    yingcun    Deg     AP
                                |       |
                                Ø       t
```
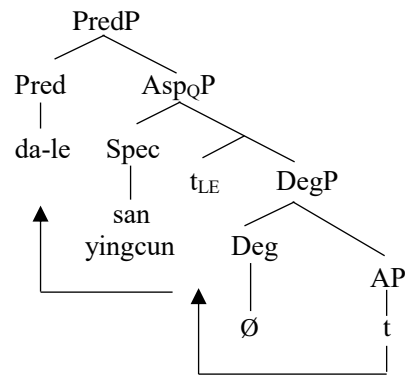
I assume the phrase which behaves as the comparison standard (*bi Lisi* in 37a) raises to a higher topic position for discourse reasons which I won't discuss in details here. The derivation if (37a) is shown in (39a). On the other hand, since the comparison degree is not specified, there is no topicalization of the DegP, as is shown in (39b).

Although statives are not usually associated with the notion of quantity, the situations described in (37a, b) are definitely quantity by Borer's definition. If the state that Zhangsan is three inches taller than Lisi is added to the same situation, the result will be Zhangsan is *six* inches taller than Lisi, which is no longer the same with either of the situations. Apart from that, part of the situation, e.g. Zhangsan is two inches taller than Lisi, is definitely a different situation, too. This means the situation in (37a) is neither cumulative nor divisive, and is thus a quantity situation. The same test also applies to (37b). The analysis corresponds to the degree achievements discussed in Hay et al (1999), which relies crucially on the interaction of linguistic material, the scalar structure of the base adjectives, and extralinguistic knowledge to derive the (a)telicity of a degree achievements as a function of the boundedness of the difference value. In other words, telicity as a notion can be applied to the boundedness of abstract domains.

Note that a sentence such as (40a) has a different structure, because although the six-feet is a specific number, it is the degree itself, instead of the quantity of the degree.
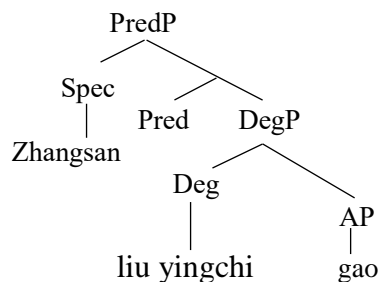
The quantity of the degree is not specified in (40a), so there is no quantity phrase here, as shown in (40b).

(40) a. Zhangsan liu yingchi gao.

　　　 Zhangsan six feet 　 tall.

　　　 Zhangsan is six feet tall.

　 b.

```
              PredP
             /    \
         Spec      \
          |      Pred   DegP
      Zhangsan      /    \
                  Deg      \
                   |        AP
                   |        |
             liu yingchi   gao
```

Also note that the verbal *le* in the comparative structure is optional, as shown in (41a, b). There is very little difference in interpretation whether the particle *le* is present or not.

(41) a. Zhangsan (bi 　 Lisi) gao (le) 　 san 　 yingcun.

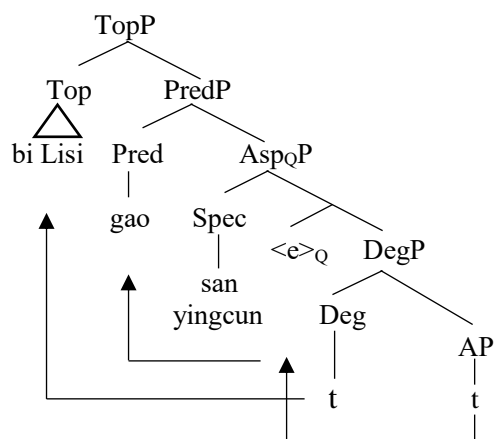　　　 Zhangsan 　than Lisi 　tall 　LE 　three inch.

　　　 Zhangsan is three inches taller (than Lisi).

　 b. Chenyi da 　 (le) 　 liang-hao.

　　 Shirt 　 large LE 　two-size.

　　 The shirt is two-size larger.

　 c.

```
              TopP
             /    \
          Top      PredP
          /\      /    \
      bi Lisi  Pred     AspQP
                |       /    \
               gao   Spec     \
                      |      <e>Q   DegP
                     san            /   \
                   yingcun        Deg    \
                                   |      AP
                                   |      |
                                   t      t
```

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I assume this is because the measuring phrase can take over the job of the verbal particle and assign range to the open value $<e>_Q$ at the head of Asp_QP, as shown in (41c).This is the same with the telic cases we discuss above. So there seems to be perfect parallel between quantity eventive (telic) and quantity stative (comparative) cases in Mandarin.

3.1.4 The resultative predicate

Last but not least, from a pure syntactic view there is another important empirical reason to reject the feature checking approach to the structure of *le*, in which the particle *le* is analyzed as an inflected form of the verb. Specifically, verbal *le* does not always immediately follow the verb. In Mandarin, resultative predicates have priority over *le* for the post-verbal position, as we can see in (42a, b).

(42) a. Zhangsan shua-bai   le   yi-mian qiang.

        Zhangsan brush-white LE one-CL wall.

        Zhangsan painted a wall white.

    b.*Zhangsan shua le   bai   yi-mian qiang.

      Zhangsan brush LE white one-CL wall.

      Intended reading: the same as (42a).

(42a) shows that the resultative phrase *bai* (white) must stay close to the verb *shua* (brush), and *le* follows it. Sybesma (1999) suggests this is because it has been incorporated into the verb through head-movement, as shown in (43).

(43) [$_{VP}$ shua-[bai]$_i$ [t$_i$ [$_{DP}$ yi-mian qiang]]]

This suggests that *le* is not combined with the verb in the lexicon level—it cannot be a perfective inflection of the verb, but has a separate position of its own on the syntax level, although probably not the AspP above vP.

This does not pose a problem for the structure proposed in this thesis, since *le*
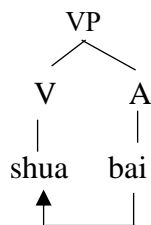
does not come together with the verb from the lexicon. But I will still assume the incorporation analysis in Sybesma (1999), as it captures the adjacency requirement of the verb and resultative predicate in Mandarin. The separation of the verb and the particle *le* leaves room for the incorporation of resultative phrase into the verb. Note that in the analysis of this thesis, telicity depends on the existence of AspQP and has nothing to do with whether there is a "resultative state", so the object originates as [Spec, AspQ] with no direct link with the result-denoting adjective. The incorporated form on the whole then moves to v. Moreover, this analysis still allows the left adjunction of adverbial phrase to vP, ensuring the right word order at PF. For example, the structure of (44a) is illustrated in (44c), with (44b) showing the incorporation procedure.

(44) a. Zhangsan feikuai-de shua-bai   le yi-mian qiang.
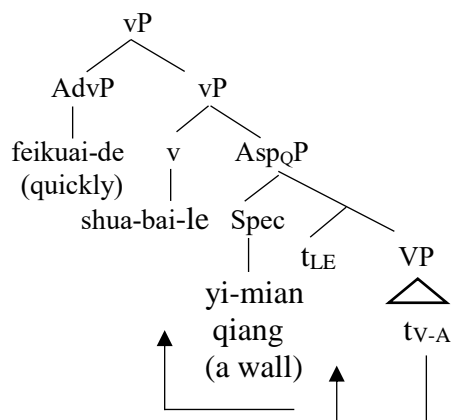
Zhangsan quick-DE brush-white LE one-CL wall.

Zhangsan quickly painted a wall white.

b.

VP
V   A
shua   bai

c.

vP
AdvP   vP
feikuai-de   v   AspQP
(quickly) |
shua-bai-le   Spec
tLE   VP
yi-mian
qiang   tV-A
(a wall)

3.2 Verbal *le* as a resultative predicate

The requirement that resultative predicates must stay close to the verb in Mandarin inspires Sybesma to put forward another approach to the syntax of le, that is, verbal *le* is used to signal the final stage of an activity, which is the only type of event a simple verb can denote in Mandarin. This is the analysis I will discuss in this section.

3.2.1 The resultative telic *le*

According to the approach outlined in Sybesma (1997 1999), Chinese verbal *le* is a resultative predicate. In his hypothesis, *le* is generated below matrix verb level. Given a strict binary branching, there are not many syntactic positions available for the accommodation of *le* at this level. In view of the fact that *le* is not nominal-related in nature and that a verb can be followed by both *le* and an object argument, the only option is to claim that *le* is a predicate, and hence the basic proposal that *le* is a resultative predicate. Therefore, the verbal *le* ends up in the matrix verb level because the verb and the resultative phrase are required to be adjacent, as we have seen already. Under this view, a sentence such as (45a) is derived from a structure like (45b).

(45) a. ta mai *le*   ta-de   zhu.

he sell LE he-DE pig.

He sold his pig(s).

b. ta mai [[ta-de   zhu] [le]]

he sell   he-DE pig   LE.

In Sybesma's analysis, [[ta-de zhu] [le]] forms a small clause in which *le* is the head and [ta-de zhu] (his pigs) is taken as its subject. This small clause is the complement of the matrix verb *mai* (sell). So *le* has exactly the same syntactic status as *si* (dead) in (46) except that it is more deeply embedded ([nong [si [[ta-de zhu][le]]]]).

(46) ta nong si   *le* ta-de zhu.

he make dead LE he-DE pig.

He killed his pig(s).

This view has some obvious advantages over the perfective marker analysis we discussed in the previous section. Since *le* here is argued to be an overt representation of the final state of an event, it indicates the existence of a stage that is different from the rest of the event. In other words, the event cannot be homogenous. Given that non-homogenous events are always quantity events according to the definition adopted in this thesis, this view is in line with the observation that verbal *le* only occurs in telic situations, which the perfective marker analysis fails to capture. Specifically, it can be argued that an event such as *playing the piano* simply does not have a resultative state so it is natural that it doesn't go with a resultative predicate *le*.

Furthermore, verbal *le* as a resultative predicate is not directly related to the perfective viewpoint above predicate domain, so it won't face the problem of the non-perfective use of verbal *le* as the perfective theory does.

There are further consequences to this claim. Because only activities have the unique properties of being dynamic and having an open range to be marked by results, situations that can be followed by a result denoting clause are supposed to be restricted to activities. Therefore, Sybesma (1997) further argues that Chinese has no inherent telic predicates, which means that in Chinese all predicate verbs, except states, denote activities. They only become telic when taking a resultative small clause as complement. This view is supported by Tai (1984) and Huang (2006), who claim that in Chinese only verbs with resultative particles can describe accomplishments, while the accomplishment readings with single verbs are pragmatic effects that can be cancelled. Their claims are mainly based on the following examples.

(47) a. Wo zuotian   hua le   yi-zhang hua,   keshi mei huawan

    I   yesterday paint LE one-CL   picture, but   NEG paint-finish

I painted a picture yesterday but didn't finish it

b. Zhangsan xie   le   yi-feng xin,   keshi meiyou xiewan

Zhangsan write LE one-CL letter but   NEG   write-finish.

Zhangsan wrote a letter but didn't finish it.

Sybesma (1999) adopts Tai's conclusion that Chinese has no inherently telic predicates because all accomplishments (and, arguably, achievements) in Chinese are analysable as activity-result compounds. This leaves activities as the only verb classes that exist in Chinese. *Le* is thus compatible with any verb if it is a resultative predicate. However, Sybesma rejects data in (47a, b). He notes that only in case of a mass NP do we have the possibility of a termination, a "freeze" reading, as in (48).

(48) a. wo xie le   xin,   keshi mei-you   xie-wan.

I wrote LE letter but   NEG-YOU write-finish.

I was letter-writing, but I did not finish.

b. wo chi le   yu, keshi mei-you   chi-wan.

I   eat LE fish but   NEG-YOU eat-finish.

I was eating fish, but I did not finish.

Sybesma claims that in the context of an unbounded object, *le* forces an arbitrary limit or boundary onto the unbounded mass the object refers to: the extent to which the matrix action is performed on the object concerns only part of the mass. Because the mass is not literally finished, *le* is not interpreted as completive in unbounded contexts; instead, it gives the impression that the act is stopped in the middle.

Note that examples such as (47a, b) and (48a, b), if valid, are counter-examples to my proposal that *le* is a quantity marker, since they suggest that *le* can actually occur in atelic (homogenous) situations.

There are, however, some problems for this view. First, examples like (47a, b), although frequently quoted in literature, are rejected by many native speakers, as in fact

mentioned in an endnote in Sybesma (1997). The degree of acceptability also seems to vary greatly according to the predicate used in the sentence (as discussed in Soh & Gao 2007, Yang 2011, etc):

(49) *Zhangsan sha *le* yi-ge ren keshi na-ge ren mei si.

Zhangsan kill LE one-CL person but that-CL person NEG die

Zhangsan killed a man, but that man didn't die.

(49) is bad to almost all native speakers consulted. It involves no resultative particle like *si* (dead) after the verb but is still ungrammatical, which is unexpected under the assumption that the implication of result can be cancelled. It becomes much better if we add *liangci* (twice) to the sentence, which makes it the original example given in Tai (1984), as shown in (50).

(50) Zhangsan sha *le* Lisi liangci keshi Lisi mei si

Zhangsan kill LE Lisi two-CL but Lisi NEG die

Zhangsan killed Lisi twice, but Lisi didn't die.

Compared with (49), (50) sounds much better. But in such a case, the interpretation is no longer as it means to be. First, the reading can be affected by *liangci* (twice), which possibly triggers a context in which a man can be resurrected or can die more than once. In this non-reality context, the meaning of *die* contributed by the extra clause is different from the result of killing, thus there is no contradiction in it. Moreover, even if we do not seek coercion in non-reality context, the phrase *liangci* (twice) already indicates that the event is non-homogenous as the *killing* are counted as two events, which directly makes it a quantity situation. In other words, the interpretation of the verb *sha* (kill) in the legitimate reading is "try to kill" and the accurate translation is actually "Zhangsan made two attempts to kill Lisi, but neither of them were successful", which no longer describes an activity but an accomplishment, as the action is completed as long as Zhangsan made the attempts. Therefore, this sentence does not count as an example

that Chinese predicates other than states are always activities.

The example in (47a) suffers from similar problems. Even with the same verb *xie* (write), the sentence will be excluded if the argument is modified by a larger numeral phrase, such as the *ba-bai zi* (eight-hundred words/characters), as shown in (51), where we can get no logical meaning from a phrase like "wrote eight hundred words but didn't finish them".

(51)*Zhangsan xie *le* ba bai zi, keshi meiyou xiewan

Zhangsan write LE eight hundred word but NEG write-finish.

Intended: Zhangsan wrote eight-hundred words but didn't finish them.

Therefore, it seems the acceptability of such examples is subject to complicated semantic or pragmatic factors concerning the minimal number of *one*, which I will not discuss in detail in this thesis.

Another serious problem here is that, even if we accept the judgements of (47a, b), these examples actually go against Sybesma's proposal that *le* is a resultative predicate, instead of supporting it, as Sybesma assumes.

Both (47a) and (47b) includes the verbal *le*, so if the particle is a resultative predicate as Sybesma proposes, the events are expected to be telic with *le*, in which case the situations will be in conflict with the second clause, as the latter explicitly suggests the situations are unfinished.

It should be noted that Sybesma (1999) also changes his attitude towards the data such as (47a, b), saying "we are not sure whether we are dealing with semantics or pragmatics". But the new examples he gave in (48a, b) are not echoed by my informants, either.

The third problem with Sybesma (1997) is that he claims *le* as a resultative morpheme "has exactly the same distribution and function as the predicate of a result denoting small clause", like *si* (dead) in (46). The only difference is that *le* does not

"specify the resulting state". But actually, this is not true, because a small clause headed by *si* can be used in progressive aspect marked by *zai*, as in (52a), while a predicate marked by *le* will be ruled out under such a viewpoint, as in (52b).

(52) a. Zhangsan zai   sha si   ta-de   zhu.

Zhangsan ZAI kill dead he-DE pig.

Zhangsan is killing his pig(s).

b*Zhangsan zai   sha *le*   ta-de   zhu.

Zhangsan ZAI kill LE he-DE pig.

Intended reading: the same as (48a).

This is not surprising because as we have seen before, *le* does have something to do with perfective aspect, though not in all circumstances. But the resultative predicate approach to the event structure of *le* fails to capture this important fact. This suggests that *le* is different from a head of small clause.
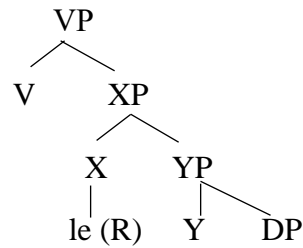
3.2.2 The subcategorization approach

Sybesma (1999) also notices the problems mentioned above, so he argues that there are in fact two different verbal *le*'s—the End point *le* and the Realization *le*. End point *le* is the predicate of a resultative small clause on a par with resultative predicates like *si* (dead) in (45). It predicates of an NP and the small clause and makes the event denoted by the matrix verb telic. Whereas End point *le* may in this sense be a telic marker, only with the help of Realization *le* can we have a sentence explicitly convey that the end point was reached.
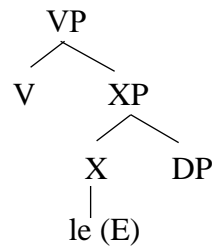
The structures for these two kinds of *le* are shown in (53a, b), in which both XP and YP are small clauses. In this structure, the verb is complemented by XP, the head of which is Realization *le*, meaning "realized". The head X is complemented by another small clause YP. In cases there is no Realization *le*, there is only one small clause for

which the End point *le* is the head, as in (53b). The difference between Realization *le* and End point *le* is that the former predicates of a small clause while the latter predicates of a DP.

(53) a.

```
          VP
         /  \
        V    XP
            /  \
           X    YP
           |   /  \
        le (R)  Y   DP
```

b.

```
          VP
         /  \
        V    XP
            /  \
           X    DP
           |
         le (E)
```
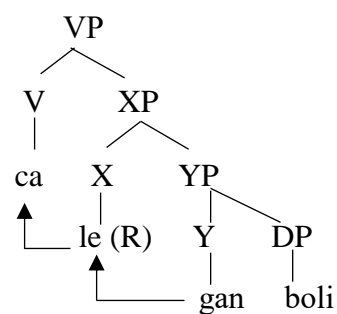
According to Sybemsa (1999), the *le* in (54a) should be a Realization *le*. But in order to derive the right surface order we need to stipulate that in the lexicon it is somehow determined and recorded that *le* has to come last. So the derivation involves raising of the head of the YP to incorporate into the head that immediately dominates it, namely Realization *le*, and the cluster Y-le moves on to incorporate into the V. The operation is shown in (54b).

(54) a. Zhangsan ca   gan le boli.

Zhangsan wipe dry LE glass.

Zhangsan wiped the glass dry.

b.

```
              VP
             /  \
            V    XP
            |   /  \
           ca  X    YP
               |   /  \
            le (R)  Y   DP
                    |    |
                   gan  boli
```

Besides this, there is one other difference: End point *le* is lexically selective in that it only occurs with certain kinds of verb, while Realization *le* goes with any predicate. Sybesma thinks this is the reason why (55a) is acceptable but (55b) is not, as the *le* in them is the End point *le*. Therefore, as the structure for (55a), (55c) only shows the raising of the particle *le* itself.

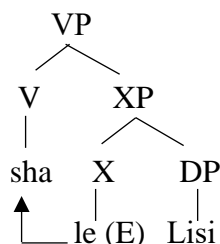(55) a. Zhangsan yao sha le   Lisi.

  Zhangsan will kill LE Lisi.

  Zhangsan will kill Lisi.

 b.*Zhangsan yao xie   le   yi-feng xin.

  Zhangsan will write LE one-CL letter.

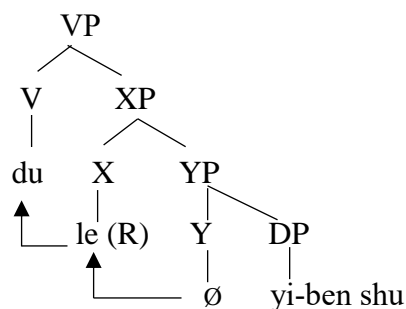 Intended reading: Zhangsan will write a letter

 c.

But the distinction of two versions of verbal *le* leads to a further problem: it would be predicted that the Realization *le* can occur even without the support of the End point *le*. Since theoretically the Realization *le* is assumed to select a small clause and empirically verbal *le* (whether Realization or End point) never occurs in atelic situations, there must also be a resultative predicate that heads YP in a sentence like (56a). Sybesma (1999) thus assumes the head of YP here is a phonologically empty predicate, extending a prototypical meaning of "finished", as shown in (56b).

(56) a. Zhangsan du   le   yi-ben   shu.

  Zhangsan read LE one-CL book.

  Zhangsan read a book.

b.

```
              VP
            /    \
           V      XP
           |     /  \
          du    X    YP
          ↑     |   /  \
          └── le (R)  Y   DP
               ↑      |    |
               └───── ø   yi-ben shu
```
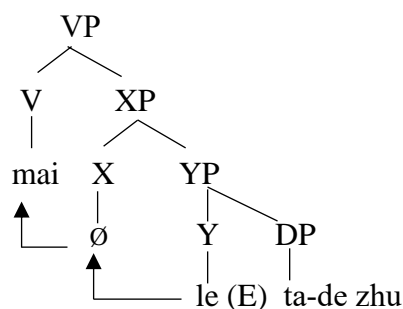
Another prediction is that with a verb that is capable of being selected by the End point *le*, we will expect the two kinds of verbal *le* occur in the same sentence, which is a case we never find in Mandarin. Sybesma (1999) suggests that the reason is purely phonological: Mandarin does not allow two stressless or toneless non-bound morphemes in a string (see Chao 1968). Therefore, the structure for (57a) should be (57b).

(57) a. Zhangsan mai le   ta-de   zhu.

     Zhangsan sell LE he-DE pig.

     Zhangsan sold his pig(s).

b.

```
              VP
            /    \
           V      XP
           |     /  \
         mai    X    YP
          ↑     |   /  \
          └──   ø  Y    DP
                ↑  |     |
                └── le (E)  ta-de zhu
```

So far, the analysis Sybesma offers based on the assumption that the verbal *le* is a resultative predicate has come very close to the proposal in this thesis. The Realization *le* can be seen as the perfective marking function carried out within the predicate domain, while the End point *le* has a function that is equivalent to range assignment to $<e>_Q$, which is in charge of telicity in the proposed analysis of mine. The difference is that I assume there is only one verbal *le* which carries two functions, while Sybesma assumes the two functions come from two different verbal *le*'s.

However, I still think mine is the better solution, at least the simpler solution. The main argument is that I cannot see any reason to propose an extra structure like (57b) in addition to (57b), given the Realization *le* always selects a small clause headed by a resultative predicate. To be specific, we can assume the *le* in (57a) is Realization *le* and the head of YP is phonologically empty but functionally valid. The result will be the same: it still expresses the meaning that there is an end point in the event and that point is realized.

I suppose the motivation that drives Sybesma to propose (57b) is the contrast between (55a) and (55b), which seems to a result of a certain selection of the verb type. However, as we have noted in the context of the *le3* proposal, the restriction is not really on the verb. Furthermore, the use of verbal *le* in non-perfective situations is not restricted to the case with deontic modals. The comparative is another structure which is non-perfective but allows the use of verbal le, as is repeated in (58).

(58) Zhangsan bi Lisi   gao le san   yingcun.

　　　Zhangsan than Lisi tall LE three inch.

　　　Zhangsan is three inches taller than Lisi.

The situation described in (58) is purely stative, which means it does not include an endpoint, or the realization of any endpoint. Neither Realization *le* nor Endpoint *le* is supposed to occur, so the subcategorization approach does not provide any account in this case.

There is one more serious problem that concerns the subcategorization analysis of verbal *le*: it does not solve the original question raised in (52), which is repeated here as (59).

(59) a. Zhangsan zai   sha si   ta-de zhu.

　　　Zhangsan ZAI kill dead he-DE pig.

　　　Zhangsan is killing his pig(s).

b*Zhangsan zai   sha *le* ta-de   zhu.

Zhangsan   ZAI kill LE he-DE pig.

Intended reading: the same as (59a).

(59) describes an event under imperfective (progressive) viewpoint, so it is expected the Realization *le* is not allowed here, as it indicates the final stage is reached. However, if we follow the structure in (55c) and analyze the *le* here as End point *le*, (59b) should not be ungrammatical, which is obviously a wrong prediction—(59b) is out in any circumstances.

Moreover, the verbal *le* and a real resultative predicate also behave differently in the imperfective habitual context, as shown in (60a, b).

(60) a. Nongyao sha-si   zacao.

Chemical kill-dead weed.

The chemicals kill the weeds.

b. Nongyao sha-si   le   zacao.

Chemical kill-dead LE weed.

The chemicals killed the weeds.

(60a) with a resultative predicate *si* (dead) and no *le* only extends a general statement that the chemicals kill the weeds. But (60b) with a verbal *le* can only be interpreted as a specific event under a perfective viewpoint. Therefore, we know analyzing verbal *le* as a resultative predicate, even with the subcategorization of Realization *le* and End point *le*, is not the right solution.

On the other hand, as we have discussed, merging the function of perfectivity and quantity marking in one *le* is able to deal with the problem, as the former is only a secondary function of *le*. In the exo-skeletal analysis proposed, the perfective aspect is contributed by the open value $<e>_{PFV}$, so we won't necessarily get realization reading in Sybesma's sense even if a verbal *le* shows up. Examples with both deontic modals and *le*

are grammatical only because the imperfective/unrealized interpretation is a result of inference rather than a grammatical information.

Meanwhile, the main proposal made in the previous chapter is that the verbal *le* is a quantity marker. It yields a telic interpretation when used in eventive situations but is not necessarily telic by itself. This allows this verbal particle to occur in other types of situations and yield different kinds of quantity reading, such as in the comparative structure. This assumption can account for the compatibility of *le* with non-perfective situations, which is hard to explain with Sybesma's subcategorization analysis as both types of in in his proposal can only occur in non-stative situations.

3.3 Verbal *le* and tense anchoring

In this section I'm going to talk about some theoretical attempts that try to link the use of verbal particle *le* to the interpretation of tense in Mandarin. As is well-known, Chinese is a language that does not have tense morphology. However, some studies suggest that it may still have inflectional node related to tense (as in Huang 1982, Li 1991 etc.) Some argue it is marked overtly (syntactically) (as in Sybesma 2007, Tsai 2008), while others propose the temporal reference is located covertly (inferably from semantics) (as in Lin 2003 2006 2010). Verbal *le*, despite its function of providing a certain perspective in event interpretation, is sometimes viewed as one of the various approaches to tense expression in this tense-less language. In the following discussion, I examine the proposal that verbal *le* is used for temporal anchoring and the problems it brings to light. This section is show that the problems which trigger the proposal of *le*'s function of tense anchoring can all have an explanation in the proposal of this thesis.

3.3.1 Binding the event variable

As is mentioned in Chapter 1, the Incompleteness issue has recently attracted great attention to the notion of tense anchoring. To recap, the issue concerns some native speakers' intuition that sentences which are aspectually inflected are sometimes still "incomplete" when used out of context, as in (61).

(61) a.??Akiu na   shu.

　　　　Akiu take book.

　　　　Intended reading: Akiu took books

　　b.??Akiu na-le   shu.

　　　　Akiu take-LE book

　　　　Intended reading: Akiu took books.

Following Parsons (1990) and Huang (2006), Tsai (2008) assumes that there is an event variable in eventive situations. Such an event variable must be bound, and tense morphology is a common approach used to bind the event variable.[22] When there is no overt tense morphology available, the aspectual markers can take over the job, which is a special case of syntax-semantics mapping Tsai terms as tense anchoring. In this sense, Tsai proposes that the Incompleteness effects in question is a result from a failure to implement tense anchoring in the syntactic structure.
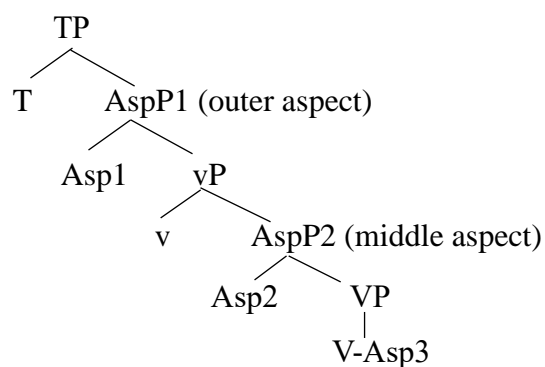
In Tsai's proposal, the event variable can be bound in two ways without tense morphology: the first one depends on Asp-to-T raising, and the second one makes use of V-to-v raising in locative-existential constructions.

Structurally, Tsai adopts a three-layered analysis of aspectual projections, following Tenny (2000), Shu (2003), and Liao (2004), which is shown in (62).

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[22] Tsai is not very clear about where the event variable is in the syntactic structure, so I will assume this variable is right above the predicate domain (vP).

(62)

```
                        TP
                      /    \
                    T       AspP1 (outer aspect)
                           /     \
                        Asp1      vP
                                 /   \
                                v     AspP2 (middle aspect)
                                     /      \
                                  Asp2       VP
                                              |
                                           V-Asp3
```

The idea is that only the head of the outer aspect (Asp1 in (62)), but not the middle aspect (Asp2) or the inner aspect (Asp3), is able to raise to T to become an operator that binds the event variable.

Tsai argues that Asp1 in (62) accommodates particles such as the progressive marker *zai* and the experiential marker *guo*, whereas possible fillers for Asp2 includes the durative marker *zhe* and the verbal *le*. This straightforwardly explains why verbal *le* alone cannot license the sentence in (61b), while the progressive *zai* is capable of doing so in (63): as an outer aspect, *zai* is free to undergo Asp-to-T raising, but a middle aspect such as the verbal *le* can never reach T for tense anchoring.

(63) Akiu zai ku.

Akiu ZAI cry

Akiu is crying.

As (62) shows, Tsai puts *le* in a position extremely similar to that of the proposed analysis in this thesis, which is, between vP and VP. Although Tsai does not discuss what functions Asp2 carries out in the syntax, it is clear enough that the particle *le* is disconnected from the viewpoint aspect, which is represented by Asp1 in this structure. But this leads to the first problem. The distinction of Asp1 and Asp2 suggests that they are independent of each other, which predicts that particles occupying these positions can co-occur in the same sentence. However, as we have seen in the previous analysis, the empirical data does not support this prediction: the verbal *le*, which is supposed to be at

Asp2, never shows up together with aspectual markers on Asp2, such as *zai* and *guo*. This problem can only be solved if we assume there is some selection relation between the two aspect nodes, but that implies the Asp2 does have some connection with Asp1, which is essentially the same with the proposal in this thesis.

Furthermore, Tsai points out that the theory predicts that with an aspect marker which is unable to anchor the tense by itself, such as *le*, the sentence can still be grammatical when the event variable is "modified or predicated upon", as in (64a-c).[23]

(64) a. Akiu xiawu   na le shu.

       Akiu afternoon take LE book.

       Akiu took books this afternoon.

   b. Akiu na   le san-ben shu.

       Akiu take LE three-CL book

       Akiu took three books.

   c. Akiu na   le shu le.

       Akiu take LE book LE.

       (As for now,) Akiu has taken the book.

(Tsai 2008:677-678)

This, however, causes more problems. Tsai argues that once a temporal adverbial like *xiawu* (afternoon) is added, the sentence will be grammatical, as in (63a). But this judgement is not echoed by any of my informants. To the native speakers consulted, (64a) is not an improvement over (61b), which undermines the assumption that the Incompleteness puzzle results from the failure of tense anchoring.

Apart from that, it is not easy to see how the event variable is "modified" in (64b), which is supposed to be the reason for its grammaticality in Tsai's assumption. The quantity classifier phrase *san-ben* is a modifier of the noun *shu* (book). These elements

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[23] Tsai (2008) assumes that the event variable can also be licensed through subordination and coordination, which I will not discuss in this thesis.

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are all under the object DP node, but the event variable is generally supposed to be higher than DP. In order to allow the quantity phrase to modify the event variable, we have to assume the object DP has the ability to scope higher and "quantify" over the whole event. If we take the term "modify" here to be synonymous of "bind", then it seems Tsai is claiming that a quantity object can bind the event variable, but a non-quantity object cannot. This claim is already very close to my proposal that quantity objects can behave as range assigners to the open value for quantity $<e>_Q$. However, without introducing the definition of quantity event, it is still hard to explain why we cannot have a complete equivalent of "John played the piano" with verbal *le* in Mandarin, as the object in this case is also "modified" (quantity) in Tsai's sense.

Finally, Tsai proposes that the sentential particle *le* provides another strategy to resolve the incompleteness, as in (64c). Although the judgement is confirmed by most informants, he fails to note that the bare noun object *shu* (book) is also restricted to a definite reading in this case. I will argue later in this thesis that this is because the sentential *le* here triggers a reading in which the event of *na shu* (taking book) is established as contextually given. The book in this reading is thus also interpreted as definite (namely, the book(s) to be taken), and definiteness is often associated with quantity, as we have discussed before. In other words, the sentential *le* in this case is only an indirect reason for the grammaticality—it forces the event into a telic interpretation, which is required by the verbal *le*.

3.3.2 Locative Existential Construction

As is mentioned in the previous section, Tsai claims tense anchoring can be implemented by binding the event variable through V-to-v raising in locative-existential constructions. In this section, I will re-examine the data with locative-existential constructions and check

if it can also have a proper explanation in my proposed framework.

Levin & Rappaport (1989) proposes that Mandarin Chinese is a language that has surface unaccusativity, which means the argument assuming an affected role can remain in the object position in some constructions extending existential meaning. That is the Locative Existential Construction (LEC), as is shown in (65a, b). These examples correspond to a large extent to the English cases in (66a, b).

(65) a. gongchang li si le yi-ge ren.

   Factory   in die LE one-CL person.

   A person died in the factory.

 b. jianyu li pao le liang-ge qiufan.

   Prison in run LE two-CL prisoner.

   Two prisoner escaped/ran away from the prison.

(66) a. At the station arrived three trains.

 b. Down the stairs came a dog.

Huang (1991) and Li (1991) separately proposes that this construction can be used diagnostically to distinguish unaccusative verbs from unergative verbs in Chinese, as they believe only the former are legitimate in this case. But Yang (1999) challenges this view by saying that typical unergative verbs like *you* (swim) and *pa* (crawl) are also found in this structure, as in (67a) and (67b).

(67) a. He   li you   zhe yi-tiao yu.

   River in swim ZHE one-CL fish.

   A fish is/was swimming in the river.

 b. Chuang xia   pa   zhe   yi-tiao she.

   Bed   under crawl ZHE one-CL snake.

   A snake is/was crawling under the bed.

I argue here that the proposal from Huang and Li is correct, that is, LEC can be

used to test the structure for unergativity and unaccusativity. It is only that the aspectual marker also plays an important role in this case: unaccusatives only appear with aspectual marker *le* and are incompatible with imperfective aspectual marker *zhe* as in (68a, b), while unergatives behave the opposite: they can only occur with *zhe* in this construction, as in (69a, b).

(68) a. Gongchang (li) si le/*zhe yi-ge ren.

　　　Factory (in) die LE/*ZHE one-CL person.

　b. Jia li lai le/*zhe ji-ge keren.

　　Home in come LE/*ZHE several-CL guest.

(69) a. He li you zhe/*le yi-tiao yu.

　　River in swim ZHE/*LE one-CL fish.

　b. Chuang xia pa zhe/*le yi-tiao she.

　　Bed under crawl ZHE/*LE one-CL snake.

Under the assumption of my analysis, this is due to the function of *le* as a quantity marker. Without further support, unergatives can only have a homogenous interpretation in the LEC, so they are incompatible with verbal *le* here. (70) becomes an irregular case under this generalization because verbs like *zuo* (sit) appear to be compatible with both *le* and *zhe*. I argue that such verbs are variable behavior verbs. With verbal *le* it expresses a perfective telic event of *sitting beside the window*, from which we can get an inference of a continuous state after the action, namely the position of the person remains unchanged after the action of sitting. With imperfective *zhe*, on the other hand, we get the reading that the activity of sitting persists till the speech time. These verbs are even ambiguous in English under the time adverbial test in (70b).

(70) a. chuang bian zuo le/zhe yi-ge ren.

　　　Window side sit LE/ZHE one-CL person.

　　　A person is/was sitting beside the window.

b. John sat beside the window in/for ten minutes.

Tsai (2008) has noticed that LEC can work with aspectual particles to avoid the Incompleteness effects. In a nutshell, aspectual markers that are not able to license a sentence by themselves acquire such an ability in LEC, as *zhe* in (71).

(71) Qiang-shang gua-zhe   yi-fu   hua

Wall-on   hang-ZHE one-CL painting

On the wall hangs a painting.

Tsai argues the LEC is another way to bind the event variable derivationally, which is obligatory in Mandarin. In his analysis, the LEC is derived by raising the verb to an implicit existential light verb, as in (72).

(72) qiang-shang [$_{vP}$ [EXT]–[gua-zhe] [$_{VP}$ t yi-fu   hua]]

Wall-on   hang-ZHE   one-CL picture

But how do we know there is an implicit existential light verb? Tsai argues we can find support from the fact that (71) can be paraphrased as (73), where the existential modal *you* is clearly visible. It may well be the case that the auxiliary, implicit or not, helps to bind the event variable by serving as an existential operator of some sort.

(73) Qiang-shang you yi-fu   hua   gua-zhe.

Wall-on   have one-CL painting hang-ZHE.

One the wall hangs a painting.

However, there is no direct evidence that can prove (73) and (71) have the same structure, even though they have similar readings. In fact, in the case of verbal le, we cannot construct a sentence like (73), since as we have seen before, *le* and *you* never co-occur in the same sentence. This is shown in (74), which suggests (71) may not come from a structure like (73).

(74)*Qiang-shang you yi-fu   hua   gua le.

Wall-on　　have one-CL painting hang LE.

Here I propose that the existential power comes from the locative phrase instead of an invisible light verb. Note that in the LEC the verb can take a bare NP as its object, which is not available in the default SVO word order unless the context allows us to interpret the object as definite. This is shown in (75a, b).

(75) a.?Zhangsan chi le pingguo.

Zhangsan eat LE apple.

Zhangsan ate the apple(s). /*Zhangsan ate apples.

b. gongchang li　si　le　ren.

Factory　　in　die LE person.

There died some people in the factory.

I argue (75b) is grammatical with a bare NP object because the NP is existentially bound by the locative phrase. Since I propose *le* is a quantity marker, we would expect (75b) to be a telic event with a bare noun object. Deriving a telic interpretation without a quantity DP may not be surprising, especially with achievement type of events. Mittwoch (1991) gives examples as (76)

(76) a. The prospectors pumped oil on Saturday and on Sunday.

b. The prospectors struck oil on Saturday and on Sunday.

In (76a) what serves as the object is the bare noun *oil*, which is homogeneous according to our definition. (76a) thus expresses a typical atelic event which has a reading that the pumping went on uninterruptedly throughout the weekend. However, (76b) can only be interpreted iteratively, which means there is an independent striking event on each of the days. This suggests that (76b) actually has a telic interpretation. Mittwoch (1991) claims that this is an achievement example, and achievement verbs yield telic sentences regardless of the properties of the object NP. Other examples like this are listed in (77a-c)

(77) a. The bulldozer hit bedrock on Saturday and on Sunday.

b. Mary noticed ink on her sleeve on Saturday and on Sunday.

c. John spotted wildfowl on Saturday and on Sunday.

Borer (2005b, 2010) observes similar cases in Hebrew, as in (78a, b). Different from atelic events, which can have a simultaneous reading when conjuncted, (78a, b) can only be interpreted sequentially, i.e. the former event happened earlier in time than the latter. This suggests they are also telic events although they don't have a quantity DP as object.

(78) a. Rina gilta   zahab ve-mac'a   matbeyot yeqarim

Rina discovered gold   and-found coins   precious.

Rina discovered gold and (then) found precious coins.

b. Rina mac'a matbeyot yeqarim ve-gilta   zahab.

Rina found coins   precious and-discovered gold.

Rina found precious coins and (then) discovered gold.

But a more similar paradigm to Mandarin is found in Catalan. Torrego (1989) reported that normally in Catalan, weak (indefinite, non-quantity) post-verbal subjects are possible only in unaccusative contexts. However, in the presence of the locative clitic *hi,* weak post-verbal subjects are possible for unergative constructions, as in (79).

(79) Catalan (modified from Terrego 1989: 264-265):

a. Hi   canten molts nens.

There sing   many boys

b. Hi   dormen molts nens.

There sleep   many boys

c. Canten molten nens.

Sang many boys

Many of the boys sang. (Definite reading only)

Based on these observations, Borer (2005b, 2010) proposes that locatives (or locales in her term) have the power to existentially close events. Specifically, the locative licenses the quantity projection head Asp$_Q$, which in turn licenses the weak (non-quantity) argument at it specifier, as in (80).

(80) [AspQP   [Spec DP$_{weak}$] ∃$_{LOC}$ <e>$_Q$ [VP   ]]
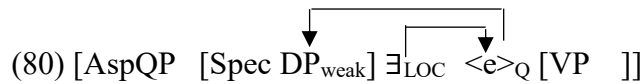
In the case of Mandarin, we have the specific particle *le* to assign range to the open value in Asp$_Q$ and give rise to telic interpretation. This means actually we do not need a quantity DP to derive telicity. The quantity DP is required in some cases because we need a quantifiable reading that is compatible with *le*. But such a quantifiable reading may come from other approaches, like the existential quantification by certain phrases. Therefore, we do not need to assume that the locative phrase in Mandarin LEC binds the open value in Asp$_Q$ as in (80). Instead, I assume the locative phrase is merged higher than vP and existentially binds the post-verbal subject directly. A quantity classifier is not obligatory for the DP as it can get a quantity interpretation through the existential quantification by the locative. Syntactically, a sentence like (81a) under this analysis has a structure in (81b).

(81) a. gongchang li   si   le   ren.

    Factory   in die LE person.

    There died some people in the factory.

    b.
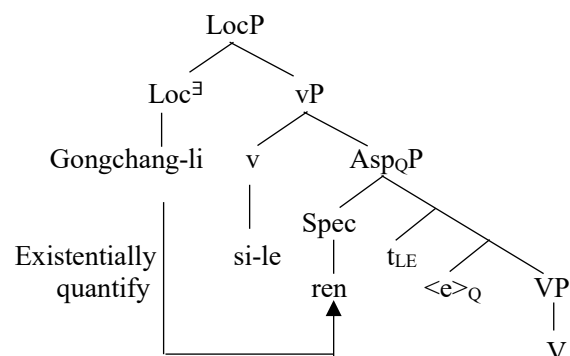
In the unergative cases, however, although the locative phrase can also bind the post-verbal subject, such a bound reading of the event is not available. The verbal *le*, if occurs, can still assign range to $<e>_Q$, which calls for a quantity interpretation of the event that cannot be provided by an unergative structure with a existentially bound subject. In this situation, we need extra information from the context which can help us get a telic interpretation, if we want it to occur with verbal *le*.

3.3.3 Covert tense anchoring

Lin (2003 2006 2010) offers another approach to the puzzle of Incompleteness, appealing to the notion of covert tense anchoring. He argues that there is no TP in the syntax of Mandarin, and there is no need to resort to a tense node in order to interpret time in this tenseless language. We can make use of time adverbials, specific particles, and pragmatic implication to express the temporal information, as in (82a, b) and (83a, b).

(82) a. Zhangsan zuotian   qu ni   jia.

   Zhangsan yesterday go you house

   Zhangsan went to your house yesterday.

b. Ta da-puo   yi-ge   huaping.

   He hit-break one-CL vase

   He broke a flower vase.

(83) a. Ta hen   congming.

   He very clever

   He is very clever.

b. Wo xiangxin ni.

    I believe you.

    I believe you.

According to Lin, the past tense reading in (82a) comes from the time adverbial *zuotian* (yesterday), but even without it, (82b) is also interpreted as a past event. Lin argues this is because the resultative predicate in (82b) calls for a perfective viewpoint. As a comparison, the imperfective situations in (83a) and (83b) both have a present tense reading. Based on these observations, Lin argues that in Mandarin, present tense can be expressed covertly with imperfective aspect while covert past tense relies on perfective aspect. In other words, if tense anchoring is defined as the approach with which tense is expressed in a tenseless language, such an approach, as Lin argues, should be a covert mechanism, rather than the syntactic solutions as Tsai proposes.

However, neither (82a) nor (82b) are acceptable to my informants. (82a) is purely ungrammatical. The addition of the time adverbial does not render the sentence more acceptable. (82b), on the other hand, can only be interpreted in a context with frequency phrases such as *mei-tian* (every-day), which results in a habitual reading as "Zhangsan breaks a vase everyday". This indicates that the generalization about covert past tense may not be accurate. But the following claim about verbal *le* in Lin's work is more relevant to the proposal in this thesis.

Lin proposes that aspectual markers such as the particle *le* in Mandarin play the same role as tense morphology in a tense language. He also argues against the idea that verbal *le* is directly related to perfective aspect, based on the examples in (84a, b).

(84) a. Ta yang le   yi-zhi   gou

　　　He raise LE one-CL dog.

　　　He is raising a dog. (He keeps a dog as pet)

　　b. Wo (zai Boston) zu   le   yi-jian gongyu.

　　　I   (in Boston) rent LE one-CL flat.

　　　I am renting/have rented a flat in Boston.

According to Lin, the syntactic constructions of (84a, b) are not different from typical verbal *le* cases, but they do not describe completed or terminated events but denote continuous situations. Although these sentences are not progressive sentences with the progressive maker *zai*, they are translated as such to indicate that the event has begun before the speech time and is still on going. In this sense, the temporal interpretation of sentences with a verbal *le* is sensitive to the aktionsart of VP. When the VP is a telic predicate, the event denoted is interpreted as a past event. When the VP is atelic, the sentence obtains a present continuative interpretation.

Lin therefore follows Liu (1988) and treats verbal *le* as a "realization aspect" instead of perfective marker. To be specific, a telic event is realized when it is under a perfective viewpoint whereas an atelic event only requires an imperfective viewpoint to be realized. In other words, a telic event with *le* extends the meaning that the situation has come to an end, but an atelic predicate with *le* only says the event has begun, which means, it is realized as long as there is a subpart of it that holds.

However, this definition of realization cannot explain why we do not have verbal *le* in general atelic situations, such as "Zhansgan played the piano" or "Zhangsan ate apples". Lin (2003) himself notes this problem. He realizes that not every atelic predicate is compatible with the verbal *le*. In fact, many activity predicates are incompatible with *le*. This empirical fact is clearly exemplified in the contrast between (85a) and (85b).

(85) a.*Zhangsan kan   le yi-zhi   niao.

Zhangsan watch LE one-CL bird

Intended reading: Zhangsan is watching a bird. /Zhangsan watched a bird.

b. Zhangsan kan   le   yi-bu   dianying.

Zhangsan watch LE one-CL film.

Zhangsan watched a film.

Lin admits that he has no idea what property distinguishes those atelic sentences which are compatible with *le* and those which are not, and he sets the problem aside without providing a solution. On the other hand, this contrast serves as the departure point for the proposal in this thesis. Analysing *le* as a quantity marker can provide a straightforward account for this issue. It is also clear that the atelic situations that are incompatible with *le* are much more wide-spread than those which take *le*, if there are any. So contrary to Lin's analysis, I believe verbal *le* does not go with atelic interpretations in general, and the examples in (84a, b) are exceptions that need an explanation under the current framework.

Here I resort to a pragmatic solution. I argue that such examples as (84a, b) still denote a telic event under a perfective viewpoint, and the imperfective (continuous) reading is just an inference with common world knowledge. My proposal is based on three empirical arguments which Lin fails to notice in his work.

First, although (84a, b) are translated as progressive sentences, putting them in progressive aspect with the marker *zai* leads to different interpretations, as in (86a, b).

(86) a.?Zhangsan zai   yang yi-zhi   gou.

　　　Zhangsan ZAI raise one-CL dog.

　　　Zhangsan is raising a dog.

　　b.?Zhangsan zai   zu   yi-jian gongyu.

　　　Zhangsan ZAI rent one-CL flat.

　　　Zhangsan is renting a flat.

(86a) and (86b) are only marginally acceptable according to the informants, which suggests the semantics of *yang* (raise) and *zu* (rent) plays an important role here. But what is more important is the change in interpretation. (86a), if grammatical, is a pure statement of fact that Zhangsan is in the process of raising a dog. It has lost the associated reading that Zhangsan keeps a dog as pet, which is the very reason that Lin views (84a) as an

imperfective event. This is also the case with (86b), which means Zhangsan is undergoing the renting procedure (e.g. having a viewing, signing the contract, etc.), instead of "Zhangsan lives in a flat he rented". But again, it is the latter reading that characterize (84b) as imperfective.

Second, (84a) and (84b) are actually ambiguous between a continuous activity and a terminated accomplishment. That is to say, (84a) either means Zhangsan keeps the dog as pet, or Zhangsan adopted a dog (begins to raise a dog). Similarly, (84b) either means Zhangsan lives in a rented flat or Zhangsan finished the procedure of renting. In each case, the imperfective reading describes a state that is very likely to result from the event under the perfective one. When the object is a definite NP, such a structure, even with the same verb, can only express a perfective telic reading, as in (87a, b). [24]

(87) a. Zhangsan yang le   na-zhi   gou.

Zhangsan raise LE that-CL dog.

Zhangsan adopted that dog.

b. Zhangsan zu   le   na-jian gongyu.

Zhangsan rent LE   that-CL flat.

Zhangsan rented that flat.

Third, it seems this use of *le* invariably yields quantity interpretations, as the structure becomes less acceptable with bare noun objects, as in (88a, b).

(88) a.??Ta yang le   gou

He raise LE dog.

Intended reading: He is raising dogs. (He keeps dogs as pet)

b.??Wo (zai Boston) zu   le   gongyu.

I   (in Boston)   rent LE flat.

Intended reading: I am renting/have rented flats in Boston.

---

[24] I will not discuss the reason why the reading is strongly eventive when the object is definite.

Based on these observations, I propose cases such as (88a, b) are not grammatically imperfective. The continuous readings associated with them are implications resulting from the culmination of the event. To be specific, to be in the ownership of a dog does not necessarily mean the event denoted by the verb *yang* (raise) is still on going, but rather expresses a resultative state after the event of adopting is completed. It is the implied ownership state that lasts in an imperfective viewpoint. In the same sense, to be in the rental contract of a flat does not entail the event of renting is not finished, but an after-effect of the completion of renting. Therefore, we do not have to change the assumption that verbal *le* is functionally quantity and perfective.

An argument in support of this view is that the *le* in (84a, b) are obligatory, which is not expected with an imperfective situation. Without the verbal particle, the sentences becomes rather unacceptable, as in (89a, b).

(89) a.??Ta yang yi-zhi gou.

　　　He raise one-CL dog.

　　b.??Wo (zai Boston) zu yi-jian gongyu.

　　　I (in Boston) rent one-CL flat.

Again, (89a, b) can be rendered grammatical if we add a frequency phrase and give them a repetitive reading. But in that case the verbal *le* is not allowed to occur, as in (90a, b).

(90) a. Ta mei-nian yang (*le) yi-zhi gou.

　　　He every-year raise LE one-CL dog.

　　　He raises a dog every year.

　　b. Wo mei-nian (zai Boston) zu (*le) yi-jian gongyu.

　　　I every-year (in Boston) rent LE one-CL flat.

　　　I rent a flat every year in Boston.

This shows that the so-called continuous events behave differently from the

comparative-stative cases (where *le* is optional) but is in line with the perfective-telic cases. Therefore, I conclude that both Tsai's overt tense anchoring and Lin's covert tense anchoring is problematic. But most of the problems can be solved if *le* is endowed with both functions of quantity and perfectivity marking as proposed in this thesis.

3.4 Summary of chapter

In this chapter I have reviewed some previous studies of verbal *le*, in which the particle is analysed separately as a perfective marker, as a resultative predicate, and as a marker that is relevant to tense anchoring. The discussion focuses on whether their arguments, if valid, can also be captured by the proposal in this thesis, and whether there is any data that goes against their analysis, but complies with mine.

We have seen that the perfective view cannot explain the restriction of *le* in atelic situations, which is the departure point of my proposal that *le* is a quantity marker—quantity in eventive situations is often (but not always) interpreted as telicity. This also explains why intransitives with *le* are always unaccusatives in Mandarin. But more importantly, the proposal provide an account for the occurrence of verbal *le* in non-perfective situations, such as the cases with deontic modals and comparative adjectives. The solution I provided is that *le* is primarily a quantity marker, and quantity is in principle compatible with any kind of situations. The perfectivity marking function of *le* is a side-effect, which won't be activated when there is no (im)perfectivity phrase. This is exactly the case with the sentences with a deontic modal: they are in fact non-perfective instead of imperfective. In the case of comparatives, I assume there is always a degree phrase above the adjective, and the use of *le* specifies the quantity of the degree.

Analysing *le* as a resultative predicate, however, is close to the dual-function analysis proposed in the thesis, except that the two functions are carried out by two

different le's in the former. But it fails to account for the fact that the verbal *le* has a different distributional pattern from resultative predicates: the verbal le, even if it is assumed to be the one which does not express the realization of the endpoint, does not occur in imperfective (progressive and habitual) aspects. Moreover, this subcategorization approach is only applicable to eventive situations, but cannot account for the *le* in stative situations, as is mentioned in the discussion of the perfective view.

Finally, the tense anchoring system, whether overt or covert, is based on data which meets strong disputes. The use of bare noun objects (post-verbal subjects) in Locative Existential Construction does not falsify the claim that *le* is a quantity marker, since I proposes that the locative phrase can existentially bind the bare noun NP, which is also reported in other languages. Meanwhile, the claim that verbal *le* is used in imperfective-continuous aspect is also problematic, since there is evidence showing that these cases are not really imperfective, but are perfective-telic instead. The continuous interpretation probably results from the discourse inference that the result state of the predicate still holds.

This chapter shows that analysing *le* as primarily quantity and secondarily perfective can provide new solutions to the old problems raised in the previous analyses.

4. Time Duration Phrase with *Le*

In this chapter, I will examine some less discussed configurations in the use of verbal *le* with time duration phrases. Such configurations exhibit some restrictions and patterns which are generally not thought to come from the use of *le*. But I will argue that some of the properties of the constructions can be directly predicted by the assumption here that verbal *le* is primarily a quantity marker. Others may not have a straightforward explanation, but still get appropriate accounts within the proposed framework. In sum, this discussion intends to show that the analysis of *le* in this thesis has the potential to deal with a broad range of constructions involving this verbal particle.

As is discussed in Chapter 2, time phrases can be used to distinguish telic and atelic structures. But compared with its English counterpart, the time duration phrase seems to have a different syntactic status in Mandarin. In this chapter, I'm going to discuss the potential positions these phrases can occupy in the structure and how this is related to the function of verbal *le*. But first, I want to be clear on what I mean by time duration phrases.

There are two types of time phrases—the time frame phrase and the time duration phrase. A time frame phrase indicates a specified period of time in which a situation occurs or is about to occur. Although a time frame phrase also expresses an interval of time, the event time of the situation under question only targets a certain temporal point within this range, as in (1a). On the other hand, a time duration (or time span) phrase is the range of time a specific event or state lasts. The event time must cover the whole period of time interval, but the event itself does not necessarily terminate by the end of this time span, as in (1b). In the following, I will focus on the second type of time phrase, that is, time duration phrase and its syntactic configuration with the particle verbal *le* in Mandarin Chinese.

(1) a. John ate three apples in ten minutes.

    b. John ate apples for ten minutes.

As we have seen in 2.2.5, different time phrases show different patterns in telic and atelic event structures. Let me briefly summarize the puzzle first. The time frame phrase (as *in x time* in English) is compatible with telic constructions but not with atelic constructions, while the time duration phrase (as *for x time* in English) behaves exactly the opposite. This is shown in examples (2) and (3).

(2) a. John ate up three apples in ten minutes

    b. *John ate up three apples for ten minutes.

(3) a.*John ate apples in ten minutes.

    b. John ate apples for ten minutes.

However, only the time-frame phrase in Mandarin, *x nei*, literally *within x time*, shows a similar pattern with its English counterpart, which means the combination of a telic structure and a time frame phrase will produce a plausible interpretation, but this does not apply to atelic events, as shown in (4a, b).

(4) a. Zhangsan shi fenzhong nei   chi *le* san-ge   pingguo.

    Zhangsan ten minute   within eat LE three-CL apple.

    Zhangsan ate three apples in ten minutes.

  b.??Zhangsan shi fenzhong nei   chi le pingguo.

    Zhangsan ten minute   within eat LE apple.

    Intended reading: Zhangsan ate apples in ten minutes.

On the other hand, the time duration phrase only goes with "intransitive" verbs such as in (5a), but is unable to follow a transitive predicate structure with an overt object, even if it denotes an atelic event, as in (5b).

(5) a. Zhangsan pao *le* shi fenzhong.

    Zhangsan run LE ten minutes.

Zhangsan ran for ten minutes.

b.*Zhangsan chi (le)   pingguo shi fenzhong.

Zhangsan eat (LE) apple   ten minutes.

Intended reading: Zhangsan ate apples for ten minutes.

To capture the contrast in (5a, b) as well as other related issues, Huang (1982) proposes that the time duration phrase in Mandarin may not be an adverbial adjunct in terms of syntactic status as in English, but rather a complement of the verb. In other words, (5a) is actually a transitive structure under this proposal, instead of an intransitive one. This is in line with the claim made in Chao (1968) that the phrase specifying the time duration of the action in a verb phrase is actually the object of the verb. Chao thus calls it "time object". Both Chao and Huang assume the object and the time duration phrase compete for the same position in syntax, so the verb in Mandarin can only take either a direct object or a time duration phrase.

In this thesis, I will follow this basic assumption of Chao and Huang and argue that the time duration phrase serves as the object of the verb in Mandarin. However, I assume it is not merged as the complement of the verb, but rather occupies the specifier position of the inner aspect, namely $Asp_Q P$, if put in the framework of this thesis. When there is another object DP that is supposed to be merged at in this position, as in the transitive cases, we need to manipulate the structure in order to make room for this extra time object. This analysis differs from Huang's analysis in that it actually allows the co-occurrence of a DP object and a time duration phrase in a ditransitive-like structure, which we can find real examples in empirical data.[25]

In the following sections, I will discuss three general approaches to express the time duration (TD) of an event in Mandarin: 1) duplication of verb: V+N+V+TD, as in

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[25] In this thesis, I will only deal with the time duration phrase in verbal *le* structures, in which the TD phrase is linearly after the verbal particle le. I will set aside the issue with TD phrases in sentential le structures as discussed in Li (1987).

(6a); 2) modification of object: V+TD-de-N, as in (6b); 3) topicalization of object: DP+V+TD, as in (6c). All of them generally express the meaning as "Zhangsan played the piano for three hours" in English.

(6) a. Zhangsan tan gangqin tan le san-ge   xiaoshi.

Zhangsan play piano   play LE three-CL hour.

Zhangsan played the piano for three hours.

b. Zhangsan tan le san-ge   xiaoshi (de) gangqin.

Zhangsan play LE three-CL hour   (DE) piano.

Literally: Zhangsan played three hours of piano.

c. Zhangsan gangqin tan le san-ge   xiaoshi.

Zhangsan piano   play LE three-CL hour.
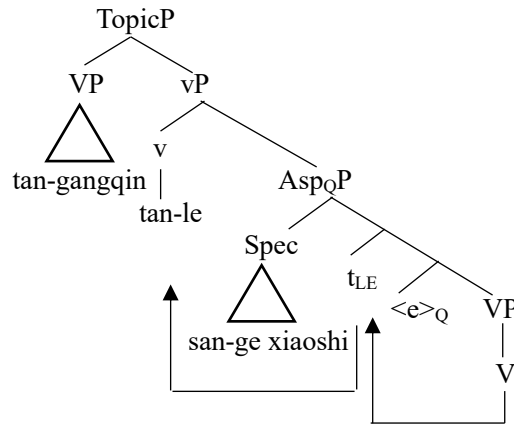
As for the piano, Zhangsan played it for three hours.

In (6a), the matrix verb *tan* (play) is repeated, with each instance respectively followed by the object *gangqin* (piano) and the time phrase *san-ge xiaoshi* (three hours). This phenomenon of reduplicating a verb is also referred to as verb-copying (as in Chang 1991). In the case of (6b), there is only one verb in the sentence, but the object and the time phrase are linked with the particle *de* (的) and constitute the same phrase, although sometimes the particle *de* is not overt. Finally, in (6c), the object *gangqin* (piano) is preposed to a topic position in front of the verb while the time phrase remains behind the verb. In the following, I will show how these three different configurations are derived given the proposed structure of *le*.

4.1 Verb duplication

For the verb duplication case as in (6a), I argue the first VP (*tan gangqin*) is a base-

generated topic[26]. It is only semantically linked to the predicate via aboutness relation. Only the TD phrase occupies the specifier of the AspQP, which is responsible for quantity. The structure for (6a) is (7a), while its semantic representation is given in (7b), which, in natural language, says "there is a quantity event about piano-playing. It has the property of *play* with *Zhangsan* as its originator and *three hours* as the measurement."
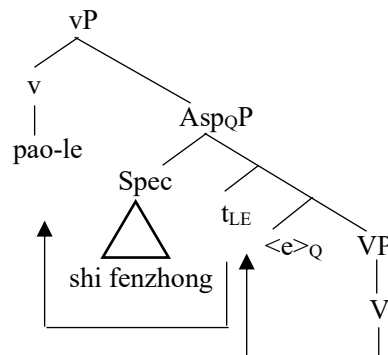
(7) a.

```
                    TopicP
                   /      \
                 VP        vP
                 △        /  \
           tan-gangqin   v    AspQP
                      tan-le  /    \
                           Spec     \
                           △      tLE  \
                      san-ge xiaoshi  <e>Q  VP
                                            |
                                            V
```

b. ∃e [Quantity(e) ∧ About(play-piano, e) ∧ Originator(Zhangsan, e) ∧ Measurement (three hours, e) ∧ PLAY (e)]

On the other hand, in a predicate which takes no more argument besides the subject and TD phrase as in (5a), we do not need to make use of the mechanism of verb-copying, so there is no TopicP that takes an extra VP. Its syntax and semantics are very similar to those of a typical transitive VP structure, which is shown in (8a) and (8b).

(8) a.

```
                vP
               /  \
              v    AspQP
              |   /    \
           pao-le Spec   \
                  △    tLE  \
              shi fenzhong  <e>Q  VP
                                   |
                                   V
```

b. ∃e [Quantity(e) ∧ Originator(Zhangsan, e) ∧ Measurement (ten-minutes, e) ∧ RUN (e)]

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[26] I won't be specific about the inner structure of the topic VP here, since the judgements vary greatly on whether the noun in the VP can be modified or not. So throughout the thesis, I assume the VP is an inseparable phrase.

In both (7b) and (8b), it is the TD phrase that merges as measurement phrase and the event is measured by the TD phrase in the interpretation. This is in line with the claim in Chang (1991) that the pragmatic function of the verb duplication is to mark an action or event by emphasizing and highlighting the quantity of the action or event. A structure as (8a) is similar to that of "John ran a mile" in English (as well as in Mandarin), except that (8a) measures the event of running with time, while the latter measured it with space.

There are several restrictions in applying the mechanism of verb duplication in Mandarin, which can be viewed as evidence in support of the analysis above. First, the relative order of these two objects are basically fixed—reversing their positions leads to ungrammaticality of the whole sentence, as in (9a). In addition, the aspectual marker *le* is only realized after the second verb, but never on the first one, as shown in (9b). This suggests that the first VP is not subject to inflection and thus not part of the matrix predicate.

(9) a.*Zhangsan tan   san-ge   xiaoshi tan   le   gangqin.

  Zhangsan play three-CL hour   play LE piano.

 b.*Zhangsan tan   le   gangqin tan   san-ge   xiaoshi.

  Zhangsan play LE piano   play three-CL hour.

Moreover, in a sentence such as (10a) where we have two NPs coordinated within the first VP, the time duration can only apply to both of them together as a whole. This is not simply a scope issue, since a sentence with post-subject topicalization is ambiguous in interpretation, as shown in (10b).

(10) a. Zhangsan tan   gangqin he   jita   tan   le   san-ge   xiaoshi.

  Zhangsan play piano   and guitar play LE three-CL hour.

  Zhangsan played piano and guitar for three hours. (Totally 3 hours)

 b. Zhangsan gangqin he   jita   tan   le   san-ge   xiaoshi.

  Zhangsan piano   and guitar play LE three-CL hour.

Zhangsan play the piano and the guitar for three hours. (3 or 6 hours)

In other words, the coordinated objects in (10a) are not allowed to be interpreted separately with the second VP *tan san-ge diaoshi* (play for three hours), which would yield a reading like "Zhangsan played the piano for three hours and played the guitar for three hours", with the total time of playing amounts to six hours. This shows that the object in the first VP is not directly predicated of by the phrase in the second VP and thus not a direct participant in the event of *playing for three hours*. Rather, (10a) in fact expresses a meaning that Zhangsan played for three hours under the topic of playing piano and guitar.

Next, I will argue that the first VP in topic phrase is base generated there, instead of a result of movement, as is proposed in other languages. In fact, the doubling of the verb or VP is found and discussed in many different languages. For example, Landau (2007) reports that there is a construction in Hebrew that breaks apart a VP by moving only a portion of it. Either V or VP may be fronted, and the fronted verb surfaces in the infinitival form, doubling the lower inflected verb, as in (11a, b).

(11) a. liknot, hi kanta et   ha-praxim.

    to-Buy, she bought ACC the-flowers.

  b. liknot et   ha-praxim, hi kanta.

    to-buy ACC the-flowers, she bought.

    To buy the flowers, she did.   (Hebrew; Landau 2007: 129)

Landau notes that the doubled (and fronted) verb (VP) in Hebrew is used to express a Topic or contrastive Focus, so it occupies a position in a Topic phrase at the left periphery of the clause. Syntactically, Landau proposes that the doubling constructions are derived via Partial VP-fronting, in which the verb is fronted with one argument and strands the other one, if there is any. However, the argument stranded is in fact not part of the syntactic representation at the point when the VP is fronted. Rather, it is late-merged
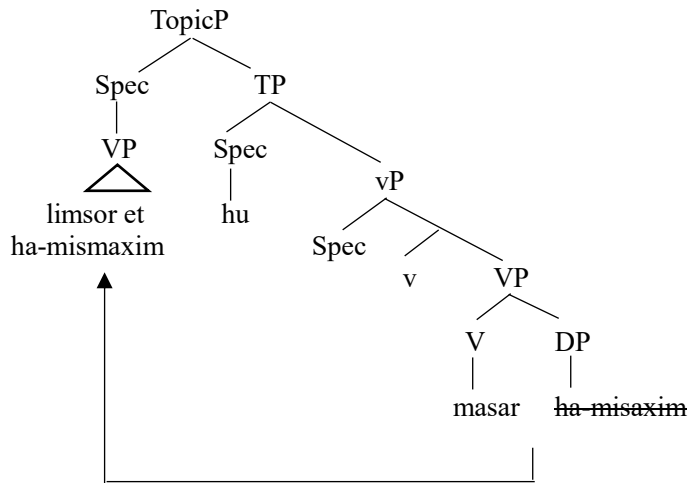
at its surface position as an adjunct after the VP has been fronted. For example, the processes of VP-fronting and late merge for (12a) is shown in (12b) and (12c).

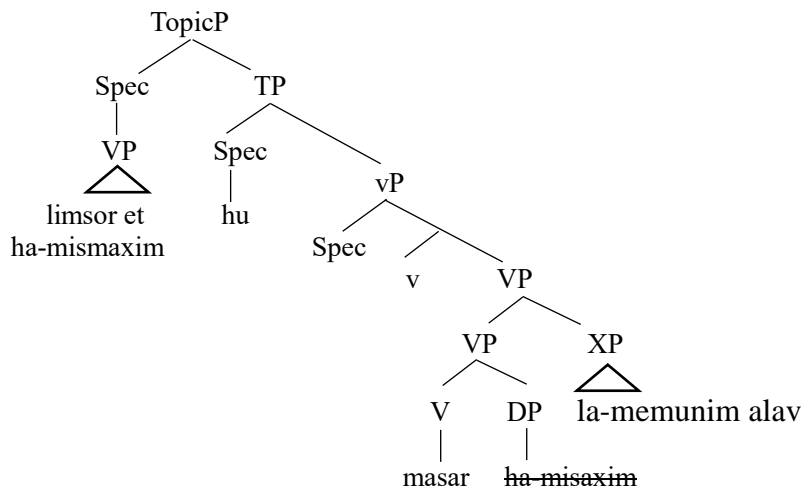(12) a. limsor   et   ha-mismaxim, hu masar la-memunim   alav.

   to-hand ACC the-documents he handed to-the-superiors on-him

   Hand the documents to his superiors, he did.

b. VP-fronting:

c. Late merge:

Note that only the lower copy of the fronted argument is deleted at PF, but the higher and the lower copies of the verb is pronounced, which creates the phenomenon of verb doubling.

Partial VP-fronting is also studied in English, as is discussed in Pesetsky (1995), who notes that the argument fronted with the verb can bind into the VP-material stranded

behind, as is shown in (13).

(13) John intended to give the book to the children, and [VP give the book to themj]

he did [PP on each other'sj birthdays].

However, I argue that the higher VP in Mandarin verb duplication cases is not a result of partial VP-fronting. Different from Hebrew and English, there is no strict binding relation between the verb and object in the two VPs. In fact, even the verb does not have to be exactly the same in the two VPs, as in (14).

(14) Ta qi   ma   shuai shang le bozi,   kai   che zhuang duan le   tui.

He ride horse fall   hurt   LE neck, drive car crash   break LE leg.

He fell and hurt his neck when he rode a horse, and crashed and broke his

leg when driving a car.

Moreover, as is discussed earlier, a resultative predicate such as *bai* (white) in (15a) must be incorporated into the verb in Mandarin. Therefore, in a structure as (15b), it is impossible for the verb *shua* (paint) and the noun *qiang* (wall) to form a VP which can be fronted and strand the resultative adjective *bai* (white) behind. The structure for (15a) is (15c), where the higher VP is a base-generated topic phrase.

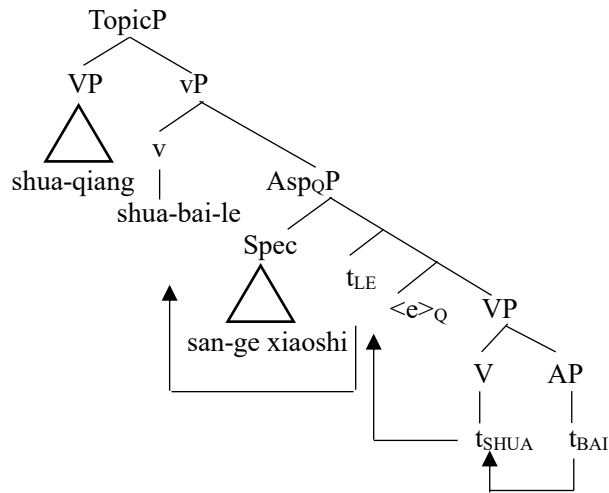(15) a. Zhangsan shua qiang shua bai   le san-ge   xiaoshi.

Zhangsan paint wall   paint white LE three-CL hour.

Zhangsan paint walls white for three hours.

b.*

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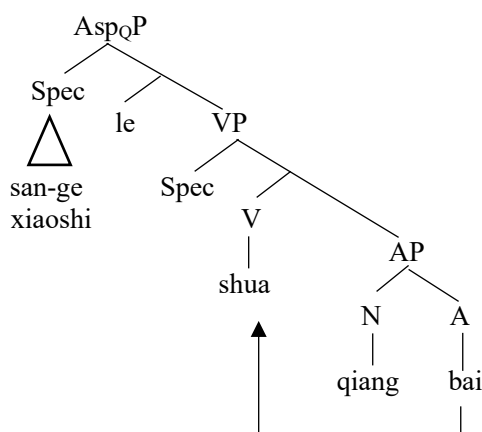
c.

As to the position of the topic verb phrase, I argue it is merged immediately above the predicate domain, which means it is below the adverbial adjuncts and even the goal argument. This claim is based on the observation in (16) and (17). Therefore, I propose part of the hierarchy above vP should be transcribed as the sequence in (18).

(16) a. Zhangsan zai gongyuan tan   tangqin tan le san-ge   xiaoshi.

Zhangsan in park   play piano   play LE three-CL hour.

Zhansgan played the piano for three hours in the park.

b.*Zhangsan tan   tangqin zai gongyuan tan   le   san-ge   xiaoshi.

Zhangsan play piano   in   park   play LE three-CL hour.

Intended reading: the same as (16a).

(17) a. Zhangsan gei Lisi xie   xin   xie   le san-ge   xiaoshi.

Zhangsan to Lisi write letter write LE three-CL hour.

Zhansgan spent three hours in writing a letter/letters to Lisi.

b.??Zhangsan xie   xin   gei Lisi xie   le san-ge   xiaoshi.

Zhangsan write letter to   Lisi write LE three-CL hour.

Intended reading: the same as (17a).

(18) Adverb>Goal>Topic(about)>vP>Asp_Q (LE)>VP

It is easy to see that the verb-copying is used to express time span because it leaves the specifier position of Asp_QP for the TD phrase instead of the bare noun object, so that

the TD phrase behaves as the quantity measurement and measures the event by the time

it lasts, although the TD phrase is in fact not a direct participant in the event.

4.2 Noun modification

Next, I will discuss the mechanism that licenses the time duration phrase without

duplication of the verb, as show in (6b) (repeated here as (19a)). I will argue in (19a),

there is only one object phrase, and the TD phrase *san-ge xiaoshi* (three hours) and the

NP *gangqin* (piano) form a constituent sharing one object position. The basic structure is

given in (19b), and the semantic representation is in (19c).

(19) a. Zhangsan tan le san-ge   xiaoshi (de) gangqin.

Zhangsan play LE three-CL hour   (DE) piano.

Zhangsan played the piano for three hours.

b.
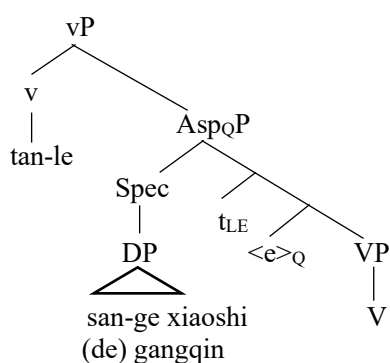
c. ∃e [Quantity(e)∧Originator(Zhangsan, e)∧S-o-q(three-hours-of-piano,

e)∧PLAY (e)]

In (19b), the TD phrase and the NP merge into as a complex DP, which occurs at

the [Spec, Asp$_Q$P] position. This DP as a whole serves as the object of the predicate, so

the structure is no different from that of a typical transitive structure. Semantically it is

also the whole DP that becomes the subject of quantity, so there is no need to create

another object position in order to accommodate the TD phrase.

The claim that the TD phrase is related to telicity in Mandarin has been previously proposed by Lin&Han (2009), who argue that the telicity of event can be expressed through quantification of the predicate by time duration phrases. But due to the optional presence of the linker *de* between the TD phrase and NP, they claim that in an example such as (19a), the time phrase is still an adverb that modifies the verb, even though it is not headed by a preposition as in English. The structure they propose is roughly like (20) (ignoring the position of the verbal particle *le*).

(20)
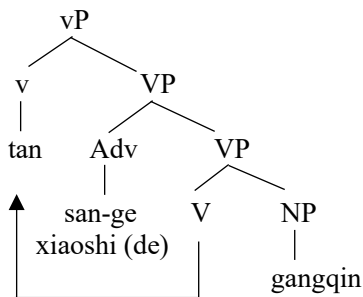
Lin&Han also note that quantification by TD phrases must obey the Adjacency Condition, which requires that the time phrase immediately follow the verb. This accounts for the problem that TD phrase is only allowed to appear in front of the noun phrase, as shown in (21) and (22).

(21) a. kan san-tian (de) xiaoshuo

     read three-day DE novel

  b.*kan xiaoshuo (de) san-tian

     read novel   DE thee-day

(22) a. xue   wu-nian   yingyu

     learn five-year English

  b. xue   yingyu wu-nian

     learn English five-year

On the other hand, English also has the Adjacency Condition, but with an opposite effect. In English the time duration phrase is forbidden to intervene between the verb and

the object noun, as in (23a, b). This should be attributed to the restriction in Case assignment, which requires that the noun must be adjacent to its Case assigner.

(23) a.*read for three days novels

b. read novels for three days

However, we have reasons to believe that the TD phrase is not an adverbial phrase adjoined to the VP. Rather, it forms an inseparable unit with the noun phrase. This is shown in the coordination test in (24a, b). (24a) shows that a real adverbial phrase is not allowed to be left with the noun phrase alone under the coordination ellipsis. But this is not observed with TD phrase in (24b), which suggests that the TD phrase forms one constituent with the NP behind it.

(24) a. Zhangsan feikuai-de guanshang le   chuanghu, (*manman-de men).

Zhangsan quickly   close   LE window   slowly   door.

Zhangsan quickly closed the window, (*and slowly the door).

b. Zhangsan tan   le   san-ge   xiaoshi (de) gangqin, si-ge xiaoshi (de)   jita.

Zhangsan play LE three-CL hour   (DE) piano,   four hour   (DE) guitar.

Zhangsan played the piano for three hours and the guitar for four hours.

Moreover, the fact that this complex phrase can behave as the subject of sentence also indicates that it is a DP, instead of two separate phrases, as shown in (25).

(25) San-ge   xiaoshi (de) gangqin duiyu xiao haizi tai jiu   le.

Three-CL hour   DE piano   to   little child too long LE.

Three hours of piano is too long for a little child.

The next question is what kind of structure is formed by the TD phrase and the noun. To be specific, which is the more important component between the two in the final DP structure. Intuitively, the noun *gangqin* (piano) plays the central role in the DP *san-ge xiaoshi (de) gangqin* (three hours of piano), as it has a straightforward relation with the action *tan* (play), while the time duration three hours is rather optional component and

semantically behaves as a modifier of the event "playing the piano" denoted by the VP. In other words, the piano as an object is "selected" by the verb, but the TD phrase is not. That is why Zhu (1982) refers to the TD phrase as "pseudo object", in contrast to the noun, which is referred to as "real object". Qin (2002) also classifies the phrase *san-ge xiaoshi (de) gangqin* (three hours of piano) as an endocentric structure, with *gangqin* (piano) being the "center".

Chang (1991) claims that syntactically the time phrase *san-fenzhong* in (26a) is similar to a pre-nominal classifier phrase, as *san-ge* in (26b). Therefore, the two examples in (26) should have the same structure, which is shown in (26c).

(26) a. Zhangsan chi le   san-fenzhong (de) pingguo.

　　　　Zhangsan eat LE three-minute　DE apple.
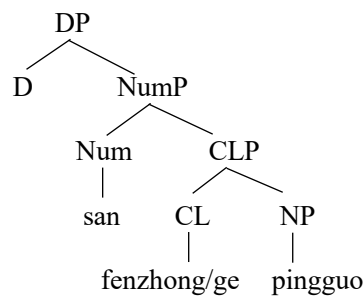
　　　　Zhangsan ate apples for three minutes.

　　b. Zhangsan chi le   san-ge   pingguo.

　　　　Zhangsan eat LE three-CL apple.
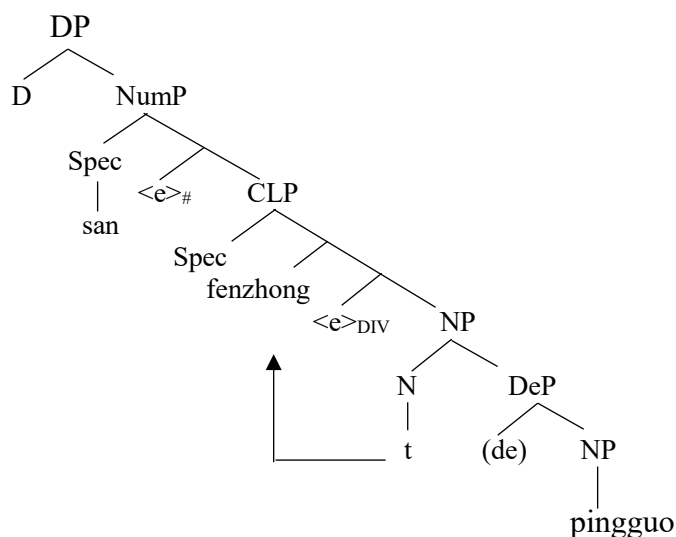
　　　　Zhangsan ate three apples.

　　c.

However, Chang (1991) also notes that there is a syntax-semantic mismatch in the structure of (26c). Semantically, the time duration "three hours" is not an attribute of the noun *pingguo* (apple). Rather, it is a modification of the verb *chi* (eat) or of the event *chi pingguo* (eating apples). On the other hand, the classifier *ge* in *san-ge* is a genuine attribute that divides the noun *apple* into quantifiable units. It is quite unexpected that the TD phrase and the classifier phrase have the same syntactic status. But Chang does not

provide any solution to this problem, but simply attributes it to the essential discrepancy between syntax and semantics.

In order to solve this syntax-semantic mismatch, I'm going to propose a different DP structure from (26c). I argue that the time phrase is the core component in the two linked noun phrases, rather than the second NP. Structurally, the noun *fenzhong* (minute) is the head of NP, which takes a phrase headed by the particle *de* as its complement. The DeP is used to link the other NP *gangqin* (piano). In this sense, it is the noun related to time (*fenzhong*) that serves as the head of the larger complex NP, instead of the noun with a concrete reference (*pingguo*). The complex NP is then modified by the classifier phrase (in which the open value $<e>_{DIV}$ divides the NP into quantifiable potions) and the numeral phrase (in which the open value $<e>_{\#}$ measures out the specific quantity with the information from its specifier), and finally becomes a DP. The structure is shown in (27). In this way, both of the nouns appear in a single DP, which can occupy the [Spec, Asp$_Q$P] position as a subject of quantity.

(27)

```
            DP
           /  \
          D    NumP
              /    \
           Spec     \
            |   <e>#  CLP
           san       /   \
                  Spec     \
                fenzhong    \
                        <e>DIV  NP
                          ↑    /  \
                          |   N    DeP
                          |   |   /   \
                          |___t  (de)  NP
                                        |
                                     pingguo
```

In (27) $<e>_{DIV}$ occurs in pair with an empty head because the noun *fenzhong* (minute) does not require any classifier. I assume this type of nouns can undergo head-movement to $<e>_{DIV}$ and assign range to the latter. In the case of other noun phrases, the position targeted by the movement of *fenzhong* in (27) is usually occupied by an overt

classifier, such as *ge* for *xiaoshi* (hour). It turns out that the higher N in (26) is similar to the massifiers in Borer (2005a), which select mass phrases as their complements but can acquire quantity structure themselves, as *bang* (pound) in (28a) and *xiang* (box) in (28b).

(28) a. san   bang   (de) rou

   three pound DE meat

   three pounds of meat

b. liang xiang (de) shu

   two   box   DE book

   two boxes of books

Borer argues massifiers involve a distinct extended projection line, paralleling English measure phrases, and having the structure in (29), which is in essence the same as (27). The measure phrase is headed by a quasi-functional item that is on a par with the quasi-functional items *box (of books), cup (of flower), cake (of soap)* in English.

(29) [NumP yi [da [NP xiang (de) [FP [NP shu]]]]]

This analysis can give a natural account to the fact that massifiers can be modified directly by adjectives and be linked with another noun phrase by *de*, as shown in (30a) and (31a).

(30) a. yi   da   xiang pingguo.

   one big box   apple

   a big box of apples

b.*yi   da   ge   pingguo

   one big CL apple

(31) a. liang xiang de   pingguo

   two   box   DE apple

   two boxes of apples

b.*liang ge   de   pingguo

two   CL DE apple

This is because the heads of measure phrases are still nominal in nature. Classifiers, on the other hand, are fully functional heads with the main function of assigning a divisional range to the open value $<e>_{DIV}$, the head of the classifier phrase. That is why they neither allows the modification of adjectives nor accommodate phrases linked by *de,* as in (30b) and (31b). This correlates with the fact that heads of measure phrases in English are also compatible with adjective modifiers, and that they can be linked with a NP by *of*, which is a marker of a phrasal nominal boundary.

The structure in (27), together with (20b), generates the intended interpretation without the undesirable mismatch between syntax and semantics in (26c), as the head of TD phrase is primarily a noun, rather than a grammatical feature of another NP. Furthermore, an internal argument in the exo-skeletal framework is severed from the verb. It is not the complement of the verb, but rather the specifier of a higher functional projection. In other words, arguments are not selected by the verb. They are prototypical participants whose role in the event is interpreted based on the context and world knowledge. From this perspective, we do not need to worry that the TD phrase intuitively has no direct interaction with the verb. We are free to go ahead to assume the time phrase is the "real object" between the two. Therefore, it is the TD phrase, instead of the bare noun object, that delimits the event, as in (32a, b).

(32) a.??Zhangsan chi le   san-ge   pingguo, keshi meiyou chi wan.

    Zhangsan eat LE three-CL apple,   but   NEG   eat over.

    Intended reading: ??Zhangsan ate three apples, but didn't ate them up.

    b. Zhangsan chi le   san   fenzhong (de) pingguo, keshi meiyou chi wan.

    Zhangsan eat LE three minute   DE apple,   but   NEG   eat over.

    Zhangsan ate apples for three hours, but didn't eat them up.

In (32a), the DP object *san-ge pingguo* (three apples) is the subject during the

change of VP from a homogenous structure to a quantity structure, so the event comes to an end only when all the three apples are consumed. We do not expect such an end point to be cancelled by the following clause. In the case of (32b), however, the event is measured with the quantity of the time duration, so the event of eating culminates when the time span runs out, no matter there are apples left or not. This is why (32b) is a legitimate expression.

However, Xing (1996) argues against this type of analysis and claims that the TD phrase (as well as the frequency phrases such as *san-ci* (three times)) cannot be the object of the sentence, but that they are predicate complement of the verb. In Xing's proposal, the TD phrase and frequency phrase are different from massifiers in Mandarin in that the latter can form a single constituent with nouns and such a constituent can appear in various positions in the sentence, while the former category is incapable of doing so. This idea is based on the contrast between (33a) and (33b) (adapted from Xing 1996: 196).

(33) a. Zhangsan ba san-xiang (de) pingguo dou chi le.

Zhangsan BA three-box DE apple   all   eat LE.

Zhangsan eat all of the three boxes of apples.

b.*Zhangsan ba san-fenzhong/san-ci   (de) pingguo dou chi le.

Zhangsan BA three-minute/three-time DE apple   all   eat LE.

Intended reading: Zhangsan eat all of the three minutes/times of apples.

Xing argues that in Mandarin most objects can be pre-posed to the preverbal position headed by the particle *ba* (把). In (33a) *san-xiang (de) pingguo* (three boxes of apples) passes this test, but *san-fenzhong/san-ci (de) pingguo* (three minutes/times of apples) in (33b) does not, which, in Xing's analysis, suggests only the former behaves as the object in the sentence.

But in fact the native speakers I consulted provide a different opinion towards (33b). Although some of them confirm that (33b) sounds marginal, they also note that it

can become acceptable under certain circumstances. For example, if we are required to eat apples for three minutes/times and eat bananas for four minutes/times (for whatever reasons) and Zhangsan is a member of our team, we can use (33b) to express the meaning that Zhangsan has finished part of the mission on his own. I argue this is because the particle *ba* demands a given interpretation for the noun phrase behind it, which is why the three boxes of apples are interpreted as definite in (33a). But it is more difficult to conjure up a context in which time duration is a given information. This may be the reason why (33b) sometimes sounds marginal. But given that (33b) is grammatically correct regardless of the pragmatic difficulty, Xing's objection to the object analysis of the TD phrase may be problematic.

Even with the basic assumption that the TD phrase behaves as an object, there are still other analyses proposed in the literature. Note that the core problem we need to solve is that there are two objects competing for a single position. Therefore, apart from the proposed analysis that the two objects fuse into one, there is another possible approach to create an extra object position. Zhu (1982) proposes that the structure in (20a) is actually a ditransitive construction, in which the TD phrase and the noun occupy different object positions, as shown in (34) (although Zhu does not give a tree).

(34)
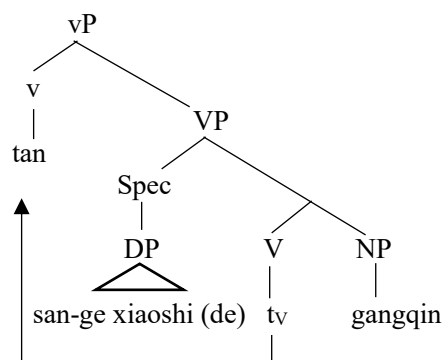
However, even though (34) yields the correct word order, I still think the ditransitive analysis is problematic. Note that the noun in the TD modification structure is always a bare noun. DPs modified by classifiers and proper names are impossible in

this structure, as in (35a, b). But this restriction is not generally found with ditransitive constructions in Mandarin, as exemplified in (35c). In other words, if we assume the ditransitive analysis, we need to stipulate, without a good reason, that the lower object position only takes bare nouns.

(35) a.*Zhangsan tan   le   san-ge   xiaoshi (de) yi/na-jia   gangqin.

Zhangsan play LE three-CL hour   DE one/that-CL piano.

Intended reading: Zhangsan played a/that piano for three hours.

b.*Zhangsan da   le   shi-fenzhong (de) Lisi.

Zhangsan beat LE ten-minute   DE Lisi.

Intended reading: Zhangsan beat Lisi for ten minutes.

c. Zhangsan song le   Lisi yi-jian liwu.

Zhangsan give LE Lisi one-CL gift.

Zhangsan gave Lisi a gift.

On the other hand, it is possible to account for this problem with the fusion analysis proposed in this section. The NP has to be a bare noun because it merges with the head of DeP, which, structurally, is used to link two noun phrases and never takes a full DP. To be specific, I argue the time phrase is essentially similar to the quasi-functional massifiers, which only take mass nominal phrases (Borer 2005a). In Mandarin, only bare nouns can be interpreted as mass NPs, while DPs with classifiers and proper names are all quantity (count) phrases. This is the reason why (35a) and (35b) are ungrammatical.

In fact, the ditransitive analysis proposed by Zhu (1982) is not completely wrong from my perspective. It just has a much more restricted application. As I have mentioned, I don't think a sentence such as (36a) has a pure stative reading. Rather, it is a structure with TD phrase as its object. But as is shown in (36a, b), the legitimate word order is different from the typical TD modification cases, in which the TD phrase always precedes the bare noun. Instead, here the TD phrase *shi-nian* (ten years) has to follow the proper

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name *Lisi*. I propose that although a case with a bare noun as (36c) looks quite close to (36a), they are considerably different in structure.

(36) a. Zhangsan xihuan le   Lisi shi-nian.

Zhangsan love   LE Lisi ten-year.

Zhangsan loved Lisi for ten year.

b.??Zhangsan xihuan le shi-nian (de) Lisi.

Zhangsan love   LE ten-year DE Lisi.

Intended reading: the same as (38a).

c. Zhangsan xihuan le   shi-nian (de) mao.

Zhangsan love   LE ten-year DE cat.

Zhangsan loved cats for ten-years.

I argue that in (36c) the TD phrase and the bare noun has fused into a single constituent, just as the TD modification phrases we have discussed above, while in (36a), the TD phrase and the proper name are both objects in separate positions of a ditransitive construction, as shown in (37a). The structure suggests that the DP Lisi serves as the subject of quantity and the TD phrase is part of the predicate. Therefore, we get the semantic representation in (37b).

(37) a.
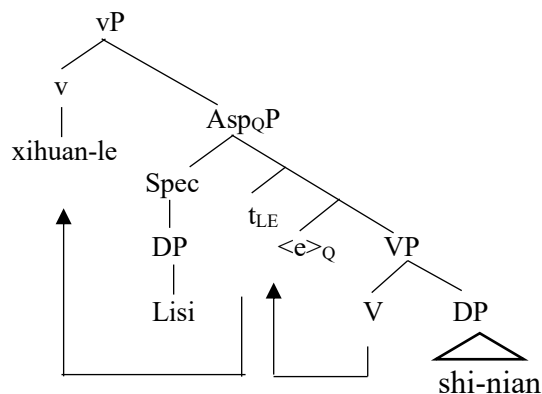
b. ∃e [Quantity(e)∧Originator(Zhangsan, e)∧S-o-q(Lisi, e) ∧ love-for-ten-year (e)]

The positional distinction explains why Lisi in (36a) has specific reference while

the bare noun *mao* (cat) only has a generic reading. Moreover, it is also predicted that the structure in (37) is free to accommodate resultative predicates that semantically target the DP object, as in (38a). But it has to be noted that the TD phrase in this case indicates the length of time that Lisi was unconscious, instead of the lasting time of the action *da* (hitting). Therefore, I propose the structure for (38a) should be like (38b).

(38) a. Zhangsan da-yun　　　　le Lisi shi-fenzhong.

　　　Zhangsan hit-unconcious LE Lisi ten-minute.

　　　Zhangsan knocked Lisi unconscious for ten minutes.

b.
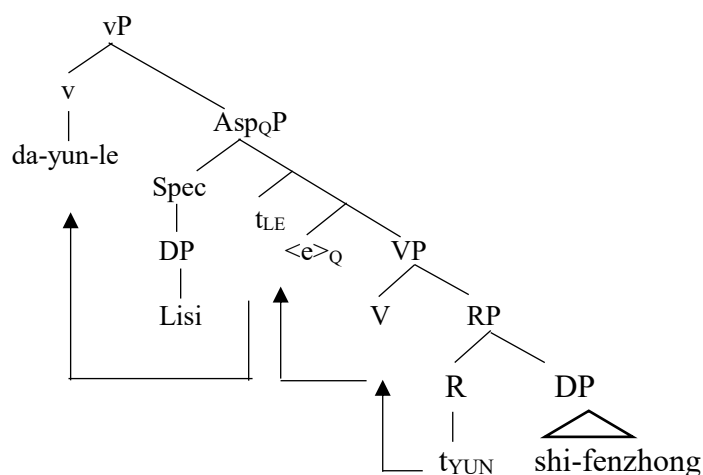
c.　∃e　[Quantity(e)∧Originator(Zhangsan,　e)∧S-o-q(Lisi,　e)∧Hit-unconscious-for-ten-minutes (e)]

In this structure, the resultative phrase (RP) is the complement of the verb and its head, which further takes the TD phrase as its complement, has to raise and incorporate into the verb. In this sense, *da* (hit), *yun* (unconscious) and *shi-fenzhong* (ten minutes) all together constitute the predicate meaning, so the semantic representation is like (38c).[27]

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[27] Ramchand (2008) makes an important distinction between the "undergoer" in the specifier position which are individuated entities that undergo a change or hold a property, and "objects" in complement position (of the verb) which provide the information about the path (consumed and created objects, and other kinds of measures). The TD phrases seem to be like the latter case. From this perspective, there is also a possible account for the issue discussed here: there is only one complement position for such duration phrases. However, since I assume that the phrase which indicates the boundary of the situation is always in [Spec, AspQP], there is obvious deviants from this approach. But the distinction between different "objects" may point to the same direction.

In a nutshell, neither Huang's object analysis nor Zhu's ditransitive analysis are completely wrong, but they only capture part of the picture. See the contrast in (39a-c).

(39) a.??Zhangsan tan le   gangqin.

Zhangsan tan LE piano.

Intended reading: Zhangsan played the piano.

b.??Zhangsan tan   le   gangqin san-ge   xiaoshi.

Zhangsan play LE piano   three-CL hour.

Intended reading: Zhangsan played pianos for three hours.

c. Zhangsan tan   le   na-jia   gangqin san-ge   xiaoshi.

Zhangsan play LE that-CL piano   three-CL hour.

Zhangsan played that piano for three hours.

Huang's theory assumes that the TD phrase and the object occur in the same position, so a verb can take either a TD phrase or a nominal object, but never both. This accounts for the ungrammaticality of (39b). But the theory cannot explain why (39c) is good, especially if we take into account the fact that (39b) is acceptable when the bare noun object *gangqin* (piano) is interpreted as bounded with certain contexts. On the other hand, (39c) can be captured by Zhu's ditransitive analysis, but at the same time we lose the explanation for (39b), since (39b) is supposed to be a possible combination under a ditransitive structure.

The proposed analysis in this thesis follows Huang's claim that the TD phrase behaves as an object, but meanwhile, it also assumes that a nominal object and a TD phrase can both be accommodated in a ditransitive structure. Under this analysis, (39b) is out for a different reason: the verbal *le* is a quantity marker, and it is only compatible with quantity interpretations. In this sense, it is ungrammatical for the same reason as (39a), which is ruled out because *playing the piano*, without contextual support, is not a quantity event. Similarly, playing pianos for three hours is not a quantity event, either, just like

pushing carts to a shop is not telic in English. Therefore, the TD phrase can occur with another object in a ditransitive structure only when the event has a non-homogenous interpretation, which often requires the object to be non-homogenous, too, as in (39c).[28]

Finally, it has to be noted again that the analysis proposed above is for the time duration phrase that interpretationally targets the whole event. In other words, these analyses only cover the occasions where the time phrase expresses how long the event lasts. There are other cases in which the time duration phrase is not directly related to the predicate in question. Sybesma (1999) notes that due to the ambiguous nature of bare NPs in Mandarin (generic or definite), the interpretation of a sentence containing a durational phrase linked with a bare NP by *de* is also ambiguous, as in (40).

(40) wo kan le   liang-ge xiaoshi-de dianying.

I   look LE two-CL hour-DE   film.

I watched film for two hours. OR: I watched the two-hour film.

As Sybesma explains, the first reading is the one relevant to the discussion here: the durative time modifies the event as a whole. In this reading the sentence can be paraphrased as "I did two hours of film-watching". In those two hours I may either have watched several short films, or have just watched a single film (whether I finished it or not). In the second interpretation, the durational expression only modifies the NP, not the event as a whole. In this case, I only watched a specific film which has a length of two hours, and the event can actually take shorter or longer than two hours (if I skipped or

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[28] However, I do not have any explanation why (i) below is bad, since if the TD phrase *shi-nian* (ten-year) occurs as the specifier of the aspect of quantity, the event will have a quantity reading. I tentatively suggest this may be because the nominal object, when it is a quantity DP, can only be merged as the specifier of Asp_Q, but the TD phrase does not have such as restriction.
>   (i)*Zhangsan xihuan le shi-nian Lisi.
>   Zhangsan love   LE ten-year Lisi.
>   Intended reading: Zhangsan loved Lisi for ten years.
This predicts that if the nominal object is a bare noun, we can have the TD-OBJ order, which is attested in (ii).
>   (ii) Zhangsan tan   le san-ge   xiaoshi gangqin.
>   Zhangsan play LE three-CL hour   piano.
However, it is difficult to see whether (ii) comes from a ditrantisive structure or the phonological deletion of *de*. So I will set this problem aside in the thesis. More detailed analysis is left for future work.

paused some time). It is obvious that the analyses proposed here only apply to the first interpretation.

There is indeed a structural difference between the two readings for (40), as we can see in (41). When the duration phrase and the bare NP are not linked by *de*, only the event duration reading is available.

(41) wo kan le   liang-ge xiaoshi dianying.

I   look LE two-CL hour   film.

I watched film(s) for two hours.

I argue that in the second interpretation of (40), the time phrase does not behave as a massifier as in previous cases. Rather, it is indeed a modifier of the NP object. Similar constructions include: *yi-bai-mi de paodao* (one-hundred-meter track), *san-ge yue de liangshi* (three months' food), etc. The particle *de* in these cases is also obligatory.

Since the time phrase in this case indeed denotes some features of the noun, there is no syntax-semantic mismatch if we analyse it as a modifier of the object. I propose the structure for the DP object *liang-ge xiaoshi de dianying* (two-hour film) is (42).

(42)
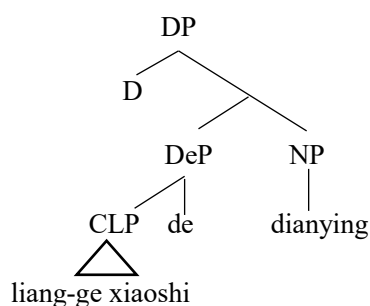
4.3 Phrase topicalization

In this section, I will discuss the last approach that licenses the TD phrase shown in (6), that is, topicalization. The example is repeated in (43a), in which the topicalized noun phrase *gangqin* (piano) occurs between the subject and the verb. But in fact, the traditional

topicalization, which pre-poses the topicalized phrase to the left periphery of the sentence, is also an effective way to accommodate TD phrase. This is shown in (43b).

(43) a. Zhangsan gangqin tan   le   san-ge   xiaoshi.

Zhangsan piano   play LE three-CL hour.

Zhangsan played the piano for three hours.

b. Gangqin, Zhangsan tan   le   san-ge   xiaoshi.

Piano,   Zhangsan play LE three-CL hour.

As to the piano, Zhangsan played for three hours.

Although (43a) and (43b) look similar to each other, I argue that the topic positions the noun occupies are different. I argue the pre-posed DP (*gangqin*) in (43a) is a contrastive topic, while the position at the left-end in (43b) is a thematic topic, which is functionally the same as the first VP phrase in the verb duplication cases.

This distinction is first shown in the coordination test, as in (44a), which is ambiguous between Zhangsan played for three hours in total and Zhangsan played each instrument for three hours, depending on whether the two instruments are interpreted as a group or not. This result differs from the VP topic as we have seen in (10), as the latter only allows a totality reading of 3 hours. The semantic representation I propose for the separate reading of (44a) (totally six hours) is given in (44b).

(44) a. Zhangsan gangqin he jita   tan le san-ge   xiaoshi.

Zhangsan piano   and guitar play LE three-CL hour.

Zhangsan play the piano and the guitar for three hours. (3 hours or 6 hours)

b. ∃e1,e2 [Quantity(e1&e2)∧Originator(Zhangsan, (e1&e2))∧Measure (three hours, (e1&e2))∧PLAY (e1&e2)∧Participant (piano, e1) ∧ Participant (guitar, e2)]

Furthermore, contrastive topic also exhibits some distinct features in interpretation. Buring (2014) (as well as Hara & van Rooij (2007), van Rooij (2010), and Tomioka (2009, 2010), etc) notes that a general case of focus is usually interpreted

exhaustively. For example, with the double focus in (45a) all combinations of alternatives are pragmatically excluded. But in spite that a contrastive topic also relates to alternatives, the exclusion in (45b) only concerns who *she* wants to kick out. It is sometimes implied that others want to do some kicking-out as well.

(45) a. (Did you kick her out?)

She_F kicked me_F out!

Interpretation: it was her who did the kicking out, and it was me who got kicked out; no one else kicked anyone out.

b. (Who do they want to kick out?)

She_CT wants to kick me_F out.

The answer in (45b) is likely to be continued with a sentence such as "John wants to kick Mary out". That is why *she* is marked as a contrastive topic (CT), instead of a focus. On the other hand, there is no consensus on the specific function of thematic topics (TT). Linguists tend to describe the pragmatic effects of thematic topic as psychological subject or what the sentence is about. This is the reason such topics are also referred to as aboutness topics.

Reinhart (1982) proposes that topics are used to express Pragmatic Assertion of a sentence under which the meaning of a topic-marked sentence can be divided into two parts: the referent of the topic expression, and the property expressed by the background part of the sentence. This is why in many situations the topic reading is placed on something that has already been established in the current context. For example, Reinhart (1982) thinks (46b) does not sound right because *as for* phrase in English must refer back to an established (given) topic.

(46) Felix is an obnoxious guy.

a. Even Matilda can't stand him.

b.? As for Matilda, even she can't stand him.

These characteristics in the use of contrastive and thematic topic are also noticeable in Mandarin. As shown in (47), placing the noun phrase *gangqin* (piano) at the post-subject position yields a natural answer to the question. It also implies that Zhangsan played some other instruments too, as suggested by the clause in the bracket. As a contrast, the sentence with the topic noun phrase on the left periphery, although totally grammatical in itself and probably acceptable to some speakers, may not be the first choice as an answer in this circumstance. I argue this is because *gangqin* (piano) is not an established topic in the previous discourse, and the association between *instrument* and *piano* is not strong enough to let the latter target the former as a reference.

(47) Q: zhe-xie yueqi   Zhangsan tan le duo-jiu?

These   instrument Zhangsan play LE how-long.

How long did Zhangsan play these instruments?

A1: Zhangsan **gangqin**$_{CT}$ tan le san-ge   xiaoshi.

Zhangsan piano   play LE three-CL hour.

Zhangsan played the piano for three hours (and the guitar for four hours).

A2:#**Gangqin**$_{TT}$, Zhangsan tan le san-ge   xiaoshi.

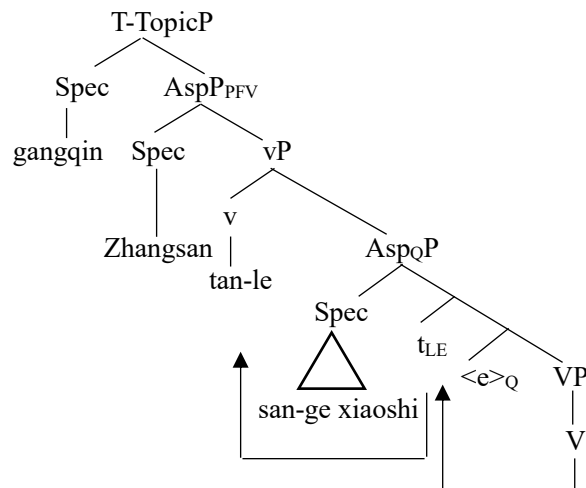Piano,   Zhangsan play LE three-CL hour.

As for the piano, Zhangsan played for three hours.

Based on this analysis, I propose the structures for (43a) and (43b) are (48a) and (48b) respectively. Here I set aside the question which category takes the subject in the hierarchy Mandarin syntax, so the highest projection in (48a) is marked as FP.

(48) a.
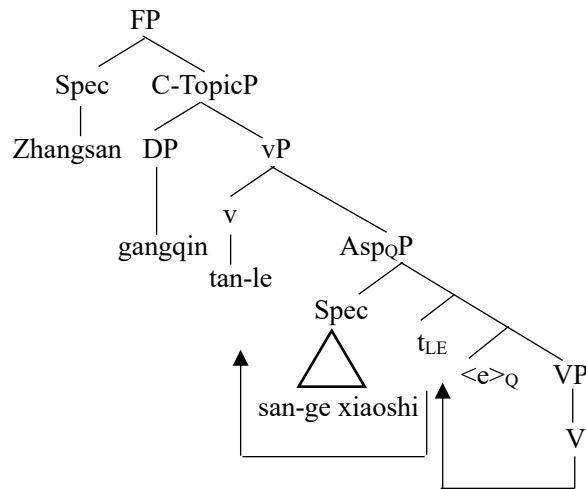
b.

Finally, it has to be noted that although the contrastive topic phrase in (48a) is sandwiched between the subject and the verb, which seems to be the same as the topic VP in verb duplication cases, these two topics are actually in different positions. We have seen that the topic VP is immediately above the vP, but (49a-d) shows that the contrastive topic is higher than the locative phrases and even the situation aspect (represented by the marker *mei-you* in (49c)), although it is still lower than the time adverbials.

(49) a. Zhangsan gangqin zai gongyuan tan le san-ge xiaoshi.

Zhangsan piano in park play LE three-CL hour.

Zhangsan played the piano for three hours in the park.

b.??Zhangsan zai gongyuan gangqin tan le san-ge xiaoshi.

Zhangsan in park piano play LE three-CL hour.

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Intended reading: the same as (71a).

c. Zhangsan zuotian　gangqin mei-you　tan.

Zhangsan yesterday piano　NEG-YOU play.

Zhangsan didn't play the piano yesterday.

d.*Zhangsan zuotian　mei-you　gangqin　tan.

Zhangsan yesterday NEG-YOU piano　play.

Intended reading: the same as (49c).

4.4 Summary of chapter

In this chapter, I have re-examined the configurations involving a time duration phrase in Mandarin. The time phrase can occur at various positions in the syntactic hierarchy, due to its status as an object of the verb. This dislocation phenomenon is motivated by the need to accommodate more than one object phrase in the syntax. In this sense, the time duration phrase differs from its adverbial counterpart in English in that it is directly related to the interpretation of telicity of the event denoted by the VP.

To summarize, there are generally three ways to accommodate this extra time object in the sentence: copying the verb to create another position for the nominal object, merging the time object with the noun object into a single DP phrase, and topicalizing the noun object to leave room for the time phrase. In the first case, the duplicated VP becomes a thematic topic above the predicate domain and is associated with the predicate via aboutness relation. In the second case, the TD phrase behaves as a massifier that takes a *de*-headed phrase with a mass NP. In the third case, the nominal object occurs. In the last case, the topicalized NP occurs either as a contrastive topic below the subject, or as a thematic topic hanging on the left periphery of the sentence. Apart from these, ditransitive structure is also used to express time duration of the event, when the nominal object is a

full quantity DP at the specifier position of the aspect of quantity, while the time phrase is merged as the complement of the verb.

The dislocation phenomenon associated with time duration phrases provides a view into the structural hierarchy of syntax in Mandarin, which I summarize as (50a), and the structure of full DP is shown in (50b).

(50) a. Topic (thematic) > Subj. > Topic (contrastive) > Asp(viewpoint) > Adverb > Goal > Topic (about/VP) > vP > Asp_Q(situation/LE) >VP

b. D > Num > Classifier > Massifier/NP > De > NP

The study reveals a clearer picture of the configuration under the predicate domain. Most importantly, all the restrictions in using a TD phrase have appropriate accounts that comply with the assumption that *le* is a quantity marker. This chapter temporarily puts a period to the discussion of verbal *le*. In Chapter 6, I will come back to some special cases of verbal *le* which are not generally considered this version of *le*, but sentential *le* instead.

5. On Sentential *Le*

As is mentioned at the beginning of the thesis, the particle *le* in Mandarin can appear in two different positions. Apart from the verbal *le* which we have been discussing in the last three chapters, we have another version of *le*—the sentential *le*, which occurs at the end of the sentence, as shown in (1a, b).

(1) a. Zhangsan qu Beijing le.

Zhangsan go Beijing LE.

Zhangsan has gone/went to Beijing.

b. Zhangsan xiang jia   le.

Zhangsan miss home LE.

Zhangsan misses his home (now).

The sentential *le* is obviously different from verbal *le* in a variety of respects. For example, it can occur under an imperfective viewpoint, as shown in (1b). In this section, I'm going to discuss the grammatical function of this sentential particle and its status in syntax. I will propose the sentential *le* is a focus marker scoping high in the syntactic hierarchy, and the flexible interpretations associated with it result from the different structures which are taken into focus.

But first of all, I will make clear in which cases I classify the use of *le* as "sentential", as these two versions of *le* can be confusing in some circumstances.

5.1 Redefining sentential *le*

As is mentioned in the first chapter, traditionally the distinction of these two versions of *le* is purely based on the position of the particle in the linear order. But sometimes, *le* can appear in a position that is both verbal and sentential, as shown in (2a, b).

(2) a. Zhangsan pang le.

Zhangsan fat LE.

Zhangsan became fat/is fat (now).

b. Zhangsan si le.

Zhangsan die LE.

Zhangsan died/is dead.

As far as I know, currently there is no way that is generally upon by linguists to tell whether the *le* in (2a) and (2b) is verbal *le* or sentential *le*. But some particular attempts to distinguish them offer us insights into a possible solution.

Soh (2009), although still keeping the order-based distinction of *le*, proposes verbal *le* may be distinguished from sentential *le* through systematic differences in their distribution. First, verbal *le* cannot occur in stative or habitual sentences in general. Sentential *le*, on the other hand, does not show such a restriction (Li & Thompson 1981, Smith 1997, Lin 2000, Smith & Erbaugh 2005). This is shown in (3) and (4).

(3) a.*Zhangsan xiang le   jia.

 Zhangsan miss LE home.

 Intended reading: Zhangsan missed home.

b. Zhangsan xiang jia   le.

Zhangsan miss home LE.

Zhangsan misses home (now).

(4) a.*Zhangsan mei-tian   chi le   pingguo.

Zhangsan every-day eat LE apple.

Intended reading: Zhansgan ate apples every day.

b. Zhangsan mei-tian   chi pingguo le.

Zhangsan every-day eat apple   LE.

Zhansgan eats apples every day (now).

Secondly, verbal *le* does not occur with the negative marker *bu* (Ernst 1995), while sentential *le* does, as in (5a, b).

(5) a.*Wo bu   chi le pingguo.

I   NEG eat LE apple.

b. Wo bu   chi pingguo le.

I   NEG eat apple   LE

I don't eat apple (now).

Thirdly, verbal *le* may not appear with elements expressing a future viewpoint, such as *hui* (will) or *dasuan* (plan), but again, this is not found with sentential *le*, as shown in (6a, b).

(6) a.*Wo hui/dasuan chi le   pingguo. [29]

I   will/plan   eat LE apple.

Intended reading: I will/plan to eat apples.

b. Wo hui/dasuan chi pingguo le.

I   will/plan   eat apple   LE.

I will/plan to eat apples (now).

Note that all these three tests make use of restrictions on verbal *le*. In other words, they are based on a presumption that verbal *le* is perfective, but sentential *le* is not. A perfective *le* is by nature incompatible with stative reading or a future viewpoint, so we get the result in (3), (4), and (6). Furthermore, Ernst (1995) has argued that the negative marker *bu* only occur in imperfective situations, which makes (5) another straightforward result.

Therefore, the tests tell us no more than the fact that verbal *le* is restricted to perfective aspect, while sentential *le can* occur in imperfective aspect. This fact is not helpful in dealing with cases with perfective readings as in (2a, b) since both types of *le*

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[29] Although (6a) is ungrammatical under the intended reading, it can be acceptable if the bare NP object is interpreted as definite, which is a case generally considered as *le3* as we have discussed in Chapter 3.

can occur in perfective aspect under this analysis. We still do not know which type the *le* in these two examples belong to. All we can tell is that if the sentence is interpreted as imperfective, the *le* must be sentential *le*.

However, this already gives us some hints for a possible solution. Since sentences like (2a, b) are ambiguous between perfective and imperfective interpretation, we may attribute each of the interpretations to one version of *le*. The verbal *le* is often associated with perfective aspect both in the literature and in the proposal of this thesis, so I assume in the perfective reading the *le* is a verbal *le*. On the other hand, since verbal *le* is incompatible with habitual or stative situations, the *le* in these readings must be a sentential *le*. In other words, the two readings for (2a, b) come from different structures which are separately related to verbal *le* and sentential *le*. It is a coincidence that these two structures result in sentences with the same linear word order. Following this assumption, the *le* which occurs at the end of a sentence with only a perfective reading is clearly a verbal *le*, as in (7).

(7) Zhangsan pao le.

Zhangsan run LE.

Zhangsan ran away.

Note that this is not really a way to distinguish the sentential *le* from the verbal *le*. Rather, it redefines sentential *le* by assuming the sentential *le* not sensitive to (im)perfectivity. In other words, it proposes a new classification of *le* based on their functions in the sentence, which is different from the traditional classification that is based on their positions in the sentence. This proposal can be justified by the fact that both versions of *le* can be used in the same sentence, which indicates that they are structurally different in term of the syntax, as in (8).

(8) Zhangsan chi le san-ge pingguo le.

Zhangsan eat LE three-CL apple LE.

Zhangsan has eaten three apples.

In this sense, although the *le* in (8a, b) occurs linearly after the object, it is not a sentential *le*, but a verbal *le*, since it contributes a perfective viewpoint to the sentence. I assume this post-object position of verbal *le* is a result of movement in derivation, which I will discuss in details in Chapter 7.

(9) a. Zhangsan he　　jiu　　　le.

　　　Zhangsan drink alcohol　LE.

　　　Zhangsan drank alcohol.

　　b. Zhangsan chi na-ge　pingguo le.

　　　Zhangsan eat that-CL apple　　LE.

　　　Zhangsan ate that apple.

Some data from certain dialects of Chinese are also in support of this view. Gan is a dialect of Chinese which has a widespread use in central China. It has many subcategories spoken in different areas. In the local dialect spoken in Hukou, the two versions of *le* in Mandarin has two phonetically distinct counterparts: the verbal *le* is still roughly pronounced as *le*, while the sentential *le* is pronounced as *lo*. This difference is clearly shown in (10), which is a sentence with both types of particles and is supposed to be equivalent to (8).

(10)　Gan (Hukou Accent)

　　　Zhangsan jia　le　san-ze　　bingo lo.

　　　Zhangsan eat LE three-CL apple　LO.

　　　Intended reading: the same as (8).

In habitual situations such as (11a), the informants use the particle *lo*, which corresponds to sentential *le* in Mandarin, while in a perfective case as (11b), the particle used is *le*.[30] This suggests the particles are chosen according to their functions instead of

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[30] Different from Mandarin, (10b) in this Gan dialect is unambiguously perfective.

their positions.

(11) a. Zhangsan zi   jia bingo lo.

Zhangsan now eat apple LO.

Zhangsan eats apples now.

b. Zhangsan si   le.

Zhangsan die LE.

Zhangsan died.

Furthermore, unlike (2a, b), which can be either perfective or stative in Mandarin, these interpretations must be expressed by different particles in this special dialect, as in (12a, b).

(12) a. Gago gao   le.

Price high LE.

The price became high.

b. Gago gao lo.

Price high lo.

The price is too high/higher than before.

This clearly shows that the particle *le* is used to express perfective meaning, while the situations with a single *lo* are always non-perfective due to the lack of *le*. Therefore, I assume Mandarin also exhibits such as pattern, with sentential *le* not directly associated with (im)perfectivity.

5.2 Sentential *le* in use

The redefinition of sentential *le* in the previous section only specifies the situations in which it can occur, but it does not discuss what role the particle plays in these situations. In this section, I will examine the semantic interpretations associated with sentential *le*

and discuss some proposals in the literature to capture its functions.

Li & Thompson (1981) argue that the sentential *le* in Chinese manifests a communicative function by signaling a currently relevant state, which, as they claim, means that a state of affairs has special current relevance with respect to some particular situation. For example, (13a) is a simple statement of fact about the sweetness of the melon, while (13b) conveys the information that the sweetness of the melon is relevant for the current situation, although this is hard to be shown in the English translation.

(13) a. zhe-ge   gua   hen tian.

      This-CL melon very sweet.

      This melon is very sweet.

   b. zhe-ge   gua   hen tian   le.

      This-CL melon very sweet LE.

      This melon is very sweet.

They continue to propose roughly four categories of sentences in which the sentential *le* can express this current relevance[31]:

A: It is a changed state

(14) Wo mingbai   le.

    I   understand LE

    I understand (now).

B: It corrects a wrong assumption

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[31] There is a fifth category: closing a statement, which is described as the speaker's total contribution to the conversation at that point, as in (i). In this use the sentential *le* is supposed marks finality and "completes" the sentence. The sentence without it sounds incomplete, as if the speaker intends to say more (Li &Thompson 1981). However, contra this claim , the speaker can add further comments as he wishes and make the clause with *le* "incomplete", as in (ii). So I won't discuss this use in details.
(i) xuefei tai gui   le.
   tuition too expensive LE.
   The tuition is too high.
(ii) Xuefei tai   gui   le, wo zhi-neng fang-qi shenqing.
   Tuition too expensive LE, I   only-can give-up apply.
   The tuition is too high, so I have to give up the application.

(15) Hai! Ni   wang   beifang qu le!

hey you towards north   go LE

Hey! You're going north (and not south as you obviously are assuming)

C: It reports progress so far

(16) Na-wei   nushi   huaiyun ba-ge   yue   le.

That-CL woman pregant eight-CL month LE.

That woman is eight months pregnant.

D: It determines what will happen next.

(17) Xiao Huang kuai lai   le.

Xiao Huang soon come LE

Xiao Huang is about to arrive (so: hide the gifts / put your pants on /get your

gun ready)!

However, current relevance is not precise enough as a definition because basically

everything uttered at speech time is supposed to be related to the current topic and thus

has current relevance. Even if it is not superficially relevant, it triggers conversational

implicature and is regarded as relevant by the listener (see Grice 1975).

Soh & Gao (2006) therefore provide a more specific analysis of this particle. They

argue that unlike the verbal *le* which is a perfective aspect marker, the sentential *le* is a

transition marker that triggers a presupposition about an immediate past situation that is

in opposition to the one described by the sentence

They claim that in accomplishment sentences which contain a numeral object,

there does not appear to be any difference between verbal *le* and sentential *le*— both give

rise to a perfective reading, because the sentential *le* as a transition marker in this case

indicate that an event changes from unfinished status to finished status, which happens to

be the same with the interpretation of perfectiveness, as in (18).[32]

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[32] As far as I understand, Soh & Gao (2006) do not try to unify the two uses of the particle le. They think
it is a coincidence that the verbal and sentential *le* yield the same interpretation in cases like (18).

(18) Ta hua   san-ge   quan le.

     He draw three-CL circle LE

     He drew three circles.

In other events which denote an accomplishment or activity, the sentential *le* indicates that the event has started. Whether the event has terminated or not is left open, as in (19a, b).

(19) a. Ta xie   na-feng xin   le.

     He write that-CL letter LE

     He started writing the letter.

    b. Ta you   yong le.

     He swim swim LE

     He started swimming.

However, the examples and the interpretations they use to support this view here seem problematic to my informants. (18) and (19b) are not acceptable when uttered out of blue. This has been reported in many studies, such as Jin & Yu (2013). They can only be rendered acceptable under a special context in which the event of drawing three circles or swimming is a previously discussed issue. As for (19a), although most informants agree it is grammatical, they reported that they cannot get the reading shown in the translation. The event has to come to an end in such a sentence. Moreover, it is not easy to see under this analysis why (18) extends a completed event while (19) only express the starting of an event, considering they both describe telic situations.

But it also has to be noted that this difference in judgements does not directly affect Soh & Gao's conclusion. In short, their basic claim is that there is a presupposed past situation which is in contrast with the situation in question, and the function of sentential *le* is to express the transition from the former to the latter. Whether the contrast is with a completed situation or a situation just prior to a new starting of activity, the

contrast still holds. But there is at least one case which cannot be explained by this theory, as in (20).

(20) Xuefei tai gui   le.

Tuition too expensive LE.

The tuition is too high.

(20) is just an exclamation/complaint that the tuition is quite high. It does not presuppose any past situation in which the tuition was not high. Therefore, although there is a contrast between a presupposed situation and the current situation, there is not transition between them, which goes against the claim that the sentential particle is a transition marker. Soh (2009) is a more detailed description about the function of sentential *le*, as is shown in (21).

(21) The speaker using a sentence with sentential *le* to

(i) assert a proposition p at speech time (ts),

(ii) presuppose [¬p before speech time (ts)], and

(iii) accepts or rejects the inclusion of presupposition in the subsequent common ground.

Soh argues that the semantics of sentential *le* can be summarized as two prototypical meanings: the "change of state" interpretation, and the "contrary to expectation" interpretation, whereby the "change of state" interpretation is associated with a change expressed by propositions *within* a common ground, while the "contrary to expectation" interpretation is associated with a change expressed by propositions *across* common grounds. In other words, the distinction of the two interpretations is created by whether the presupposed situation is accepted or rejected. Furthermore, in the proposal of Soh, both the "change of state" and the "contrary to expectation" interpretations involve changes across a temporal domain.

The table in (22) is a schematic representation of the speaker's beliefs about the

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common grounds when the use of sentential *le* expresses a "change of state". P1, P2, and P3 refer to the propositions involved. P3 has its source from (21i), P1 from (21ii) and P2 from (21iii). Soh claims that the change of state interpretation is triggered when the speaker accepts the presupposition in the subsequent common ground with sentential -*le*.

(22) Change of state reading:

Common ground 1	Common ground 2
P1: ¬p before ts [presupposition]	P2: ¬p before ts [acceptance of presupposition]
	P3: p at ts [assertion]

By accepting the presupposition in the subsequent common ground (P2) through the use of sentential *le*, and proposing to add the proposition asserted to the next common ground (P3), the speaker expresses a belief about the existence of a change. The belief is that there is change across the temporal domain from the past to the speech time in the truth of p (from ¬p to p).

The rejection of the presupposition P1 for the subsequent common ground results in the addition of P2, which is the negation of P1. By rejecting the previous presupposition (P1) in Common ground 2, the speaker also expresses a belief about the existence of a change. The belief is that there is a change across a temporal domain in the participants' belief about the truth of [p before ts], as shown in (23).

(23) Contrary to expectation reading:

Common ground 1	Common ground 2
P1: ¬p before ts [presupposition]	P2: p before ts [rejection of presupposition]

	P3: p at ts
	[assertion]

In a nutshell, when the current situation is set in contrast with a negative situation that truly existed before the speech time, the use of sentential *le* extends a change of state meaning. On the other hand, when the current situation is set in contrast with a negative situation which only holds in someone else's belief but not in the real world (as the speaker believes), the use of *le* extends a contrary to expectation meaning.

For example, in (24a), the change of state reading is enabled by the acceptance of the presupposition (he didn't resemble his father before), and the contrary to expectation reading in (24b) is based on the rejection of the presupposition (The melon was not sweet). The derivation processes are respectively shown in (25a, b).

(24) a. Ta xiang   ta-de   baba le.

He resemble he-Poss father LE

He resembles his father (, and he did not before).

b. Zhe-ge gua   hen tian   le.

This-CL melon very sweet LE.

This melon is very sweet (It is different from what you said/thought).

(25) a.

Common ground 1	Common ground 2
P1: He did not resemble his father before ts. [presupposition]	P2: He did not resemble his father before ts. [acceptance of presupposition]
	P3: He resembles his father at ts. [assertion]

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b.

Common ground 1	Common ground 2
P1: The melon was not sweet before ts. [presupposition]	P2: The melon was sweet before ts. [rejection of presupposition]
	P3: The melon is sweet at ts. [assertion]

This presupposition analysis provides a principled scheme in deriving the different interpretations associated with sentential *le*. However, it is not perfect in dealing with all the uses of this particle. The dichotomy of the two prototypical meanings does not cover all the possible meanings of sentential *le*. Most importantly, this proposal does not solve the problem in (20), which is repeated here as (26).

(26) xuefei tai gui   le.

tuition too expensive LE.

The tuition is too expensive.

It is clear that in the intended reading no one presupposes that the tuition was not expensive before the speech time. (26) just expresses an exclamation or complaint of the current state. It neither means that the tuition has changed from cheap to expensive, nor that someone else said/thought that the tuition is not expensive. So the interpretation of this sentence does not fall into either of the two prototypical types. If there is any presupposition involved, it should be a presupposed standard price with which the tuition is compared.

Moreover, the mechanism in (21) cannot explain (27), which is another case that the interpretation falls beyond either the change of state or contrary to expectation type.

(27) (Context: two students are talking about the result of an exam, and one of them just complained that he didn't do well)

Ni   (dou) 80 fen   le.

You already 80 point LE.

You already have 80 points. (It's not bad, compared with me.)

If we follow the analysis proposed by Soh, the presupposition should be the negative situation of what the sentence is denoting, which in this case should be "you did not have 80 points before speech time". But here the potential hearer of (27) obviously is not assuming he didn't/doesn't have 80 points. Rather, he is assuming 80 points is a low grade, and the speaker is correcting him by saying 80 points is not low, compared with the speaker himself. This is a typical use of sentential *le* in correcting a wrong assumption as proposed by Li & Thompson (1981). But such a wrong assumption is context-dependent, so it cannot be captured by simply negating the proposition, as Soh (2009) claims.

5.3 Sentential *le* is a focus marker

In this section, I propose that *le* when used as a sentential particle is a focus marker, and the sense of current relevance just comes from the focus reading. By focus marker, I mean the function of sentential *le* is to set a situation in contrast with all the potential alternatives and express the assertion of the situation in question. This description is, to some extent, close to the proposal in Soh (2009), where the assertion of the situation under sentential *le* is also made through contrast with certain presupposed situations. However, I don't assume there are rules which determine what situations the current situation is compared with in each of the interpretations. Rather, I assume the various interpretations result from the different structures that enter the focus domain of *le*. In this sense, all the readings associated with sentential *le* are conversational implicatures, which vary greatly according to the context. We will see that most of the problems and restrictions around this sentential particle can have a proper explanation under this assumption.

I argue that all the four semantic categories of sentential *le* can be brought under the notion of focus. For example, (28a) involves an ambiguous *le*. Depending on whether the process of change is taken into consideration, the *le* can either extend accomplishment reading or a stative reading. Sentential *le* is only responsible for the latter reading as we have discussed in 5.1.

(28) a. Wo mingbai   le.

      I   understand LE

      I understand (now).

   b. Wo mingbai

      I   understand

      I understand.

   c. Wo bu   mingbai   le

      I   NEG understand LE

      I don't understand (now).

Compared with the no-*le* version in (28b), which is a pure statement of fact, (28a) always presupposes the existence of a previous stage in which "I didn't understand". As is also expected, in a negative sentence like (28c), the presupposed previous stage is the opposite: a stage where "I understood". It extends a reading that I understood before but was confused and now I no longer understand. This suggests that the change of state reading is made available through contrast with an opposite previous state, which complies with the presupposition analysis in Soh (2009). We cannot get the "changed" sense from (28b) even though it definitely has current relevance when used as an answer to a question such as *ni ming bai m*a? (Do you understand?). But meanwhile, this use of contrast to emphasize the current state is definitely a function of focus, as the interpretation of focus depends on the contrast with potential alternatives. This function of focus can also explain the correction of wrong assumption reading in (29), which, as

we discussed, poses a problem for the presupposition analysis.

(29) Ni (dou) 80 fen le.

You already 80 point LE.

You already have 80 points. (It's not bad, compared with me.)

I argue the interpretation that 80 points is not a bad grade is just a conversational effect created by focusing on the fact that you have 80 points. In fact, if the context change, (29) can have exactly the opposite interpretation:

(30) – Wo kao le bashi fen. Bu-cuo.

I get LE eighty point. NEG-bad.

I got 80 points. Not bad.

– Ni dou 80 fen le. Na-li bu-cuo?

You already 80 point LE. Where NEG-bad?

You only have 80 points. How is it not bad.

The sentence used as the answer in (30) is no different from the one in (29), but the interpretation has totally changed. Such a flexibility in interpretation cannot come from syntax and lexicon—it is most likely to be the result of pragmatics. (29) without *le* loses this special interpretation and purely states the fact that you have 80 points, so there is reason to believe *le* contributes the focus in this case.

Similarly, the functions of reporting progress and determining what will happen are also realized in this way, as in (31) and (32).

(31) Na-wei nushi huaiyun ba-ge yue le.

That-CL woman pregant eight-CL month LE.

That woman is eight months pregnant. (She will deliver in one month.)

(32) Xiao Huang kuai lai le.

Xiao Huang soon come LE

Xiao Huang is about to arrive (so: hide the gifts / get your gun ready)!

It is not easy to find a proper presupposition for the state described in (31). A possible previous state like *not pregnant* is contrary to a state of *being pregnant* rather than *being 8 months pregnant*, although the latter entails the former. As the function here is categorized as reporting progress, I argue that *ba-ge yue* (eight months) here acts as a degree modifier and triggers a scaler implicature. This scale of being pregnant ranges from the stage of just becoming pregnant to, normally, nine months pregnant. In this sense it acts like a proper name of degree (Klein 1980), such as "6 feet tall". The sentence focuses on the degree of 8 months on the scale and is thus put in contrast with other stages of pregnant, such as 3 months pregnant and 9 months pregnant, etc. In other words, the assertion of the situation is made by saying that it is currently at this degree, not others. Therefore, this function of sentential *le* can also be derived by focus.

Although the use of *le* in (32) seems to be quite different from that in (31), I think *le* here is used for the same purpose. In (32) *kuai* (soon) becomes the degree phrase indicating the extent in the scale of Xiao Huang's arrival. It does not directly determine what will happen next, which can be varied according to the context. Sentences like (3) just have the pragmatic use of warning or reminder, which is enabled by the focus reading provided by sentential *le*. It seems to determine what happens next because contextually there's supposed to be different reactions corresponding to different stages in the process. The degree phrase is required for the scalar implicature. If it is not present the sentence can only extend a perfective reading like (33).

(33) Xiao Huang lai   le

Xiao Huang come LE

Xiao Huang came.

Finally, assuming sentential *le* is a focus marker can solve the problem in (20), which the presupposition analysis in Soh (2009) fails to deal with. The example is repeated in (34).

(34) Xuefei tai gui   le.

     Tuition too expensive LE.

     The tuition is too high.

(34) also has a degree phrase—*tai* (too). I suggest this excessive degree phrase implies a contrast by showing the relation of the current degree with a standard one, whatever it is. Therefore, this use of sentential *le* can also be viewed as a special reading under focus.

Since it has been shown that all the interpretations with sentential *le* can be associated with focus, the next step is to see where the particle sits in the syntax hierarchy. (35a) below shows that *le* can even scope higher than the subject. But judging from (35b), I suggest *le* is merged below the yes-no question marker *ma*, which is supposed to be a head of CP.

(35) a. yi-qian hen shao ren qu na-jia   canting,   xianzai suoyou ren   (dou) qu le.

     Past   very few man go that-CL restaurant, now   every person all   go LE.

     Few people went to that restaurant before, but now everyone goes there.

  b. Zhangsan xianzai he   jiu   le ma?
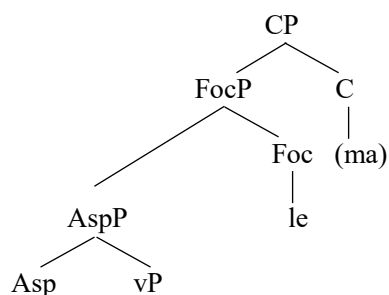
    Zhangsan now   drink alcohol LE Q?

    Does Zhangsan drink alcohol now?

Therefore, I follow Paul (2015) and assume the sentential *le* scopes high in the hierarchy, probably immediately under CP. The projection is head-final, so *le* as its head always appears at the end of the clause. The general structure involving sentential *le* is (36)[33].

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[33] I have nothing to say whether there is an overt TP or nominative case in Mandarin syntax, but there may be some other phrase between FocP and AspP which can host the subject.

(36)

```
                        CP
                   ╱         ╲
               FocP            C
              ╱    ╲           │
                   Foc      (ma)
                    │
          AspP      le
         ╱    ╲
      Asp      vP
```

The interpretation of a sentential *le* sentence depends on the phrase merged below FocP. When the predicate is stative, I assume there is no AspP projection in the structure, as viewpoint of (im)perfectivity only targets dynamic events. In this case, the vP is directly merged with the sentential *le*, and the focus marker takes the whole predicate into computation, as in (37).

(37)

```
              FocP
            ╱      ╲
          vP        Foc
        ╱   ╲        │
     Spec    VP      le
    (Subj.)
```
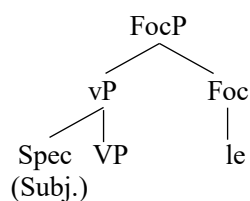
This operation can yield a series of readings according to the context. It can either create a verum focus, which emphasizes on the truth value of the proposition, or focus on the semantic content of the vP, as shown in (38).

(38) Hua   hen hong le.

   Flower very red   LE.

   1. The flower is very red now. (It was not very red before.)

   2. The flower *is* very red. (Contrary to what you said/assume.)

   3. The flower is very red now. (I will then become yellow/Let's pick it)

   4. The flower is indeed very red. (Exclamation)

The verum focus can set the proposition in contrast with its negative situation. When the negative situation is taken to be the previous state, the sentence expresses a change of state reading, as Interpretation 1 in (38). When the negative situation is taken

to be a wrong assumption/judgement, the sentence gives a contrary to expectation reading, as Interpretation 2. But in fact, the contrary to expectation reading does not necessarily need a negative presupposition, as we have discussed earlier. This means we can also get an interpretation which contrasts the wrong assumption by putting the focus on the semantics of the vP, as in the case of (29)-(30).

But here in (38), the vP is modified by a degree adverb *hen* (very), so we will get a scalar implicature when the focus is on the semantic content. This reading can be used to report the current progress or determine what will happen, as Interpretation 3. Finally, sentential *le* here can also be used to emphasize the fact that the flower is very red, which can be interpreted as a simple exclamation as in Interpretation 4.

It has to be noted, however, that even if the degree modifier *tai* (too) does not occur, the sentence is still grammatical as in (39a). Apart from the change of state reading, the sentence cannot express the general meaning that "the flower is red", but still extends the excessive reading shown in the translation. This is also the case with (39b) and (39c).

(39) a. Hua   hong le.

    Flower red   LE.

    1. The flower is red now. (It was not red before.)

    2. The flower is too red. (We can't use it for the funeral.)

  b. Guozhi tian   le.

    Juice   sweet LE.

    1. The juice is sweet now. (It was not sweet before.)

    2. This juice is too sweet. (I don't like it.)

  c. Chenshan da   le.

    Shirt   large LE.

    1. The shirt is large now. (It was not large before.)

    2. The shirt is too large. (I should have bought a smaller one.)

Besides the change of state reading, (39b) can only convey the meaning that the sweetness of the juice has exceeded some presupposed degree. However, this is a potential threat to the previous analysis. (39a-c) can only extend the contrast of degree, but not contrast between the property and its alternatives. To be specific, we can never use (39b) to mean the juice is *sweet* instead of *salty*. Therefore, the problem is why we cannot use the sentential *le* to emphasize the semantic content in this case.

I propose that this restriction should be attributed to the use of adjectival predicate in Mandarin. Unlike English, bare adjectives without degree modification are not directly allowed to be used as predicate in Mandarin, as shown in (40a, b).

(40) a.*Zhangsan gao.[34]

Zhangsan tall.

Intended reading: Zhangsan is tall.

b. Zhangsan hen gao.

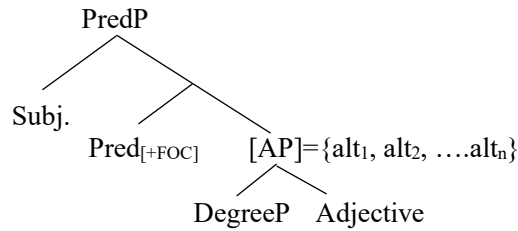Zhangsan very tall.

Zhansgan is (very) tall.

To account for this phenomenon, Grano (2012) proposes the the T[+V] constraint, which claims that in Mandarin the direct complement to T(ense) must either be (an extended projection of) a verb or a functional morpheme that can in principle combine with (an extended projection of) a verb. Consequently, the semantically bleached degree adverb *hen* can be used instead to approximate positive semantics in a way that satisfies T[+V], whereas a superficially bare adjectival complement to T may project a null comparative morpheme in order to satisfy T[+V]. In this sense, there is always a Degree phrase above the adjectival phrase in Mandarin stative predicate. However, since I do not assume the existence of T(ense)P in this thesis, I will follow another analysis of similar pattern but without necessarily projecting TP.

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[34] (42a) cannot express the intended reading, but can be grammatical under other readings with a proper context, such as "Zhangsan is the taller one (between the two)".
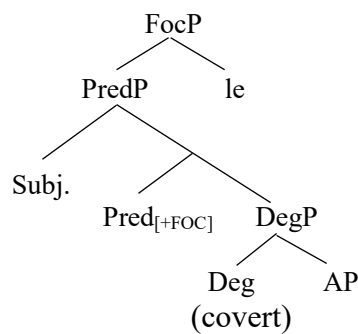
Niu (2015) claims that this is because Mandarin adjectives, when used as predicates, are licensed by alternative propositions. In other words, the head of PredP in Mandarin syntax selects focused adjectival phrases. Therefore, modifiers such as *hen* in (40b) are obligatory to satisfy the [+FOC] feature on the light verb phrase (see Adger & Ramchand 2003), as in (41).

(41)

```
                      PredP
                     /     \
                Subj.      /\
                     Pred[+FOC]   [AP]={alt₁, alt₂, ….altₙ}
                              /\
                       DegreeP  Adjective
```

I argue that this requirement remains the same in the structure of sentential *le*. The degree modification always occurs with the adjective whether there are overt degree morphemes or not. However, I assume the Degree Phrase (DegP) dominates the AP and merge with the head of PredP. FocP in this case targets the whole predicate phrase and yield a focus interpretation based on the scale implicature triggered by the DegP, as in (42).
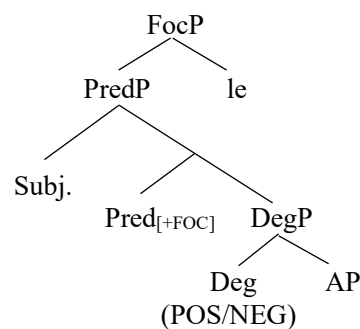
(42)

```
                   FocP
                  /    \
             PredP      le
            /     \
       Subj.      /\
            Pred[+FOC]   DegP
                        /    \
                     Deg      AP
                  (covert)
```

Seen from the two available interpretations in (39a-c), it is inferable that the covert degree morpheme cannot express the general meaning as the overt *hen* (very). I assume the covert degree morpheme by default can introduce two operators: the first one is a yes-no operator, which is responsible for the contrary to expectation reading (Interpretation 1) in (39a-c); the other one is a "more-than-standard" operator, which gives rise to the

excessive interpretation (Interpretation 2) in these examples. With the yes-no (POS/NEG) operator, the adjectival phrase can satisfy the focus requirement on Pred without an overt degree phrase, since it carries an assertion reading itself (as in Kennedy 1999). In this case, the potential alternative that is in contrast with the situation in question is the negative case of the situation. The change of state reading is thus available in (39a-c), if the negative situation is (contextually) constructed to be a past situation. The structure for this reading is shown in (43).[35]

(43)

```
                    FocP
                   /    \
              PredP      le
             /     \
         Subj.      \
                 Pred[+FOC]   DegP
                            /     \
                         Deg       AP
                       (POS/NEG)
```

On the other hand, the excessive interpretation is derived from the contrast with the standard and less-than-standard situations. But in fact, the excessive reading is even available without the sentential *le*, if there is an appropriate context, as in the case of (44).

(44) (A and B are dinning in a restaurant)

A: Zhe tang xian ma? bu-xian   a.

This soup salty Q? NEG-salty EXCLAM.

Is this soup too salty? It's not too salty.

B: Wo jue-de xian.

I   think   salty.

I think it's too salty.

In (44), the question from A should not be interpreted as whether the soup is salty or not (although this interpretation is also available), and A's comment in the second

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[35] Grano (2012) argues that positive semantics is provided by a type-shifting rule that does not project in syntax, so positive assertion is not actually available in bare adjectives.

clause does not mean the soup is not salty at all (again, this interpretation in fact is available too). Rather, A means that the soup is not too salty (or, not saltier than it should be). B's response also shows that in Mandarin we can use a bare adjective to extend a meaning of degree (excessiveness). This shows that the function of the covert degree operators is independent of the sentential *le*. I argue that it is difficult to get this type of interpretation from a sentence like (40a) due to the lack of context. Although it remains to be a question whether this restriction is a syntactic or pragmatic effect, I will not go into more details about this problem.

In sentences where we have modals, the sentential *le* takes the whole modal phrase into focus, which prevents the vP from entering the focus computation directly as in the stative cases. In this case, the whole phrase under ModP extends a meaning that Zhangsan will/can (not) go to Beijing. A series of situations are likely to be constructed as alternatives in the focus computation of sentential *le* here, e.g. the negative situation, in which case focus is on whether or not Zhangsan can/will go to Beijing; other situations such as going to London, where going to Beijing is assumed to be a better/worse choice. There are hence a series of possible readings depending on the context (with only a few listed here).

(45) a. Zhangsan (bu)-   hui/neng qu Beijing le.[36]

Zhangsan (NEG)-will/can   go Beijing LE.

1. Zhangsan will/can (not) go to Beijing now.

2. Zhangsan indeed will/can (not) go to Beijing.

3. Zhangsan will/can (not) even go to Beijing! (Exclamation)

b.

---

[36] Following Ernst (1995), I assume the negative marker *bu* in Mandarin is a negative prefix on the modal, so there is no independent NegP in this structure.
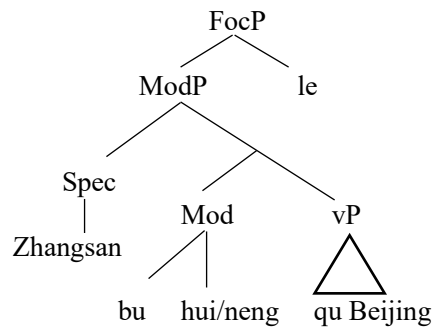
When the predicate is under an imperfective (habitual) aspect, the sentential *le* focuses on this imperfective event, although there is no overt morphology for this particular aspect. Like the cases with modals, the aspect phrase here also separates the FocP from the vP. So both the asserted situation and the excluded alternatives should be in imperfective viewpoint.

(46) a. Zhangsan he   jiu   le.

    Zhangsan drink alcohol LE.

    Zhangsan drinks alcohol now.

    b.
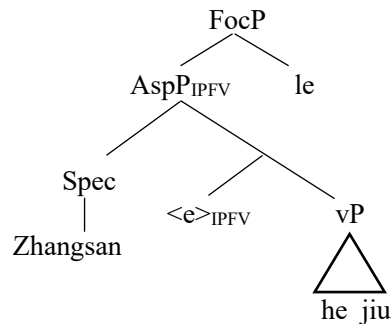
To be specific, the asserted situation in (46) is (47a), which is an imperfective (habitual) event in (47a). This means the potential alternatives should also be habitual situations like (47b) and (47c), but not (47d), which is a perfective case as indicated by the perfective-exclusive marker *mei*.

(47) a. Zhangsan he   jiu.

    Zhangsan drink alcohol.

    Zhangsan drinks/drank alcohol.

    b. Zhangsan bu   he   jiu.

Zhangsan NEG drink alcohol.

Zhangsan does/did not drink alcohol.

c. Zhangsan chou   yan.

Zhangsan smoke cigarette.

Zhangsan smokes cigarette.

d. Zhangsan mei-you   he   jiu.

Zhangsan NEG-YOU drink alcohol.

Zhangsan didn't drink alcohol. (Perfective reading)

For example, if (47b) is interpreted as a past situation in contrast with (47a), we will have a change of state reading as (48a). If it is (47c) that enters the contrast relation with (47a), we will have an assertion reading in (48b), which is also roughly a contrary to expectation reading in this particular case.

(48) a. Zhangsan congqian bu   he   jiu,   dan xianzai he   jiu   le.

Zhangsan before   NEG drink alcohol but now   drink alcohol LE.

Zhangsan didn't drink alcohol before, but now he drinks alcohol.

b. Zhangsan (dou) he   jiu   le, wei-shenme bu   chou yan?

Zhangsan even drink alcohol LE why   NEG smoke cigarette.

Zhangsan even drinks alcohol, (then) why doesn't he smoke cigarette.

Finally, in the perfective situation the sentential particle highlights the fact that a certain event has come to an end (in the viewpoint), or, the event is terminated. This may lead to a series of interpretations as the context varies, such as reporting the progress so far or implying the final state of the event. Since the perfective function is carried by verbal *le* as I have argued, this structure corresponds to sentences with both verbal *le* and sentential *le*, as in (49a, b).

(49) a. Zhangsan chi le   san-ge   pingguo le.

Zhangsan eat LE three-CL apple   LE.

Zhangsan has eaten three apples.

b.

FocP
AspP_PFV   le
Zhangsan
AspP   vP
<e>_PFV   v   Asp_QP
chi-le   Spec   t_LE   VP
san-ge   V
pingguo
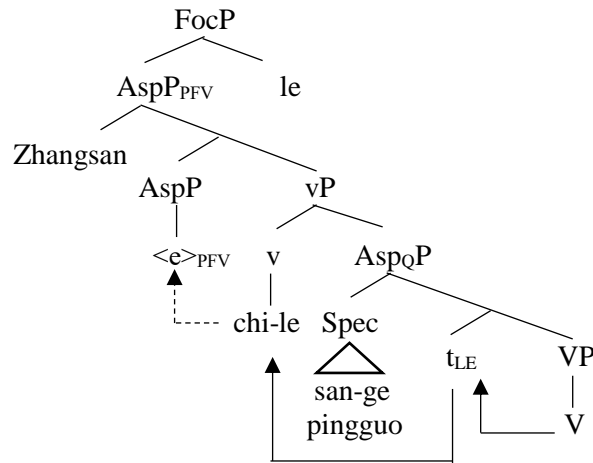
As to the grammatical function of this construction with two *le*'s, I argue it expresses a similar interpretation with the perfect aspect in English, which consists of the auxiliary have and a past participle. I will discuss this idea in details in the next chapter.

To sum up, the interpretations of sentential *le* depend on the structure types which enter the domain of this particle of focus:

Stative situations do not have outer aspect phrase (AspP), which means the predicate phrase (vP) directly enters the domain of sentential *le*.

Adjectival phrases, although also stative, are usually dominated by a degree phrase, which triggers scalar implicature.

In the imperfective (habitual) eventive situations, the AspP that expresses an imperfective viewpoint enter the domain of sentential *le*.

In the perfective situations, it is still the AspP that enter the domain of FocP, but the AspP carries a perfective (terminated) viewpoint instead.

5.4 Summary of chapter

In this chapter, I have examined the function of sentential *le* in Mandarin and proposed that this sentential particle is a focus marker. In order to have a coherent analysis of the

two versions of *le*, I argued that verbal *le* and sentential *le* should be distinguished by their functions instead of their linear positions in the sentence. I assume verbal *le* is responsible for quantity and perfective situations, while sentential *le* has no directly influence on the aspect. In this sense, the *le* in an ambiguous position is truly ambiguous: it can be either verbal *le* or sentential *le*, depending on the interpretation of the sentence. This redefinition of sentential *le* is supported by evidence from certain dialects of Chinese.

To analyze sentential *le* as a focus marker can capture the flexible readings proposed in Li & Thompson (1981) while avoiding the potential problems in the presupposition analysis in Soh (2009), e.g. not all interpretations associated with sentential *le* involve a contrast across temporal domain with a negative situation in the past. Under the focus analysis, the sentential *le* can offer various interpretations according to the structure that enters the focus domain. In this sense, it is almost impossible to give a full summary of the interpretations of sentential *le*. But there are still restrictions in interpretation since some structures that enter the focus domain are unable to trigger certain contrastive situations. The stative situations are the most flexible cases as *le* can focus directly on the semantic content of the vP. Imperfective situations have restricted interpretations since the potential alternatives are limited. There is one special case that involves both types of *le*, which will be the topic of Chapter 6.

6. The Double Le Configuration

In the previous chapter I have proposed that the sentential *le* is a focus marker and the specific interpretation varies according to the structure it combines with. As a continuation of that discussion, this chapter will focus on the Double Le Configuration (DLC), namely the structure with both verbal *le* and sentential *le*. Note that in generally the DLC is no more than a case where the sentential *le* takes a perfective sentence marked by verbal *le*. But it is its interesting pragmatic effect that makes me give it a specific term and a separate discussion. I will argue that focusing on a perfective (telic) sentence with verbal *le* creates a reading emphasizing the fact that the event has come to an end, which, I assume, is functionally equivalent to the perfect aspect with auxiliary *have* and past participle in English. This points out the possibility that the meaning of perfect in English may also be derived compositionally by focus and perfective viewpoint. Therefore, in the following I will start with the analysis of Double Le Configuration in Mandarin and illustrate how it is different from structures with a single verbal *le*. I will argue that some irregular behaviours of this special configuration should be attributed to pragmatic effects, such as the incompatibility of manner and locative adverbials out of blue.

(1) a. Zhangsan feikuai-de guanshang le   chuanghu (??le).

　　Zhangsan quick-DE close　　 LE window　　LE.

　　Zhangsan has closed the window (??quickly).

　b. Zhangsan zai huayuan-li guanshang le   chuanghu (??le).

　　 Zhangsan in garden-in   close　　　LE window　 LE.

　　Zhangsan (??in the garden) has closed the window.

On the other hand, the unambiguous wide scope interpretation of the universal quantifier in (2) is a result of focus intervention.

(2) Mei-ge　 xuesheng dou kan　 le yi-bu　 dianying le.

Every-CL student   all   watch LE one-CL film   LE.

Every student has watched a film. (∀>∃; *∃>∀)

The discussion of the English perfect will come afterwards as a comparison, in which we will see the DLC and the English perfect, although they are totally different configurations from different languages, share many similarity in their function and distribution.

6.1 The Double Le Configuration in Mandarin

In this section, I will argue that in Mandarin, the Double Le Configuration (DLC), which involves a perfective marker verbal *le* and a focus marker sentential *le* as in (3a), expresses a reading that focuses on the perfectiveness (termination in viewpoint) of a situation, as shown in (3b).

(3) a. Zhangsan chi le   san-ge   pingguo le.

   Zhangsan eat LE three-CL apple   LE.

   Zhangsan has eaten three apples.

 b. [Termination-event/state] - Focus

   [[$_{\text{AspP}}$ Perf. [$_{\text{VP}}$ [$_{\text{AspQP}}$ *LE*]]] *LE* $_{\text{FocP}}$]

Although the functions of the two versions of *le* have been discussed separately for decades, there are relatively fewer attempts to give an analysis directly to the structure with both verbal *le* and sentential *le*, namely the DLC. Soh & Gao (2006), which contributes one of the few attempts, claims that "with sentences that denote bounded states, achievements and accomplishments with a numeral object, the DLC does not provide any additional meaning compared to sentences with only verbal *le*". But this does not seem to be the truth, as in (4), which shows that the sentence with only a verbal *le* is

not a proper answer in such a context. We need both versions of *le*.[37]

(4) Speaker 1: Zai   chi dian   pingguo ba.

Again eat some apple   BA.

Have some more apples.

Speaker 2: # Wo chi le   san-ge.

I   eat LE three-CL.

I ate three.

Wo chi le   san-ge   le.

I   eat LE three-CL LE.

I have eaten three.

I argue that this is because in the DLC, the perfective information represented by the verbal *le* is in focus, although truth-conditionally it is not different from the sentence with a single verbal *le*. The proper answer with the DLC in (4) emphasizes the fact that an event of eating three apples is completed, which, under this circumstance is usually interpreted as "I've had enough. I don't want anymore".

The structure of a DLC sentence (5a) in Mandarin is illustrated in (5b), which is not very different from most structures proposed in the previous chapter, except that the sentential *le* takes a perfective AspP in this case.

(5) a. Zhangsan chi le   san-ge   pingguo le.

Zhangsan eat LE three-CL apple   LE.
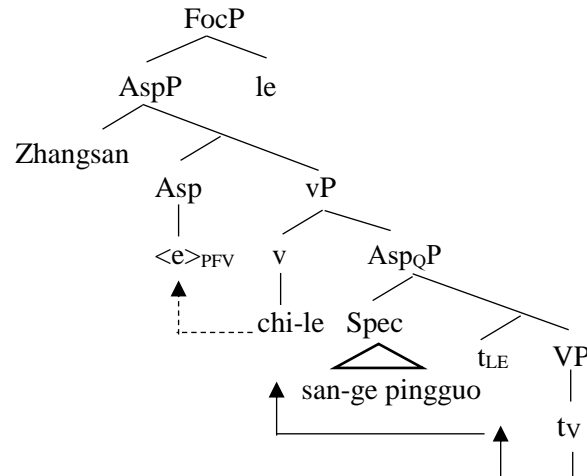
Zhangsan has eaten three apples.

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[37] Some informants suggest that with the adverb *yijing* (already), a sentence with verbal *le* alone is sufficient as (i).

(i) Wo yijing   chi le san-ge,   bu-xiang zai   chi le.
I   already eat LE three-CL NEG-want again eat LE.
I already ate three. I don't want to eat any more.

However, it has to be noted that without the second clause, which explicitly specify the meaning of refusal, the sentence is not acceptable as an answer without sentential le, as in (ii). This suggests that the sentential *le* here plays a role which cannot be substituted by *yijing* (already).

(ii) Wo yijing   chi le san-ge   #(le).
I   already eat LE three-CL LE.

b.

```
                        FocP
                       /    \
                   AspP      le
                  /    \
          Zhangsan      \
                    Asp    vP
                     |    /  \
                 <e>_PFV  v   Asp_QP
                     ↑    |   /    \
                     ┊  chi-le Spec  \
                     ┊........         tLE   VP
                            △               |
                          ↑ san-ge pingguo  tv
                          └────────────┘ ↑
                                         └──┘
```

Syntactically, the DLC has a more restricted distribution, compared with the typical verbal *le* cases. First, a DLC sentence, if used out of blue, does not co-occur with manner and location adverbs, as in (6a) and (6b).

(6) a. Zhangsan feikuai-de guanshang le   chuanghu (??le).

　　　Zhangsan quick-DE close   LE window   LE.

　　　Zhangsan has closed the window (??quickly).

　 b. Zhangsan zai huayuan-li guanshang le   chuanghu (??le).

　　　Zhangsan in garden-in   close   LE window   LE.

　　　Zhangsan (??in the garden) has closed the window.

I argue this is due to the function of sentential *le* as a focus marker. To be specific, there are roughly two possible interpretations of (6a) and (6b), depending on whether the adverbial modifier is in focus or not. If the adverbial modifier is in focus, the situation is set in contrast with alternatives in which the event is done in other manners or places, such as Zhangsan closed the window *slowly* or Zhangsan *in the living room* closed the window. If the information of manner or location is backgrounded and the focus is given to something else, such as *chuanghu* (the window), then the focus reading is created by excluding alternatives in which Zhangsan closed *other things* quickly or in the garden. But either way, the focus reading presupposes that Zhangsan do things in a specific

manner/place. From the view of pragmatics, the modifications are often interpreted as more-than-enough information, which triggers conversational implicature. Such a situation is more complicated than a simple event which only involves the default participants, so there must be a special context to help the manner and location information be focused or backgrounded.

For example, suppose the window in (6a, b) controls the entrance to a secret chamber. The chamber only opens if someone closes the window quickly first, reopens it, and closes it slowly again. Under such a circumstance (6a) is acceptable with the manner adverb. The sentence thus gets an interpretation that that the work is half-done, and Zhangsan then has to close the window slowly. By a similar logic, (6b) with the locative adverbial is also acceptable if Zhangsan is supposed to close the window in the garden and repeat it in the living room.

The existence of sentential *le* also causes focus intervention effect in some circumstnces. Note that a Mandarin sentence with only verbal *le* can be ambiguous when there are multiple quantifiers, as in (7a). But with the DLC it has only one interpretation, namely the wide scope reading of the universal quantifier for the subject, as in (7b).

(7) a. Mei-ge   xuesheng dou kan   le   yi-bu   dianying.

Every-CL student   all   watch LE one-CL film.

Interpretation: 1. For every student x there is a film y, so that x watched y.

2. There is a film y so that for every student x, x watched y.

b. Mei-ge   xuesheng dou kan   le   yi-bu   dianying le.

Every-CL student   all   watch LE one-CL film   LE.

Interpretation: For every student x there is a film y, so that x has watched y.

Huang (1982) claims that Mandarin is different from English in that sentences such as (7a) are unambiguous, and he thus proposes that there is isomorphism between the LF and PF of quantificational structures in Mandarin: scope in Chinese is mostly

determined by the surface c-command relation of the relevant quantifiers. However, this judgement is not echoed in Aoun &Li (1993), Jiang (1998), Jiang & Pan (2005), etc. Lin (1998) supports Huang's isomorphism. But he probabaly realized the disagreement in data and so replaced it with the following one:

(8) Meiyi-ben shu dou you yi-ge   ren mei mai

    Every-CL book all   have one-CL man not buy

    Every book is such that someone did not buy it.   (Lin 1998: 239)

(8) is indeed unambiguous. But here the subject *meiyi-ben shu* (every book) actually occupies the topic position instead of the subject position. So a more accurate translation should be "for every book, there's someone who didn't buy it". It is expected this sentence is unambiguous since quantifier-raising, which is believed to be the reason of ambiguity, cannont get the existentially quantified DP over the topic. Therefore, I will follow Aoun &Li (1993), Jiang (1998), Jiang & Pan (2005) and regard (7a) as ambiguous.

On the syntax level, I propose an account based on focus intervention. Focus intervention, or Beck's effect, refers to the ungrammaticality caused by the combination of a wh-phrase with a quantificational or focusing element in certain configurations (Beck 1996, Beck & Kim 1997, Beck 2006, Li & Law 2016, etc). This effect is most salient in wh-in-situ languages, such as Korean and Japanese, as shown in (9) and (10)

(9) Korean (Beck & Kim 1997: 370)

    a. Minsu-nun   nuku-lul   po-ass-ni?

       Minsu-TOP who-ACC see-Past-Q.

       Who did Minsu see?

    b. *Minsu-man nuku-lul   po-ass-ni?

        Minsu-only who-ACC see-Past-Q.

        Intended reading: Who did only Minsu see?

    c. Nuku-luli   Minsu-man po-ass-ni?

Who-ACC Minsu-only see-Past-Q

Who did only Minsu see.

(10) Japanese (Tanaka 2003: 315)

a.*Dare-mo nani-o   kawa-nakatta-no?

Anybody what-ACC buy-NEG.PAST-Q.

Intended reading: Nobody buys what?

b. Nani-o   dare-mo kawa-nakatta-no?

What-ACC anbody   buy-NEG.PAST-Q

Nobody buys what?

As we can see in (9a), in a wh-in-situ language such as Korean, we do not expect the wh-phase to move (overtly) in a question. However, the sentence becomes ungrammatical with the insertion of the quantificational operator *only*, as in (9b). To express the intended meaning, we need to move the wh-phrase past *only* to the left periphery, as in (9c). This is basically the same in Japanese. This phenomenon is generalized by Beck (1996) as the focus intervention. The definition is in (11). A more concise illustration is in (12).

(11) Focus intervention (Beck's effect):

A quantificational or focusing element may not intervene between a wh-phrase and its licensing operator.

(12) *$[OP_i [… [\text{intervener} [… \text{wh-phrase}_i…]]]]$

According to Beck (2006), the potential interveners include the focusing and quantificational elements, which are usually represented by the following items:

(13) a. nominal quantifiers: *only, even, also, not, every, no, most, few*, etc.

b. adverbial quantifiers: *always, often, never,* etc.

I propose the restriction of interpretation in (8) also results from focus intervention, since Mandarin as a typical wh-in-situ language shows Beck's effect (Li & Law 2016).

(14) *Zhiyou Zhangsan mai le   shenme dongxi?

   Only   zhangsan buy LE what   thing.

   Intended reading: what did only Zhangsan buy?

(15) Shenme dongxi zhiyou Zhangsan mai le?

   What   thing only   Zhangsan buy LE.

   What did only Zhangsan buy?

The ambiguity of (7) depends on the operation of quantifier raising, which allows the lower-merged object to scope higher than the subject (May 1977). The wide scope reading of the existentially quantified object requires it covertly raise to, or agree with, a quantifier head above the universal quantifier. But this operation is blocked by the sentential *le* under FocP, as the particle is a focus operator and thus an intervener in this relation. Therefore, (16a) cannot have the interpretation that every student watched the same film. The structure for (16a) is shown in (16b).

(16) a. Mei-ge   xuesheng dou kan   le yi-bu   dianying le, (# ji   taitannike)

   Every-CL student   all   watch LE one-CL film   LE,   namely Titanic.

   Every student has watched a film, namely Titanic.

   b.
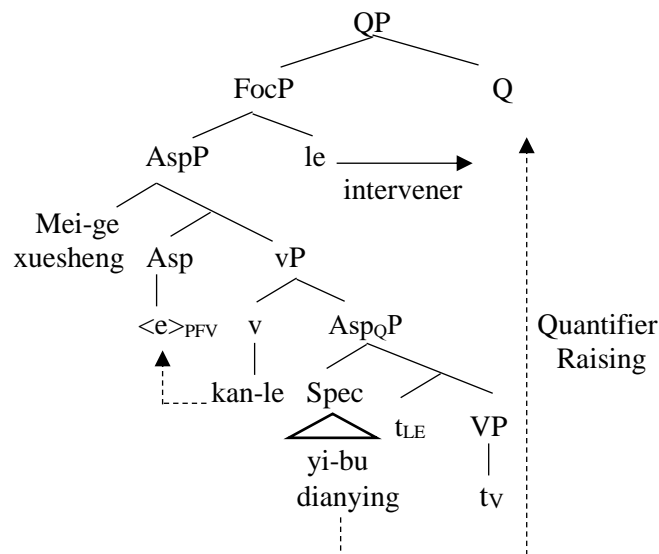
Similarly, two weak quantifiers in Mandarin also results in ambiguous interpretations, as shown in (17). If *two students* scope over *three films*, the result will be Interpretation 1, in which each of the two students watched three films and there are totally six films being watched. On the other hand, if *three films* take the wider scope, the two students then watched the same three films and the total number of films being watched is still 3.

(17) Liang-ge xuesheng kan   le   san-bu   dianying.

   Two-CL student   watch LE three-CL film.

   Interpretations: 1. 2>3 (6 films)

                    2. 3>2 (3 films)

However, adding a sentential *le* to (17) makes Interpretation 2 unavailable, as shown in (18a). I propose this is because the sentential *le* as a focus operator disrupts the quantifier raising of the object, as shown in (18b).[38]

(18) a. Liang-ge xuesheng kan   le   san-bu   dianying le.

   Two-CL student   watch LE three-CL film   LE.

   Interpretations: 1. 2>3 (6 films)

   b.

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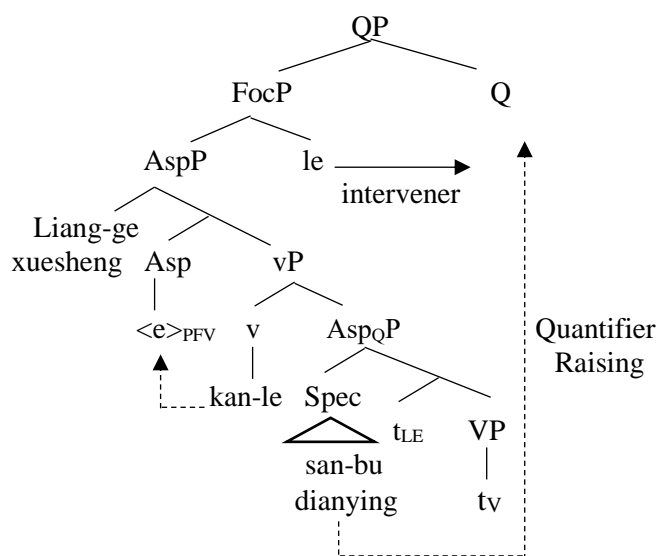
[38] Both (17) and (18a) can have a collective reading, in which the two students as a group watched 3 films together. In this case there are also 3 films being watched, but it is still different from Interpretation 2 in (17), which is a distributive reading that two students separately watched the same 3 films.

Even without quantifier raising, there are also cases in which the sentential *le* cuts off long-distance binding relations. For example, the DLC is not often used in wh-questions, as shown in (19). [39]

(19) Zhangsan mai le shenme dongxi (?le)?

Zhangsan buy LE what thing LE.

What did Zhangsan buy?

(19) with a sentential *le* is only acceptable as an echo question instead of a straight forward question uttered out of blue. I suggest this is because although Mandarin does not require overt wh-movement, the wh-phrase still need to check the [+Q] feature on the head of CP, possibly via Agree (Huang 1982). In this long distance relation of Agree, the sentential *le* becomes an intervener since it is a focus-related operator, as in (20). This is similar to the intervention in wh-questions of Korean and Japanese as discussed (9) and (10).

(20)

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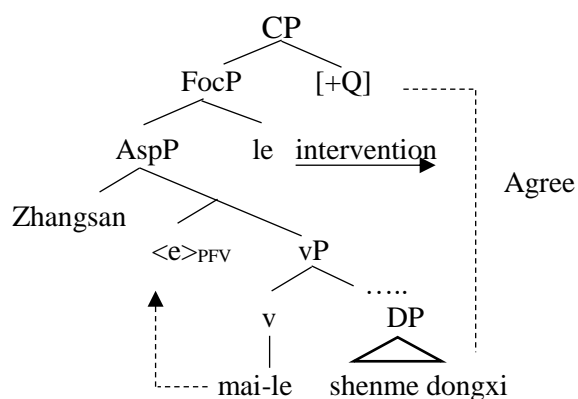
[39] (19) is actually acceptable under the context that we both know Zhangsan has a whole list of things to buy, and now I ask you: which things (on the list) has Zhangsan bought? This possibility typically arises when the answers to the question are supposed to be drawn from a set of individuals previously introduced into the discourse, or when the set forms part of the "common ground" shared by speaker and hearer. In such cases, the wh-phrase is termed as D-linked wh-phrase by Pesetsky (1987 2000). D-linked wh-phrases behave differently from typical wh-phrases in various ways. For example, they can override Superioity effect:
(i) a. *What did you persuade who to read?
   b. Which book did you persuade which person to read?
This suggests that D-linked wh-phrases behave differently in wh-movement. Meanwhile, they are also sensitive to Intervention effect, as argued in Pesetsky (2000). I will not go into more details here, but just assume the acceptable D-linked interpretation of (19) is an expected exception.

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Different from wh-questions, the DLC is compatible with yes-no questions, as in (21a). I argue that this is because a yes-no question is headed by a covert wh-operator base-generated at CP (Radford 2009), which does not bind any wh-variable in the lower structure. I suggest this operator is realized as the particle *ma* in Mandarin. Therefore, the sentential *le* in this case will not be an intervener. The structure is illustrated in (21b).

(21) a. Zhangsan da-sui   le na-ge   beizi le ma?

      Zhangsan hit-break LE that-CL cup   LE Q

      Has Zhangsan broken that cup?

b.
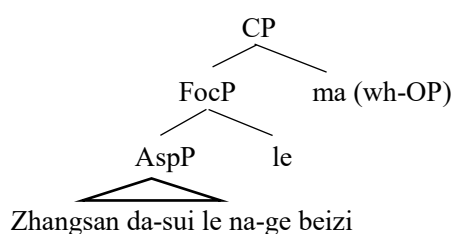
In general, the intervention effect in these cases is created by the function of sentential *le* as a focus marker. It is actually not a restriction exclusive to the DLC. This means we can also expect intervention effect in sentences with only sentential *le* but not verbal *le*. This is true, as shown in (22a, b).

(22) a. Zhangsan (zhang-de) xiang shui (?le)?

      Zhangsan looks   like   who LE.

      Intended reading: Who does Zhangsan look like?

b.
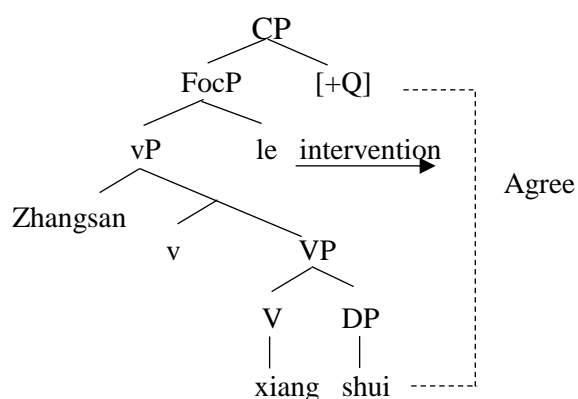
However, there is indeed a special restriction on the use of the DLC: Mandarin does not have a standard negative form of the DLC. The verbal *le* is only used in positive sentences, and the negative form of a sentence with perfective meaning usually makes use of the marker *mei-you*, as in (23a). However, the co-occurrence of *mei-you* and the sentence-final *le* is ungrammatical, as in (23b).

(23) a. Zhangsan mei-(you)   lai   Beijing.

Zhangsan NEG-YOU come Beijing.

Zhangsan didn't come to Beijing.

b.*Zhangsan mei-(you)   lai   Beijing le.

Zhangsan NEG-YOU come Beijing LE.

Intended reading: Zhangsan has not come to Beijing.

The current proposal cannot provide any explanation to this distributional restriction, but there is one point that has to be noted: the restriction is not actually about the DLC in negative sentences. Rather, the ungrammaticality of (23b) is caused by the incompatibility of *you* and sentential *le*, as shown in (24a, b).

(24) a.??Zhangsan you   lai   Beijing.

Zhangsan YOU come Beijing.

Zhangsan has come to Beijing.

b.*Zhangsan you   lai   Beijing le.

Zhangsan YOU come Beijing LE.

Intended reading: Zhangsan has come to Beijing.

Generally (24a) is not acceptable in Mandarin, although it is sometimes used in some southern dialects of Chinese, especially Cantonese and Taiwan Mandarin. But even to those who accept (24a), (24b) is still ungrammatical. This suggests that the maker *you* and the verbal *le* are not interchangeable in all circumstances. Therefore, the discussion of the DLC should be strictly restricted to the cases with both versions of *le*, which are

always positive sentences. The ungrammaticality of (23b) and (24b) calls for further study of *you*, which I leave for future research.

In fact, there is a circumstance where *mei-you* and the sentential *le* do co-exist. Jin (2005) reports that when a phrase indicating a time span of a state occupies the position in front of the perfective marker, the sentential *le* is allowed to appear at the end, as in (25a).

(25) a. Zhangsan san-nian   mei-(you)   lai   Beijing le.

   Zhangsan three-year NEG-YOU come Beijing LE.

   Zhangsan has not come to Beijing for three years.

   b.*Zhangsan san-nian   lai   Beijing le.

   Zhangsan three-year come Beijing LE.

   Intended reading: Zhangsan has come to Beijing for three years.

   c. Zhangsan lai   Beijing san-nian   le.

   Zhangsan come Beijing three-year LE.

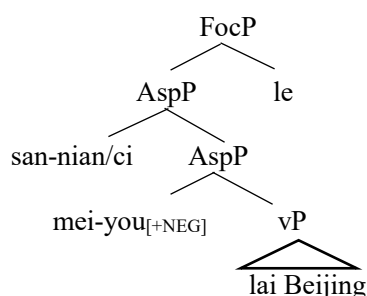   Zhangsan has come to Beijing for three years.

It is not hard to see that in (25a), the phrase of time span *san-nian* bears the focal stress, since it does not normally appear at such a position, as is shown in (25b, c). I propose that (25a) is grammatical because the temporal phrase *san-nian* sits in a position that scopes over the perfective phrase (AspP). The sentential *le* as a focus marker asserts the situation "Zhangsan has not come to Beijing for three years", which is in contrast with alternatives such as "Zhangsan has not come to Beijing for two years". The interpretation therefore stresses the time span of the lasting state of *not* coming to Beijing. It is also predictable that phrases expressing the time interval is not the only type that licenses the co-existence of *mei-you* and sentential *le*. Those indicating the frequency also have such a capability, as in (26). The structure for this kind of sentences is illustrated in (27).

(26) Zhangsan san   ci   mei-(you)   lai   le.

Zhangsan three times NEG-YOU come LE.

Zhangsan has not come for three times.

(27)

```
                    FocP
                   /    \
               AspP      le
              /    \
      san-nian/ci   AspP
                   /    \
          mei-you[+NEG]  vP
                        / \
                       /___\
                    lai Beijing
```

6.2 Cross-linguistic comparison: English perfect

In this section, I will seek cross-linguistic comparison from English perfect and discuss the possibility to extend the compositional analysis of the DLC to this morpho-syntactic structure in English. I will argue the interpretation of current relevance in English perfect also comes from the assertion of a perfective situation. This means the English perfect and the DLC may be used for similar grammatical functions based on similar derivation procedures.

6.2.1 The English perfect

In English, as well as a series of other languages, the perfect is a complex morpho-syntactic configuration consisting of an auxiliary and a past participle. The auxiliary inflects according to the tense, thus creating different types of perfect with regard to the reference time. But this also leads to the question whether the perfect is an aspect or a tense.

Aspect is concerned with different ways of representing the internal temporal constitution of a situation. It is not supposed to be connected with time as tense is. However, the perfect is rather different from other types of aspect, since it tells us nothing

directly about the situation in itself, but rather relates some state to a preceding situation (Comrie 1976). For example, (28) describes a state of a box being empty and its causal relation with an event of John eating all the biscuits.

(28) John has eaten all the biscuits (so there is none in the box now).

McCoard (1978) thus insists that "we shall not refer to the perfect as an aspectual category". On the other hand, as Comrie (1976) notes, in the traditional works that differentiate tense and aspect, the perfect has usually, although not always, been regarded as an aspect. I will follow this tradition in this paper and call it the perfect "aspect", although it is an aspect in a rather different sense from other types.

The perfect has been a problematic category for scholars not only due to the flexibility of its meanings and uses within a given language but also to the variations of what is claimed to be "perfect" across languages. Generally, we can find formally expressed perfect meaning in a number of languages across the world, despite the fact that many of them technically don't have a perfect marking at all.

This section mainly targets the structure underlying English perfect aspect and its syntactic function. I will propose that the *have+past participle* [AUX-PP] form is a complex expression consisting of focus and perfectiveness. Specifically, I propose that the past participle form in English is a method to express perfective aspect (termination of event)[40]. The auxiliary, on the other hand, is a focus marker which syntactically selects a perfective phrase and semantically stresses the termination of the eventuality (either event or state) in question. To be more specific, I assume that *have* besides its lexical meaning is always used as a focus marker. The focus head that takes a perfective phrase is always realized as *have* as a result of agreement, as in (29).[41]

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[40] In this thesis, I will set aside the question whether the past participle in passives is also perfective or not.
[41] Although it is tempting to say that other auxiliaries such as *be* are also focus markers in different agreement forms, it is too big a topic to be discussed in this thesis. Currently I will assume *be* is a different auxiliary at the head of an AuxP.

Focus-Termination-event/state

(29) [$_{TP}$ *have$_i$* +T [$_{FocP}$ t$_i$ [$_{AspP}$ Perf.-*en* [$_{VP}$]]]

The relation between the state we want to emphasize and the actual situation in an

anterior time point is created by means of focus on a perfective situation, which often

yields an interpretation subject to the context. In other words, the reading is based on the

assertion of a perfective situation through the contrast with potential alternatives. The

auxiliary afterwards head-moves to T to check the feature of tense. The structure is shown

in (30).

(30)
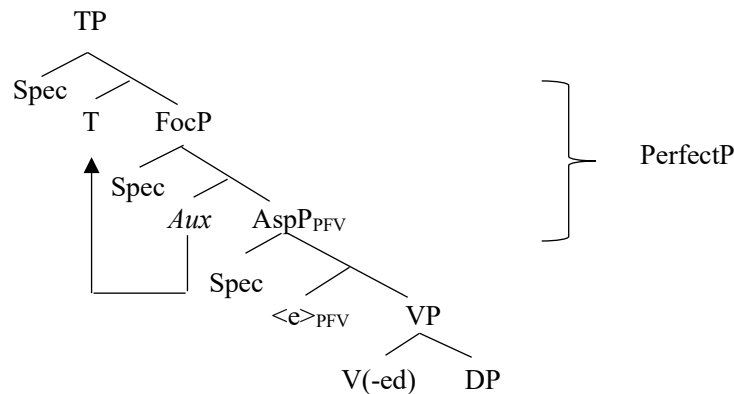
In the proposed structure there is no independent projection of Perfect phrase. It

is the combination of FocP and AspP (Perfective) that results in what is typically referred

to as perfect. In other words, the interpretation of perfect aspect is derived

compositionally.

The proposed compositional analysis has additional advantages in dealing with

the constraints in the use of perfect aspect. For example, it has been observed in Michaelis

(1994) and Mittwoch (2008) that English perfect aspect is not compatible with certain

kinds of adverbial modifiers, especially manner and locative ones, as in (31) and (32).

Such restrictions are not found with sentences in simple past tense, as shown in (33) and

(34). (Mittwoch 2008: 329-330)

(31) John has/had closed the window (??quickly)

(32) John has/had peeled three potatoes (??in the garden)

(33) John closed the window quickly.

(34) John peeled three potatoes in the garden.

Moreover, it seems the wide scope reading of a quantified object is not available in perfect aspect, as in (35), while it is totally fine in simple past, which often makes the sentence ambiguous, as in (36). These restrictions are very similar to those seen in the DLC as discussed in the last section.

(35) Every student has watched a film. (Scope: ∀＞∃)

(36) Every student watched a film. (Scope: ∀＞∃ or ∃＞∀)

But in the next part, I will first discuss the basic uses and the semantics of perfect aspect and how it can be accommodated in the proposal here.

6.2.2 The semantics and pragmatics of the perfect

Traditionally there are three types of interpretation associated with the perfect, as described in McCawley (1971) and Comrie (1976)[42], namely:

A. Persistent meaning:

This meaning is also referred to as the universal perfect or perfect of persistent situation. It describe a situation that started in the past but continues into the present, or a state holding throughout an interval, as (37).

(37) John has lived in London for two years (and he still lives there).

B. Experiential meaning:

The experiential perfect, or existential perfect, denotes a fact that a given situation occurred at least once in the past, as in (38).

(38) John has been to London.

C. Resultative meaning:

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[42] Comrie discussed a fourth type of meaning "hot news perfect", which I won't talk about in this thesis.

In the perfect of result, a present state is considered the result of some past situation. In other words, the result or consequences of a past situation still holds at the speech time, as in (39).

(39) John has come (he is here).

These three meanings do not reflect the semantics of the perfect, though. They are more like a classification of its meanings in use. A concise and accurate representation of perfect semantics has always been under debate among researcher in this field. But there are also agreements in certain issues. The core meaning of these different types of perfect is often described as current relevance, which means a perfect sentence describes a situation that is more relevant to the present time than one in the simple past tense (McCoard 1978). For example, in (40), which is a conversation between two speakers, the sentence in the perfect is more appropriate as an answer to the question, while the one in simple past sounds a little weird, if not completely impossible, even though both imply that the event of eating three apples happened in the past.

(40) Speaker1: Have some more apples.

Speaker2: I have eaten three.

(#I ate three.)

In this sense, the resultative meaning, or the perfect of result, is the most typical and prototypical use of the perfect aspect, as it is the clearest manifestation of the current relevance of a past situation (Comrie 1976, Moens 1987, Dahl & Hedin 2000, Lindstedt 2000). I will set aside in this work the experiential interpretation of the perfect, and confine myself to its central resultative use.

Clearly, "current relevance" is too vague an idea. Besides, the result or consequence of the situation expressed by a particular sentence seems to vary greatly according to the context. For instance, (39) does not always entail that John is at the

current location at the speech time, although such a state is the necessary result of the event of John's coming.

To exemplify, suppose the speaker is working at a school office and every student is required to come and enrol. If the speaker says "John has come", it is very likely that John is not at the office at the moment. The intended meaning is that "John has finished the enrolment procedure". This can also be interpreted as the completion of anything John has to come to do. From this we can see that the current state in the perfect aspect is more of a conversational implicature than an entailed onging result of the event.

Nishiyama & Koenig (2004) also point out that sometimes there is no strong logic relation between the intended reading and the previous situation. For example, a speaker may use (41a) to a person who is looking for the key, but that does not necessarily mean that the state in (41b) is a result from the event of seeing the key.

(41) a. I have seen the key in this room.

b. The key is in this room.

This is a very interesting point, but from my perspective (41) may not be a strong counter example to Moens' view. In fact (41b) is not necessarily the "perfect state" of (41a) as Nishiyama & Koenig propose. It only emphasizes the fact that I saw the key in the past and is not specific about where is the key is now. It is very likely that the key turned out not in this room.

This is supported by Parsons (1990), who argues that a perfect sentence like *Mary has eaten the apple* under neo-Davidsonian framework should be represented in the following logical form.

(42) $\exists e \exists x (eat(e) \wedge Agent(e,Mary) \wedge Theme(e,x) \wedge apple(x) \wedge Hold(R\text{-}state(e),S)$

Although Parsons also claims that the perfect denotes a resultant state underlying the event denoted by the VP's culmination, he is careful to distinguish between the R-state of a telic event and its "target state". If someone throws a ball onto a roof, he explains,

the "target state" of this event is a state where the ball is on the roof. This state continues to hold until the ball is removed from this location. On the other hand, the R-state of the event is just the state of someone's having thrown the ball onto the roof. In other words, the state tells us nothing more than the fact that such an event is completed. Therefore, this resultant state never ceases to hold.[43]

Nishiyama & Koenig (2004) propose an analysis from a neo-Gricean approach. They attempt to connect the interpretation of "perfect state" to the discourse context. The mechanisms for providing the pragmatic inference are based on the informativeness or I-principle (Levinson 2000), where a speaker chooses the less informative utterance if there is a choice, and the hearer enriches it to derive the most specific information, based on the context. Such information needs to be normally inferable from the occurrence of the event. For example, the resultative state of (43a) is still "John's leg is broken", while the perfect state in (43b) is an inference under a certain context, which does not always hold if the context is changed.

(43) a. John has broken his leg.

b. John is behind his work.

Another proposal based on the stativity of the perfect is given by Ramchand (2018). The proposed solution follows the syntax and morphology of the perfect directly and build it around the present tense assertion of a situation s' which is necessarily a consequence of the situation denoted by the participle s_0, as in (44).

(44) i. The Dependent Situation s_0 (the situation existentially closed at Asp)

ii. The Asserted Situational State s': the situation introduced by *have* that is in relationship with the dependent situation.

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[43] Giorgi & Pianesi (1997) disagrees with Parsons' analysis based on a counterexample as the following: imagine that John wins a race on Thursday, but is subsequently disqualified on Friday because he is found to test positive for drugs. So the resultant state in (i) does stop holding. But in this case it is not true that John ever "really" won, it just seemed that way.
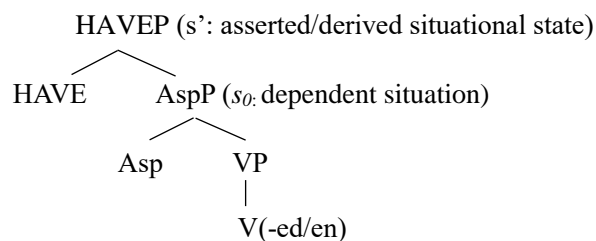
The *-en/ed* participle is the component that directly contributes the embedded situation s_0, and it is the auxiliary *have* that introduces the secondary stative situation *s'*. The fact that the perfect participle is placed higher than the base position of existential arguments must result from the *-en/ed*-participle spelling out AspP. In other words, the perfect is no longer an inseparable unit, but a function that is derived compositionally by two components.

The key to the notion of current relevance is the definition of an inference licensing state, or evidential state (the Evid-State).

(45) For all *s'* and *s*, *s'* is an Evid-State for *s* iff *s'* is a state which gives evidence for *s* in the same world as *s'*.

In short, in the proposed theory, *have* combines with a situational description and creates a *derived stative* situational description, such that the derived stative situation is an **Evidential State** for that situational description, as illustrated in (46).

(46)

$$
\begin{array}{l}
\text{HAVEP (s': asserted/derived situational state)} \\
\quad \diagup \quad \diagdown \\
\text{HAVE} \qquad \text{AspP } (s_{0:} \text{ dependent situation}) \\
\qquad\qquad\quad \diagup \quad \diagdown \\
\qquad\qquad \text{Asp} \qquad \text{VP} \\
\qquad\qquad\qquad\qquad\quad | \\
\qquad\qquad\qquad\quad \text{V(-ed/en)}
\end{array}
$$

For example, in (47) the perfect is infelicitous if A is interrogating B back at the cabin, even though the tracks are still in the snow, and even though that state is clearly relevant.

(47) (Back at the Cabin)

A: How did you find the wounded deer?

B1: The poor animal left bloody tracks in the snow.

B2: ??The poor animal has left bloody tracks in the snow.

On the other hand (47B2) is good if A and B are together in the forest and contemplating the tracks as they speak.

(48) (Out in the Woods)

A: How will we find the deer?

B: No problem. Fortunately, it has left tracks in the snow.

In the analysis proposed by Ramchand, the answer B2 in (47) is weird because the perfect reports a state as evidence. In other words, the deer leaving blood tracks is supposed to imply the fact that the dear is wounded, but we already know it directly from A's question, so the perfect used here does not contribute anything as an answer. It is only felicitous when it is precisely that state that is present and apparent to the interlocutors and not the entailed event itself as in the situation of (48), where the speakers didn't know the deer was wounded.

The solution I propose in this thesis is basically a combination of the semantic representation in Parsons (1990), the pragmatic approach in Nishiyama & Koenig (2004), and the compositional analysis in Ramchand (2018). To be specific, I argue that the assertion of a terminated event or state plays a central role in the interpretation of the perfect, while the flexibility in the interpretation is just a pragmatic issue. However, there is no need to assume a resultative state or perfect state, since there is no concrete evidence that such a state exists on the syntax level.[44]

I propose the perfect interpretation is triggered by the assertion of a perfective event, which is represented by the past participle inflection of the predicate. The contrast with alternative situations is enough to create a discourse effect which leads the hearer to turn to the pragmatic inference available within the context. In other words, we use the perfect to emphasize the existence of an eventuality which is over by the reference time. The semantic representation of (49a) under this view should be like (49b).

(49) a. Mary has eaten the apple.

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[44] Katz (2003) and Ramchand (2018) both propose a series of diagnostics to show the parallels between perfect and statives in distribution. But this does not prove the perfective is stative, because there are situations which are generally not taken to be stative but nonetheless pass these tests.

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b. ∃e∃x [EAT(e)∧Originator(e,Mary)∧S-o-q(e, the apple)∧Quantity(e)∧

Perfective(e)]

This proposal can explain the current relevance issue in most cases. For example, in the case of deer-chasing in (47), the answer in present perfect is infelicitous because the present tense sets the reference time the same with the speech time. To be specific, it extends the meaning that the event of the deer leaving blood track is over before the time of the speech. This is not enough as an answer to this particular question in (47) as the sentence still holds if the event of leaving blood track happened after the time point at which we found the deer but before the speech time, in which case the blood track cannot be interpreted as the reason we found the deer. A valid answer needs to emphasize the fact that the blood track was left before we found the deer. As a result, an utterance in the past perfect (It had left bloody track in the snow) is a completely good answer.

It is not hard to see that this proposal can accommodate the resultative use of the perfect, but it does not seem to be compatible with the persistent meaning, as in (50). In (50), the activity of living in London does not terminate by the speech time and is supposed to continue.

(50) John has lived in London for two years (and he still lives there).

However, most of the native speakers I consulted reported that (50) is ambiguous, which means it is not entailed that John still lives in London at the moment. Portner (2003) also points out that a persistent reading is available only if an adverbial led by *for* is present in the sentence. As a comparison, (51) does not allow a continuative reading as (50) does. Such a persistent interpretation is only compulsory, as noted by Dowty (1979), when the phrase denoting time span is pre-posed to the beginning of the sentence, as in (52).

(51) John has lived in London.

(52) For two years, John has lived in London.

Both Hitzeman (1997) and Portner (2003) believe this is an issue concerning scope. When the temporal adverbial phrase scopes lower, the eventuality that terminates is actually "John living in London for two years" instead of just "John living in London." The termination of the former does not entail that of the latter, because the termination point becomes the boundary of the time span. If the adverbial occurs after the predicate, two interpretations of the sentence are possible, since it is unclear whether the adverbial is within the scope of the perfect or not. Alternatively, the adverbial can originate higher than the perfect, in which case it scopes over the termination point. The pre-posed position is necessarily such a position. This explains why (52) can only have one reading, whereas (50) has two.

To sum up, in this section I provided a brief discussion of the semantics of the perfect aspect in English and its interpretation in real use.[45] I agree with the traditional view that the core function of the perfect is to denote a situation which comes to an end before a reference time point has some relevant consequence or influence at the reference time in question. Such a situation does not have to be a telic event with a natural culmination point in its lexical meaning, but only an eventuality (either event or state) that terminates within a boundary. In addition, I believe there is no such thing as a perfect state, which is supposed to describe the after-effect of a given situation. I proposed that the prototypical function of the perfect, or the current relevance reading, is created by asserting a perfective eventuality, while its discourse effect and flexibility in meaning is just pragmatically achieved by interpreting the focus in a particular context.

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[45] There are also other irregularities found with the present perfect in English, commonly known as the present perfect puzzle. English present perfect is incompatible with specification of the time for a past situation, and it prohibits a sentence in perfect aspect to take a subject that no longer lives in this world (lifetime effects), as in (i) and (ii).

        (i)*John has got up at five o'clock this morning.
   (ii)*Charles Darwin has visited Australia.

I set these problems aside in this thesis and simply assume the present perfect is not essentially different from the typical function of the perfect aspect in other tenses. More details can be found in Comrie (1976) and Binnick (1991), etc.

In the next section I will examine the syntactic structure of the perfect and discuss some special restrictions that may be arguments in support of this view.

6.2.3 The syntax of the perfect

As I have argued in the previous section, I assume the perfect interpretation result from the assertion of a perfective eventuality. This suggests that we need at least two operations in this process: 1. to provide a perfective viewpoint; 2. to provide a focal view. These two functions does not seem similar to each other: one is obviously related to aspect but the other is focus. Therefore, it is likely that these two functions are carried out by different categories in the syntax. Following this assumption, I propose that the standard form of the perfect in English, namely an auxiliary followed by a past participle ([AUX-PP]), should not be viewed as a single inseparable inflection for a syntactic perfect phrase. I assume the eventuality is indicated by the predicate part (the VP) of the clause and the past participle form of the verb gives a perfective aspect viewpoint to the eventuality. The auxiliary *have* is a focus maker, which scopes over the perfective phrase and takes the whole perfective phrase into the computation. The basic structure is illustrated in (53).

Focus-Termination-event/state

(53) [$_{TP}$ *have$_i$* +T [$_{FocP}$ t$_i$ [$_{AspP}$ Perf.-*en*   [$_{VP}$]]]
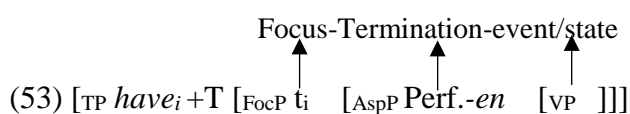
The perfect is different from the simple past tense since the latter does not indicate the situation is over, but simply indicates the event took place before the speech time. For example, (54) conveys a meaning that the running has already come to an end. Even though John is really performing the activity of running at the moment, it cannot be the same event in the perfect aspect that continues into the current time. On the other hand, (55) in the simple past tense does not have such an interpretation. It is not clear in terms of whether the running lasts from the past to now without any stop.

(54) John has run, (#and he is still running).

(55) John ran, (and he is still running).

Meanwhile, the idea that auxiliaries are associated with focus is not uncommon, as exemplified by (56), which is an emphasis structure with *do*. I assume, without further discussion, that *have* in the perfect aspect is also used as a marker for focus structure, except that it is exclusive to perfective situations.

(56) John did eat the apple.

Some restrictions in the distribution of the perfect support this focus analysis. Michaelis (1994) and Mittwoch (2008) both talk about the restrictions on occurrence of manner adverbs with the resultative perfect aspect. Such a restriction is not found with the simple past, as the contrast in (57a, b) shows.

(57) a. John closed the window quickly.

   b. John has closed the window (??quickly).

Moreover, locative adverbials are infelicitous with resultative reading of the perfect, unless, as Mittwoch put, the verb incorporates a [PUT] feature, as shown in (58) and (59).

(58) a. John peeled three potatoes in the garden.

   b. John has peeled three potatoes (??in the garden).

(59) John has put three potatoes in the bucket.

According to Mittwoch (2008), the perfect of result consists of two component, an event component and a result state component, which is similar to the analysis in Parsons (1990). A use of the perfect that includes a result state component is incompatible with manner modification of the event component. To be specific, the manner adverb *quickly* in (57b) and the locative adverb *in the garden* in (58b) only modify the event itself, but do not hold for the result state of the event. On the other hand, in (59) *in the bucket* is the goal of the event of putting potatoes and indicates where the potatoes are

afterwards. This seems to suggest that there is indeed a result state, or state of perfect, in the structure of the perfect aspect.

However, there is evidence to show that the adverbials that only modify the event are compatible with the perfect aspect, as long as there is a proper context. For instance, John is supposed to close the window quickly, reopen it, and close it slowly, as in the case discussed with the DLC in Mandarin. This suggests that we do not really need to introduce a result state in addition to the eventuality, since the context is not supposed to affect which component the adverbials can modify. The uneasiness to process (57b) and (58b) out of blue comes from the fact that it is more difficult to conjure up the alternative situations in a specific manner/location without a proper context, while (59) is acceptable because the goal argument is obligatory by default in this case. This is in line with the observation in Sandstrom (1993) that there are presuppositions associated with perfects that are not evident with simple eventives. In short, "out of the blue" perfects are infelicitous. Katz (2003) also notes that simple eventive sentences appear to be like indefinite NPs, which naturally introduce new events into the discourse and serve as antecedents for subsequent expressions. But when a text begins with a perfect, we feel as if we are starting in the middle of the action, much as when a definite NP or pronoun is used at the start of a text.

Another argument in favour of the focus analysis is the scope issue with the quantified object, which is repeated here as (60a, b). Unlike (60a), which is ambiguous between the wide scope reading of universally quantified subject and the existentially quantified object, (60b) in the perfect aspect, according to most of my informants, has only one interpretation, namely the wide scope reading of the universal quantifier. This can be tested in (61a, b), which indicates that (61b) cannot mean every student has watch the same film.

(60) a. Every student watched a film.

b. Every student has watched a film.

(61) a. Every student watched a film, namely Titanic.

b. Every student has watched a film, (#namely Titanic).

This restriction is also close to that is discussed with the DLC in the previous section. Therefore, I will offer a similar explanation. I argue that the (covert) quantifier raising of the existential quantifier, which is responsible for the wide scope reading of the object in (60a), is blocked by FocP under Beck's effect in (60b), as the auxiliary *has* is an intervener in this relation.

(62)
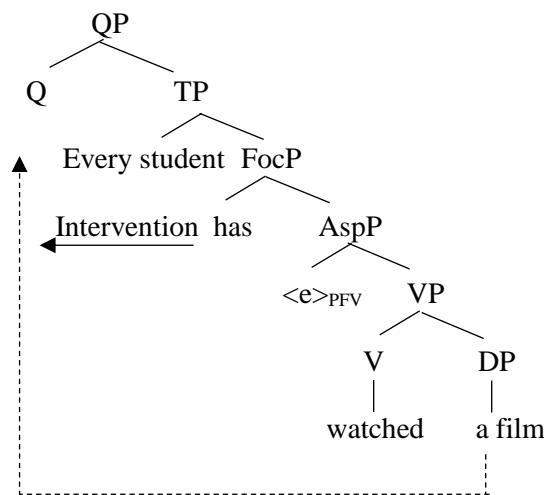
However, a serious problem occurs when we have a lower-merged universal quantificational phrase, as in (63) and (64). (63) still has two interpretations even in the perfect. In (64), on the other hand, the wide scope reading of the subject is not available because of the world knowledge, but the remaining interpretation is the real problem. Both of these examples require quantifier raising of the object, which, in principle, should not be allowed under the proposed analysis in this thesis.

(63) A nurse has taken care of every patient.

(64) At least one tree has fallen on every street.

This problem does not exist in Mandarin, since a sentence with an existentially quantified subject and a universally quantified object is not ambiguous even with only a

verbal *le* in this language, as in (65). But as to (63) and (64), I currently do not have any plausible account. I will leave this issue for future study.

(65) Yi-ge   xuesheng kan   le mei-bu   dianying.

One-CL student   watch LE every-CL film.

A student watched every film.   (∃>∀; *∀>∃)

There are two more differences between the DLC in Mandarin and the perfect in English. First, the Mandarin DLC is not used in wh-questions as a result of potential focus intervention, but in English the perfect is legitimate in wh-questions, as shown in (66).

(66) What has John bought?

I propose that this difference between the two languages is due to the fact that in English the auxiliary does not trigger focus intervention in wh-questions. English has overt wh-movement, in which the wh-phrase raises to the specifier of CP to check with the [+Q] feature on the head via Spec-head agreement. This agreement relation is a local one so that it is not disrupted by the auxiliary at the head of FocP. In other words, the overt wh-movement shifts the long distance binding relation into a local agreement relation, which leaves no room for the focus operator *has* to intervene, as shown in (67).
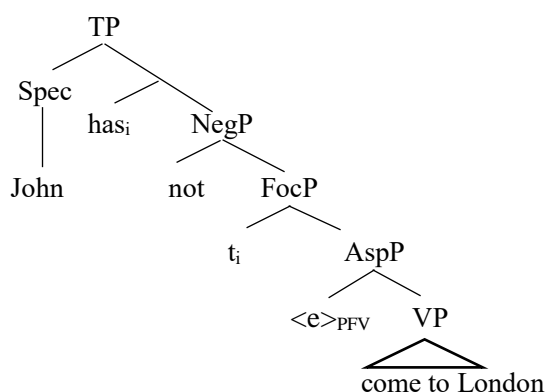
(67)

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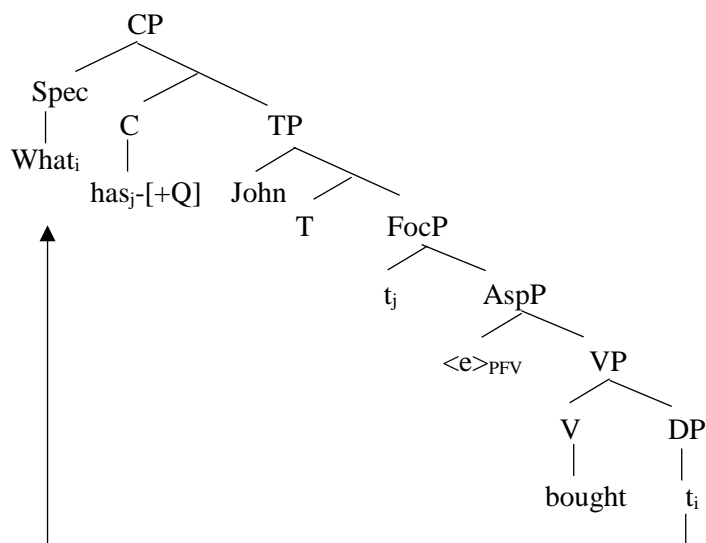
The second difference is the negative form. Unlike the Mandarin DLC, which is only used in positive sentences, the English perfect is free to occur with negation, as in (68).

(68) John has not come to London.

In fact, (68) is a potential threat to the compositional analysis proposed here since I assume Foc is realized as the auxiliary *have* when it takes a perfective AspP, *not* in (68) seems to interrupt this agreement relation.

I follow the claim in Adger (2003) that in the English perfect *not* is originally merged higher than *have*. It appears linearly after the auxiliary because *have* raises to T to check tense feature. This means *not* will not intervene between FocP and AspP, as shown in (69).

(69)

```
                TP
              /    \
         Spec       \
           |    has_i   NegP
           |         /      \
         John      not       FocP
                           /      \
                         t_i       AspP
                                 /      \
                            <e>_PFV      VP
                                        /  \
                                   come to London
```

6.3 Summary of chapter

In this chapter, I compared the Double Le Configuration in Mandarin and the English perfect. I propose that the Double Le Configuration in Mandarin is derived compositionally with two parts: the perfective aspect which indicates the eventuality under discussion is terminated, and the focus marker which produces the assertion of the perfective eventuality. The former is represented by the verbal *le* while the latter is carried out by the sentential *le*. The interpretation of the DLC depends on the interpretation of

the assertion of a perfective situation in a specific context, which is often a pragmatic issue.

Some restrictions in the use of the DLC have natural explanations in this focus-related compositional analysis, such as the incompatibility with manner and locative adverbials in the absence of a proper context. The constraints in the interpretation of multiple quantifiers also have explanations if the focus intervention effect is taken into consideration.

In addition, I propose that the English perfect has a similar structure with the Mandarin DLC, which means it also consists of a perfective aspect and a marker of focus, as separately realized in the past participle and the auxiliary *have*. This morpho-syntactic structure exhibits similar distributional restrictions as to the DLC, although there are also differences due to the configurational variations between the two languages.

This analysis shows that from a cross-linguistic view, there may be a universal mechanism that express the meaning of current relevance with focus and perfectiveness. The flexibility in the interpretation may just come from the flexibility of focus interpretation.

7. Verbal or Sentential: Configuration under Movement

In Chapter 5, I have redefined the sentential *le* as a focus marker that scopes over that outer aspect projection. This means that sentential *le* is not to be directly related to the viewpoint of perfectivity. A sentence with no aspectual marker but only sentential *le* thus cannot be interpreted as a perfective event. Meanwhile, a sentence without any aspect marker at all only has imperfective/habitual interpretation of a general situation, and rejects the episodic reading as a specific event, as shown in (1).

(1) Zhangsan (*zuo-wan) he   jiu.

Zhangsan   last-night drink alcohol.

Zhangsan drinks alcohol./Zhangsan drank alcohol (*last night).

However, this leaves us with the question of where the perfective meaning comes from in the cases such as (2).

(2) a. Zhangsan he   jiu   *le*.

Zhangsan drink alcohol LE.

Zhangsan drinks alcohol (as a habit)/Zhangsan drank alcohol (episodic).

b. Zhangsan mai fang   le.

Zhangsan buy house LE

Zhangsan buys houses (regularly). /Zhangsan bought a house (episodic).

(2a) is ambiguous: it can express a current habitual situation that Zhangsan drinks alcohol in contrast with a presupposed situation that he didn't drink alcohol before. This is the interpretation enabled by the function of sentential *le* as a focus marker, as is discussed in Chapter 5. However, (2a) can also mean Zhangsan drank some alcohol, which describes a perfective event that happened before the speech time. This is also the case in (2b), which either means Zhangsan buys houses regularly as a way of investment, or Zhangsan bought a house for living.

All these examples seem to go against the binary distinctions for the particle *le*, since the function of the particle in these cases appears to swing between perfective and an aspectually neutral focus. Moreover, perfective interpretations emerge with sentences which do not include a verbal *le* (and other aspectual makers), but only a "sentential" *le*, which is not in line with the analysis of perfectivity in the previous chapters. To solve these problems, I will look into the configurations associated with verbal *le* closely and revisit the issue of lincensing [Spec, Asp$_Q$P]. Generally, I will maintain the assumption that there are two types of *le* in Mandarin: one (the verbal *le*) is related to perfective aspect, and the other one (the sentential *le*) is not. But these two versions of *le* may end up in the same linear position, if independent movement operations place the object in a different position. The following two sections in this chapter will be given to the "perfective sentential *le*" structure and show how the form of VO-le can be derived with verbal *le*.

7.1 VP-fronting

In Chapter 2, I have proposed that the specifier position for the aspect of quantity Asp$_Q$P always needs to be occupied by a phrase which can measure the quantity of the event. This requirement is very much like an EPP or edge feature. In the previous chapters, I have shown that [Spec, Asp$_Q$P] can be licensed by a quantity DP object, the subject in unaccusative cases (which is merged at [Spec, Asp$_Q$P] and moved to the left edge), the measure phrase in comparative adjectives, and the phrases indicating the time duration of a situation, as shown in (3a-d).

(3) a. Zhangsan chi *le* san-ge pingguo.

Zhangsan eat LE three-CL apple.

Zhangsan ate three apples.

b. Zhangsan pao le.

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Zhangsan run LE.

Zhangsan ran away/escaped.

c. Zhangsan (bi   Lisi) gao le   san   yingcun.

Zhangsan than Lisi   tall LE three inch.

Zhangsan is three inches taller (than Lisi).

d. Zhangsan tan   gangqin tan   le   san-ge   xiaoshi.

Zhangsan play piano   play LE three-CL hour.

Zhangsan played the piano for three hours.

Following the analysis in Chapter 2, I argue that in these cases it is the particle *le* that assigns range to the open value $<e>_Q$, and the phrase that occupies [Spec, Asp$_Q$P] takes over that function only when *le* is not allowed to occur (i.e. in telic imperfective situations). But [Spec, Asp$_Q$P] needs to be filled in order to measure the quantity of the situation. Therefore, I assume the VP can also raise to license [Spec, Asp$_Q$P] if required. The result of the VP-fronting is the perfective VO-le construction. The structure is shown in (4).

(4)
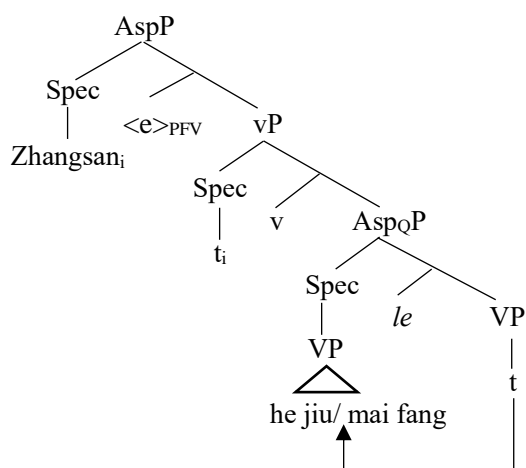
In (4), the verbal *le* is stranded because there is no V-to-v movement in this circumstance, which means the particle is not pied-piped with the verb to the light verb position. As I said in Chapter 2, I assume the V-to-v raising in Mandarin is only driven

by morphological reasons, which means the verb is free to not move to v if it is required. This leaves *le* at the end of the clause and makes it look like a sentential *le*. In addition, there is still a relation of Agree between *le* and the open value $<e>_{PFV}$, although it is not displayed in (4). This accounts for the fact that VO-le structures can have a perfective reading.

This analysis predicts that the VO-le construction should be telic despite the fact that the object is a non-referential bare noun. This prediction is attested in (5a, b).

(5) a. Zhangsan mai fang   you mai che.

      Zhangsan buy house and buy car.

      Zhangsan buys houses and cars.

   b. Zhangsan mai fang   le   you mai che le.

      Zhangsan buy house LE and buy car LE.

      Zhangsan bought a house and (then) a car.[46]

In Chapter 3, I have shown that when two verb phrases are connected by the conjunction marker *you* (又), the result will have a sequential reading if the two events are telic, whereas a simultaneous reading will be yielded if the two events are atelic. This is exactly the case in (5a, b). (5a) has a simultaneous reading, which means Zhangsan buys an indefinite number of houses and cars at the same time. On the other hand, two perfective VO-le structure are connected by the conjunction marker *you* in (5b), and the interpretation clearly states that Zhangsan bought a house *before* he bought a car. This shows that the perfective VO-le construction extends telic situations.

It has to be noted that in some cases two VPs can be connected without any conjunction marker, and the particle *le* occurs only once after the second VP, as in (6a).

(6) a. Zhangsan mai fang   mai che le.

---

[46] The bare nouns in (30b) are translated as singulars, because in the common sense knowledge one only need one house and one car. But following van Geenhoven (1998), Farkas & de Swart (2003) and Espinal & McNally (2011), I assume the bare noun in PNI is number neutral, which means it can be interpreted as either singular or plural.

Zhangsan buy house buy car LE.

Zhangsan bought a house and a car.

b.??Zhangsan mai rou   mai cai   le.

Zhangsan buy meat buy vegetable LE.

Intended reading: Zhangsan bought meat and vegetable.

In the interpretation of (6a) the buying a house does not necessarily precede buying a car. But I argue that this is because *mai fang mai che* (buying house and car) in Mandarin is an idiomatic phrase, which means that someone has achieved a certain degree of success in life (as owning a house and a car). Therefore, there is in fact only one event instead of two in (6a). In contrast, (6b) is not very acceptable, because buying meat and vegetable is not an idiomatic phrase that can only be interpreted as two separete events.

Furthermore, (6a) also indicates that the bare noun object in perfective VO-le construction is not merged as the specifier of some higher category above VP (i.e. [Spec, AspQP]) as in the more general V-le-O cases. Instead, (6) has a structure in which a single *le* scopes over two coordinated VPs, and the bare noun object is merged as the complement of the verb within the VP, as is shown in (7). I will return to the position of the object in the next section.

(7)
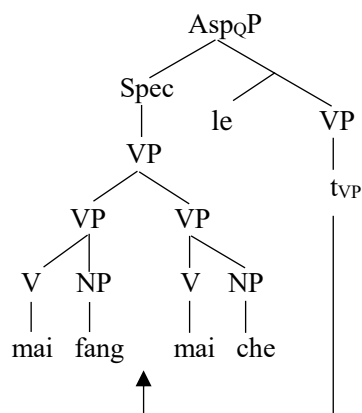
The next question is why a VP with a bare noun object can measure the quantity of the event and thus express a telic interpretation. Note that throughout the thesis, I

discuss telicity based on the definition of quantity in Borer (2005a, b), which claims that quantity/telicity is a property of the whole predicate, and a quantity DP is only one of the many ways to give the predicate a quantity property. In Chapter 3, I have shown examples from Mittwoch (1991) in which telic interpretations with a bare noun object are available. Some of them are repeated as (8a, b).

(8) a. The prospectors struck oil on Saturday and on Sunday.

    b. John discovered gold and (then) found precious coins.

In the analysis of Borer (2005b), these examples are telic because there is a covert locative phrase that existentially bounds the bare nouns. But there are other cases in which no quantity DP occurs, as in (9).

(9) The army took over (in two hours).

Borer (2005b) notes that (9) does not necessarily include an elliptical object argument, as *take over* does not in fact mean the same as *take something over.* But (9) is clearly telic. Borer argues that this is because the particle *over*, originally merged as the complement of the verb, can raise to [Spec, Asp$_Q$P] and assign range to the open value for quantity, as shown in (10).

(10)
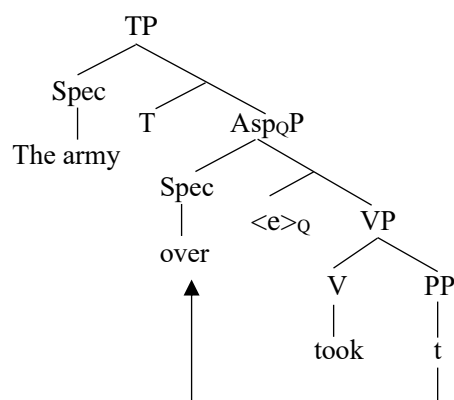
In this thesis, however, I want to propose a slightly different analysis both for the English telic unergatives such as (9) and the VP-fronting cases in Mandarin.[47] Note that

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[47] I leave the question aside whether the examples in (8) involve pseudo-noun incorporation or not.

since there is no elliptical object in (9), the particle *over* is not used to specify the final state of a particular argument. Rather, *over* behaves like a modifier of the verb and provides a supplement to the lexical meaning of the latter. In other words, the predicate itself has a clear boundary though there is no object. This is much like the function of the bare noun object in the perfective VO-le construction (details will come in the next section). Therefore, in cases like (9) I assume the whole VP undergoes VP-fronting to the [Spec, Asp_QP] to license $<e>_Q$, as in (11).

(11)
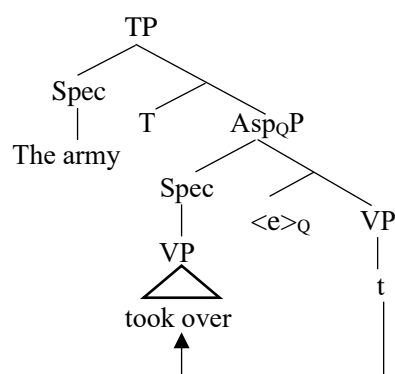
In a Mandarin VP-fronting case as (12), I assume that the bare noun object also acts as the modifier of the verb. In other words, we are talking about events which can be termed as *alchohol-drinking* and *house-buying*. This means the situation culminates as long as any amount of alcohol is drunk or the any number of houses are bought. This interpretation is different from the general atelic meaning of *drinking alcohol* and *buying houses*, in which there is no clear boundary. This is the reason why a VO-le construction with a bare noun object can express a telic interpretation.

(12) Zhangsan he   jiu/   mai fang *le*.

Zhangsan drink alcohol buy house LE.

Zhangsan drank alcohol/bought a house.

On the other hand, in an intransitive case like (13a), although in principle the verb *pao* (run) can raise to license [Spec, Asp_QP] as a VP, it cannot yield a legitimate telic interpretation in the structure shown in (13b). This is because the event of *running* which
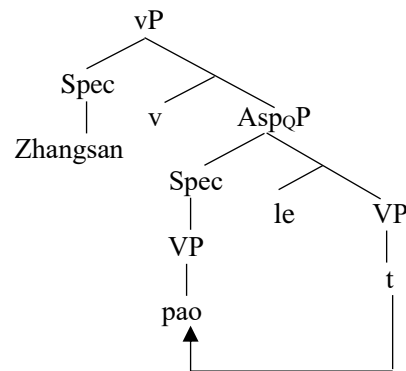
is denoted by the VP does not have a bounded reading itself, unless there is a special context indicating the running does have a boundary. (13a) therefore is only legitimate under a unaccustive interpretation.

(13) a. Zhangsan pao le.

Zhangsan run LE.

Zhangsan ran away./*Zhangsan ran.

b.*

7.2 Pseudo-noun incorporation

Given the structure proposed in Chapter 2, it is clear that *le* is merged higher than the verb. It appears after the verb because the verb moves up. But *le* still precedes the object in the final order since the object stays low. In this section, I will show that the object can raise together with the verb as a VP to a higher position when the object is merged as the complement of the verb, whereas a normal object argument originates as the specifier of Asp_QP in the analysis of this thesis. This VP-fronting results in the VO-*le* order with a perfective interpretation.

As is shown in many examples in the previous section, the perfective VO-le construction generally involves a verb that takes a bare noun object. This reordering effect is similar to the process of pseudo-noun incorporation (PNI), which is found in many different languages. A typical example of PNI is the analysis in Massam (2001). Massam

found that in Niuean, a language whose normal word order is VSO, the object in certain circumstances can undergo predicate fronting along with the verb to derive the "incorporated" order VOS, as in (14a, b).

(14) a. Takafaga tumau ni   e ia e   tau ika.   (VSO)

Hunt   always Emph Erg he Abs Pl fish.

He is always fishing.

b. Takafaga ika tumau ni   a   ia.   (VOS)
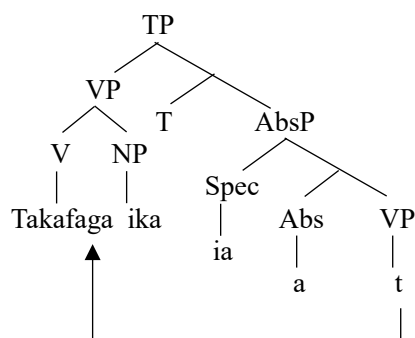
Hunt   fish always Emph Abs he.

He is always fishing.   (Massam 2001: 157)

Massam claims that in Niuean the object argument needs to undergo object shift to a position outside of VP for case reasons. But an NP object does not require case and can remain adjacent to the verb and moves along with it to [Spec, TP], which yields the verb-initial order in Niuean, as in (15).

(15)

Since the object does not really incoporate "into" the verb to form a single head, this case in Niuean is different from the noun incorporation cases in Baker (1988). Massam therefore makes use of the term "pseudo-noun incorporation". However, Massam also notes that the operation that links the verb and the NP is purely merge, which means PNI actually refers to the process that a verb and its object moves together as a VP.

However, there are some differences between the PNI proposed by Massam and Mandarin VP-fronting. In Massam's analysis the verb in Niunean always needs to move

to the left periphery of the sentence, and the object goes with the verb only when it is not moved out of VP for case reasons. But I assume there is no case requirement in Mandarin, and the bare noun object is only involved in VP-fronting when it is merged as the complement of the verb.[48] In other words, the movement occurs only when we want the whole VP instead of the other phrases to license [Spec, Asp$_Q$P]. But there are also many similarities between PNI and VP-fronting.

PNI often exhibits some restrictions on interpretation. For example, Dayal (2011) shows that in Hindi PNI cases the object after the verb seems to be non-referential, which means it does not refer to any specific entity, but just extends generic meanings or forms compound meaning with the verb, as in (16a, b).

(16) a. anu-ne kitaabi paRhii.　　#voi bahut acchii thii

　　　Anu　book　read-PFV　it　very　good　be-PST

　　　Anu book-read (read a book). #It was very good.

　　b. anu apne　bete ke-liye laRkiii dekh rahii　hai

　　　Anu self's son　for　　girl　　look PROG be-PRS.

　　　Vo #us-kaai　swabhaav jaannaa caahtii　　hai.

　　　She she-GEN nature　　to-know want-IPV be-PRS.

　　　Anu is girl-looking for her son. She wants to know #her temperament.

Furthermore, PNI constructions in general have to refer to recognizable, typical or institutionalized activities, namely activities which are well-established, common and easily identifiable, as shown in the follow examples.

(17) Danish (Asudeh & Mikkelsen 2000):

　　a. Min nabo　　kobte　hus　sidste ar

　　　my　neighbour bought house last year

　　　My neighbour did house-buying last year.

---

[48] As I have argued in Chapter 2, the object is usually merged at [Spec, Asp$_Q$P] to measure the quantity of event.

b.#Min nabo kobte blyant igar

   my neighbour bought pencil yesterday

(18) Hindi (Dayal 2011: 133)

   a. laRkii-dekhnaa, baccaa-khilaanaa,

   girl-seeing   child-looking-after

   b. *aurat-dekhnaa, *baccaa-maarnaa

   woman-seeing   child-beating

The object *hus* (house) in (17a) can be incorporated because *house-buying* refers to a well-established and prototypical activity, but pencil-buying does not have this interpretation, so (17b) is deviant. In (18), the verb *see* can combine with *girl* but not with *woman*. This is because seeing a girl in Hindi means choosing a prospective bride, but seeing a woman does not have this meaning. This is similar in *looking after a child* vs. *beating child.*

This tendency of prototypicality is connected to the restriction of modification and number in PNI cases, as in (19) and (20).

(19) Hindi (Dayal 2011: 136)

   anu sirf   puraanii/#bhaarri kitaab becegii

   Anu only old   heavy   book sell

   Anu will only sell old/#heavy books.

(20) Hungarian (Farkas & de Swart 2003: 13)

   Mari (#egy) belyeget gyujt.

   Mari a   stamp   collect.

   Mari is collecting stamps/# a stamp.

Dayal (2011) points out that in a case like (19), modifying the books with *old* is legitimate, but modifying them with *heavy* is not. Farkas & de Swart (2003) reports that

the verb in a Hungarian PNI structure can take an object in bare singular form, but not a singular indefinite with a determiner, as in (20).

We can find parallel behaviors in the perfective VO-le structure in Mandarin. The non-referentiality effect with this VO-le structure can be tested by the restriction on co-reference with pronominal.

(21) a. Zhangsan$_i$ zuo-wan sha le ren$_j$.   Ta$_{i/j}$ shi ge laoshi.

Zhangsan last-night kill LE person. He COP CL teacher.

Zhangsan$_i$ killed the person$_j$ last night. He$_{i/j}$ is a teacher.

b. Zhangsan$_i$ zuo-wan sha ren$_j$ le. Ta$_{i/*j}$ shi ge laoshi.

Zhangsan last-night kill person LE. He   COP CL teacher.

Zhangsan$_i$ killed someone$_j$ last night. He$_{i/*j}$ is a teacher.

(22) a. Zhangsan zuo-wan sha le zhu, zhong liang-bai   gongjin.

Zhangsan last-night kill LE one-CL pig, weigh two-hundred kilogram.

Zhangsan butchered the pig last night. It weighs two-hundred kilogram.

b.#Zhangsan zuo-wan sha zhu le, zhong liang-bai   gongjin.

Zhangsan last-night kill pig LE, weigh two-hundred kilogram.

Zhangsan butchered (a) pig(s) last night. It weighs two-hundred kilogram.

(21a) is a typical case with verbal *le*. The pronominal *ta* in the following clause can refer to either the subject Zhangsan or the object *ren*, creating an ambiguous reading between Zhangsan is a teacher and the person Zhangsan killed is a teacher. (12b) in the VO-le order, however, loses the latter interpretation. *Ta* here cannot co-refer with the object *ren* in the previous clause. The second clause in (21b) therefore can only be interpreted as *Zhangsan is a teacher*. This is the same with (22a, b), except that a man naturally cannot weigh two-hundred kilogram. (22b) is thus simply odd.

Furthermore, the examples in (23-25) show that VP-fronting with bare nouns is subject to the "prototypicality" requirement. With the verb "kill", for example, the object

"cat" is degraded, because *butchering pigs* is generally established as a prototype activity, but *butchering cats* is less common. The fact that (24a) and (25a) are perfect suggests that this is not simply caused by the mismatch between certain verbs and nouns.

(23) a. Zhangsan zuo-wan   sha ren   le.

Zhangsan last-night kill person LE.

Zhangsan killed people last night. / Zhangsan committed murder last night.

b. Zhangsan zuo-wan sha zhu le.

Zhangsan last-night kill pig LE.

Zhangsan killed pigs last night (as a butcher).

(24) a. Zhangsan zuo-wan   sha le   yi-zhi   mao.

Zhangsan last-night kill LE one-CL cat.

Zhangsan killed a cat last night.

b. #Zhangsan zuo-wan sha mao le.

Zhangsan last-night kill cat LE.

Intended reading: Zhangsan killed cats last night.

(25) a. Zhangsan zuo-wan hua le   yi-zhi   niao.

Zhangsan zuo-wan paint LE one-CL bird.

Zhangsan painted a bird last night.

b.??Zhangsan zuo-wan hua   niao le.

Zhangsan last-night paint bird LE.

Intended reading: Zhangsan painted birds last night.

Finally, in the VO-le construction only modifiers expressing prototypical meaning with the object are allowed to occur between the verb and the noun, as in (26a, b). [49]

(26) a. Zhangsan zuo-wan   he   hong jiu   le.

Zhangsan last-night drink red   alcohol LE.

---

[49] (26b) is only acceptable when there is a particular context such as Zhangsan is supposed to drink expensive/a glass of alcohol and the interpretation is he did it.

Zhangsan drank red wine last night.

b.??Zhangsan zuo-wan   he   mingguide jiu   le.

Zhangsan last-night drink expensive alcohol LE.

Overall, the bare noun object in the Mandarin perfective VO-le structures does not refer to any entity, but only denotes a property. Therefore, it is not a real argument of the verb, but acts as a modifier that supplements the lexical meaning of the predicate, which is in line with the proposal about PNI in Geenhoven (1998), Espinal & McNally (2011). Therefore, the VP-fronting cases with a bare noun object only denote prototypical activities and tend to reject modification, unless the prototypicality is preserved.

Another possible structure for the perfective VO-le cases is formed by noun incorporation, which can also result in reordering effect. Some data from the Chilean language Mapudungun is shown in (17a, b).

(27) a. Ni chao kintu-le-y   ta-chi   pu   waka.   (SV-infl-O)

My father seek-PROG-IND.3sS the-ADJ COLL cow.

My father is looking for the cows.

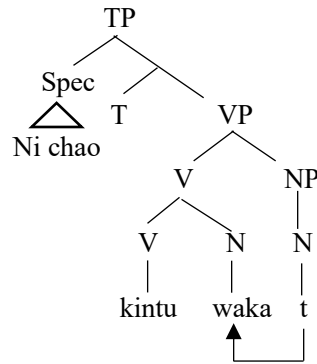b. Ni chao   kintu-waka-le-y.   (SVO-infl)

My father seek-cow-PROG-IND.3sS

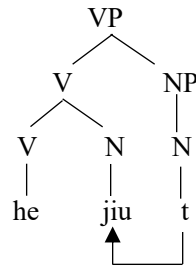My father is looking for the cows.

(Baker 2009: 149)

In the analysis of Baker (2009), (27b) is derived from an original structure similar to (27a) by means of noun incorporation. He argues that the formation of noun-verb takes place at the syntax level (as in Baker 1988). More specifically, there is a movement process which takes the noun from its base position, namely the complement of V, and adjoins it to the V node in the syntax. The derivation process makes use of head movement, thus the product yielded is also a verb head instead of a VP phrase. The simple illustration is given in (28).

(28)

```
                    TP
                   /  \
                Spec   \
                /\    T    VP
              Ni chao     /  \
                         V    NP
                        / \    |
                       V   N   N
                       |   |   |
                     kintu waka t
                            ▲___|
```
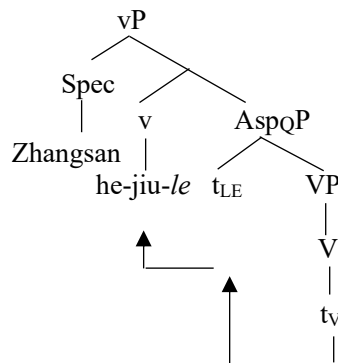
This would appear to be a potential alternative solution to the perfective VO-le structure in Mandarin. If we follow the noun incorporation analysis, the object that undergoes incorporation should be an N merged as the complement of the verb, which is different from a typical DP object as it is not a full argument. The noun adjoins to the head V and forms a compound *he-jiu*, which is still a V head instead of a VP phrase, as in (29). The V head then undergoes short V-to-v movement via Asp_Q head to the light verb position. As a result, we get the derived word order VO-le. The final syntactic structure is shown in (30).

(29)

```
              VP
             /  \
            V    NP
           / \    |
          V   N   N
          |   |   |
          he  jiu t
               ▲__|
```

(30)

```
                vP
               /  \
            Spec   \
              |    v     Asp_QP
          Zhangsan |     /   \
                  he-jiu-le t_LE  VP
                      ▲           |
                      |___         V
                          |        |
                          |____    t_V
                               |___|
```

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However, I maintain the claim that the VO-le order is derived by a VP-fronting process similar to PNI instead of noun incorporation. This is mainly because of (31a, b), which show that insertion is possible between the verb and the object.

(31) a. Zhangsan chi-wan   fan   le.

Zhangsan eat-finish meal le.

Zhangsan finished his meal.

b. Zhangsan da-si   ren   le.

Zhangsan beat-dead people LE.

Zhangsan killed someone.

(31a) and (31b) are representative examples of a resultative adjective in Mandarin, where the adjective denoting the result state of the object has to follow the verb immediately, as I have mentioned previously. The fact that the resultative adjective must be adjacent to the verb and that *le* can only occur after the adjective suggests that this is also a case of incorporation, with the adjective integrated into the verb.

Syntactically, as Sybesma (1997 1999) proposes, the adjective projects into an AP, for which the object DP serves as the specifier. After the AP merges with the verb, the adjective head moves to V and incorporates into it to form the complex verb [V-A] (this step is always necessary in order to obtain the normal word order of resultative predicates). Lastly, [V-A] moves across Asp_QP via head movement to the light verb[50], as in (32).

(32)

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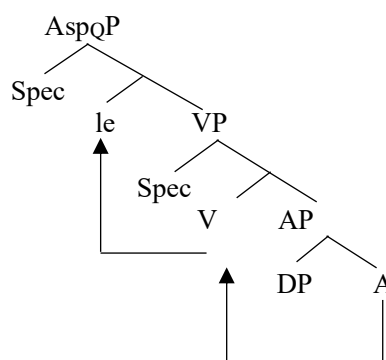
[50] Sybesma doesn't say there is an AP here, but simply say there is a resultative predicate. But he does assume the resultative head incorporates into the verb via head movement.

However, if we assume the analysis in (29), then in the case of resultative adjective, both the adjective and the noun will compete for the position after the verb to be incorporated. Since the adjective must move to V and get incorporated to give the right word order, it prevents the object incorporation from happening and the structure is unlicensed, as shown in (33). This predicts that the insertion of resultative adjective between the verb and the object should not be possible.

(33)
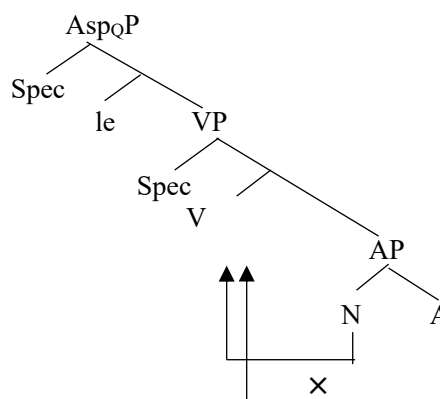
The fact that the sequence of VAO-le is grammatical in (31a, b) suggests that the prediction of (33) is wrong. The verb and the object in VO-le cannot be combined by noun incorporation. On the other hand, the VP-fronting analysis does not have this problem, as it moves the whole VP under AspQP upwards to derive the desired order and therefore involves only one step of incorporation: A into V.

Another argument against the noun incorporation comes from the head-movement analysis in (30). If the object argument is incorporated into the verb and moves together with the head V, the [Spec, AspQP] position will be left open, which, in principle, can be otherwise occupied. In other words, we will expect sentences like (34a) under the structure (34b). (As I have argued in Chapter 4, time duration phrases such as *shi-fenzhong* (ten minutes) in (34) can act as the measurement phrase at [Spec, AspQP].)

(34) a.*Zhangsan he   jiu   le shi-fenzhong.

        Zhangsan drink alcohol LE ten-minute.

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b.*

vP
Spec
Zhangsan
v
he-jiu-*le*
AspQP
Spec
shi-fenzhong
tLE
VP
tV
tN
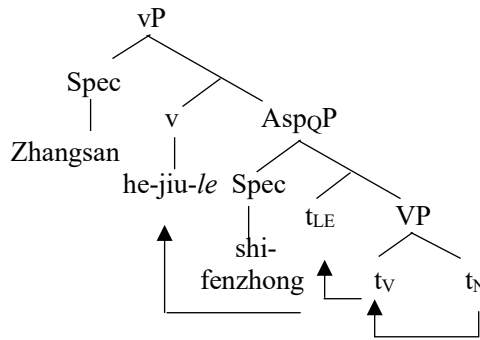
But obviously this prediction is also wrong. I argue the VP-fronting analysis can provide an account for this restriction: the raising of VP lands at [Spec, AspQP], so this position is not actually available to accommodate another argument.

As is mentioned earlier in this section, PNI is typically related to re-ordering effect. This is because there is no distinctive syntactic relation between the verb and the noun in PNI constructions, so it is only visible when independent movement operations cause the dislocation of the object. In other words, PNI is not the motivation of movement, and the VP moves for separate reasons. I propose that this is also the case with Mandarin perfective VO-le constructions—the VP raises to license [Spec, AspQP], as is discussed in the previous section. PNI is triggered when there is a bare noun merged with the verb as its complement. This means even there is no PNI, the VP-fronting can still occur, in principle. But the VP needs to denote an event with inherent boundary to specify the quantity.

7.3 Does phonology plays a role?

The last section of this chapter is devoted to an open discussion of an unclear question—does phonology play a role in the configuration of *le*?

Although I analyze the *le* in perfective VO-le construction as verbal *le*, there are differing views on this matter in the literature. Lin (2003) claims that the sentential *le*

expresses an implicature that the result state must still hold at the speech time, which gives it a function of perfectness, as in (35).

(35) Wo zai meiguo zhu ershi nian le, cong mei tingshuo guo zhe-zhong shi.

I in America live twenty year LE, ever not hear GUO this-kind thing.

I have lived in America for 20 years and have never heard this kind of thing.

Lin claims that (35) is only used in a situation in which I still live in America at the moment of speech. In other words, (35) implies that the state of my living in America still holds at the speech time. This means that the "sentential" *le* itself can extend a meaning as the English perfect.

However, the first clause in (35) is not accepted by many native informants, especially when used alone. Similar judgements for this type of sentence are also reported in Jin & Yu (2013). This group of informants express a strong need to insert another *le* after the verb *zhu* (live), making it a DLC, as in (36).

(36) Wo zai meiguo zhu *(le) ershi nian le.

I in America live LE twenty year LE.

I have lived in America for 20 years.

Apart from that, it is also easy to find counter examples to the claim that the resultative state must hold at speech time, as in the case of (37). This shows that the current relevance reading does not depend on the continuation of the resultative state.

(37) Wo zuo-wan guan-shang chuanghu le, keshi xianzai shi kai-zhe-de.

I last-night close-up window LE but now COP open.

I closed the window last night, but now it is open.

But most importantly, the assumption that *le* is a perfect marker cannot provide an explanation for the problem which serves as the point of departure in this chapter: why (38a) is only imperfective but (38b) can be either imperfective or perfective.

(38) a. Zhangsan he jiu.

Zhangsan drink alcohol.

Zhangsan drinks alcohol.

b. Zhangsan he   jiu   le.

Zhangsan drink alcohol LE.

Zhangsan drinks alcohol (habitual)/Zhangsan drank alcohol (episodic).

Given the fact that a sentence without any aspectual marker only has habitual meaning (as in (38a)), and the claim that "sentential" *le* is a marker of the perfect extending current relevance, it is unexpected that a sentence like (38b) can express an episodic meaning which refers to a specific event in the past.

The observation made by Lin (2003), however, is very inspiring. Suppose we accept Lin's judgement and take sentences like (38a, b) as marginally acceptable. In this case the objects in VO-le structure are not property-denoting. They clearly have specific discourse reference. Therefore, cases like (39a, b) are not PNI constructions.

(39) a.?Zhangsan he   na-ping jiu   le.

Zhangsan drink that-CL alcohol LE

Zhangsan drank that bottle of alcohol.

b.?Zhangsan he   Lisi pao-de   kafei le.

Zhangsan drink Lisi make-DE coffee LE

Zhangsan drank the coffee made by Lisi.

I propose that cases like (39a, b), if acceptable, include an elided verbal *le*, and thus should be analysed as DLCs. This means the *le* at the end is indeed a sentential *le*, and the episodic reading comes from the elliptical verbal *le*.

There's some evidence in support of this view. First, as I have shown in Chapter 6, the DLC does not go well with manner and locative adverbials, and in the cases with more than one quantifiers, the interpretation which depends on quantifier raising becomes unavailable, as repeated in (40a, b).

(40) a. Zhangsan feikuai-de/zai huayuan-li guanshang le   chuanghu (??le).

Zhangsan quick-DE/in garden-in close   LE window   LE.

Zhangsan has closed the window (??quickly/in the garden).

b. Mei-ge   xuesheng dou kan   le yi-bu   dianying le.

Every-CL student   all   watch LE one-CL film   LE.

Every student has watched a film. (∀>∃; *∃>∀)

It turns out that the perfective VO-le construction with a DP complement also show these behaviours, as in (41) and (42).

(41)??Zhangsan feikuai-de/zai huayuan-li chi yi-ge   pingguo le.

Zhangsan quick-De/ in   garden-in   eat one-CL apple   LE.

(42) Mei-ge   xuesheng dou kan   yi-bu   dianying le.

Every-CL student   all   watch one-CL film   LE.

Every student has watched a film. (∀>∃; *∃>∀)

On the other hand, a VO-le sentence with a non-referential bare noun object (which means it is formed with PNI and VP-fronting) is free to occur with manner and locative adverbials, as shown in (43). [51]

(43) Zhangsan feikuai-de/ zai Beijing mai fang   le.

Zhangsan quick-DE/ in   Beijing buy house LE.

Zhangsan bought a house in Beijing/quickly.

Second, Jin & Yu (2013) report that the adverbial operator *cai* (才) in Mandarin express a meaning that the event under discussion happened/will happen latter than expected. This *cai* goes with verbal *le* but is totally incompatible with sentential *le*, as shown in (44).

(44) Zhangsan zuo-tian   CAI dao   le Beijing (*le).

Zhangsan yesterday CAI arrive LE Beijing LE.

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[51] It is impossible to test with the scope of quantifiers since the bare noun is non-referential.

Zhangsan only arrived at Beijing yesterday.

If this test is applied to the VO-le cases, we can see a VO-le sentence with *cai* is ruled out if the verb takes a full DP, suggesting it contains sentential *le*, as shown in (45a). Meanwhile, (45b, c) shows that the sentence is compatible with *cai* if the object is a non-referential bare noun. This means that a perfective VO-le construction does not necessarily include a sentential *le*.

(45) a.*Zhangsan zuo-wan cai he   na-ping jiu   le.

Zhangsan last-night CAI drink that-CL alcohol LE

Intended reading: Zhangsan only drank that bottle of alcohol last night.

b. Tamen zuo-tian cai qianshu xieyi   le.

They   yesterday CAI sign   agreement LE.

They only signed (*the*) agreement yesterday.

c. Zhangsan qu-nian cai   zai Beijing mai fang   le.

Zhangsan last-year CAI in   Beijing buy house LE.

Zhangsan only bought a house in Beijing last year.

Most importantly, the VO-le construction that takes a DP object usually has the same interpretation with the corresponding DLC. Suppose there is a situation in which Zhangsan promised to his mother that he would write her two letters every month after he left home and his friend asked if he did so this month, then he can reply with a sentence like (46), which is marginally acceptable in this case but not without such a proper context.

(46)?Wo zhe-ge yue   xie   liang-feng xin le.

I   this-CL month write two-CL   letter LE.

I wrote two letters (as I promised) this month.

As a comparison, an answer in the default V-le-O order is not acceptable in this special situation, although it is totally grammatical itself, as in (47), probably because we

need the function of sentential *le* to assert the situation of writing two letters in order to express the relevance to the previous situation.

(47) Q: Did you write two letters this month as you promised to your mother?

   A: # Wo zhe-ge yue   xie   le   liang-feng xin.

       I   this-CL month write LE two-CL   letter   .

       I wrote two letters this month.

On the other hand, the DLC in (48) also serves as a proper answer, and there is hardly any difference in interpretation between (46) and (48), except that the latter is grammatically more acceptable.

(48) Wo zhe-ge yue   xie   le   liang-feng xin   le.

   I   this-CL month write LE two-CL   letter LE .

   I have written two letters this month.

Nevertherless, it must be noted that sometimes even if the verb takes a non-referential bare noun, the VO-le construction still show some similarities to the DLC in terms of current relevance. These behaviours are generally not found with the verbal *le*, as in (49).

(49) –Rang wo kai   che ba.

    Let   me drive car BA.

    Let me drive the car.

   –Bu-xing, ni   he   jiu   le.

    No-way, you drink alcohol LE.

    No way, you have drunk alcohol.

   –#Bu-xing, ni   he   le yi-ping   jiu.

     No-way, you drink LE one-bottle alcohol.

     No way, you drank a bottle of alcohol.

In the situation of (49), the relation between drinking alcohol and driving is not explicit, so an answer in the typical verbal *le* structure (V-le-O) is not regarded as very appropriate. This is a case where the function of current relevance from sentential *le* is needed. But *he jiu le* (drink alcohol *le*), which cannot be a DLC with an elliptical verbal *le*, is also viewed as sufficient, suggesting that there is a sentential *le* in this VO-le construction.

This is not in line with the previous analysis, which claims that VO-le order can be derived without the help of a real sentential *le*. But it may be too early to conclude that the *le* in VO-le order is the sentential version. Here I would like to examine another possibility that structures with VO-le order and a perfective interpretation sometimes could include both kinds of *le*. But since they have the same pronunciation and appear adjacent to each other at the end of the sentence (when the verbal *le* is stranded by the VP-fronting), one of them is deleted for phonological reasons. Although there is only one *le* left in the final utterance after the deletion, the sentence is derived with structures including two versions of *le*. That is why sentences like (49) have a strong reading of current relevance. The structure is shown in (50).[52]

(50)

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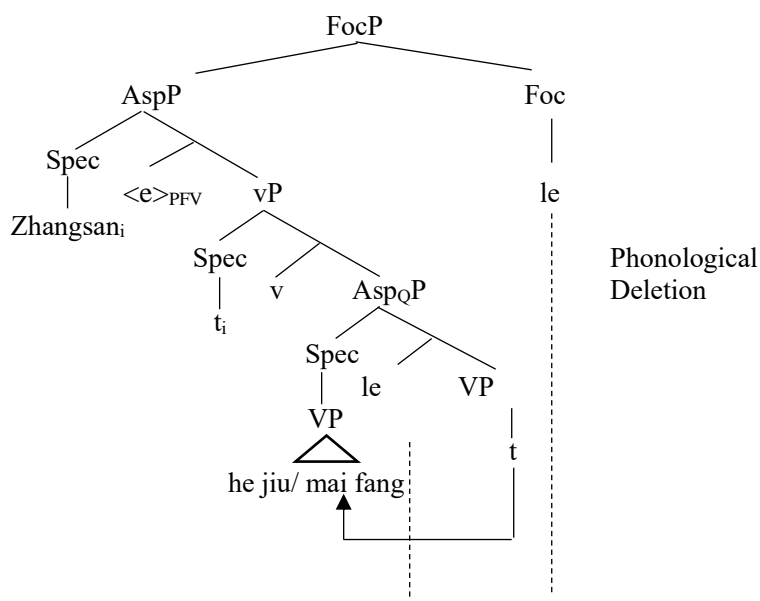
[52] Note that this proposal is only for the VO-le case with a bare noun object. The cases which include a full DP, in the analysis of (39a, b) above, are only created by phonological sloppiness in the colloquil speech.

Although this is only one of the many possible accounts for why a sentential *le* is included in this structure, there is indeed evidence showing that the phonological rule which prevents the two versions of *le* from being adjacent to each other does exist, as shown in (51) to (54).

(51) a. Zhangsan qu le   Beijing.

Zhangsan go LE Beijing.

Zhangsan went to Beijing.

b. Beijing, Zhangsan qu   le.

Beijing, Zhangsan went LE.

Beijing, Zhangsan went.

(52) a. Zhangsan qu guo   Beijing.

Zhangsan go GUO Beijing.

Zhangsan has been to Beijing.

b. Beijing, Zhangsan qu   guo.

Beijing, Zhangsan went GUO.

Beijing, Zhangsan has been to.

(53) a. Zhangsan qu guo   Beijing le.

Zhangsan go GUO Beijing LE.

Zhangsan (now) has been to Beijing.

b. Beijing, Zhangsan qu   guo   le.

Beijing, Zhangsan went GUO LE.

Beijing, Zhangsan (now) has been to.

(54) a. Zhangsan qu le Beijing le.

Zhangsan go LE Beijing LE.

Zhangsan has gone to Beijing.

b*Beijing, Zhangsan qu   le   le.

Beijing, Zhangsan went LE LE.

Intended reading: Beijing, Zhangsan has gone to.

(51) and (52) show that both the verbal *le* and the experiential marker *guo* in Mandarin allow the topicalization of the object to the left periphery. (53a, b) shows that the sentential *le* and *guo* can occur in the same sentence, and when the object is topicalized, *le* and *guo* are allowed to be left adjacent to each other at the end. However, (54a, b) indicates that in the case of two *le*'s, it is not legitimate to do so. This suggests that the adjacency of two *le*'s is indeed prohibited, and the restriction is probably phonological instead of structural, since other grammatical markers with different pronunciation are not excluded.

This particular case of morphological dissimilation, or haplology, has been observed in previous studies. For example, Nevins (2012) argues that although there are two distinct instances marked separately by the verbal and sentential *le*, the two versions of *le* are phonologically identical, resulting in the "outright deletion under adjacent identity". In this sense, the haplology of *le* is a case of Prosodic-Phrase-Level Dissimilation, which is supposed to have the following properties as defined by Nevins:

(55) Properties of Prosodic-Phrase-Level Dissimilation

a. Prosodically-sensitive (with gradient acceptability due to pauses)

b. No reference to features: requires total identity of affected terminal

c. Strict adjacency required

d. Possible repair: complete deletion of a node, or complete deletion of all features under a category node

In addition, there is also indirect evidence from some dialects of Chinese that supports the assumption of phonological deletion. Hu (2016) points out that in Yixing, a variety of Wu dialect in South China, *le* has two phonetically distinct counterparts, *ze* and

lei, which correspond to verbal and sentential uses in Mandarin. These two particles can also appear together in a sentence, just like Mandarin, as shown in (56). But different from Mandarin, *ze* and *lei* are allowed to be adjacent to each other if required, as in (57).

Yixing (Wu Dialect)

(56) to che ze sa   dze bingo lei.

He eat ZE three CL apple LEI.

He has eaten three apples.

(57) go bingo che le lei.

I   apple eat ZE LEI.

I have eaten *the* apple(s).

In (57) the object *bingo* is dislocated before the verb as a topic. This shows that at least in Yixing, there is no reason to exclude the adjacent use of *le* and *li*. In Mandarin, where the two versions of *le* have functions equivalent to *le* and *li*, we can hardly expect restrictions to rule out this use on the syntactic level. The reason then is more likely to come from the phonology level.

Data from Yixing also supports the proposed view that the VO-le construction with a full DP is not a standard use of the particle *le*.[53] According to the informants, in Yixing there is clearly no corresponding form for the Mandarin sentence in (58) with either *ze* or *lei*. The closest sentence for the intended reading must include both *ze* and *lei*, as shown in (59), which is obviously the Yixing version of the DLC in Mandarin. [54]

(58) Mandarin:

?Zhangsan mai na-dong fangzi le.

Zhangsan buy that-CL house LE.

Zhangsan bought that house.

---

[53] Thans to Xu-hui Hu (personal communication) for providing the data from Yixing.
[54] However, in Yixing there is no corresponding form for the VO-le case with a bare noun object, either. More evidence from other dialects is needed in order to see if the VO-le construction is exclusive to Mandarin.

(59) Yixing:

Zhangsan ma ze duo-dong fangze lei.

Zhangsan buy ZE that-CL   house LEI.

Zhangsan has bought that house.

More dialectal evidence comes from Jin (2003), who claims that in another South China dialect Fenghua, the two versions of *le* also have different counterparts: the perfective aspect marker in Fenghua is also *le*, while the sentential particle is pronounced as *lai*, as in (60a, b). (61a-d) show that just like the sentential *le* in Mandarin, a Fenghua sentence that ends with only *lai* usually has a non-perfective reading.

Fenghua (Jin2003: 38-39)

(60) a. qi kan le san-bian   lai.

He read LE three-times LAI.

He has read three times.

b. qi chi le   yefan   lai.

Ta eat LE dinner LAI.

He has eaten the dinner.

(61) a. shi-dian   lai.

Ten-o'clock LAI.

It's ten o'clock (now).

b. wo you gongzuo lai.

I   have job   LAI.

I have a job (now).

c. qi   hui aihua lai.

He can speak LAI.

He can speak (now).

d. qi bu   qu xuetang lai.

He NEG go school   LAI.

He doesn't go to school (now).

As is expected, the two particles *le* and *lai* can be used together at the end of the clause, as shown in (62a, b).[55]

(62) a. Ta jiehun le   lai.

He marry LE LAI.

He is married.

   b. qi qian-tian   yetou xie   zi   le lai.

He the-day-before-yesterday night write character LE LAI.

He wrote characters (did paper work) the day before yesterday at night.

To summarize, I propose that phonology plays an important role in perfective VO-le constructions. The PNI cases can involve either a single verbal *le* or both verbal *le* and sentential *le*. But in the latter case the two versions of *le* are pronounced the same and thus triggers the deletion of one of them in PF level. In contrast, the VO-le construction is not generally accepted if the object is a full referential DP. For those who accept it, I assume that there is always an elliptical verbal *le* that gives the sentence a perfective episodic reading.

7.4 Summary of chapter

In this chapter I have re-examined the perfective cases of sentential *le* in Mandarin. The analysis is based on the assumption in Chapter 2 that verbal *le,* as the head of AspQP between vP and VP, is also responsible for the marking of perfective viewpoint. I argue that cases which have a *le* after a bare noun object but nonetheless get a perfective reading

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[55] However, according to Jin (2003), *le* in Fenghua is never used alone at the end. It must be followed by a *lai*, if not followed by an object. Since I don't have sufficient data from Fenghua, I have to leave this problem aside.

are all structures resulting from pseudo-noun incorporation and VP-fronting to [Spec, Asp$_Q$P]. In this case the bare noun object merges as the complement of the verb rather than the specifier of Asp$_Q$P, which requires the object to be non-referential. The object semantically serves a modifier of the verb and together they express institutionalized events. The VP raises to [Spec, Asp$_Q$P] because this position always has to be filled in order to have measurement of the situation.

In addition, I propose that the perfective VO-le constructions that involve a DP argument are generally not very acceptable. To those who actually accept this construction, I claim that there is in fact an elided verbal *le*, which means these constructions are DLCs. Meanwhile, sometimes the PNI also exhibits some properties which suggest there is indeed a sentential *le* in this structure. I propose that this is because in this case the structure does include two types of *le*, but one of them is phonologically deleted due to adjacency after VP-fronting. Data from some southern varieties of Chinese supports this view.

If this analysis is correct, then the bipartite categorization of *le* based on its linear position will be a misleading path for further research. I suggest to avoid the term verbal and sentential and instead name the two versions of *le* with their syntactic functions, since what is sentence-final may not be "sentence-final".

8. Conclusion

In this dissertation, I have re-examined the syntax of the particle *le* in Mandarin Chinese in the exo-skeletal framework. Overall, I propose that there is a distinction in the grammatical function and syntactic status between the two versions of the particle, which are traditionally referred to as verbal *le* and sentential *le*.

I have proposed that the verbal *le* is a quantity marker at the head of inner aspect phrase, which means it licenses quantity situations by assigning range to an open value $\langle e \rangle_Q$ as shown in (1).

(1)
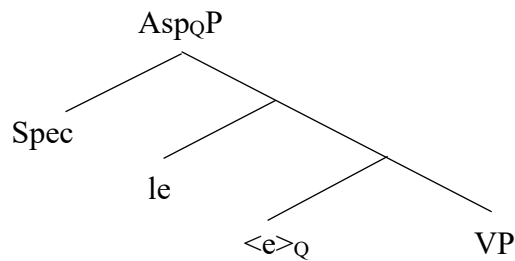
The term quantity is defined in Borer (2005a, b) as (2).

(2) a. P is homogeneous iff P is cumulative and divisive.

    i. P is divisive iff $\forall x, y\ [P(x) \wedge (y < x) \rightarrow P(y)]$

    ii. P is cumulative iff $\forall x\ [P(x) \wedge P(y) \rightarrow P(x \cup y)]$

    b. P is quantity iff P is not homogeneous.

In my analysis, a quantity event is a telic event, and a non-quantity (homogenous) event is an atelic event. This provides an account for the fact that an event with verbal *le* is always telic, and a situation which is not typically associated with a telic interpretation does not go well with *le*, as in (3a, b).

(3) a. Zhangsan chi le   pingguo.

    Zhangsan eat LE apple.

    Zhangsan ate the apple(s)./*Zhangsan ate apples.

b.??Zhangsan tan le   gang-qin.

    Zhangsan play LE piano

    Intended reading: Zhangsan played the piano.

(3a) is only acceptable when the bare noun object is interpreted as bounded. (3b) cannot express the intended reading but can be rendered acceptable if Zhangsan is supposed to play the piano for a certain period of time under the current context. Both of the cases suggest the verbal *le* can be used in telic but not atelic situations.

Meanwhile, events with verbal *le* always have a perfective reading and imperfective (habitual or progressive) situations are incompatible with *le*, as in (4a, b).

(4) a. Zhangsan chi le   san-ge   pingguo.

    Zhangsan eat LE three-CL apple.

   Zhangsan ate three apples./*Zhangsan eats three apples.

  b. Zhangsan zai   chi (*le) na-ge   pingguo.

    Zhangsan PROG eat   LE   that-CL apple.

    Zhangsan is eating that apple.

I argue that this is because the verbal *le* can also assign perfective range to the open value in the outer aspect via Agree, as shown in (5). Such a range assignment engjoys priority, thus excluding any other aspectual marker for outer aspect.

(5)
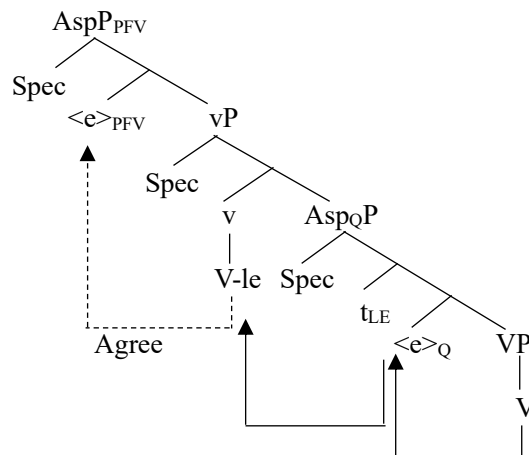
Telic situations are not only licensed by verbal *le*, but also licensed by quantity objects, which usually occur at [Spec, Asp$_Q$P] to measure the event. So (4b) is still quantity/telic even if *le* is not allowed to occur. In other words, *le* indicates the situation has a boundary, and the [Spec, Asp$_Q$P], which always needs to be filled, tells where the boundary is.

In this analysis, the verbal *le* can have two functions: perfectivity and quantity/telicity. Previous analyses, such as the perfective analysis in Smith (1997) and the resultative analysis in Sybesma (1999), can only capture one of the functions and thus cannot cover the whole distributional pattern of verbal *le*.

Furthermore, the function of perfectivity is only a side-effect of *le*. There is no perfective meaning if there is no perfective AspP, so we expect to find verbal *le* in some non-perfective (and also non-imperfective) situations, such as (6).

(6) Zhangsan bixu chi le   na-ge   pingguo.

   Zhangsan must eat LE that-CL apple.

   Zhangsan must eat that apple.

The meaning of quantity is also compatible with stative situations, if there is a proper method to express the quantity of state. Therefore, the verbal *le* is used with comparative adjectives, too. Such examples are like (7).

(7) Zhangsan (bi   Lisi) gao le   san   yingcun.

   Zhangsan than Lisi   tall LE three inch.

   Zhangsan is three inches taller (than Lisi).

Although the quantity of a telic event is usually measured by a quantity DP object, sometimes there are other items which take over this function in Mandarin, such as the time duration phrase. I argue in this situation it is the time phrase that occupies [Spec, Asp$_Q$P], so the object must be dislocated from this position by various means, as shown in (8a-c).

(8) a. Zhangsan tan   gangqin tan   le   san-ge   xiaoshi.

Zhangsan play piano   play LE three-CL hour.

Zhangsan played the piano for three hours.

b. Zhangsan tan   le   san-ge   xiaoshi (de) gangqin.

Zhangsan play LE three-CL hour   (DE) piano.

Literally: Zhangsan played three hours of piano.

c. Zhangsan gangqin tan   le   san-ge   xiaoshi.

Zhangsan piano   play LE three-CL hour.

As for the piano, Zhangsan played it for three hours.

As to the grammatical function of sentential *le*, I have proposed that it is a focus marker which expresses the assertion of the situation it takes by setting it in contrast with potential alternative situations. Here the particle *le* occupy the head of a FocP, which is a right-headed phrase. It scopes over most of the phrases but under CP, as in (9).

(9)
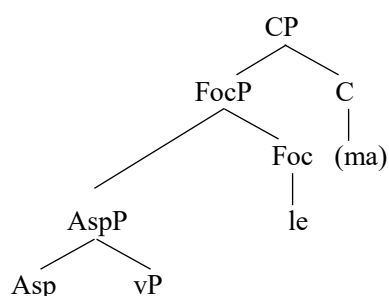
The interpretation for a sentence with sentential *le* largely depends on the context, which determines what meaning is expressed through the assertion of the situation. Therefore, a sentence with sentential *le* can have totally opposite interpretations in different contexts, as shown in (10a, b).

(10) a. Ni   dou   80 fen   le,   bi   wo hao.

You already 80 point LE, than I   good .

You already have 80 points. Better than me.

b. Ni   dou   80 fen   le. Na-li bu-cuo?

You already 80 point LE. Where NEG-bad?

You only have 80 points. How is it not bad.

When the sentential *le* takes a perfective telic situation, both versions of *le* occur in the same sentence. I call this structure the Double Le Configuration (DLC). The DLC extends a reading of current relevance which is not found with the structure with only verbal *le*, as shown in (11).

(11) Speaker 1: Zai   chi dian   pingguo ba.

Again eat some apple   BA.

Have some more apples.

Speaker 2: Wo chi le   san-ge   #(le).

I   eat LE three-CL LE.

I have eaten three.

I argue the current relevance reading is the result from the assertion of a perfective event. Syntactically, there are some restrictions in the use of the DLC. For example, manner and locative adverbials are not very acceptable in this case without a special context, as in (12a). Moreover, in the cases which include multiply quantifiers, the interpretation depending on quantifier raising becomes available with the DLC, as in (12b).

(12) a. Zhangsan feikuai-de/zai huayuan-li guanshang le   chuanghu (??le).

Zhangsan quick-DE/in garden-in   close   LE window   LE.

Zhangsan has closed the window (??quickly/in the garden).

b. Mei-ge   xuesheng dou kan   le yi-bu   dianying le.

Every-CL student   all   watch LE one-CL film   LE.

Every student has watched a film. (∀>∃; *∃>∀)

I argue that both of the restrictions result from the status of sentential *le* as a focus marker: it is difficult to express the assertion of an event in a specific manner/location

without the support of the context; and the position of sentential *le* makes it an intervenor in the quantifier raising of the object—a typical case of Beck's effect.

The English perfect also exhibits such restrictions, as in (13) and (14), which suggests that this morpho-syntactic construction may also make use of focus structure.

(13) John has/had closed the window (??quickly/in the garden)

(14) Every student has watched a film. ($\forall > \exists$; *$\exists > \forall$)

Following this assumption, I propose that the auxiliary *have* is focus marker, which focuses on a perfective situation represented by the past participle form of the verb, as in (15).

Focus-Termination-event/state

(15) [TP *have*$_i$ +T [FocP t$_i$ [AspP Perf.-*en*   [VP   ]]]

Despite the disparities in use between the DLC in Mandarin and the perfect in English, there is a possibility that the perfectness, or current relevance, is universally expressed by means of focus.

The verbal *le* and sentential *le* have a clear distinction in function according to the proposed analysis, but there is one case that goes against the assumption: the perfective VO-le structure, as in (16).

(16) Zhangsan he   jiu   le.

     Zhangsan drink alcohol LE

     Zhangsan drank alcohol.

In cases like (16), the particle *le* occurs after the object, which seems to suggest it is a sentential *le*. However, the event is interpreted in a perfective point, which is supposed to be the function of verbal *le*. As a result, there is a mismatch between the position and the function of *le*.

I propose that cases like (16) are configurations under movement. The particle *le* here is actually a verbal *le*. The verb and its bare noun object is connected by pseudo-

noun incorporation and then moves around *le* to [Spec, Asp$_Q$P]. As a result, the particle

is left behind in the linear order, as in (17).

(17)
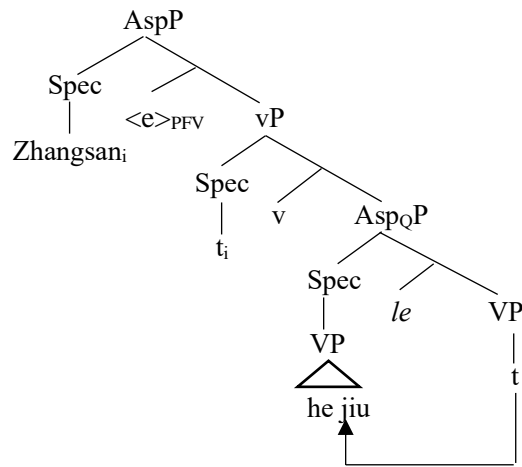
Since the bare noun object is not merged at [Spec, Asp$_Q$P], it is not really an

argument of the verb, but is semantically interpreted as a modifier of the verb. Therefore,

bare noun objects in perfective VO-le structures always non-referential, as in (18).

(18) Zhangsan$_i$ zuo-wan sha ren$_j$ le.   Ta$_{i/*j}$ shi   ge laoshi.

Zhangsan last-night kill person LE. He   COP CL teacher.

Zhangsan$_i$ killed someone$_j$ last night. He$_{i/*j}$ is a teacher.

On the other hand, I assume that the VO-le structure that includes a full DP, is

only an informal colloquil form which always involves an elided verbal *le*, as shown in

(19). Such a structure is in fact a DLC and thus exhibit the characteristics associated with

the DLC.

(19) Zhangsan he   ??(le) na-ping jiu   le.

Zhangsan drink   LE that-CL alcohol LE.

Zhangsan has drunk that bottle of alcohol.

However, there is evidence showing that the *le* in VO-le is also sentential *le*, since

it can be used to express the meaning of current relevance, as in (20).

(20) –Rang wo kai   che ba.

Let   me drive car BA.

Let me drive the car.

–Bu-xing, ni   he   jiu   le.

No-way, you drink alcohol LE.

No way, you have drunk alcohol.

In (20), the *le* in the perfective VO-le structure displays features from both verbal *le* and sentential *le*. Therefore, I tentatively argue that the perfective *le* at the end of the clause is actually a result of phonological deletion. There are originally two versions of *le* adjacent to each other at this position because of VP-fronting. But since they are pronounced the same, one of them is deleted at the PF level while its grammatical meaning survives.

The thesis shows that there are indeed two kinds of *le* in Mandarin: one is a quantity marker, and the other one is a focus marker. These two kinds of *le* occupies different positions in the syntax: the quantity marker is the head of Asp$_Q$P between vP and VP, while the focus marker is the head of a FocP under CP. This structural difference leads to their occurrence patterns in the linear order: the quantity marker usually follows the verb immediately, while the focus marker often occurs at the end of the clause. However, the patterns can be disrupted if syntactic operations cause reordering of the phrases. This also makes it unclear whether the *le* in intransitives should be treated as verbal *le* or sentential *le*. Therefore, I propose that for sake of clearance, the two versions of *le* should be distinguished by their grammatical functions and thus be referred to as quantity *le* and focus *le*.

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