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Argument Structure in Mandarin Chinese:
a Lexical-syntactic Perspective

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Acknowledgements

Abstract

In this dissertation I put forth a lexical-syntactic theory of argument structure to account for cases in Mandarin such as motion events, the aspectual particle *le*, and the resultative construction. I suggest that the argument structure in Mandarin can be approached from the perspective of the lexicon-syntax interface. Special attention is paid firstly to what the building blocks of argument structure are and, secondly, to how these units interact to form argument structure in Mandarin. Moreover, I argue for the homomorphism between syntax and (structural) semantics. That is, a predicate can be decomposed in a configurational manner and the (structural) semantics is read off the syntactic configuration.

In chapter one I deal firstly with the general view on the lexicon-syntax interface. I examine in detail the approaches from projectionist and neo-constructionist perspectives, and finally adopt Mateu's (2002) revision of Hale and Keyser's (1993f.) lexical-syntactic approach as the framework for this dissertation. The essential idea of the modification is that argument structures are governed by the head-complement and specifier-head relations and the complement is required before the specifier can be introduced.

Chapter two accounts for motion events in Mandarin from the perspective of argument structure and Talmy's (1991, 2000) typology of lexicalization patterns, which is adopted into a syntactic configuration. I argue that, unlike the verb-framed encoding pattern, which involves the process of incorporation: copying the semantic features of the complement to its head, motion events in Mandarin involve the satellite-framed encoding pattern, which results from the process of conflation: merging of an unergative structure to the phonologically empty head of an unaccusative/causative structure.

Chapter three covers the aspectual particle *le*. Based on the two-tier analysis of aspect in Smith (1997), I distinguish between the VP-external and VP-internal uses of this particle and claim that the two VP-internal uses of this particle are related to argument realization. One use is related to the role of the resultative predicate because the particle occupies the same position in the argument structure as a resultative predicate in a resultative construction; the other is interpreted as an inchoative marker, which derives from the head of the unaccusative structure.

In chapter four I try to explain the resultative construction in Mandarin, focusing on issues such as the Direct Object Restriction, the possible multiple interpretations, and causativity. I claim that the Direct Object Restriction is to be retained, that the possible multiple interpretations of the same sentence of the resultative construction in Mandarin arise from different syntactic configurations, and that the causative interpretation results from the interpretation of the features Voice and CAUSE bundled together.

Chapter five concludes this dissertation.

Resumen

La presente tesis tiene como objeto presentar una teoría léxico-sintáctica de la estructura argumental para explicar casos en mandarín como los eventos de desplazamiento, la partícula aspectual *le* y la construcción resultativa. En nuestra opinión, la estructura argumental en mandarín puede explicarse desde la interfaz léxico-sintaxis. Tal posición nos ha llevado a prestar atención especial, primero, a las estructuras primitivas de la estructura argumental y, segundo, cómo estas estructuras primitivas forman las estructuras argumentales en mandarín. Estamos convencidos del homomorfismo entre la sintaxis y la estructura semántica. Un predicado se puede descomponer configuracionalmente y de esta configuración sintáctica se obtiene la interpretación semántica.

El capítulo uno traza un panorama general de la interfaz léxico-sintaxis. Examino en detalle las distintas propuestas desde las perspectivas proyeccionista y neo-construccionista, y adopto como marco teórico la revisión de Mateu (2002) de la propuesta léxico-sintáctica de Hale y Keyser (1993f.). Su idea esencial consiste en que las estructuras argumentales son legitimadas por las relaciones núcleo-complemento y especificador-núcleo, de mode que la presencia del complemento es obligatoria antes de que se pueda introducir el especificador.

El capítulo dos explica los eventos de desplazamiento en mandarín desde el punto de vista de estructura argumental y de la tipología de los patrones de lexicalización de Talmy (1991, 2000), la cual es adoptada en la configuración sintáctica. En vez de al patrón de marco verbal, que recoge el proceso de incorporación y de copiado de los rasgos semánticos del complemento a su núcleo, los eventos de desplazamiento en mandarín se ajustan al patrón de marco satélite. El carco satélite implica el proceso de unificación 'conflation' y de fusión de una estructura inergativa con el núcleo fonológicamente vacío de una estructura inacusativa/causativa.

El capítulo tres estudia la partícula aspectual *le*. A partir del análisis del aspecto de Smith (1997), distingo los usos externos e internos en el sintagma verbal de esta partícula y propongo que sean los dos usos internos en el sintagma verbal los que relacionan esta partícula con la realización argumental. Uno está relacionado con el papel de los predicados resultativos, porque esta partícula ocupa el mismo lugar en la estructura argumental que un predicado resultativo en la construcción resultativa. En el otro la partícula es interpretada como un marcador incoativo, que ocupa el núcleo de la estructura inacusativa.

En el capítulo cuatro, analizo la construcción resultativa del mandarín y hago hincapié en cuestiones como la Restricción del Objeto Directo, las posibles interpretaciones múltiples y la causatividad. Sugiero que la Restricción del Objeto Directo se debe mantener, que las posibles interpretaciones múltiples de una misma oración de la construcción resultativa surgen de configuraciones sintácticas distintas y que la interpretación causativa resulta de interpretar conjuntamente los rasgos Voz y CAUSAR. El capítulo cinco concluye esta tesis con una síntesis y unas reflexiones finales.

List of abbreviations

ACC	accusative case
BA	disposal particle *ba*
CL	classifier, measure word
DE	complementizer, possessive marker, extent particle, adjective marker
GEN	genitive
HEN	the positive degree marker *hen*
LE	the particle *le*
NEG	negation
NOM	nominative case
PART	particle
RVC	resultative verb complements
ZAI	the stationary marker *zai*, the progressive marker *zai*
ZHE	gerund marker *zhe*

Chapter 1: Argument Structure: the Theoretical Framework

In this dissertation I deal with the issues of argument structure in Mandarin Chinese from the perspective of the lexicon-syntax interface; that is, from the different general analyses available, I adopt the lexicon-syntax interface approach for application to Mandarin Chinese.

The formation of argument structure is directly related to the formation of linguistic representations. An important recognized property of language is the computational process, which contributes to the unlimited number of linguistic representations. In other words, to manage argument structure, we are dealing with the formation of linguistic representations and, concretely, the computational process of this formation. Pylkkänen (2002: 9) says that "[a] comprehensive theory of linguistic representations must minimally (i) define the nature of the primitive building blocks that enter into linguistic computation, (ii) characterize the manner in which the basic units combine into complex representations and (iii) identify the ways in which languages may differ with respect to their inventory of possible representations". This quotation captures what a theory of argument structure should relate.

These three issues constitute the important criteria for the theoretical development of this dissertation and the linguistic model developed here needs to meet these requirements by being able to answer the questions in (1).

(1)   a. What are the building blocks of argument structure?
        b. How do these units interact to form argument structure?
        c. How can such interaction account for the cross-linguistic variation?

To approach these issues, I will draw on studies from the lexical-syntactic perspective, such as Hale and Keyser (1993, 1998, 2000) and Mateu (2002, 2012), and from the syntactic perspective, such as Haugen (2009) and Acedo Matellán and Mateu (2012).

The theory of argument structure developed in this chapter will be applied to cases in Mandarin such as motion events, the aspectual particle *le*, and the resultative construction, illustrated by the examples in (2). The purpose of this dissertation will be

to develop an adequate approach to argument structure and to apply this approach to the types of examples in (2).

(2)   a. Zhangsan   xiang *pao*-**jin**   fangjian.   (Motion event)
           Zhangsan   want   run-enter   room
           'Zhangsan wants to run into the room.'
      b. Lisi   xiang *mai*-**le**   ta-de zixingche.   (The aspectual particle *le*)
           Lisi   want   sell-LE   he-GEN bicycle
           'Lisi wants to sell his bicycle.'
      c. Wangwu   xiang *qiao*-**bian**   na-ge guanzi.   (Resultative construction)
           Wangwu   want   pound-flat   that-CL can
           'Wangwu wants to pound that can flat.'

What these examples have in common is that they all deal with two components: a telic predicate, in boldface, and the manner in which the result state is achieved, in italics. *Zhangsan* in the example (2a) will end up in the room after carrying out the running activity; *Lisi* in (2b) will dispose of his bicycle after selling it; *na-ge guanzi* 'that can' in (2c) will become flattened after *Wangwu* pounds it. The examples of these types will be briefly presented in section 1.4.

In this study, I will endeavor to account for the three aforementioned empirical constructions with the well articulated theoretical approach which can answer the questions laid out in (1). In order for the empirical problems to be accounted for, well restricted theoretical criteria will be necessary. No matter how sound the explanations to empirical problems might be, without restricted criteria they will neither be proved true or false, and credibility will thus be lost. Therefore, for the theoretical task, the goal is to satisfy the criteria of being well restricted.

In the literature, theories on how to approach the lexical-syntactic interface can be argued to form a continuum according to the role that the lexicon and the syntax play within these theories. According to Borer (2003, 2005), varying degrees of attention paid to these two linguistic components reflect the different human linguistic capacities between focusing on lexical items and on computational processes. At one end of this continuum are approaches that rely on lexical items specified with morphological, syntactic, and semantic properties, etc., to project and to determine the syntactic

properties. Given this view of projection, they can be called *projectionist approaches*. Jackendoff (1987)[1], Levin and Rappaport Hovav (1995), Rappaport and Levin (1988), and Rappaport Hovav and Levin (1998, 2001, 2005), among others, provide some representative projectionist approaches. For approaches at the other end, it is the computational system that shoulders the burden of interpreting the lexical items that appear in structures: for example, the argument or event structure of a lexical item is interpreted and read off the syntactic structures. Approaches in this spirit can be termed *neo-constructionist approaches*, examples of which include those of Arad (1998), Borer (2003, 2005), Marantz (1997), Ramchand (2008), and Ritter and Rosen (1998), etc.

What the division of burden between lexical items and the computational system suggests is the different ways of treating both linguistic components. Different approaches result in the contents of these two components being treated differently. A lexical item for projectionist approaches can be treated as a seed that has all the necessary genes encoded to grow into a plant, in the sense that a lexical item contains all the necessary properties for developing a syntactic representation. For example, the instantiation of an element as a verb or a noun is lexically specified before it enters the computational process. For neo-constructionist approaches a lexical item contains nothing more than encyclopedic concepts. Other properties, whether syntactic or semantic, are derived from the syntactic environment in which a lexical item appears. An item, for instance, will be interpreted as a verb in a verbal environment but will become a nominal item in a nominal context.

No matter how the burden between lexical items and the computational system is divided, a generally accepted idea is that meanings can be separated into two kinds: one is the grammatically relevant meaning and the other is the grammatically opaque encyclopedic one. This distinction is clearly established in studies such as Acedo Matellán (2010), Borer (2003, 2005), Grimshaw (2005), Hale and Keyser (1993, 1998, 2002), Harley (2002, 2005), Jackendoff (1987), Levin and Rappaport Hovav (1995), Marantz (1997), Mateu (2002, 2005, 2008), Mateu and Amadas (2001), Rappaport Hovav and Levin (1998, 2001), Ramchand (2008), and Zubizarreta and Oh (2007), etc. By merely glancing at these studies, we may observe that this distinction is accepted by

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[1] Classifying a study as a projectionist or a (neo-)constructionist approach is not an easy task. Depending on different criteria, a study can be classified as different approaches. From the series of studies by Jackendoff, it can be observed how this author's focus shifts from the projectionist to the constructionist approach in the sense of Goldberg (1995). Even though Jackendoff's (1990) approach is classified by Mendikoetxea (2007) as projectionist, this classification is questionable, because syntactic structures are associated with, instead of being derived/projected from, conceptional structures.

approaches from different frameworks. Even though the terminology employed by each study is different, the spirit is the same. Details about the distinction between grammatically transparent and grammatically opaque meaning and how such a distinction is presented in different approaches will be discussed in subsection 1.1.1. These approaches can be evaluated by assessing how they deal with both kinds of meanings.

The organization of this chapter is as follows. Section 1.1 deals with the general view on the lexicon-syntax interface. In subsection 1.1.1, the different approaches will be evaluated by how they differentiate the grammatical transparent meaning from the grammatical opaque meaning. I will then conclude by deciding which approach most adequately answers questions (1a) and (1b), thus determining a suitable approach as the framework for accounting for the argument structure in Mandarin. As previously mentioned, the lexical-syntactic approach will be proven to be the adequate framework for studying argument structure. Subsection 1.1.2 gives examples to illustrate how different languages follow different patterns with regard to the three constructions that will be dealt with in this dissertation.

In section 1.2, I will examine lexical-syntactic approaches in detail, specially focusing on the series of studies by Hale and Keyser (1991, 1992, 1993, 1997a, 1997b, 1998, 2002, 2005) and the revision of these studies by Mateu (2002, 2005, 2012). It should be noted that both Hale and Keyser's and Mateu's studies share the basic idea with neo-constructionist approaches in that the interpretation of lexical items is obtained from the positions they occupy in a syntactic structure, instead of being previously specified in their lexical entries. Therefore, it should not be surprising that Mateu (2002) is classified by Acedo Matellán (2010) as a neo-constructionist approach. Also in this section, Haugen's (2009) distinction between the process of incorporation and the process of conflation will be adopted in this dissertation, a distinction that will prove useful when accounting for cross-linguistic variation, as well as for the case studies in Mandarin. In subsection 1.2.5, I outline the general formation of argument structures in Mandarin under the framework adopted in this dissertation.

Section 1.3 will examine in greater detail the approaches from different frameworks briefly presented in section 1.1. By discussing these representative approaches, their disadvantages compared with the lexical-syntactic framework adopted here will be singled out.

Section 1.4 presents the data in Mandarin that will be covered in the following chapters. Specifically, the motion events, the aspectual particle *le*, and the resultative construction will be the subjects of section 1.4.1, 1.4.2, and 1.4.3, respectively. The common denominator of these constructions is that they all involve a telic secondary predicate, as can be observed in the examples in (2). Without the presence of this secondary predicate, these examples would be either ungrammatical, in the case of (2a), or would lose the telic denotation, in cases of (2b) and (2c).

Lastly, section 1.5 concludes this chapter.

The rest of the dissertation will be structured as follows. Chapter **two** will focus on motion events and the claim that Mandarin is a satellite-framed as opposed to a verb-framed language, according to Talmy's (1991, 2000) typological classification, is sustainable. The topic of chapter **three** is the aspectual particle *le*, which has different functions such as the perfective aspect and the inchoative marker. By making use of the distinction between situation and viewpoint aspects established by Smith (1997), I will show that the particle *le* has two functions that are related to argument realization and one of them is parallel to that of a resultative predicate. Chapter **four** focuses on the formation of resultative constructions. Both Mandarin and English are satellite-framed languages; however, the resultative constructions in both languages do not follow the same pattern. For example, the word order is different: a resultative predicate in an English resultative construction constitutes an independent syntactic element situated after the syntactic object while a resultative predicate in Mandarin resultative construction seems to form a compound with the verb and appears before the object. Chosen for case studies, these three types of constructions are related to argument realization, already claimed in the literature. For example, Li and Thompson (1981) classify all these types of construction as resultatives: directional resultatives, phase resultatives[2], and simple resultatives, respectively. Finally, chapter **five** concludes this dissertation.

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[2] Some examples of the phase complements are *cheng* 'success', *dao* 'arrive', *diao* 'drop', *hao* 'good', *wan* 'finish', etc. The glossaries here are from Lin (2004). The examples offered by Li and Thompson (1981) do not include the particle *le*. However, as it will be made clear in chapter three, one function of the particle *le* should be analyzed parallel to these phase complements.

1.1 Overview: The Lexicon-Syntax Interface

In this section, on the one hand, I will present the distinction between the two important components of meaning: structural meaning and idiosyncratic meaning. By briefly presenting how such a distinction is treated by different approaches, I will be able to compare these approaches at the same time. On the other hand, different approaches are compared in accordance with how the cross-linguistic variation is examined.

Before we deal with the argument structure in Mandarin from the perspective of the lexicon-syntax interface[3], we may ask what the lexicon-syntax interface is. By *interface* we refer to the place where independent systems—often unrelated—meet and communicate with or act on each other. In short, the lexicon-syntax interface should be the place at which the linguistic component lexicon and the component syntax meet. With regard to argument structure, what is communicated between these two components is the realization of the arguments.

By affirming the existence of the interface of the lexicon and the syntax, what we presuppose is a modular view of these two linguistic components. This means that the lexicon-syntax interface exists only in approaches in which both lexicon (which contains lexical items) and syntax (consisting of the computational system) are present. In such approaches, syntax is the generative machine that produces sentences from the items in lexicon. Such a relation can be captured by the words of Chomsky (1995: 168) in (3).

(3)   "[A] language consists of two components: a lexicon and a computational system. The lexicon specifies the items that enter into the computational system, with their idiosyncratic properties. The computational system uses these elements to generate derivations and SDs[4]. The derivation of a particular linguistic expression, then, involves a choice of items from the lexicon and a computation that constructs the pair of interface representations".

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[3] Readers are referred to Demonte (2006) and Rosen (1999) for more discussions regarding the lexicon-syntax interface.
[4] SDs: structural descriptions.

On the contrary, it would be logical to expect that the lexicon-syntax interface does not exist for approaches in favor of the non-modularity of the lexicon and the syntax, for example, Cognitive Grammar and Construction Grammar. As Mendikoetxea (2007: 58) points out, for Cognitive Grammar and Construction Grammar, the relation between the lexicon and the syntax forms a "continuum". As a consequence, the interface ceases to exist. For Borer's (2003, 2005) neo-constructionist approach, according to which lexical items are nothing more than pairs of conceptual notion and abstract morphological representation, the lexicon-syntax interface "is considerably reduced, if existent at all", in terms of Acedo Matellán (2010: 21). The issue of lexicon-syntax relation is further complicated in Distributed Morphology. For Distributed Morphology, the traditional concept of lexicon is claimed to be encoded in three different parts, according to Marantz (1997: 203-204): Narrow Lexicon, containing "the atomic roots of the language and the atomic bundles of grammatical features"; Vocabulary, containing Vocabulary items, which "provides the phonological forms for the terminal nodes from the syntax" and "includes the connections between sets of grammatical features and phonological features, and thus determines the connections between terminal nodes from the syntax and their phonological realization"; and Encyclopedia, a "list of special meanings", which "lists the special meanings of particular roots". If the lexicon-syntax interface does exist for Distributed Morphology, the lexicon would refer only to the Narrow Lexicon, because the syntax has access only to the morphemes from the Narrow Lexicon. Instead of being traditional lexical items, these morphemes are features, such as semantic features, categorical features, syntactic features, etc. Parallel to neo-constructionist approaches, the impoverishment of the lexicon certainly reduces the necessity of the existence of the lexicon-syntax interface.

In this dissertation, which is a study based on the generative framework, I take the modular view. Let us first turn to the Government and Binding Theory of Chomsky (1981) to illustrate how the early generative studies account for argument realization. In the Government and Binding Theory, the Projection Principle governs the projection from lexicon to syntax. According to Chomsky (1981: 29), the Projection Principle is defined as the following: "representations at each syntactic level (i.e., LF, and D- and S-structure) are projected from the lexicon, in that they observe the subcategorization properties of lexical items". This claim suggests that the syntactic encoding of arguments is governed by the properties previously specified in lexical items. This

projectionist view can explain the (un)grammaticality of the examples in (4). For example, if the verb *gei* 'to give' in (4a) is specified in the lexicon that it takes two arguments, such a requirement should be fulfilled also in the syntactic representation. The absence of *yi-fen baogao* 'a report' will thus lead to the ungrammaticality.

(4)   a. tamen   gei-le   jingli   *(yi-fen baogao).

            they   give-LE   manager   a-CL report

            'They gave the manager *(a report).'

         b. ta zou-le   (*women).

           he walk-LE   us

           'He walked (*us).'

                                                  (From Huang et al., 2009: 39)

Moreover, the possible ungrammaticality of these examples can be explained by the concept of the Theta Criterion, which requires that every argument should have an assigned thematic role. For the example in (4a), according to the projectionist view, the verb *gei* 'to give' is specified in its lexical entry with the thematic roles Agent, Theme, and Goal; moreover, according to the Theta Criterion, each of these thematic roles should be assigned to a different argument. If the argument y*i-fen baogao* 'a report' is deleted, the thematic role Theme will not be assigned and the Theta Criterion will not be satisfied. Therefore, without the presence of this argument, the example would be ungrammatical. As for the example in (4b), the verb *zou* 'to walk' has only one thematic role specified. If two arguments are present, they are required to compete for the only available thematic role and, consequently, only one of them will be assigned the thematic role. As a result, the requirement of the Theta Criterion would not be satisfied when the argument *women* 'we' is present.

      As theories advance, such a projectionist view is questioned. The most important development is the realization of the role that a construction may play. Zubizarreta and Oh (2007: 1) point out: "[t]he most noteworthy development in the area of the lexicon-syntax interface since the 1980s has been the realization that there are "constructional" meanings, which are independent of the particular lexical items that make up the sentence". Although the structural meaning is not altogether undeveloped in projectionist approaches such as in Levin and Rappaport Hovav (1995) and Rappaport Hovav and Levin (1998, 2001) in that the templates are actually "structures", neo-

constructionist approaches go further toward the importance of structures. For example, according to neo-constructionist approaches, lexical items do not have so much "power" as to govern the well-formedness of the syntactic representation. Instead, lexical items only contribute encyclopedic contents and obtain their interpretation depending on the syntactic contexts in which they appear.

In the following part of this section, I will turn to the comparison of different approaches by focusing on how they distinguish the structural meaning from the idiosyncratic meaning.

1.1.1 Structural Meaning and Idiosyncratic Meaning

In this subsection, I will present a brief comparison of different approaches based on how these instantiate the distinction between the structural meaning and the idiosyncratic meaning[5,6]. The details of these approaches will be presented later in the following two sections.

Firstly, let us see the distinction between the grammatically transparent structural meaning and the grammatically opaque idiosyncratic meaning by comparing the verbs *run*, *walk*, and *drink*. The examples in (5) and (6) show that, in spite of different conceptual meanings, these verbs may have an identical syntactic structure because they may appear in identical syntactic contexts. In other words, structural meanings should be disassociated from idiosyncratic meanings. *Run* and *walk* are

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[5] These two types of meanings are established in the literature with different terms. In addition to those that will be discussed in this subsection, below are some other illustrations.

Marantz (2001: 8): "[W]ord (really, root) meanings don't decompose; the semantic **properties** of words (=roots) are different from the compositional/decompositional semantics **features** expressed through syntactic combination".

Mateu (2002: 32): "[I]t is necessary to draw a crucial distinction between those relational elements that can encode grammatically relevant aspects of *semantic construal* and those non-relational elements that mostly encode grammatically irrelevant aspects of pure *conceptual content*".

Mateu and Amada (2001: 1): "Meaning is a function of both (non-syntactically transparent) *conceptual content* and (syntactically transparent) *semantic construal*".

Ramchand (2008: 20): "I will indeed be taking seriously the distinction between lexical encyclopedic content and structural correlates of meaning… [T]he structural generative aspect of meaning can profitably be analyzed as part of the syntactic component. The Lexical encyclopedic side is a matter for general cognition".

[6] Based on the fact that such a distinction is accepted by both projectionist approaches and neo-constructionist approaches, Rappaport Hovav and Levin (1998: 130) argue that these two types of approaches would be similar as long as "the details of compatibility <between the verb and the construction: SF> have been worked out" and that "although the theory presented in this paper has been cast in projectionist terms, the components of the theory can easily be incorporated into a nonprojectionist framework".

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conceptually related in that both are ways of displacement. Syntactically, we expect that in contexts where *run* can appear, it can be substituted by the verb *walk*. This is indeed so as shown in (5). When we turn to the paradigm in (6), we can see that *drink*, the verb which is conceptually very different from *run* and *walk* in that there is no displacement involved, may actually pattern together with these verbs syntactically regarding, for example, aspectuality, transitivity, and compatibility with reflexive objects and unselected objects.

(5)   a. John ran/walked for ten minutes.

         b. John ran/walked ten miles.

         c. John ran/walked himself to death.

         d. John ran/walked the shoes threadbare.

(6)   a. John drank for ten minutes.

         b. John drank ten bottles of beer.

         c. John drank himself to death/into a stupor.

         d. John drank his fortune away.

This parallelism between *run*/*walk* and *drink* is not surprising if we assume that the conceptual contents and the structural properties are independent from each other. The syntactic formation is only sensitive to structural properties and not conceptual contents.

For projectionist approaches, both the grammatically sensitive structural meanings and the grammatically opaque idiosyncratic or encyclopedic meanings are determined by lexical items. By accepting the distinction of these two types of meanings, these approaches would distinguish these two meanings inside the lexicon.

Jackendoff (1987, 1990) proposes the lexical conceptual structure to govern argument realization by its interaction with the subcategorization specified in the lexical entries. For example, the lexical entries of *run* and *drink* are those in (7). The subcategorization and the lexical conceptual structure are related by the indexes. In this proposal, the lexical conceptual structures are composed of vocabularies of primitive conceptual categories such as THING, EVENT, PLACE, PATH, and STATE, etc.

(7)　　a. *run*

$$\begin{bmatrix} \text{run} \\ \text{V} \\ \_\_ <PP_j> \\ [_{\text{Event}} \text{ GO ([}_{\text{Thing}} \quad]_i, [\text{Path} \quad]_j)] \end{bmatrix}$$

(Jackendoff, 1990: 45)

　　b. *drink*

$$\begin{bmatrix} \text{drink} \\ \text{V} \\ \_\_\_ <NP_j> \\ [_{\text{Event}} \text{ CAUSE ([}_{\text{Thing}} \ ]_i, [_{\text{Event}} \text{ GO ([}_{\text{Thing}} \text{ LIQUID]}_j, \\ \qquad [_{\text{Path}} \text{ TO ([}_{\text{Place}} \text{ IN ([}_{\text{Thing}} \text{ MOUTH OF ([}_{\text{Thing}} \ ]_i)])])])] \end{bmatrix}$$

(Jackendoff, 1990: 53)

In Levin and Rappaport Hovav (1995) and Rappaport Hovav and Levin (1998, 2001), the structural meaning and the idiosyncratic meaning are encoded in lexical semantic templates and constants, respectively. The lexical semantic template with which the verbs *run* and *drink* are associated is the one in (8a), corresponding to the event type of activity in Vendler (1957) and Dowty (1979). These two verbs result from the insertion of the constants RUN and DRINK, which pertain to the ontological manner type, as in (8b) and (8c).

(8)　　a. [x ACT $_{<MANNER>}$]
　　b. [x ACT $_{<RUN>}$]
　　c. [x ACT $_{<DRINK>}$]

For Hale and Keyser (1993, 1998), unlike the lexical-semantic approaches, the grammatical transparent meanings are represented by syntactic structures and the idiosyncratic meanings are represented by the roots introduced into these structures. For instance, *run* and *drink* would be associated with the same lexical argument structure in (9a). The same structure suggests that *run* and *drink* share the same structural meaning and differ regarding the conceptual meaning represented/introduced by the complements, in (9b) and (9c). The structural meaning that they are associated with is

that of activity, represented by DO in the structure. To run is to be interpreted as doing the activity of running and to drink is interpreted as doing the activity of drinking.

(9)   a.   b   c

$$
\begin{array}{ccc}
\text{h} & \text{x} & \text{x} \\
\text{h} \quad \text{cmp}^{7} & \text{x} \quad \text{y} & \text{x} \quad \text{y} \\
 & \text{DO} \quad \text{run} & \text{DO} \quad \text{drink}
\end{array}
$$
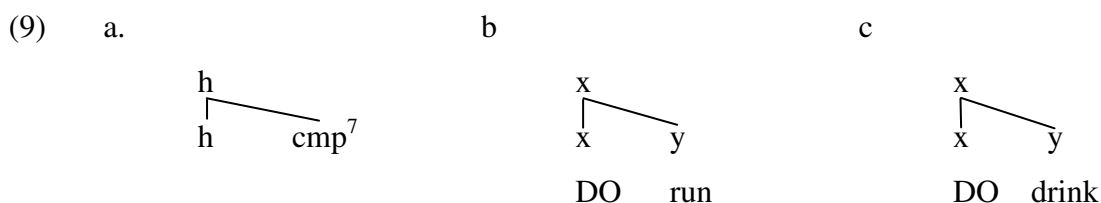
I do not intend to go into the details of these approaches here; instead, I will attempt to compare these three different approaches which could all be claimed to be projectionist/lexicalist ones. First of all, I will show that the studies of Levin and Rappaport Hovav (1995), Rappaport Hovav and Levin (1998, 2001), and Hale and Keyser (1993, 1998) have more advantages over those of Jackendoff (1987, 1990). As we can observe in the previous brief introduction regarding how the verbs *run* and *drink* are accounted for, both verbs are analyzed uniformly in the former, but quite differently in the latter. The uniform analysis in the former helps to account for the parallelism between the examples in (5) and (6), but further mechanisms are needed in the latter to explain this parallelism. From this perspective, it seems that what is regarded as roots, which offer only encyclopedic concepts, in the studies of Levin and Rappaport Hovav (1995), Rappaport Hovav and Levin (1998, 2001), and Hale and Keyser (1993, 1998) can be further decomposed into more basic components in Jackendoff (1987, 1990). Mateu (p.c.) points out that such a decompositional view of roots is problematic in that the encyclopedic contents should be opaque to the computational system and, therefore, should not influence argument realization. In other words, with regard to argument realization, the syntax should not be sensitive to the encyclopedic content of *drink*, paraphrastic as to cause liquid to go into the mouth of somebody, as claimed by Jackendoff (1990: 53).

Secondly, I would like to argue that the lexical-syntactic approach of Hale and Keyser (1993, 1998) has a theoretical advantage over the lexical-semantic approach of Levin and Rappaport Hovav (1995) and Rappaport Hovav and Levin (1998, 2001). Both of these approaches in fact share the same spirit of neo-constructionist approaches to a certain degree in that lexical items can be distinguished from the construction-like

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[7] h: head; cmp: complement.

structures, i.e., the lexical semantic templates in the former and the lexical argument structures in the latter. They are different from neo-constructionist approaches in that it is the ontological types of the lexical items that determine the structures that they are to be associated with. For this reason, they belong to projectionist approaches. Compared with the lexical-semantic approach of Levin and Rappaport Hovav (1995) and Rappaport Hovav and Levin (1998, 2001), the lexical-syntactic approach of Hale and Keyser (1993, 1998) is better restricted in that the formation of the lexical argument structures is based on better restricted syntactic principles, i.e., the relation between a head and its complement or specifier, while the formation of the lexical semantic templates is basically less restricted (see Mateu, 2002).

In this dissertation, I adopt the approaches from the lexical-syntactic perspective as the framework. The exact lexical-syntactic approach adopted will be discussed in the next section. In the following subsection, I will present the cross-linguistic variation that a theory of argument structure should account for. The advantage of the theory adopted here over the neo-constructionist approach of Borer will be clear in subsection 1.3.2.

1.1.2 Cross-linguistic Variation

In this subsection, I will present the data that represent cross-linguistic variation with respect to argument realization. First of all, what attracts most attention when we compare different languages is the fact that languages show systematic differences with regard to the secondary predication. On the one hand, a language that permits a secondary predication that expresses a change of state may also permit a secondary predication that expresses a change of location[8,9]. This is the case of Mandarin and

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[8] Note that this claim is not applied to predicates with light verbs. Spanish is a language that does not allow the secondary predicates to express a change of state or a change of location (see the examples in (10c) and (11c). However, when the main predicate is a light verb, a secondary predicate can express a change of location and a change of state, as the examples in (i) and (ii) show. The examples in (ii) are from Mendívil (2003: 3).

(i)   Juan la volvió a casa.
        Juan it returned to home
        'Juan returned it home.'
(ii)   a. Juan volvió   a María   loca.
           Juan turn   to María   crazy
           'Juan drove María crazy.'
        b. La carrera   me   dejó   agotado.
           the race   mi   left   exhausted
           'I was exhausted because of the race.'
        c. Las despedidas   me   ponen   triste.

13

English. The examples in Mandarin, in (10a) and (11a), and those in English, in (10b) and (11b), show that a secondary predication that expresses a change of location/state is compatible with the main predicate, which expresses a kind of manner. On the other hand, if a language does not allow the secondary predication to represent a change of location, as in (10c), in all likelihood, the secondary predication that expresses a change of state, as in (11c), may not be allowed. Spanish is an illustration of this type.

(10)   *Change of Location*
      a. Zhangsan wu-(jin)-le   (fangjian).
         Zhangsan dance-enter-LE room
         'Zhangsan danced into the room.'
      b. John danced (into the room).
      c. Juan bailó   (*en la habitación)[10].   (* for directive interpretation)
         Juan danced   in the room
         Intended: 'Juan danced into the room.'

(11)   *Change of State*
      a. Zhangsan qiao-(bian)-le   guanzi.
         Zhangsan pound-flat-LE   can
         'Zhangsan pounded the can flat.'
      b. John hammered the metal (flat).
      c. Juan martilleó   el metal (*plano).
         Juan hammered   the metal flat
         Intended: 'Juan hammered the metal flat.'

However, there seem to be languages that do not show such a uniform pattern. For example, in Italian the directed motion events with the telic secondary predication

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        the farewell   mi   put   sad
        'The farewells make me sad.'
[9] I will leave the discussion of possible counterexamples to the next chapter. Readers are referred to Acedo Matellán (2012), Son (2007, 2009), and Son and Svenonius (2008) for discussions in more detail.
[10] With the presence of these prepositional phrases, only the locative reading, but not the directional reading, is available. Therefore, some linguists, such as Fábregas (2007) and Son (2007, 2009), attribute the lack of directional reading in this pattern to the lack of directional prepositions in this language. Folli (2001) also differentiates between morphologically simple and morphologically complex prepositions. In Romance languages morphologically simple prepositions denote only location. Hence, the directional reading is not available in the example in (10c).

are possible with the verb *correre* 'to run' but impossible with the verb *camminare* 'to walk', as the examples in (12) show.

(12) a. Maria *è*   corsa   *a* casa.   (Italian)
          Maria is   run-3rd p.s.fem.   to house
          'Maria has run to the house.'
      b. *Maria *è*   camminata   *a* casa.
          Maria is   walked-3rd p.s.fem   to house
          Intended: 'Maria has walked to the house.'

                                                        (Zubizarreta and Oh, 2007: 49)

A sound theory of argument structure should be able to account for the systematic cross-linguistic variation shown by English, Mandarin, and Spanish, but should also be able to explain the intra-linguistic difference shown by Italian.

Both Mandarin and English show a similar pattern with respect to unselected objects while this is not allowed in Spanish, as the example in (13c) demonstrates.

(13) a. Zhangsan pao-*(huai)-le   ta-de xiezi.
          Zhangsan run-bad-LE   he-GEN shoes
          'Zhangsan ran (so much) that his shoes got damaged.'
      b. John ran his shoes *(threadbare).
      c. *Juan corrió   sus zapatos   raídos.
          Juan ran   his shoes   threadbare
          Intended: 'Juan ran his shoes threadbare.'
      d. Juan destrozó   sus zapatos   de tanto correr.
          Juan broke   his shoes   with so.many run
          'Juan ran his shoes threadbare.'

Unlike the examples of Mandarin and English in (11), the object in (13a) and (13b) cannot be selected by the main verb, in traditional terms. For instance, *ran* cannot select *his shoes*, so *John ran his shoes* is ungrammatical, while *hammer* can select *the metal*, so *John hammered the metal* is grammatical. In order for *ran* and *his shoes* to be able to appear in the same predicate, some element, such as the secondary predicate *threadbare* in (13b), is needed. There is a divergence in the literature in whether the examples in

(11) and those in (13) should be accounted for under a unitary analysis or a different one. In this dissertation I claim that they should be accounted for under a unitary analysis since it is only illusory that the syntactic objects in the examples in (11) are arguments selected by the verbs.

Another phenomenon that should be noted is the employment of reflexives in certain contexts. In an English resultative construction, as in (14b), the employment of a reflexive is obligatory when no other syntactic object is present. This requirement might suggest that there is no intransitive resultative construction in English. This time Mandarin departs from English in that no reflexive is necessary in order for the Mandarin resultative construction to be grammatical. The reflexive *ziji* 'self' in the example in (14a) can be either present or absent, even though this does not imply that there is no distinction in meaning with this difference, because, as we will see, the presence of the reflexive focuses on the causative interpretation. In the example of Spanish in (14c), despite the presence of the reflexive, the sentence is still not grammatical.

(14) a. Zhangsan chang-ya-le   (ziji).
         Zhangsan sing-hoarse-LE self
         'Zhangsan sang himself hoarse.'
      b. John sang *(himself) hoarse.
      c. *Juan cantó   a sí mismo   ronco.
          Juan sang   to himself   hoarse
          Intended: 'Juan sang himself hoarse.'
      d. Juan   se   quedó   ronco cantando.
         Juan   reflexive   became   hoarse singing
         'Juan became hoarse (by) singing.'

Again, to explain why the reflexive is needed in the English example but not in the Mandarin example, in addition to the impossibility of forming the example in the same pattern in Spanish, would be a task for this dissertation.

What these constructions have in common is that what is encoded by the secondary predication in English and Mandarin must be encoded in the main predication in Spanish. This cross-linguistic variation reflects the binary typology established by Talmy (1991, 2000): satellite-framed and verb-framed languages.

Talmy's insights into typology will be incorporated into the next chapter of this dissertation.

Another issue that arises from taking these examples into account is the manner/result complementarity observed by Levin and Rappaport Hovav (2008) and Rappaport Hovav and Levin (2010). Following the lexicalization constraint established by Kiparsky (1997: 490), according to which "[a] verb can inherently express at most one semantic role (theme, instrument, direction, manner, path…)", these authors claim that "[m]anner and result meaning components are in complementary distribution: a verb may lexicalize only ONE" (Levin and Rappaport Hovav, 2008: 1). If we treat the change of state and the change of location expressed in the examples from (10) to (14) as result and the way in which this result is carried out as manner, these two semantic components do show the complementary distribution in English and Spanish. The case studies in the following chapters will prove that the constraint of the manner/result complementarity is retained in Mandarin. According to Acedo Matellán and Mateu (2012), such a constraint results from general syntactic principles.

The next two sections will review approaches from the above mentioned frameworks and will discuss how these questions could be answered according to these approaches. Firstly, I will examine the approaches from the lexical-syntactic perspective, which will be adopted as the framework of this dissertation, in section 1.2. Then, I will review the other approaches in section 1.3.

1.2 The Theoretic Framework: The Lexical-syntactic Perspective

The central idea adopted in this dissertation is the one developed in the series of studies by Hale and Keyser (1991, 1992, 1993, 1997a, 1997b, 1998, 2002, 2005), according to which argument structure is lexically composed and restricted by syntactic principles. The lexical argument structure represents how a predicate can be decomposed configurationally. If a predicate can be decomposed, then it is natural to ask about the basic components that form it. This question is actually another way of inquiring about the primitives that form a predicate. The second question is how these primitives combine to form a predicate. Different approaches are expected to have

different answers to these two questions. This section will cover the answers from the lexical-syntactic perspective. In subsection 1.2.1, I will present the basic ideas upon which the lexical-syntactic approaches are developed. Subsection 1.2.2 will deal with the original and influential works of Hale and Keyser (1992, 1993, 1997a, 1997b, 1998, 2002) and subsection 1.2.3 will present and discuss the proposal of Mateu (2002), which revises the Hale and Keyserian model and makes their lexical-syntactic proposal more minimalist. Subsection 1.2.4 will establish the important distinction between the process of incorporation and the process of conflation that will be employed in this dissertation. Finally, subsection 1.2.5 will expand upon the framework adopted for the analysis of motion events, the particle *le*, and the resultative construction.

1.2.1 Overview

The essence of the lexical-syntactic approaches can be captured in the following quote from Mateu and Amadas (2001: 1): "meaning is a function of both (non-syntactically transparent) *conceptual content* and (syntactically transparent) *semantic construal*… On the basis of this distinction… the grammatically relevant predicate-argument structure representations are not to be drawn from non-syntactically based conceptual structures encoding 'conceptual content', but rather from syntactic structures encoding 'semantic construal'". That is, if a predicate can be decomposed, it consists of two different kinds of components: one is syntactically transparent and the other is not. Besides, the syntactically transparent meaning should be syntactically governed.

In fact, as we have seen in the previous section, such a distinction is not unique for lexical-syntactic approaches and is necessary for any analysis that adopts the decomposition of predications. Let us take the verbs *run* and *jog* by way of illustration. On the one hand, the verb *run* and the verb *jog* share the same syntactic properties with the argument realization included. Therefore, under the lexical-syntactic assumption, the same lexical syntactic structure would be involved to encode the event represented by these two verbs. On the other hand, these two verbs are certainly not synonyms and their difference should also be explained. However, this difference is not reflected in their syntactic behaviors because it deals with conceptual behaviors, that is, the different ways of carrying out a motion of displacement. Therefore, the way to account for this difference should vary from the way in which their syntactic identity is explained. As a consequence, at least two different components should be proposed for the

decomposition of predicates. This distinction may be presented by different terms in various works, but what counts is that the concept behind these terms can capture the distinction in question.

Similar to Hale and Keyser (1993, ff.), another example for the different way to instantiate such a distinction can be found in Lin (2004: 12), who argues that "argument structure can be reduced to a syntactically-encoded lexical semantic representation based on the structure of events, and that verb meanings are constructed from a combination of functional elements (verbalizing heads) and abstract concepts (categoryless verbal root)". Under the distinction between functional elements (verbalizing heads) and abstract concepts (categoryless verb root), what is syntactically transparent is distinguished from what is not syntactically transparent.

Next, let us see how this distinction can be carried out for the study of argument structure in Hale and Keyser (1993, ff.).

1.2.2 Hale and Keyser (1993, ff.)

One of the most important endeavors of the series of works by Hale and Keyser (1991, 1992, 1993, 1997a, 1997b, 1998, 2002, 2005) is to answer the two questions formulated in Hale and Keyser (1993: 65) in (15).

(15)   a. Why are there so few thematic roles?
          b. Why the UTAH?

These two questions are closely related to argument realization in traditional terms when arguments are treated as relating to certain thematic roles, which are organized in a fixed order. For the first question, Hale and Keyser observe that, instead of having twenty or one hundred thematic roles, "the number of thematic roles suggested in the literature is rather small". For example, some of the typically observed thematic roles are Agent, Experiencer, Goal, Theme, Source, Location, and not many more. For the second question, these observed thematic roles are not organized in a casual way and are usually "assigned according to a universal hierarchy and in conformity with the UTAH" (Hale and Keyser, 1993: 66). The Uniformity of Theta Assignment Hypothesis (UTAH) was established by Baker (1988: 46) and holds that "[i]dentical thematic

relationships between items are represented by identical structural relationships between those items at the level of D-Structure".

To answer these two related questions, Hale and Keyser (1993) propose the model in which argument structures are composed of lexical argument structures, the configurations of which are restricted by syntactic principles based on X' theory. According to Hale and Keyser (1998: 82), the structural types of lexical argument structure are those in (16).

(16)   *The Structural Types of Lexical Argument Structure* (Hale and Keyser, 1998: 82)

a.   b.

c.   d.
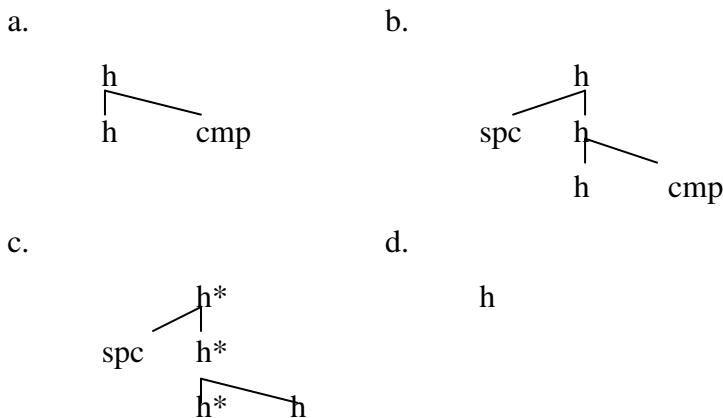
These structures show the essence of Hale and Keyser's (1993, ff.) proposal of a lexical-syntactic approach: these lexical relational structures are restricted with syntactic criteria, that is, the syntactic configuration based on the complement/specifier relation with the head. When a head can freely combine with a complement and a specifier, there will be a maximum of four possibilities. These four possibilities are reflected by the structures in (16). In (16d), the head selects neither a complement nor a specifier; in (16a), the head selects only a complement; in (16c), the head selects only a specifier by making use of the other head that can satisfy this need; in (16b), the head selects both a complement and a specifier. These structures are universal but the morphological realization of them is language specific. In English, the heads of these structures in (16) are typically realized as V, P, A, and N, respectively. The application of lexical argument structures to different types of predicates can be illustrated by the examples in (17), from Hale and Keyser (1998).

(17) a. The children laughed.

  b. She saddled the horse.

  c. The screen cleared.

The example in (17a), together with the examples in (18), results from the structure in (18c). As can be observed in this structure, the syntactic subjects do not appear in the lexical argument structure. The syntactic subjects in these examples are truly external arguments. Together with studies by Chomsky (1995), Kratzer (1996), and Collins (1997), an external argument is introduced by a functional projection, such as *v*, *Voice*, and *Tr(ansitive)*, respectively, for these authors. The structure in (18c) suggests that an unergative verb such as *laugh* is actually derived from a "transitive" lexical argument structure. The structural meaning of the unergative structure involves *doing* activity. That is, the *laughing* activity is parallel to *doing the activity of laughing*. The difference in argument realization between the example in (17a) and the examples in (18) consists in the phonologically empty nature of the selecting light head. How this phonologically empty head is satisfied will be discussed in subsection 1.2.4.

(18) a. The children made trouble.

  b. The children baked a cake.

  c.   V
       V   N/DP
       DO   laugh
       make   trouble
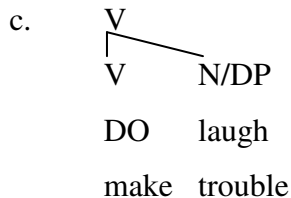
The example in (17b) comes from the lexical argument structure in (19c), a transitive structure. In this structure the verbal head selects the P projection that selects both a complement and a specifier. The phonologically empty head can also be occupied by light verbs, such as *fit* and *put*, as in the examples in (19a) and (19b). Again, in these examples, the subjects are also external arguments.

(19)   a. She fit the horse with a saddle.

         b. She put the books on the shelf.

         c.
```
              V
              |
          V        P
          |       /\
          Ø   DP    P
              |    /\
          fit the horse  P
                     |   \
                     P    N
                     Ø   saddle
```
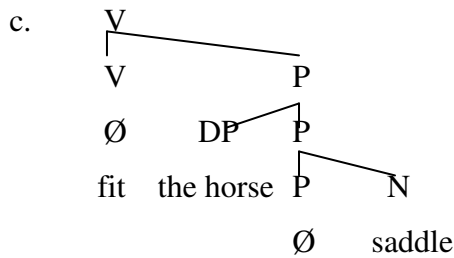
The category A is a predicate that should be predicated of a subject. With this predicative relation, a head A needs an element in its specifier position in order to be predicated of. However, if a head A selects only one argument, there is no way to analyze this element as the specifier, since the first selected sister should be analyzed as the complement. To solve this problem, a head A should make use of another V which can select a specifier and thus satisfy the predicative requirement of category A. The structure in (20b) can illustrate this configuration. This is an unaccusative structure and can be applied to the example in (17c). As in the previous types of structures, the phonological head can also be satisfied by a light verb like *become*, as in the example in (20a). From the examples in (17c) and (20a), it is clear that the syntactic subject is actually an internal argument since it is derived from the internal position of the argument structure.

(20)   a. The screen became clear.

         b.
```
                      V
                     /|
              DP      V
              |      /\
          the screen V    A
                     |    |
                     Ø   clear
                   become
```
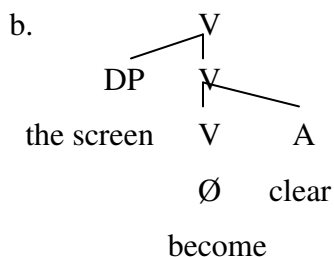
        For Hale and Keyser, the difference between the structure in (19c) and the structure in (20b) explains the different behaviors these examples show with regard to the causative alternation: the example in (17b) does not show causative alternation while the example in (17c) does, as the examples in (21) indicate. This is due to the fact that while the unaccusative structure in (20b) can be embedded under another verbal

projection[11], as V1 in (22), to form the causative structure, leading to the unaccusative-causative alternation, the structure in (19c) is already a causative structure.

(21)   a. She saddled the horse.

        b. *The horse saddled.

        c. She cleared the screen.

        d. The screen cleared.

(22)

```
        V1
       /  \
     V1    V2
      |    / \
      Ø   DP  V2
       the screen / \
               V2    A
                |    |
                Ø   clear
```
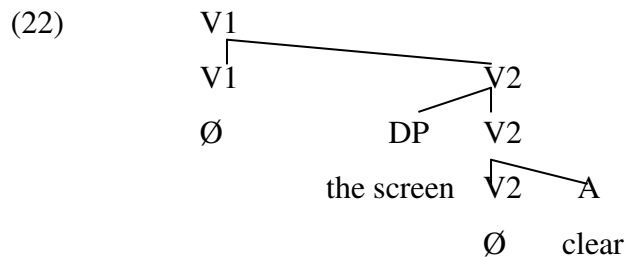
        To briefly sum up this subsection, according to the proposal of Hale and Keyser's lexical-syntactic approach, the two questions in (15) arise simply as the side effects of the lexical syntactic configuration, because thematic roles are not semantic primitives, but interpretations associated with determined positions in the lexical syntactic structures. There are so few thematic roles because the complement and the specifier positions in the lexical syntactic structures are few. Since these positions are very limited, the number of thematic roles associated with them is also expected to be very limited. Moreover, since the thematic roles are simply the labels of the elements in the specifier and complement positions, instead of being assigned by the verbs, the identical thematic relationships between items as claimed in the UTAH should be expected.

        Before we go to the next subsection, we may note that, even though Hale and Keyser have not mentioned in their studies, the distinction of the syntactic subject's configuration between the unergative structure, in (18c), and the unaccusative structure, in (20b), perfectly captures Perlmutter's (1978) Unaccusative Hypothesis. When the Unaccusative Hypothesis is incorporated into Burzio's (1986) Government and Binding framework, these two types of intransitive verbs are distinguished by the original site

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[11] As Levin and Rappaport Hovav (2005: 133, 134) point out, the use of VP-shells—verbal projections with empty heads—was first introduced by Larson (1988) and "VP-shells effectively reintroduce predicate decomposition into the syntax".

from which the syntactic subject argument is derived. While the subject of an unergative verb is truly an external argument, the subject of an unaccusative verb derives from the internal argument position. This syntactic distinction is empirically reflected by the auxiliary selection in languages such as Italian and Dutch, as examples (23) and (24) show.

(23)　a. Giovanni **è** arrivato.　　　　　　　　　　　　　　(Italian)

　　　　Giovanni is arrived

　　　　'Giovanni has arrived.'

　　b. Giovanni **ha** telefonato.

　　　　Giovani has telephoned

　　　　'Giovanni has telephoned.'

　　　　　　　　　　　　　　　　　　　　　　　　　(Burzio, 1986: 20)

(24)　a. dat　Jan　　naar Groningen　　gewandeld　*heeft*.　　(Dutch)

　　　　that　Jan　　to Groningen　　　walked　　has

　　　　'On his way to Groningen, Jan walked.'

　　b. dat　Jan　　naar Groningen　　gewandeld　*is*.

　　　　that　Jan　　to Groningen　　　walked　　is

　　　　'Jan walked to Groningen.'

　　　　　　　　　　　　　　　　　　　　(Zubizarreta and Oh, 2007: 132)

In these examples, the auxiliary selection in the perfect tense is sensitive to the unergative/unaccusative distinction. For the unergative structure, *avere* in Italian and *hebben* in Dutch are the auxiliaries to be selected; for the unaccusative structure, the auxiliaries to be selected in Italian and Dutch are *essere* and *zijn*, respectively. In (23) and (24), the different auxiliary selections imply the different syntactic structures and, hence, the different interpretations. (24a) expresses the activity that took place on Jan's way to Groningen, while (24b) expresses Jan's displacement to Groningen. The prepositional phrase in (24a) is not derived from the argument structure but that in (24b) is.

　　　Next, I will present the modification of the lexical argument structures in (16) from Mateu (2002).

1.2.3 Mateu (2002)

Mateu (2002), on the shoulder of Hale and Keyser, pushes the lexical-syntactic approach to a more minimalist level. Concretely, the number of structural primitives of argument structure is reduced from four to three. The essential idea is that lexical category A, which requires a specifier but not a complement, cannot be a primitive structure as claimed by Hale and Keyser. These three structures are shown in (25).

(25)   a.   [tree: x dominating x and y]   b.   [tree: x dominating z and x, where x dominates x and y]   c.   x
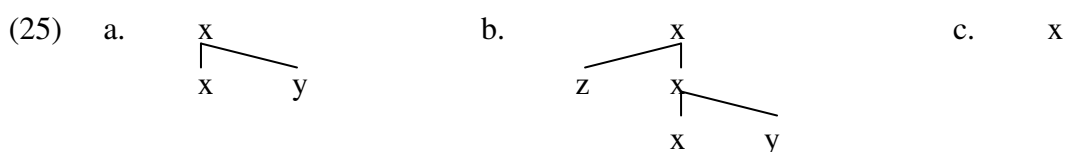
These structures distinguish the syntactically transparent semantic construal from the non-syntactically transparent conceptual content, as we have previously seen in subsection 1.2.1. The distinction between what is syntactically transparent and what is not can be captured by the distinction between relational and non-relational elements. On the one hand, the head in (25c) is a non-relational element and, on the other, the heads in (25a) and (25b) are relational elements, which take the complement alone or together with the specifier. Following Mateu (2002), the former is "to be associated to an eventive relation", while the latter is "to be associated to a non-eventive relation"[12] (Mateu, 2002: 29). With such simplification, the head A in Hale and Keyser is no longer a primitive but should be introduced into the relational element associated with a non-eventive relation, in (25b).

The reduction of the structural primitives of argument structure is not only welcome but also convincing as the following arguments will show. Theoretical evidence can be found in Chomsky (1995), Acedo Matellán (2010), and Jackendoff (1983, 1990).

Let us first see the theoretical arguments. According to Chomsky (1995), in order for a head to have a specifier, the existence of a complement is necessary. If a

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[12] The terms *eventive relation* and *non-eventive relation* are adopted for the same uses as in Mateu (2002: 29): "The eventive relation that is uniformly associated to the *x* in (46a) <my (25a): SF> can be instantiated as two different semantic relations: if there is a non-derived external argument in the specifier position of the relevant *F*(unctional) projection, the eventive relation will be instantiated as a *source relation*, the external argument being interpreted as 'Originator'… If there is no external argument, the eventive relation will be instantiated as a *transitional relation*… which in turn always selects a non-eventive relation (cf. (46b) <my (25b): SF>), whose specifier and complement are interpreted as 'Figure' and 'Ground', respectively…".

head can only take a specifier without the presence of a complement, there will be no way of telling if this sole argument is a complement or a specifier. The requirement of the previous existence of a complement for the possible presence of a specifier makes Hale and Keyser's proposal for A problematic. Nevertheless, Hale and Keyser's analysis of A can be claimed to escape from this requirement: the danger of confusing a complement with a specifier disappears, as the structure in (16c) shows, when the requirement of a head having only a specifier is satisfied by making use of the other projection.

However, the other problem, observed in Acedo Matellán (2010), is more serious and the insight of this author convinces me that the reduced model in (25) is more convenient than that proposed in (16). In Mateu's (2002) model, the distinction between relational elements and non-relational elements also parallels the distinction between functional elements and traditional lexical elements or roots. The relational elements would therefore be expected to constitute a close set while the non-relational elements would constitute an open set. Moveover, the relational elements are expected to have functional properties but not encyclopedic content, while the non-relational elements are elements that encode encyclopedic content. Such a distinction between relational and non-relational elements is perfectly maintained in Mateu's (2002) but not in Hale and Keyser's model. I use the problematic category A by way of illustration. Category A has the structure in (26a) according to Hale and Keyser. The head A is, at the same time, the complement of the the head V.

(26)   a. A *in Hale and Keyser*   b. A in *Mateu* (2002)
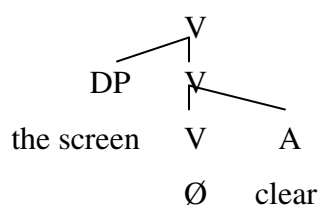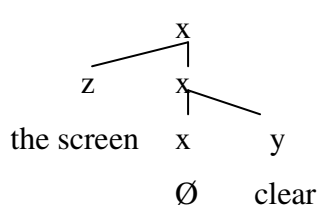
Two problems arise from this claim. Firstly, being a relational head, A should lack the encyclopedic content. However, unlike other categories, such as P and V, category A in structure (26a) clearly has the encyclopedic content, which denotes the state *clear*. Secondly, being a complement of the projection of V, A should lack the "power" of being able to select a specifier argument. That is, the existence of the specifier *the screen* should be required by the phonologically empty head of the structure and not by

the complement *clear*, against Hale and Keyser's reason for the existence of this structure. These problems disappear in Mateu's (2002) proposal, according to which the traditionally treated A category would have the structure shown in (26b). In this structure, category A results from the combination of a relational element associated with a non-eventive relation, represented by *x* in (26b), and a non-relational element, represented by *y* in (26b). Employing the terms used by Hale and Keyser, category A would actually result from the combination of a P projection and an N element. Readers are referred to Kayne[13] (2008) and Boeckx (2012) for the claim that A is not a primitive category. In this case, the fact that relational elements are actually functional elements and do not encode any encyclopedic content can be maintained.

Furthermore, according to the Thematic Relation Hypothesis (Jackendoff, 1983; 1990), the conceptual functions that deal with physical space can be applied to the conception of abstract space. Therefore, the structure in (26b) can be treated as a relational element that has an abstract space, via the non-relational element, as its complement. Analyzing an adjective as an abstract place can be seen in the Jackendovian conceptual structure in (27).

(27)   a. The door is open.

        b. [$_{State}$ BE [$_{Thing}$ DOOR], [$_{Place}$ AT [$_{Property}$ OPEN]]]

                                      (From Mateu, 2002: 27)

Now, let us turn to some empirical supports. For Hale and Keyser, one support for the structural distinction between category A and category P is that, while category A can participate in the transitive alternation, category P cannot, as shown in the examples in (21). However, as Mateu (2002) points out, the proof of transitive/causative alternation cannot be a valid support, according to Kiparsky (1997) and Levin and Rappaport Hovav (1995), and the distinction between these two categories, as claimed by Hale and Keyser, is therefore not well-grounded. Kiparsky (1997: 497) points out that, on the one hand, the location verbs that denote "mechanical processes which are understood as capable of proceeding on their own (*reel, spool, stack, pile* (*up*)), and the

---

[13] For Kayne (2008), all lexical items can be divided into two classes: one open and the other closed. Nouns belong to the open class and the lexical items of the remaining categories, to which verbs and adjectives belong, are of the closed class. Kayne (2008: 7) suggests that "[M]ost what we call verbs… actually involve a noun and a silent light verb (or more than one silent light verb… [A]djectives might cross-linguistically be analyzed as resulting from the incorporation of a noun to a (silent) Case morpheme". For more discussions on adjectives, see Baker (2003).

positioning of self-propelled vehicles (*dock, berth, land*) or of persons (*bed, billet, lodge*)" do participate in the causative alternation; on the other hand, not all deadjectival verbs, for example, *legalize*, *visualize*, etc., participate in the causative alternation. As for Levin and Rappaport Hovav (1995), they offered the examples in (28) and (29) to show that the morphosyntactic distinction between A and N does not determine the availability of the causative alternation, which depends on semantic conditions.

(28)   a. The waiter cleared the table.

        b. *The table cleared.

        c. The wind cleared the sky.

        d. The sky cleared.

(29)   a. The dressmaker lengthened the skirt.

        b. *The skirt lengthened.

        c. The mad scientist lengthened the day.

        d. The days lengthened.

<div align="right">(From Levin and Rappaport Hovav, 1995: 104-105)</div>

Furthermore, the uniform account of P projection and A projection can find support from Spanish. In Spanish, there are two kinds of BE verbs: *ser* and *estar*. Depending on the qualities of the adjectives, one is chosen instead of the other. This contrast can be shown by the pair of (30a) and (30b). While the use of *ser* implies the inherent quality, the use of *estar* expresses the changing quality. For example, *Juan* in (30b) may be born a redhead, which is an inherent quality. *Juan* in (30a) is happy only at this moment and his emotional state may be constantly changing. Given this difference, it is not strange that the use of the verb *estar* is also employed for the indication of positions, as in the example in (30c). The coincidence of the use of the same verb between the adjective in (30a) and the prepositional phrase in (30c) may be a significant indication of the parallel status of A and P.

(30)   a. Juan está   contento.

        Juan BE   happy

        'Juan is happy.'

b. Juan es   pelirrojo.

           Juan BE   redhead

           'Juan is redhead.'

        c. Juan está   en casa.

           Juan BE   in home

           'Juan is at home.'

As a result, in this dissertation I will adopt the modified version of the lexical syntactic structures of Mateu (2002) as the bases for my analysis of argument structure in Mandarin. Until now, the basic primitives for the analysis are available. The next question to answer is how these primitives interact to form different argument structures. To account for this, two important mechanisms are necessary: the process of incorporation and the process of conflation. These will be covered in the next subsection.

1.2.4 Incorporation and Conflation

Let us start to deal with the issue of the phonetically empty head in the previously mentioned structures, by making use of the unergative structure in (31), according to Hale and Keyser.

(31)   V
              ┌─────┐
              V   N

              Ø   laugh
              ▲_____|
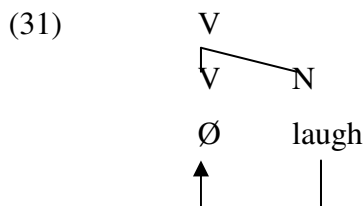
According to Hale and Keyser (1998: 80), when the upper head has an empty phonological matrix, this empty phonological matrix "must be eliminated from the morphosyntactic representation". Concretely, this empty phonological matrix can be eliminated via the process of conflation, adopted from Talmy (1985). This process is defined by these authors thus: "conflation is a specific kind of incorporation, conforming to an especially strict version of Head Movement Constraint (Travis, 1984; Baker, 1988), according to *which the phonological matrix of a complement replaces the empty matrix of the government head*" (my emphasis: SF). That is to say, the empty

phonological matrix of the head is replaced by the phonological matrix of the complement in (31), *laugh*. The same process is applied to the other location/locatum denominal verbs and deadjectival verbs. For example, in the structure in (32), the phonological matrix of the complement of P first replaces the empty phonological matrix and, furthermore, replaces the empty phonological matrix of V.

(32)

```
        V
       / \
      V         P
     Ø    DP  / \
          ↑  P   P
         the horse  / \
                 P   N
                 Ø   saddle
```
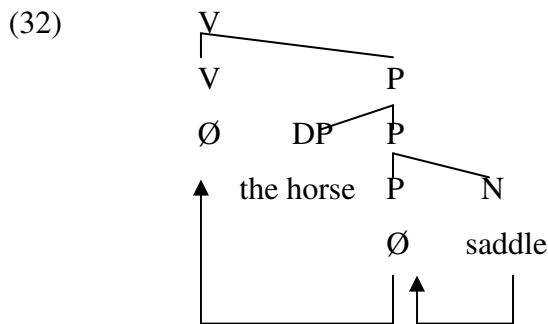
This process renders the example in (33a), from Hale and Keyser (1992: 105), as ungrammatical. The intended meaning of this example is that "John gave his money to the church". In order to obtain this interpretation, as shown in the structure in (33b), the phonological matrix of the element in the specifier position of the P projection must replace the empty phonological matrix of V. This is precisely what violates the Head Movement Constraint and what leads to the ungrammaticality of this example.

(33)   a. *John churched his money.

   b.

```
        V
       / \
      V        P
     Ø    N   / \
          ↑  P   P
         church  / \
                P   N
                Ø   money
```
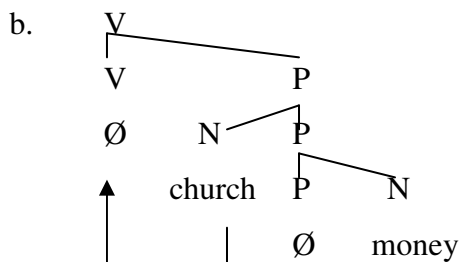
      But what does replacing the empty phonological matrix of a governing head by the phonological matrix of its complement really mean? During the development of Hale and Keyser's theory, the concept of this process changes from head-movement to selection. Firstly, for the head-movement analysis, when the empty phonological matrix of a head is replaced by that of its complement, a trace is left in the original position in the complement position. This movement can be illustrated by the steps in (34), from Haugen (2009: 246).

(34) a.   b.

```
        VP                                    VP
       /  \                                  /  \
      V    NP                               V    NP
           |                                |    |
           N                              dance  N
           |                                     |
         dance                                   tᵢ
```
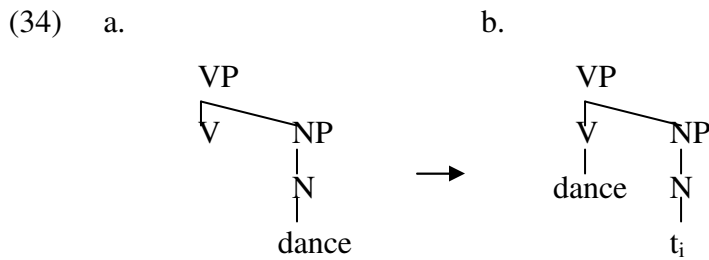
The problem arises with the examples of hyponymous objects, as in *dance a polka*. If the N position in the structure in (34b) is saturated by a trace, how can this position be occupied again by another phonologically full element? To resolve this problem, Hale and Keyser (1997a) propose that the referential character of the trace in the complement position be erased via index-deletion, and, as a consequence, this position can be occupied by other elements. That is to say, after the mechanism of index-deletion takes place, the place of the complement in (34b) will be free for the insertion of another element; when *a polka* is inserted into this position, the verbal phrase *dance a polka* can be obtained.

Later, the head movement process is replaced by selection: Merge and Vocabulary Insertion. The discussed unergative structure for the verb *dance* would be that in (35).

(35)

```
        V
       /  \
      V     N
   {dance}  {dance}
      |
    dance
```
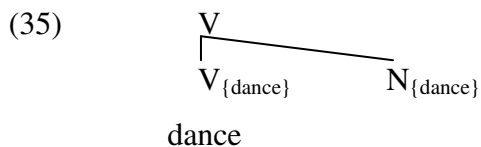
Firstly, the head V merges with the head N. Then, the phonological matrix of V, namely *dance*, ends in its position by Vocabulary Insertion, instead of being conflated from its complement position. Moreover, in this structure, the head specifies what kind of complement it can take according to the identification between the head and the complement, represented by braced indices. Hence, the complement position can be occupied by elements that can be understood as 'a kind of dance'. For example, since *polka* is a kind of dance, it is a possible candidate for insertion in the complement position. In the words of Hale and Keyser (2002: 92), "it is this identification that licenses the nonovert complement". In this way, the original analysis of the process of

conflation as a head movement is substituted by the selectional relation between the head and the complement.

Such a modification is not altogether satisfactory because it blurs the distinction between the syntactically transparent part of meaning and the grammatically irrelevant encyclopedic meaning. That is, if the structure in (35) involves the semantic selection between the head and the complement, the head not only has the syntactic but also the encyclopedic meaning. This is not a welcome modification according to the basic spirit of the initial works of Hale and Keyser on event decomposition, according to which idiosyncratic contents derive from the elements occupying a complement position.

I will now turn to Haugen (2009), who maintains that the abandonment of the process of conflation as part of the argument structure is premature. This author proposes a clear distinction between incorporation and conflation. The definitions of these two processes are set down in (36).

(36)   "*Incorporation* is conceived of as head-movement (as in Baker, 1988; Hale and Keyser, 1993), and is instantiated through the syntactic operation of Copy, whereas *conflation* is instantiated directly through Merge (compounding)".

(From Haugen, 2009: 260)

Let us illustrate, first, the process of incorporation. To be able to explain the examples with hyponymous arguments by applying the head-movement analysis without needing to propose the index-deletion, Haugen (2009) turns to Chomsky's (1995) Copy Theory and to the Late Insertion of Distributed Morphology (Halle and Marantz, 1993, 1994; Harley and Noyer, 1999; Marantz, 2001). According to the Copy Theory (Chomsky, 1995: 202), "the trace left behind is a copy of the moved element". Haugen (2009) proposes that these copies consist of a bundle of features, instead of being morpho-phonologically specified. By dissociating concrete morpho-phonological forms from moved items, the important insight of Haugen leads to the conclusion that a moved element in head-movement and its trace are coindexed and can be spelled out with more than one vocabulary item.

The expressions with hyponymous objects, as in *John danced a jig*, could be explained in the following way, by adopting the unergative lexical syntactic structure as in (37). According to the head-movement approach, the complement "moves" to the

head position by copying the bundle of features. As a result, the complement and the head share the same bundle of features, indicated by the coindex *i* in the structure in (37). Assuming that these two coindexed elements can be spelled out with different vocabulary items, there would be no problem for the non-relational elements *dance* and *jig* to be inserted into these two positions as in (37). In this way, the problem presented in Hale and Keyser's proposal of selection disappears because the head only has the syntactic meaning, and the encyclopedic meaning comes from its complement via incorporation.

(37)

$$
\begin{array}{c}
x \\
\diagdown \\
x \qquad\qquad y \\
[\alpha, \beta, \ldots n]_i \qquad [\alpha, \beta, \ldots n]_i \\
\textrm{dance} \qquad\qquad \textrm{jig}
\end{array}
$$
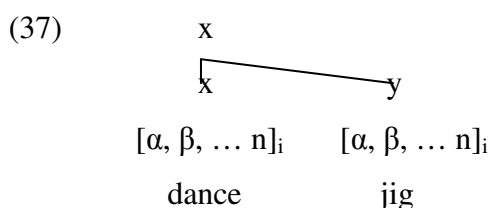
In other words, the denominal verbs, such as *dance*, *saddle*, *shelve*, for example, can be claimed to result from the process of incorporation. In these cases the nominal forms are incorporated from the complement position in argument structure. In some cases, this complement position can be occupied by cognate or hyponymous objects[14]. That is to say, the derivation of these denominal verbs and cognate/hyponymous objects is still related to the argument structure.

Secondly, I will turn to the process of conflation. There is another type of denominal verb whose nominal roots do not originate from the argument structure via the process of incorporation. These verbs usually express means or manner in which the predicate is carried out. *Hammer*, *brush*, *whistle*, *tape*, etc., are verbs of this type. Following the notion of manner incorporation in Harley (2005), Haugen (2009) argues that these verbs result from the process of conflation, namely, Merge. This process is illustrated by the structure in (38). In this structure, the nominal form of the main verb results from the merging of an independent root, which serves as an adverbial modifier.

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[14] By accepting the claim of Son (2009: 219) that "a single vocabulary item or morpheme may 'span' more than one functional head' (see Son and Svenonius (2008) for further references), we may account for *dance* and *dance a jig* in the following way: in both cases, two heads have coindexed a bundle of semantic features and, while *dance* is the result of lexicalizing these two heads with a single vocabulary item, *dance a jig* is instantiated by two vocabulary items.

(38)   Sue was hammering the metal.

…
*v*P
DP   *v'*
Sue   *v*   √P
√   DP
hammering   (hit)   the metal
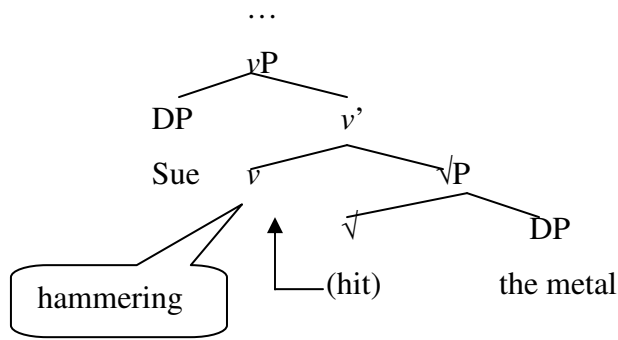
Even though the main modified structure may vary according to different authors, works that adopt the similar spirit of merging an independent structure/root as the modifier of another structure can also be found in Acedo Matellán (2010), Embick (2004b), Mateu (2002, 2008), McIntyre (2004), and Zubizarreta and Oh (2007), among others.

The distinction established between the processes of conflation and that of incorporation will be important when accounting for the argument structure in Mandarin. However, in this dissertation I will contend that the process of conflation involves merging an established unergative structure instead of a root, illustrated by the structures in (39), for the examples in (40).

(39)   a.   x1   b.   x3
x1   x2   x3   y3
Ø   z2   x2   run
John   x2   y2
into   room

c.   x1
x1   x2
x3   x1   z2   x2
x3   y3   Ø   John   x2   y2
run   into   room
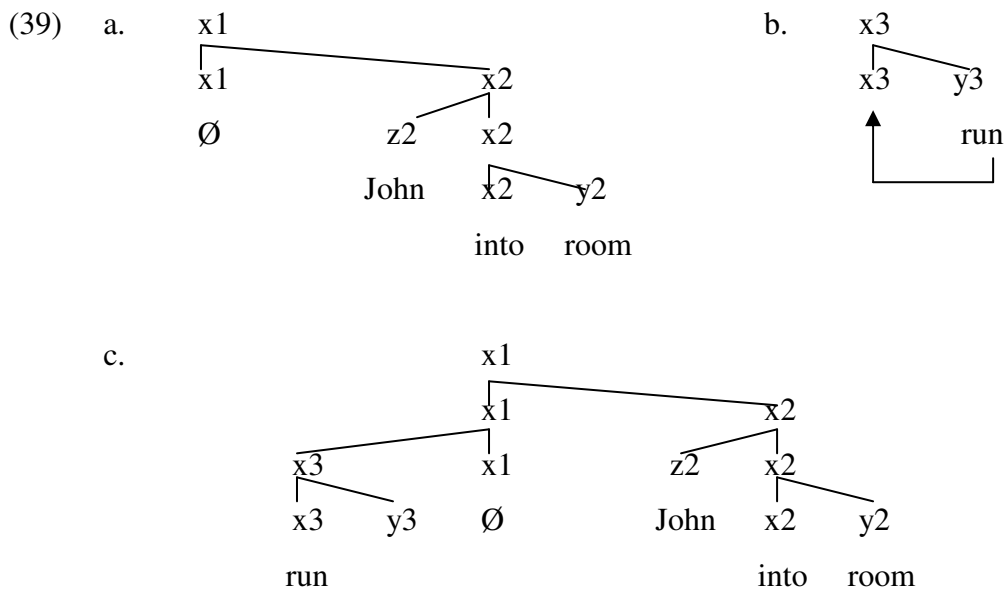
(40)   a. John went into the room.

        b. John ran.

        c. John ran into the room.

When the head of the structure in (39a) is satisfied by the light verb *go*, the example in (40a) will be obtained. The other way to satisfy this head is by conflating an unergative structure, such as that in (39b), into it. The resulting structure will be that shown in (39c).

My reason for advocating the conflation of an unergative structure is that, empirically speaking, as already observed in the literature, verbs that denote activities are usually more flexible than verbs that denote accomplishment regarding argument realization, as pointed out by Rappaport Hovav and Levin (1998) and Mendikoetxea (2007: 79). The fact that verbs that denote activities show more flexibility can be claimed to arise from the following two facts: firstly, structurally they can stand alone, as in the structure in (39b), and, secondly, they can be conflated into a structure that denotes accomplishment, as in the structure in (39c). Such flexibility is also reflected in expressions with unselected objects. For example, while unergative verbs can appear in examples with unselected objects, unaccusative verbs cannot. The different patterns regarding compatibility of these types of verbs with unselected objects are shown by the examples in (41).

(41)   a. The dog barked the chickens awake.

        b. They talked us into a stupor.

        c. *The river froze the fish dead.

        d. *The ice melted the floor clean.

                                                    (From Mateu, 2002: 231)

The grammaticality and ungrammaticality of these examples can be explained in the following way. The main predicate of these examples involves a causative structure with a phonologically empty head, as illustrated in the structure in (39c), and this phonologically empty head is further saturated by the conflation of another structure. The difference between the first two examples in (41) and the rest lies in the different conflated structures. The conflated structure in the examples in (41a) and (41b) is unergative while the conflated structure in the examples in (41c) and (41d) is

35

unaccusative. However, an unaccusative structure is not a possible candidate for the process of conflation; therefore, the examples in (41c) and (41d) are not well-formed.

As for why the unaccusative structure is not a possible candidate for the process of conflation, this is explained in Mateu (2002: 175), according to whom "the conflation operation (incorporation in terms of this dissertation: SF) always exhausts ***all*** the lexical material of the subordinate argument structure: that is, no residue is left behind" (original emphasis). Let us compare the unaccusative structure, in (42a), and the unergative structure, in (42b). The coindexed bundles of features represent the process of incorporation à la Haugen (2009).

(42)   a. $x1$ b. $x3$

       $x1$ $x2$ $x3$ $y3$

  $[\alpha, \beta, \ldots n]_i$ $z2$ $x2$ $[\alpha, \beta, \ldots n]_i$ $[\alpha, \beta, \ldots n]_i$

    freeze $x2$ $y2$ bark

          $[\alpha, \beta, \ldots n]_i$ $[\alpha, \beta, \ldots n]_i$
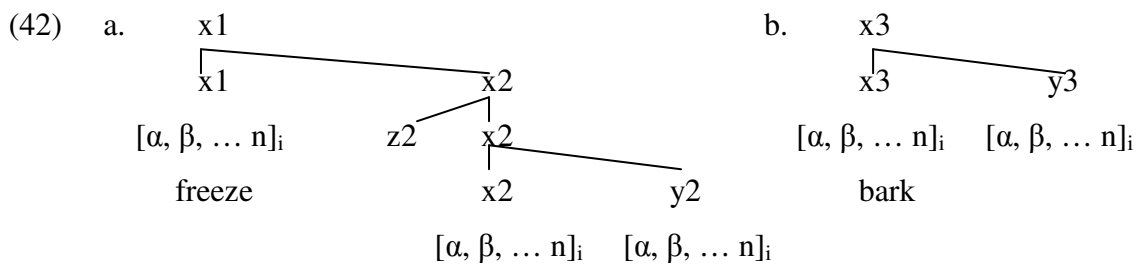
In the unergative structure in (42b), both the head and the complement are affected by incorporation; in the unaccusative structure in (42a), the element in the specifier position of the projection *x2* is not affected and is a "residue left behind". As a result, an unaccusative structure cannot be conflated.

Such a proposal of conflating unergative structures is the one adopted in Mateu (2002) but is abandoned in the later work of this author, for example in Mateu (2010a, 2012), to embrace the proposal of conflating roots. According to the unergative-structure-conflating proposal, the examples in (43a) and (43b) would be predicted to be ungrammatical, because the main verb involved is a predicative verb, which is derived from the unaccusative structure and, thus, is not a possible candidate for the process of conflation. The problem would disappear if it were the root that conflates, since there is nothing to impede the conflation of roots. These two examples could be analyzed as the structures in (43c) and (43d), respectively.

(43)   a. He broke into the room.

       b. The hammer head broke off.

<div align="right">(From Mateu, 2010a: 97)</div>

       c. [He [[√break + Ø] into the room]].

       d. [The hammer head [[√break + Ø] off]].

In order for my approach—namely that of adopting the conflation of unergative structures instead of roots—to be valid, I must at least show that the examples in (43) need not necessarily involve the conflation of roots. I will show that this is actually so and what is involved in the formation of these two examples is incorporation rather than conflation, inspired by Mateu (2012). Mateu (2012) claims that there are actually two types of incorporation: one involves incorporation of the morpho-phonological form of a root from the complement position to its selecting head and the other does not involve incorporation of the morpho-phonological form from the complement but a light/copular use of the verb. These two types are illustrated with the examples and the structures in (44), both from Mateu (2012). The example in (44a) illustrates incorporation from the complement position. The root *LAVA* is incorporated into P en route to V. Via this process, not only the bundle of semantic features but also the morpho-phonological form is incorporated. As for the process of incorporation in the example in (44b), only the bundle of semantic features, but not the morpho-phonological form, is involved. The morpho-phonological form of V is satisfied by the insertion of a light/copular verb root *CORRERE*. In other words, the root CORRERE is what instantiates the structure. In the spirit of Hoekstra and Mulder (1990), the example in (44b) shows that, in addition to typically considered light/copular verbs, some unergative verbs can function as light/copular verbs, despite their phonological concreteness. See also den Dikken (2010) for more discussion of how manner verbs can instantiate a light predicate.

(44) a. Gianni ha lavato   via   la macchia.   (Italian)

Gianni has washed   away   the stain

'Gianni washed the stain away.'

a'.
```
              V
          ┌───┴───┐
          V        P
       √LAVAᵢ    ┌─┴──┐
                DP     P
            la macchia  ┌─┴───┐
                        P      X
                    √L̶A̶V̶A̶ᵢ  ┌─┴────┐
                            X    (Part)
                         √L̶A̶V̶A̶ᵢ    via
```
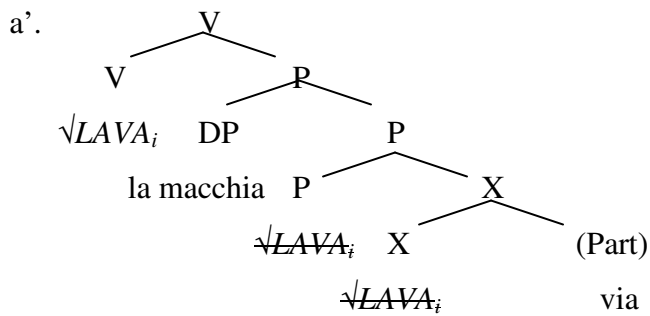
b. Gianni è   corso *(via)[15].   (Italian)

Gianni is   run   away

'Gianni ran away.'

b'.
```
              V
        ┌─────┴─────┐
       DP            V
     Gianni     ┌────┴────┐
                V          P
           [+P(ath)]ᵢ   ┌──┴────┐
           √CORRERE     P      Part
                     [+P(ath)]ᵢ  via
```
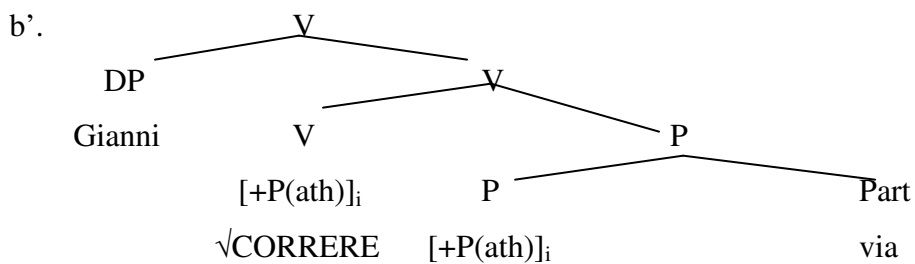
If the superficial unergative verb *correre* 'to run' in Italian can indeed be analyzed as a copular/light verb[16], I see no reason not to extend this analysis to the examples in (43). Moreover, such copular use of the verb in the examples (43) can explain why the entities that suffer the change of location do not suffer the change of state specified by the main verb *break*. That is, the subject *he* in the example (43a) did not break when he got into the room, and the subject *the hammer head* did not break when it fell off. This phenomenon can also be observed in the examples in Mandarin in (45). Although the verbs are unergative, the examples are clearly unaccusative predicates. The example in (45a) does not necessarily imply that the prisoner got away

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[15] Since the verb *danzare* 'to dance' cannot be a light verb, the ungrammaticality of the example in (i) is thus expected.

(i)   *Gianni è danzato via.   (Italian)
          Gianni is danced away
          Intended: "Gianni danced away.'

[16] See Acedo Matellán (2012: 9): "there seems to be cross-linguistic evidence that *run* is able to behave as a light motion verb, as well as a manner-of-motion verb".

by running because he/she may have got help and been released by someone out there. *Zhangsan* in the example in (45b) did not have to leave by walking for the sentence to make sense. He/she could perfectly have left by car.

(45)   a. fanren   pao-le.
            prisoner   run-LE
            'The prisoner ran away.'
        b. Zhangsan   zou-le.
            Zhangsan   walk-LE
            'Zhangsan left.'

As a result, the analysis of the process of conflation as involving a conflated unergative could be maintained. In the examples in (43) no process of conflation is involved. What is involved is the process of incorporation.

In the next subsection, I will incorporate the mechanisms discussed until now in order to present the framework for this dissertation.

1.2.5 The Framework Adopted for this Dissertation

As set out above, in this dissertation I adopt the lexical-syntactic approach for the analysis. By combining the lexical syntactic structures established in Mateu (2002), we may form the basic types of predicate structures as follows in (46). These structures are unergative in (46a), unaccusative in (46b), and causative in (46c). In this subsection, I will provide some examples for the formation of these structures and the details will be seen in the following chapters.

(46)   a. *Unergative Structure*

```
            F
        ┌───┤
        z   F
            ├- - - - - - - - -┐
            F                 x
                            ┌─┤
                            x  y
```

b. *Unaccusative Structure*

```
    x1
    ├──────────┐
    x1         x2
            ┌──┤
            z2 x2
               ├──┐
               x2 y2
```

c. *Causative Structure*

```
            F
        ┌───┤
        z3  F
            ├- - - - - - - - -┐
            F                 x1
                            ┌─┤
                            x1  x2
                          ┌──┤
                          z2 x2
                             ├──┐
                             x2 y2
```
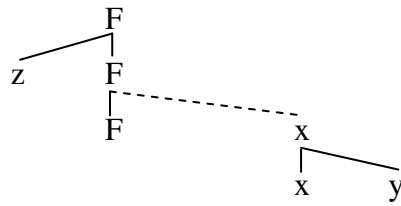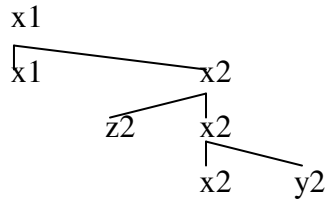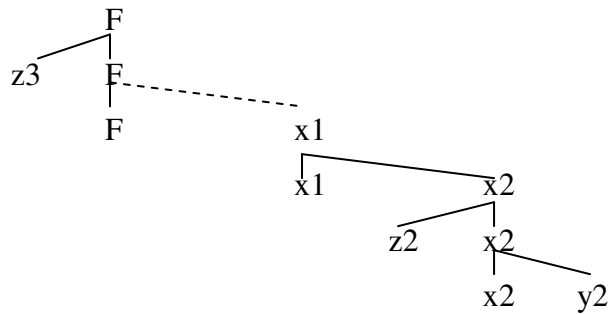
The unergative structure is formed by a head, associated with an eventive relation, which selects a non-relational element as its complement. Two examples in Mandarin are given here for this structure. They are shown in (47), with the omission of the functional projection. Adopting the head-movement analysis of Haugen (2009) for incorporation, I claim that these two examples differ only in phonological presentation. For the type that involves zero-derivation, that in (47a), the head-movement process is involved and I will present the phonological presentation in the complement position. For the type that involves the cognate or hyponymous object, that in (47b), the head-movement process is also involved but the head is occupied by the element of verbal form and the complement position is occupied by the cognate or the hyponymous object. Following Harley (2002, 2005) and Mateu (2002), the non-relational element in the unergative structure will be interpreted as Incremental Theme.

(47) a.   x   b.   x
     ┌──┐   ┌──┐
     x   y   x   y
          chi   chi   fan

          eat   eat   food
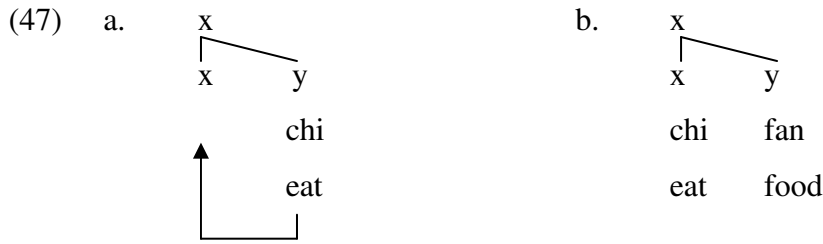
If we compare the unaccusative structure with the unergative structure, the difference consists in the complement of the selecting head: while the complement of the unergative structure is a non-relational head, the complement of the unaccusative structure is a projection of the head that associates with a non-eventive relation. As argued by Mateu (2002), the head that associates with a non-eventive relation associates Figure with Ground, in terms of Talmy (1985, 1991, 2000)[17]. While Ground is selected as the complement, Figure is selected as the specifier. The change of position/state of Figure has Ground as the point of reference. This relation can be illustrated by the structure in (48b).

(48) a. Zhangsan   jin   fangjian.
         Zhangsan   enter   room
         'Zhangsan entered the room.'

      b.   x1
            ┌──────────┐
            x1   x2
                      ┌──────┐
                      z2   x2
                   Zhangsan ┌────┐
                             x2   y2
                             jin   fangjian
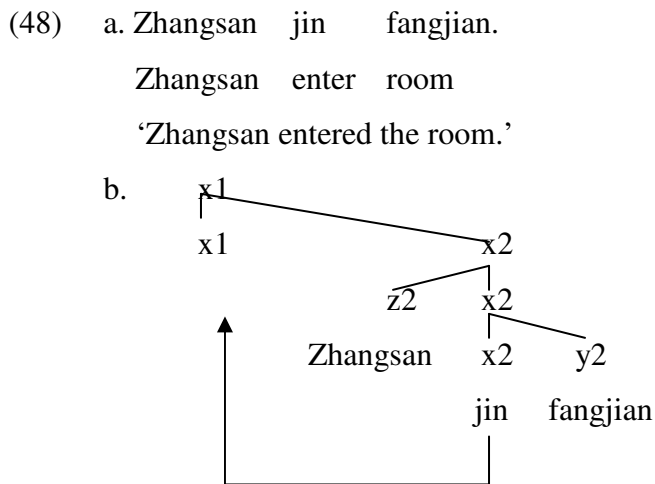
Lastly, the third structure is the causative structure. It differs from the unaccusative structure in that the causative structure has an additional functional projection. This functional projection is comparable to that of *voice* in Kratzer (1996), *v* in Chomsky (1995), or *Pr(edication)* in Bowers (1993, 1997, 2002) in that it introduces the external argument, which is interpreted as Originator, according to van Voorst (1988)

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[17] Talmy (1985: 61): "The terms 'Figure' and 'Ground' are taken from Gestalt psychology but we give them a distinct semantic interpretation here: the Figure is a moving or *conceptually* movable object whose path or site is at issue; the Ground is a reference-frame, with respect to which the Figure's path or site is characterized".

and Borer (1994, 2003, 2005). In the unaccusative example in (48a), the element that occupies the specifier position of the projection that associates with a non-eventive relation, i.e., Figure, must raise to occupy the syntactic subject position. In a causative predicate, the syntactic subject is introduced by the functional projection, as the example in (49a) shows. In the structure in (49b), the verbal form results from the successive instantiation of the process of incorporation, which involves movement from the complements to their heads.

(49)   a. Zhangsan po-le   jilu.

           Zhangsan break-LE   record

           'Zhangsan broke the record.'

        b.
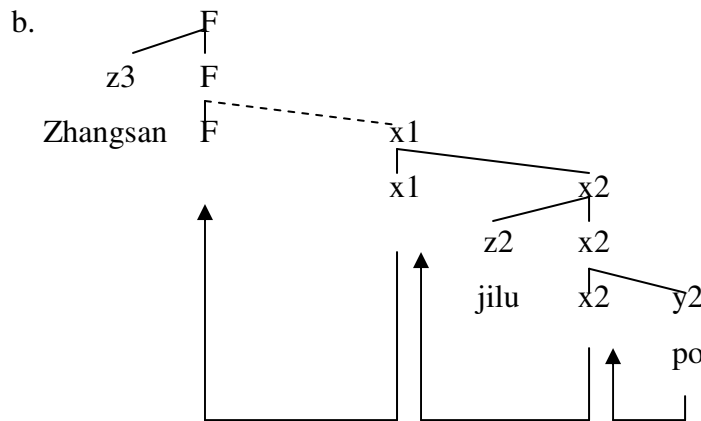
The structures that we have seen until now involve the process of incorporation. Now, I will make use of the example (50a) to illustrate how the process of conflation works in Mandarin. Besides describing the event of change of position, as the example in (48a) does, the example in (50a) provides the additional manner information in which the changing event takes place. All details aside, this example can be treated as combining the structure that denotes the change and the structure that expresses the manner component. The former is identical to the structure in (48b) and the latter is introduced by the process of conflation. This combination is shown by the structure in (50b). What counts here is the structural configuration, as chapter two will cover how the superficial word order is obtained.

(50) a. Zhangsan   pao-jin   fangjian.
        Zhangsan   run-enter   room
        'Zhangsan ran into the room.'

  b.
```
                        x1
                     ┌──────────────────┐
                    x1                  x2
                ┌────────┐          ┌────────┐
               x3        x1        z2        x2
            ┌──────┐              Zhangsan ┌──────┐
           x3     y3                      x2     y2

           pao                            jin   fangjian
```
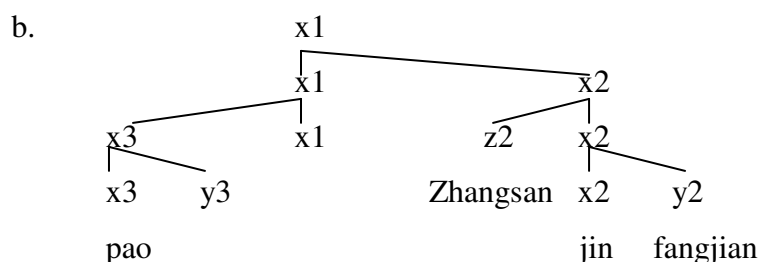
Thus, the basic mechanisms necessary for this dissertation are ready. The next section presents two approaches to the lexicon-syntax interface and compares them with the one presented here. They are the lexical-semantic and neo-constructionist approaches.

1.3 Other Approaches to the Lexicon-Syntax Interface

In my lexical-syntactic approach, argument structure is determined by the available positions in the lexical syntactic structure, which in turn results from the availability of the complement argument and the specifier argument to the heads. Such a proposal may be interpreted from two perspectives: that argument structure is determined by both the lexicon and the syntax, and that argument structure is determined only by the syntax. According to the first point of view, a lexical head has its complement or specifier argument assigned in the lexicon. However, according to the second perspective, the value of having the complement or the specifier argument can be treated purely in syntactic terms in that these are actually functional heads that select the complement and the specifier in the syntactic derivation. No matter which one might be the better interpretation, what counts here is that the semantic interpretations of the arguments are read off the syntactic structures. Work in the same spirit can also be found in neo-constructionist approaches, which will be discussed in subsection 1.3.2. On the contrary, for proponents of lexical-semantic approaches, it is the lexical semantics specified in the lexicon that determines the mapping of arguments to the syntactic structures. In these analyses, the explanatory burden is shouldered by the

lexicon rather than by syntax. This will be the issue of subsection 1.3.1. The divergence in treating the same subject, namely argument structure, reflects the following distinction argued by Borer (2003) in (51).

(51)   "At one extreme of the continuum from lexicon to computation, we find a view of the human linguistic capacity fundamentally anchored in our demonstrable ability to acquire an intricate lexicon, based, at least in part, on a complex conceptual system… At the other extreme, we find a view anchored in our equally demonstrable rule-governed behavior".

1.3.1 Projectionist Approaches

For projectionist approaches, it is the information specified in the lexical entries that determines argument realization. What is this information? Stowell (1981) first introduced the thematic grid (θ-grid) in the lexical entries, and it is the thematic grid that governs the syntactic realization of arguments. Since then the concept of theta-grid determined in the lexicon has been adopted to account for the problems relating to argument realization. This view is claimed to be projectionist because the lexicon projects the argument realization in syntax. The so-called lexical-semantic approaches can be classified as projectionist theories because it is the lexical semantics specified in lexicon that projects. Concretely, I will review the studies of Jackendoff (1987, 1990[18]), Levin and Rappaport Hovav (1995), and Rappaport Hovav and Levin (1998, 2001). The studies of these authors are also regarded as predicate decomposition approaches, according to which "verb meanings can be decomposed into basic components" (Levin and Rappaport Hovav, 2005: 69)[19]. By undertaking this revision, the fundamental distinction between the lexical-syntactic and the lexical-semantic approaches to argument structure will be revealed.

Jackendoff (1987, 1990) proposes an independent non-linguistic module called conceptual structures. Conceptual structures are composed of a "vocabulary of primitive

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[18] See footnote (1) of this chapter, in page 3.
[19] The lexical-syntactic studies of Hale and Keyser (1992, 1993, 1997a, 1997b, 1998, 2002, 2005) and the neo-constructionist approaches of Arad (1998) and Marantz (1997) can also be regarded as predicate decomposition approaches. According to these approaches, the predicate decomposition is made in the syntactic structures, without the need of proposing an independent level of representation, as in the studies of Jackendoff and Levin and Rappaport and Hovav.

conceptual categories" such as THING, EVENT, PLACE, PATH, STATE, etc. These primitive categories can be expanded into complex expressions by formation rules, as in (52).

(52) a. PLACE → [_Place_ PLACE-FUNCTION ([THING])]

b. PATH → [_Path_ TO/FROM/TOWARD ([THING]/[PLACE))]

c. EVENT → [_Event_ GO/STAY ([THING], [PATH]/[PLACE])]

(From Jackendoff, 1990: 43)

For instance, the example in (53a) has the conceptual structure in (53b). This conceptual structure results from the combination of the information provided by the lexical entry of *run*, in (53c), and that of the preposition *into*, in (53d). As for how the elements in the conceptual structure are instantiated in the syntactic structure, this task is carried out by the coindexes between the conceptual structure and the subcategorization in lexical entries. From the indexes of the conceptual structures in the lexical entries, the first complement of the conceptual category GO is realized as the subject, and the complement of the conceptual category IN is realized as the noun in the prepositional phrase.

(53) a. John ran into the room.

b. [_Event_ GO ([_Thing_ JOHN]), [_Path_ TO ([_Place_ IN ([_Thing_ ROOM])])])]

c.
$$
\begin{bmatrix}
\text{run} \\
\text{V} \\
\underline{\quad} \ \langle PP_j \rangle \\
[_{Event} \ GO \ ([_{Thing} \quad]_i, [_{Path} \quad]_j)]
\end{bmatrix}
$$

d.
$$
\begin{bmatrix}
\text{into} \\
\text{P} \\
\underline{\quad} NP_j \\
[_{Path} \ TO \ ([_{Place} \ IN \ ([_{Thing} \quad]_j)])]
\end{bmatrix}
$$

(From Jackendoff, 1999: 45)

As mentioned in subsection 1.1.1, the problem of Jackendoff's proposal lies in the decomposition of roots, as can be observed in the conceptual structure in (54). If

roots can be decomposed, the distinction between the structural meaning and the idiosyncratic meaning would be blurred.

(54)

$$\begin{bmatrix} \text{drink} \\ \text{V} \\ \underline{\quad} <\text{NP}_j> \\ [_{\text{Event}} \text{CAUSE} ([_{\text{Thing}}\ ]_i, [_{\text{Event}} \text{GO} ([_{\text{Thing}} \text{LIQUID}]_j, \\ \qquad [_{\text{Path}} \text{TO} ([_{\text{Place}} \text{IN} ([_{\text{Thing}} \text{MOUTH OF} ([_{\text{Thing}}\ ]_i)])])])] \end{bmatrix}$$

(Jackendoff, 1990: 53)

If structurally both *run* and *drink* can be analyzed as unergative verbs, under the lexical-syntactic approach adopted in this study, they should have the same structure, as that in (55a), which can be interpreted as [DO X]. Such syntactic parallelism is lost under the proposal of Jackendoff, as can be observed by the comparison between the conceptual structure in (53c) and that in (54). Moreover, criteria for the decomposition of roots do not seem to be consistent. For example, there is no way of telling why the mouth is involved for *drink* but not the legs for *run*. The lack of well-defined criteria will lead to the risk of not being able to be verified or falsified.

(55)   a.   b.   c

Other authors, such as Levin and Rappaport Hovav (1995) and Rappaport Hovav and Levin (1998, 2001), also adopt a approach of decomposition of verbal meaning[20]. However, unlike Jackendoff's (1987, 1990) proposal, according to which arguments in the syntactic structure and those in the conceptual structure are related by coindexes, these authors propose linking rules to guarantee the well-formedness of the mapping from lexical semantic templates to syntactic structures. Lexical semantic templates, in (56), are composed of primitive predicates, such as ACT, BECOME, CAUSE, etc., and constants, such as STATE, MANNER, THING, PLACE, INSTRUMENT, etc. These lexical semantic templates are also called event structure templates because they

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[20] For arguments against the decomposition of verbal meaning, see Fodor (1970, 1998) and Fodor and Lepore (1999).

correspond to the event types proposed by Vendler (1957) and Dowty (1979): activity, state, achievement, and accomplishment.

(56)   *Lexical Semantic Templates*

   a. [x ACT $_{<MANNER>}$]   (activity)

   b. [x $_{<STATE>}$]   (state)

   c. [BECOME [x $_{<STATE>}$]]   (achievement)

   d. [[x ACT $_{<MANNER>}$] CAUSE [BECOME [y $_{<STATE>}$]]]   (accomplishment)

   e. [x CAUSE [BECOME [y $_{<STATE>}$]]]   (accomplishment)

                                      (From Rappaport Hovav and Levin, 1998: 108)

These lexical semantic templates are the configurational part of verbal meaning while the constants[21] are the idiosyncratic part of verbal meaning. The association of a constant with these templates is determined by the "ontological type of a constant" (Rappaport Hovav and Levin, 1988: 108). Constants can be classified into different ontological types, according to which they are associated with the templates. This mechanism is carried out by the canonical realization rules[22]. For example, a state constant can only be inserted into the constant place labeled by STATE in the angled brackets in the templates. One verb is distinguished from other verbs of the same event type by the different constants inserted in these templates. For example, the verbs *break* and *melt* belong to the ontological externally-caused state type and, thus, can be inserted into the lexical semantic template in (57).

(57)   [[x ACT] CAUSE [BECOME [y $_{<STATE>}$]]]

In this sense, the previously mentioned distinction between the syntactically transparent part of meaning and the idiosyncratic part of meaning is captured by the distinction

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[21] The term 'constant', representing the idiosyncratic part of verbal meaning, is replaced by the term 'root' in Levin and Rappaport Hovav (2005), following Pesetsky (1995).
[22] Concretely, the fundamental canonical realization rules proposed by Rappaport Hovav and Levin (1998: 109) are the following:

(i)   manner → [x ACT $_{<MANNER>}$]
         instrument → [x ACT $_{<INSTRUMENT>}$]
         placeable object → [x CAUSE [BECOME [y WITH $_{<THING>}$]]]
         place → [x CAUSE [BECOME [y $_{<PLACE>}$]]]
         internally caused state → [x $_{<STATE>}$]
         externally caused state → [[x ACT] CAUSE [BECOME [y $_{<STATE>}$]]]

between lexical semantic templates and constants. Regarding this aspect, the proposal of Levin and Rappaport Hovav (1995) and Rappaport Hovav and Levin (1998, 2001) has advantages over that of Jackendoff (1987, 1990) and is similar to Hale and Keyser's lexical-syntactic proposal.

The associations of the constants with the lexical semantic templates via the canonical realization rules result in the basic meanings of the verbs. Besides the basic meaning, a verb may have the meaning derived by applying the Template Augmentation Rule, in (58).

(58)   *Template Augmentation Rule*

Event structure templates may be freely augmented up to other possible templates in the basic inventory of event structure templates.

(From Rappaport Hovav and Levin, 1998: 111)

For example, the verb *sweep* in the example in (59a) has the basic meaning that associates with the lexical semantic template related to activity, in (59b). If we follow the Template Augmentation Rule, this lexical semantic template can be augmented to that in (59d), and this augmentation of the template leads to the possible example in (59c).

(59)   a. Phil swept the floor.

b. [x ACT $_{<SWEEP>}$ y]

c. Phil swept the floor clean.

d. [[x ACT $_{<SWEEP>}$ y] CAUSE [BECOME [y $_{<CLEAN>}$]]]

As for how the arguments in the lexical semantic templates are related to the arguments in the syntactic structures, these authors propose a series of well-formedness conditions and linking rules[23]. These conditions and rules govern the mapping between the lexical semantic templates and syntax.

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[23] The well-formedness conditions are those in (i) and the linking rules are those in (ii).

(i)   a. *Subevent Identification Condition on Syntactic Realization*: Each subevent in the event structure must be identified by a lexical head (e.g., a V, an A, or a P) in the syntax.
         b. *Argument Realization Condition*: b1. There must be an argument XP in the syntax for each structural participant in the event structure. b2. Each argument XP in the syntax must be associated with an identical subevent in the event structure.

The basic ideas of the two lexical-semantic approaches have been presented; what they have in common is that an independent level of representation is needed for the decomposition of verbal meaning and that a certain mechanism of mapping is necessary. Compared with the previous proposals positing the list of thematic roles or theta roles[24], the lexical-semantic approaches by Jackendoff (1987, 1990), Levin and Rappaport Hovav (1995), and Rappaport Hovav and Levin (1998, 2001) show great progress in that thematic roles are no longer unrestricted roles associated with arguments. In these studies, the thematic roles are labels[25] of the elements that occupy certain positions of either the conceptual structures or the lexical semantic templates. In Levin and Rappaport Hovav's (2005: 69) words, "[t]his move allows semantic roles to be defined with respect to the argument positions of particular primitive predicates, making them explicitly derived notions". The advantage of this change is that thematic roles are no longer unlimited arbitrary items. The thematic roles are limited because the number of the positions they represent in the conceptual structures or the lexical semantic templates is limited. The analyses in this aspect share the same essential idea with the lexical-syntactic approach adopted here.

Even though the studies of Jackendoff (1987, 1990), Levin and Rappaport Hovav (1995), and Rappaport Hovav and Levin (1998, 2001) are reviewed together as projectionist approaches and predicate decomposition approaches in this subsection, we

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(From Rappaport Hovav and Levin, 1998: 112-113)

(ii)   a. *Immediate Cause Linking Rule*: The argument of a verb that denotes the immediate cause of the eventuality described by the verb is its external argument.

      b. *Direct Change Linking Rule*: The argument of a verb that corresponds to the entity undergoing the direct change described by that verb is its direct internal argument.

      c. *Existence Linking Rule*: The argument of a verb whose existence is asserted or denied is direct internal argument.

      d. *Default Linking Rule*: An argument of a verb that does not fall under the scope of any of the other linking rules is its direct internal argument.

(From Levin and Rappaport Hovav, 1995: 135, 146, 153, 154)

[24] Levin and Rappaport Hovav (2005: 7) argue that "[s]ince the 1980s, many theories of grammar have been built on the assumption that the syntactic realization of arguments… is largely predictable from the meaning of their verbs. Such theories take many facets of the syntactic structure of a sentence to be projections of the lexical properties of its predicator…" However, "[s]yntacticians often appeal to principles such as the Projection Principle, which presuppose a lexical semantic representation, without seriously considering the nature of the lexical semantic representations on which they are meant to operate". These authors (2005: 38) also point out that the problem of the use of thematic roles/semantic roles is that "it is difficult to find reliable diagnostics for isolating precisely those arguments bearing a particular role. There do not seem to be diagnostic test which can be consistently applied to an argument with relatively uncontroversial results to determine whether that argument bears a particular role in the way that there are test for, say, lexical and syntactic categories".

[25] For example, 'agent' can be coarsely defined as the element that is associated with the "first argument position of the predicate CAUSE" or the "first argument position of the predicate" (Levin and Rappaport Hovav, 2005: 70).

should keep in mind, as we have seen in subsection 1.1.1 of this chapter, the essential difference that makes the studies of Jackendoff different from those of Levin and Rappaport Hovav. The fundamental difference consists of the treatment of the roots and it is precisely this difference that highlights the advantages of the studies of Levin and Rappaport Hovav over those of Jackendoff concerning argument realization. While the roots in the studies of Jackendoff can be decomposed, this is not allowed for Levin and Rappaport Hovav. In other words, the proposal of Levin and Rappaport Hovav is more restricted than that of Jackendoff in the sense that for Levin and Rappaport Hovav the computational system is kept from having access to the encyclopedic contents of the roots. Differences asides, these analyses do face some problems that lexical-syntactic approaches can escape.

Firstly, proposing an independent level of representation other than that of syntax supposes the need for some mechanism to guarantee the interaction between both levels of representation. As we have seen, such a mechanism takes the form of the employment of coindexes in Jackendoff (1987, 1990), and the linking rules and well-formedness conditions in Levin and Rappaport Hovav (1995) and Rappaport Hovav and Levin (1998, 2001). If there is a theory that can dispense with this mapping mechanism, this theory would be more welcome because of the economical consideration.

The second problem concerns the formation of the independent level of representation. In the two approaches that we have seen, we can observe the use of primitives such as ACT, CAUSE, BECOME, STATE, EVENT, PATH, etc. The conceptual structures and the lexical semantic templates are based on these primitive elements. However, there are no clear criteria to govern and define these primitives nor are there ways of governing the formation of these conceptual structures or lexical semantic templates. Different authors may propose different primitive predicates and additional primitives may be introduced as long as they are considered necessary. As Levin and Rappaport Hovav (2005: 74) point out, "[o]nce predicates begin to proliferate, theories of predicate decompositions encounter the same problems as theories of semantic roles". There is no doubt that lexical-semantic approaches have mechanisms that can describe data better than lexical-syntactic or neo-constructionist approaches. However, descriptive adequateness aside, there is no way to govern the formation of these independent levels of representation. As a result, there is also no way to falsify the formation of these levels of representation or to prove the validity of such a proposal. These two problems seem to be difficult to avoid for projectionist approaches, since

Levin and Rappaport Hovav (2005: 7) claim that "[t]he successful implementation of the program of deriving the syntactic properties of verbs from facets of their meaning depends on the existence of both *an articulated theory of the lexical semantic representation of verbs* and *a theory of the mapping between this representation and the relevant syntactic representation*" (my emphasis: SF).

Thirdly, in addition to the fact that neither the linking rules nor the existence of primitives in these proposals can be proved valid or false, there are no answers as to why there are only four linking rules and not seven, or why there are these primitives and not two more or one less. The same critique of the list of thematic roles is equally applicable to the lists of primitives and linking rules here.

To briefly sum up this subsection, lexical-semantic approaches may have advantages in describing data by establishing an independent level of representation—lexical conceptual structures in Jackendoff (1987, 1990) and lexical semantic templates in Levin and Rappaport Hovav (1995) and Rappaport Hovav and Levin (1998, 2001). The cost of establishing this independent level of representation is that certain mapping or linking mechanisms—the correspondence rules in Jackendoff (1987, 1990) and the linking rules in Levin and Rappaport Hovav (1995) and Rappaport Hovav and Levin (1998, 2001)—are necessary to associate this level with the syntactic structures. However, selecting the primitive elements for this level of representation and forming this linking mechanism both run the risk of having to attribute to the stipulation because neither are restricted by concrete criteria and cannot therefore be justified or falsified. This is not a trivial problem. If there is an approach that need not stipulate either this level of representation or these rules but can still account for the same data, this approach would, theoretically, have more advantages over the lexical-semantic approaches discussed.

In the next subsection, the neo-constructionist approaches, principally Borer's (2003, 2005), will be discussed.

1.3.2 Neo-constructionist Approaches

Unlike the lexical-semantic approaches, according to which it is the lexicon that bears the burden of determining how a verbal predication should have its argument

structure, for neo-constructionist approaches[26], the argument structure is not projected by any information specified in the lexicon. Arguments are freely projected to the syntactic structure and are interpreted from it. In other words, while lexical-semantic approaches focus on the lexicon, neo-constructionist approaches emphasize the computational ability of syntax. Among proposals from the neo-constructionist perspective, we find Acedo Matellán (2010), Arad (1998), Borer (2003, 2005), Ramchand (2008), and Ritter and Rosen (1998), etc. In what follows I will concentrate on that of Borer (2003, 2005).

For Borer (2003: 3), the information contained in the lexicon is no more than sound-meaning pairs, as the quote in (60) shows. As for the traditionally considered conceptions, such as lexical categories and subcategorization, they are no longer specified in the lexical entries; instead, they are defined in the syntactic configuration.

(60)   "If successful, then, an *exo-skeletal* research program is looking at a highly impoverished substantive lexicon which is a true interface with the conceptual system, and which contains little beyond the sound-meaning pair […] Within such an approach there is a reservoir of sound-meaning pairs, where by *meaning* we refer to the appropriate notion of a concept, and where by *sound* we mean an appropriately abstract phonological representation".

In Borer's (2003, 2005) approach, both the categories of the vocabulary and the argument structure are determined in the syntactic structures. Whether a lexical element is a verb or a noun depends on the syntactic structure in which it appears. Regarding the argument structure, it results from the interpretation of the lexical elements in the syntactic structure. An element that occupies the specifier position of a functional node must be properly interpreted. For example, the head ASP_Q is a functional node that associates with the semantic information relating to quantity. With the presence of such a functional head, the event must be non-homogenous. In other words, this functional node is associated with telicity. The element that appears in the specifier of the projection of the functional node ASP_Q will have the aspectual role of *subject-of-*

---

[26] The neo-constructionist approaches differ from the constructionist approaches, that of Goldberg (1995, 2006) for example, in the different treatment of the term "construction". For the former, constructions result from computational processes; for the latter, constructions are specific units that are not governed by any computational process.

quantity or *delimiter*. The head *E* is a functional node that encodes the existential binding of events and the element that occupies the specifier of its projection is interpreted as *originator*.

The arguments that occupy the specifier position of the above mentioned functional heads obtain their thematic interpretation from the structure; besides, they must be compatible with the open value of these functional heads. For instance, the node ASP_Q has the variable $<e>_\#$, which expresses the open value of non-homogeneity. Therefore, the element that occupies the specifier position of this ASP_Q must have the same non-homogeneous property in order to be compatible with the variable $<e>_\#$.

Since roots are not verbs until they are inserted into a verbal environment in the syntactic structure, no lexical distinction between unergative verbs, unaccusative verbs, and transitive verbs is expected. However, this does not mean that these already established distinctions in the literature do not exist. Even though verbs cannot be lexically classified as unergative, unaccusative, or transitive, a structure can be claimed to be unergative, unaccusative, or transitive. These structures are given in (61) to (63).

(61)   *Unaccusative Structure*

       a. The flower wilted.

       b.

---
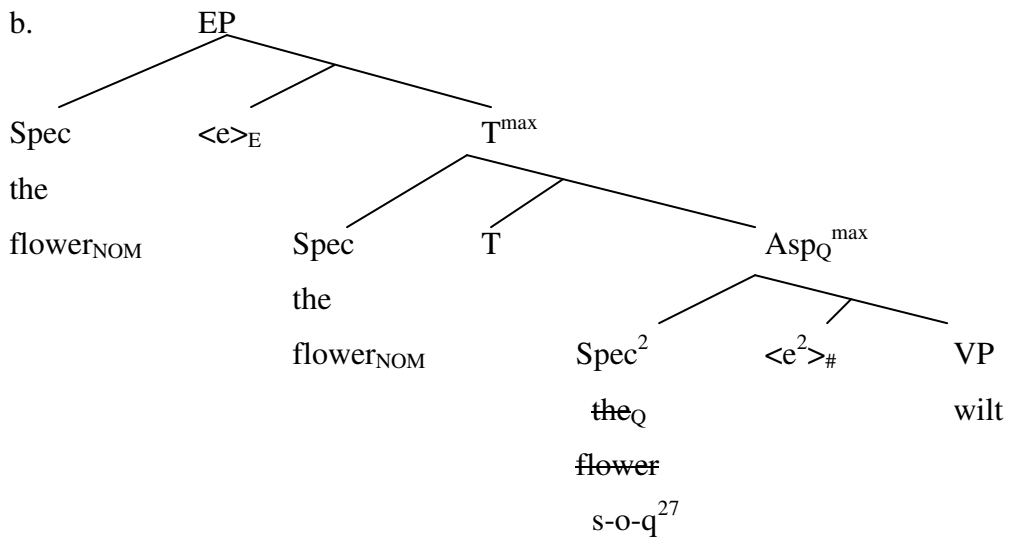
[27] s-o-q: subject-of-quantity

(62) *Unergative Structure*

a. The flower wilted.

b.

```
                        EP
           _____/|‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾
       Spec      <e>_E                T^max
                               _____/|‾‾‾‾‾‾‾‾‾‾‾‾‾‾
       the                  Spec^2       T           VP
      flower
    originator             ̶t̶h̶e̶_±Q                    wilt
                         ̶f̶l̶o̶w̶e̶r̶_NOM
```
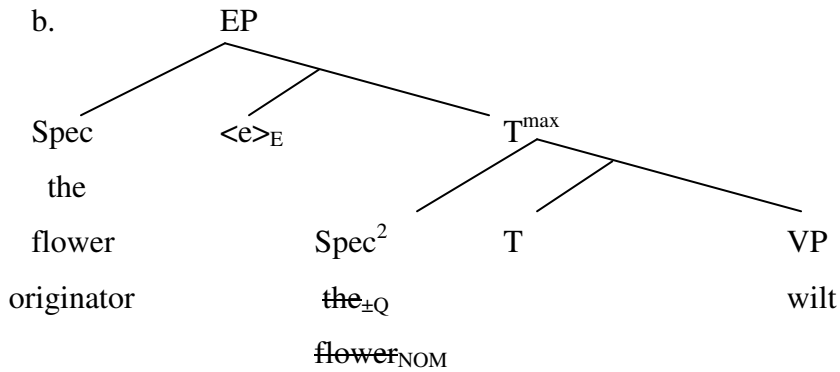
(63) *Telic Transitive Structure*

a. Anna read the book.

b.

```
                        EP
           _____/|‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾
       Spec      <e>_E                T^max
                               _____/|‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾
       Anna                 ̶A̶n̶n̶a̶_NOM   T          Asp_Q^max
     Originator                               ____/|‾‾‾‾‾‾‾‾‾‾‾‾
                                         Spec^2   <e^2>_#^28    VP
                                       the book_Q              read
                                         s-o-q        Quantity predicate
```
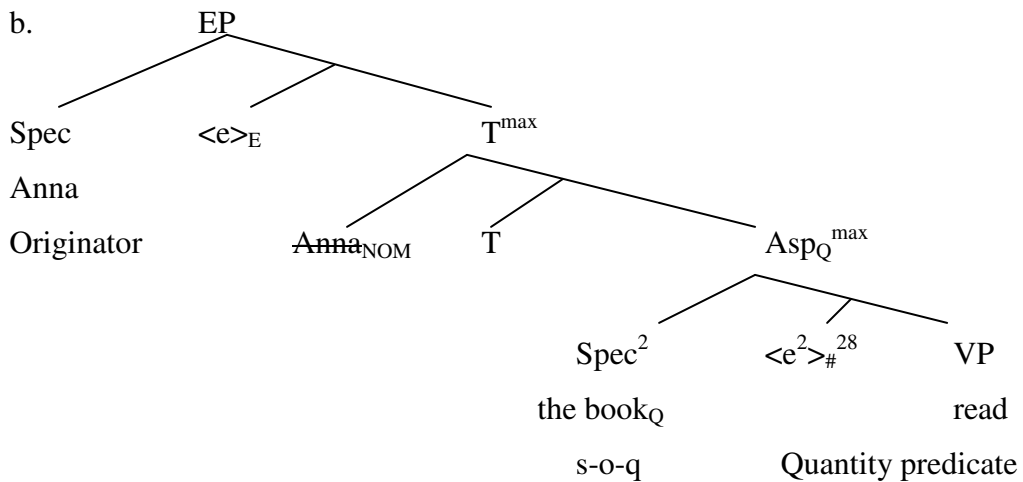
With these basic structures in hand, let us see how this approach explains the construction of secondary predication, more specifically, the resultative construction. Borer (2005) rejects the analysis of resultative construction as being composed of an activity and a result because resultative constructions are not necessarily telic, as the examples in (64) indicate.

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[28] The atelic transitive structure differs from the telic transitive structure in the different functional node that introduces the object argument: ASP_Q for the latter and F^s for the former. This functional node for the atelic transitive structure lacks the non-homogeneous requirement that its complement should satisfy. As a result, the object in the specifier position of F^s does not have quantity reading.

(64)   a. John hammered metal/cans flat (for an hour/*in an hour).

b. Kim sang babies asleep (for an hour/*in an hour).

c. We yelled ourselves hoarse (for ten minutes).

<p align="right">(From Borer, 2005: 225)</p>

Borer (2005) adopts the analysis of predicate composition for the resultative construction. According to this author, the main verb and the resultative predicate form a complex predicate[29]. Such formation of complex predicates is illustrated in (65), for the examples in (64).

(65)   a. hammer + flat → hammer-flat

b. sing + asleep → sing-asleep

<p align="right">(From Borer, 2005: 227)</p>

By this analysis, the atelicity of the examples in (64a) and (64b) and the telicity of the examples in (66) can be explained as follows. Since complex predicates do not imply any property related to telicity, the difference regarding telicity in these examples is attributed to the functional structures in which these complex predicates appear. As we have seen previously, telicity depends on the functional nodes of the structures, which in turn govern the possible elements that can occupy the specifier position of these functional nodes. Concretely, the examples in (64a) and (64b) involve the functional node F^s, introduced in footnote (19) in this chapter, while the examples in (66) involve the functional head ASP_Q.

(66)   a John hammered the metal/the can flat (*for an hour/in an hour).

b. Kim sang the baby asleep (*for an hour/in an hour).

By assuming neo-constructionist approaches, regular polysemy is expected because, depending on the different structures in which a lexical element appears, this lexical element may show different syntactic behaviors. Therefore, there is no need to propose different lexical entries for the different syntactic behaviors that a lexical element shows. That is to say, such approaches can avoid the problem of proliferation

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[29] See Mendívil (2003) for a similar complex-predicate proposal.

of lexical entries. However, not all lexical elements show equal freedom with respect to regular polysemy, as the examples in (67) show. What neo-constructionist approaches should deal with regarding these examples is how to prevent the ungrammatical patterns from happening in order to escape from the potential problem of overgeneralization.

(67)   a. John poured the water into the glass.

  a'. *John poured the glass with water.

  b. John covered the bed with a blanket.

  b'. *John covered a blanket onto the bed.

  c. John loaded the truck with apples.

  c'. John loaded apples into the truck.

(From Juffs, 1996: 83)

Cross-linguistically, even though Borer's (2005) proposal can explain the resultative construction in English[30], it cannot easily explain the systematic presence and absence of this construction in certain languages. There is no reason why *hammer* and *flat* can form a complex predicate in English but not in Spanish or French, for example. In chapter four, the resultative construction will be accounted for under the lexical-syntactic framework without having to attribute to complex-predicate formation.

1.4 Case Studies: the Data

This section briefly introduces the data that will be discussed in the following chapters. More detailed discussion will be contained in each respective chapter. From the brief presentation here, readers should be acquainted with the main problems covered by this dissertation. These data include constructions related to motion events, the uses of the aspectual particle *le*, and the resultative construction.

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[30] Readers are referred to Huang (2006) for the claim that, while some languages function in accordance with Borer's (2003, 2005) proposal, such as Mandarin, in that a lexical element is inserted into the syntactic computation without its previously specified argument structure, in other languages, such as English, a lexical element enters the syntactic computation with its argument structure specified. In other words, according to Huang (2006), Borer's (2003, 2005) proposal can apply to some languages but not to others.

1.4.1 Motion Events

A motion event principally involves the movement of an entity and the displacement resulting from this movement; that is, how an entity ends up in one place after being displaced from another. From this description, I am reciting the four basic semantic components proposed by Talmy (1985, 1991, 2000) for motion events: Motion, Path, Figure, and Ground. In other words, in a motion event, Figure moves from a certain place via a certain Path and ends in another place denoted by Ground. Let us use the examples in (68) for illustration.

(68) a. Zhangsan   jin-le   fangjian.
         Zhangsan   enter-LE   room
         'Zhangsan entered the room.'
      b. Zhangsan   pao-jin-le   fangjian.
         Zhangsan   run-enter-LE   room
         'Zhangsan ran into the room.'
      c. Zhangsan pao-le   (yi-ge xiaoshi)[31].
         Zhangsan run-LE   one-CL hour
         'Zhangsan ran (for an hour).'

Figure and Ground can be expressed by the nouns in (68a), while the path component is realized as the main verb. When the manner in which the motion event is carried out is present, as in (68b), the manner component appears before the path component. This lineal order is exactly the same as its counterpart in English, as can be observed in the translation. However, when the other functional elements are present, it becomes clear that this coincidental word order is only superficial. In English, it is clear that the manner component is realized as the main verb because it is the element that has undergone the conjugational change; moreover, the path element clearly has the prepositional form. In the Mandarin example in (68b), the aspectual particle *le* immediately follows the path component. Because of the syntactic realization of this aspectual particle *le*, there are two possibilities regarding the syntactic encoding of the

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[31] The sentence might have another interpretation which is 'One hour had passed since Zhangsan ran away'. Such ambiguity may arise because of the different usage of the particle *le*. Readers are referred to chapter three for details.

path component and the manner component. One is that the path component is the main verb while the manner component is an adjunct modifying the path-encoding main verb; the other is that the path and manner components form a unit and the aspectual particle *le* actually attaches to this union. I am inclined to accept the second option. This will be clarified in chapter two. As we will see, both Mandarin and English are treated as satellite-framed languages, according to Talmy (1985, 1991, 2000). If this is true, what should be explained is why they have this observed syntactic distinction.

The example in (68c) shows that the manner component can form the predicate alone and that there is no displacement involved. English, a satellite-framed language, also shows the same paradigm in the examples in (68), as can be observed in the translations. However, not all languages show such parallelism between the encoding of the manner and path components. For instance, as the example in (69a) shows, in Spanish the pattern shown in the example in (68b) is not allowed. In order for both path and manner to appear in the same sentence, a subordinate phrase must be applied, as the example in (69b) indicates. Such cross-linguistic variation is also one of the issues to be explained.

(69)   a. *Juan bailó   a la habitación.

          Jaun danced   to the room

          Intended: "Juan danced into the room.'

      b. Juan entró   en la habitación   bailando.

        Juan entered   in the room   dancing

        'Juan danced into the room running.'

In the examples in (68a) and (68b), the motion is initiated by the entity that itself changes the place. There is another case in which the displacement of an entity is initiated by another entity. In this case, expressions representing all three elements are expected, which is indeed the case, as the examples in (70) show.

(70)   a. Zhangsan   ba   qiu   ti-jin-le   fangjian.

        Zhangsan   BA   ball   kick-enter-LE   room

        'Zhangsan kicked the ball into the room.'

b. Zhangsan   ti qiu   jin   fangjian.

   Zhangsan   kick ball   enter   room

   'Zhangsan entered the room kicking the ball.'

c. *Zhangsan jin   qiu   fangjian.

   Zhangsan enter   ball   room

   Intended: 'Zhangsan made the ball to go into the room.'

In the example in (70a), the disposal particle *ba* is used. The disposal particle *ba* introduces the displaced element in the preverbal position. The employment of this particle is frequent in order for the sentence to be indisputably causative. Again, in this case, the adjacency of the manner and path components is observed in Mandarin, but not in its counterpart in English. When this particle is not employed as in the example in (70b), normal interpretation shifts from causative meaning to accompanying meaning, in which the entity that triggers the motion moves with the other entity. That is, the motion event is not only triggered by the former but is also unfolded according to its movement. Furthermore, it is worth noting that, for the causative resultative construction, the employment of the manner component is obligatory, as the example in (70c) shows.

The aim of chapter two will be to give an account of motion events in Mandarin.

1.4.2 The Aspectual Particle *le*

At first sight, the aspectual particle *le* does not seem to be related to argument realization, since it is usually treated as a functional projection situated above the verbal phrase to indicate the perfective aspect. Such use can be illustrated by the examples in (71).

(71)   a. Zhangsan   pao-le   san gongli.

          Zhangsan   run-LE   three kilometer

          'Zhangsan ran three kilometers.'

        b. Zhangsan   da-po-le   na-pian boli.

          Zhangsan   hit-break-LE   that-CL glass

          'Zhangsan broke that glass.'

In these examples, the particle *le* indicates that the actions described by the verbs have been carried out. Without this particle, the perfective interpretation of these examples disappears but there is no difference regarding their argument realization.

However, the use of this particle in the example in (72a) has a different function from that in the examples in (71). The particle *le* in the examples in (71) simply has the perfective function and specifies how the events are treated regarding the aspectual view. The particle *le* in the example in (72a) changes the internal structure of the event described by the main verb.

(72)　　a. Zhangsan　mai-le　　　　ta-de che.
　　　　　　Zhangsan　sell-LE　　　　he-GEN car
　　　　　　'Zhangsan sold his car.'
　　　　　b. Zhangsan　xiang　mai-le　　　　ta-de che.
　　　　　　Zhangsan　want　sell-LE　　　　he-GEN car
　　　　　　'Zhangsan wants to sell his car.'
　　　　　c. Zhangsan　xiang　da-po-(*le)　zhe-pian boli.
　　　　　　Zhangsan　want　hit-break-LE　this-CL glass
　　　　　　'Zhangsan wants to break this glass.'
　　　　　d. Zhangsan　xiang　pao-(*le)　　san gongli.
　　　　　　Zhangsan　want　run-LE　　　three kilometer
　　　　　　'Zhangsan wants to run three kilometers'.

Without the particle *le* in the example in (72a), the event might be an activity, while the presence of the particle makes the event an accomplishment. The different functions of the particle *le* in the examples in (71) and (72a) can be clearly illustrated with the help of the modal verb *xiang* 'want to'. This modal verb is compatible with the particle *le* in the example in (72a), but not with that in the examples in (71), as the examples in (72c) and (72d) show. The alternation of the example in (72a) between with and without the particle *le* can be claimed to be the accomplishment-activity alternation. Quite unlike its counterpart in English, without the particle *le*, the example in (72a) could only mean that *Zhangsan* tried to sell his car. That is, the car did not end up being sold. The resultative state of the car being sold is encoded by adding the particle *le*. This observation is in accordance with the fact that Mandarin does not have verbs of accomplishment in monosyllabic form. See, for example, Tai (1984).

The manner in which this particle could participate in the activity-accomplishment alternation shown in the example in (72a) but not in the examples in (71) will be explained in chapter three. Besides, the particle *le* can participate in another pattern of alternation, as in (73). The examples in (73) show the state-achievement alternation. When the marker *hen* is necessary for interpreting state, the particle *le* is indispensable for the achievement/inchoative interpretation. Without these grammatical markers, the expression would be ungrammatical.

(73)   a. yezi   *(hen) huang[32].

            leaf   HEN   yellow

            'The leaves was yellow.'

        b. yezi   huang-*(le).

            leaf   yellow-LE

            'The leaves became yellow.'

I will claim that the particle *le* in (71a), (72a), and (73b) is actually the instantiation of different functional elements, which share the same morphological form. Since we have seen its different usages in (71a) and (72a), let me now discuss the difference between this particle in (73b) and in (71a) and (72b). Firstly, this particle shows the obligatory presence in (73b) for the inchoative interpretation, but is optional in (71a) for the aspectual interpretation. The example in (74) shows the ambiguity between the activity and the inchoative interpretation. For the activity interpretation, the particle *le* has the aspectual function and is optional. For the inchoative, the particle *le* is obligatory because, as will be shown in chapter three, it is derived from the argument structure.

(74)   Zhangsan pao-le.

       Zhangsan run-LE

       a. 'Zhangsan ran.'

       b. 'Zhangsan ran away.'

Secondly, the particle *le* in both (72a) and (73b) is obligatory and is derived from different positions in the argument structure, which lead to their different interpretations.

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[32] Without *hen*, the sentence is acceptable on the comparative interpretation.

The derivation from different positions in the argument structure permits the various alternations shown in the examples in (72) and (73), the activity-accomplishment and the state-inchoative alternation, respectively.

Chapter three will deal with the use of the particle *le* in these different contexts. I will show that the different uses of this particle correspond to different syntactic configurations.

1.4.3 The Resultative Construction

The resultative construction has been a popular topic for the study of argument structure in general, and the resultative construction in Mandarin is no exception. The resultative states are usually analyzed as secondary predicates. However, the syntactic realization of these secondary resultative predicates is different from language to language. If we analyze the resultative construction in Mandarin, there are at least four specific points that should be accounted for.

First of all, while the resultative predicate in the resultative construction in English goes after the syntactic object, as in (75a), in Mandarin the resultative predicate appears immediately after the main verb, as in (75b).

(75) a. John hammered the metal flat.
      b. Zhangsan   qiao-bian   guanzi.
         Zhangsan   hammer-flat   can
         'Zhangsan hammered the can flat.

Secondly, in the literature the use of *fake reflexives* (Simpson, 1983: 146) has been argued to satisfy the syntactic requirement, according to which a predicate should be predicated of the syntactic object in the resultative construction. This requirement is shown by the obligatory presence of the reflexive in English, as in the example in (76a). This restriction is termed as Simpson's Law or Direct Object Restriction. However, this restriction does not seem to apply to the resultative construction in Mandarin, since the examples in (76b) and (76c) show that the fake reflexive is not needed to make the sentence grammatical. The presence of the reflexive would add the causative connotation to the sentence. This causative connotation is especially obvious in the example in (76d). If we compare the example in (76d) with that in (76c), the former

seems to have a much easier causative connotation than the latter, which can simply be used to describe the fatigue of the syntactic subject *Zhangsan*. This superficial distinction may imply the difference between their argument structures.

(76) a. John sang *(himself) hoarse.

     b. Zhangsan chang-ya-le   (ta ziji).

       Zhangsan sing-hoarse-LE he self

       'Zhangsan sang himself hoarse.'

     c. Zhangsan lei-si-le.

       Zhangsan tire-dead-LE

       'Zhangsan was tired to death.'

     d. Zhangsan lei-si-le   ta ziji[33].

       Zhangsan tire-dead-LE   he self

       'Zhangsan made himself tired to death.'

Thirdly, in relation to the previous issue concerning the predicative relation between the resultative predicate and the syntactic object, to which the resultative predicate is predicated of, is the issue that, in the resultative construction in Mandarin, the resultative predicate does not have to be predicated of the syntactic object but can be predicated of the syntactic subject, as the example in (77a) shows, in which the different predicative relations lead to ambiguous interpretations. Furthermore, in some cases only the subject predicating relation is possible and obligatory, despite the presence of the syntactic object, indicated in the examples in (77b) and (77c).

(77) a. Zhangsan zhui-lei-le   Lisi.

       Zhangsan chase-tired-LE Lisi

       i. 'Zhangsan chased Lisi and (as a result) Lisi got tired.'

       ii. 'Zhangsan chased Lisi and (as a result) Zhangsan got tired.'

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[33] The argument *ta ziji* 'himself' usually appears in the preverbal position introduced by the disposal particle *ba*, as in (i).

(i)   Zhangsan ba   ta ziji   lei-si-le.
       Zhangsan BA   he self tire-dead-LE
       'Zhangsan made himself to be tired to death.'

b. Zhangsan wan-ni-le   na-ge youxi.

   Zhangsan play-fed.up-LE   that-CL game

   'Zhangsan played the game and (as a result) he got fed up.'

c. Zhangsan chi-bo-le   fan.

   Zhangsan eat-full-LE   food

   'Zhangsan got full.'

Fourthly, in the examples mentioned previously in this subsection, the subjects may not only initiate the events but also have control over the unfolding of these events. However, there are cases in which the subject in the resultative construction in Mandarin can simply be a cause that triggers the event. In the example in (78), the object *Lisi* is the one that wrote and the one that became tired. The syntactic subject *shu* 'book' can neither be the argument that wrote nor the argument that became tired, but can only be the causer.

(78)   nei-ben shu   xie-lei-le   Lisi.

        that-CL book   write-tired-LE   Lisi

        'That book got Lisi to write himself tired.'

(From Cheng and Huang, 1995: 190)

The aim of chapter four will be to analyze these examples.

1.5 Conclusions

This chapter covers the following four important issues. The first is the issue of the lexicon-syntax interface, which is briefly introduced, and the relation between argument structure and the lexicon-syntax interface. The fundamental distinction between meaning components is the grammatically transparent and the idiosyncratic. As for argument realization, only the grammatically transparent meaning should be taken into account. Based on this distinction, a brief comparison of studies from different frameworks is offered.

I then present the framework under which the presented data will be analyzed. I adopt the lexical-syntactic approach as the framework. According to this approach, verbal meaning can be decomposed according to the syntactic head-complement and specifier-head properties. The lexical-syntactic approach that I adopt here is, specifically, Mateu's (2002) modification of Hale and Keyser's (1993, 1997b, 1998, 2002) approach. Mateu's (2002) version makes a radical modification to Hale and Keyser's lexical-syntactic approach by eliminating the projection that requires the specifier argument without the presence of the complement argument. In addition to this modification, I adopt and modify the distinction between the process of incorporation and the process of conflation proposed by Haugen (2009), according to which the incorporation process involves the head-movement and the conflation process involves the merging of roots. However, in this dissertation, the process of conflation involves merging the unergative structure with the phonologically empty head of the other syntactic structure. This modification results from the observation that, in the resultative construction, a resultative predicate has greater freedom to appear with an unergative main verb, which denotes activity, than with an unaccusative verb, which denotes achievement or accomplishment. The availability or the unavailability of the process of conflation in a language is directly related to the availability or the unavailability of the resultative construction in this language.

Thirdly, approaches from other perspectives are presented. Principally, I focus on two approaches, which can be viewed as focusing on different parts of "human linguistic capacity", in Borer's (2003) terms. The first is lexical-semantic approaches and the other is neo-constructionist approaches. When the former focuses on human "demonstrable ability to acquire an intricate lexicon", the latter emphasizes human fundamental computational linguistic ability. The lexical-semantic approaches of Jackendoff (1987, 1990), Levin and Rappaport Hovav (1995), and Rappaport Hovav and Levin (1998, 2001) face the problem of not being economical enough. Compared with the lexical-syntactic approaches, the lexical-semantic approaches need to propose an independent level of representation and a series of linking rules to link this level of representation with the syntactic structure. Both are dispensable in lexical-syntactic approaches. Moreover, the other important advantage that lexical-syntactic approaches have over lexical-semantic approaches is that the primitives in lexical-syntactic approaches are better defined and, thus, better restricted. Besides, the primitives in the two lexical-semantic approaches reviewed in the previous section are, to a certain

degree, the result of intuition on the part of these authors. As a consequence, these primitives are not restricted and cannot be falsified. This is not a trivial problem because if they cannot be falsified, neither can they be proved. What we should bear in mind is that this criticism is valid to different degrees for distinct lexical-semantic approaches. For example, proposals that tolerate the decomposition of roots would be more problematic than those that do not, since this kind of decomposition would involve more arbitrary intuition. The reviewed approach from the other perspective is that of Borer (2003, 2005). Borer's (2003, 2005) approach has the advantage that it explains regular polysemy without having to attribute to proliferating the lexical entries of a lexical element. A lexical element is free to be inserted into a syntactic structure as long as it is compatible. This freedom also poses the problem facing this approach if this process is not well-restricted in order to filter the undesirable examples with regard to the alternation shown in the examples in (67). Overgeneralization is a possible problem for this approach both intra- and cross-linguistically. The empirical evidence for the possible cross-linguistic problem is manifested by comparing the resultative construction in Mandarin, English, and Spanish. To account for the systematic absence of this construction in Spanish and the presence of it in English, the stipulation regarding the formation of complex predicates must be made. As a result, by comparing the lexical-syntactic approaches with the two aforementioned approaches, I show that lexical-syntactic approaches are more favorable for the study of argument structure.

Lastly, I present the data that will be dealt with in the next chapters. These data include those of motion events, those that are related to the aspectual particle *le*, and those related to resultative construction. They all share one aspect: they are all related to argument realization. They have, therefore, been chosen as case studies for examining argument structure in Mandarin.

Chapter 2: Motion Events

Motion events have received much attention since the appearance of Talmy's (1975, 1985, 1991, 2000) seminal works. According to Talmy (2000: 25), a motion event refers to "a situation containing motion and the continuation of a stationary location". Also according to Talmy (2000: 35), two different types of motion events can be distinguished: translational motion and self-contained motion events. In a translational motion event, "an object's basic location shifts from one point to another in space", while in a self-contained motion, "an object keeps its same basic, or "average location"". One example for each type is offered in (1), taken from Talmy (2000: 36), in which the same verb may express either type of motion events.

(1)   a. The ball bounced/rolled down the hall.   (translational motion)
          b. The ball bounced up and down on the same floor tile. (self-contained motion)

From the citations in the previous paragraph, it may be observed that, whether it is a self-contained motion event or a translational motion event, the indispensable semantic components involved in a motion event are an entity that moves and the place as a landmark by which this entity is moved. Although such semantic components are required cross-linguistically for motion events, the way in which they are organized syntactically is a language-specific question. The different ways of syntactic encoding of these semantic components of languages are what attracts the attention of linguists who investigate motion events.

According to Talmy (1985, 1991, 2000), the cross-linguistically universal semantic components in motion events include Motion, Path, Figure, Ground, Manner, and Cause. The definitions of some of these components, given by Talmy (1985: 61), are exemplified in (2).

(2)   a. **Figure**: a moving or conceptually movable object whose path or site is at issue.

b. **Ground**: a reference-frame, or a reference-point stationary within a reference frame, with respect to which the Figure's path or site is characterized.

c. **Path**: the course followed or site occupied by the Figure object with respect to the Ground object.

d. **Motion**: the presence per se in the event of motion or location.

The aforementioned complexity with respect to the morpho-syntactic encoding of the same cross-linguistically universal semantic components in motion events can be captured from the examples of some languages in (3). The examples from (3a) to (3d) are taken from Beavers et al. (2010) and the example in (3e) is taken from Croft et al. (2010).

(3)   a. John *limped* **into** the house.   (English)

b. Je   suis   **entré** dans la   maison(*en boitant*).   (French)
   I   am   entered   in   the   house   in limping
   'I entered the room (limping).'

c. ọli   ọmọhe *la*   **o**   vbi   oa   (Emai)
   the   man   run   enter   at   house
   'The man ran into the house.'

d. Ih *aluh*-**dah**-la   in   dollo.   (Mokilese)
   he walk-up-PRF   LOC   mountain
   'He walked up to the mountain.'

e. Ja   **vy**-   *bežal*   **iz**   doma   (Russian)
   I   out-   ran   from   house.GEN
   'I ran out of the house.'

f. Zhangsan   *pao*-**jin**-le   fangjian.   (Mandarin)
   Zhangsan   run-enter-LE   room
   'Zhangsan ran into the room.'

Let us make use of these examples to see how the cross-linguistically universal semantic components are encoded. For the convenience of visual identification, Path is marked in boldface, while Manner is in italics. In these languages, the Figure argument

is situated at a syntactically higher position than the Ground argument, while both are instantiated as nouns. The encoding of the Path and Manner components is more complicated. In the example in English in (3a), the Manner component is realized as the main verb, while the Path component is instantiated by the preposition. As for the example in French in (3b), the main verb position is occupied by the Path component; the Manner component is introduced by a subordinate adjunct if it is present. It seems that in the Emai example in (3c), both Manner and Path are encoded as main verbs. The equipollent status of Path and Manner is also observed in the example in Mandarin in (3f); however, it is not so clear whether these two components are actually two verbs or constitute two parts of one verb. These two components also form a unit in Mokilese in (3d), but, while the Manner component works as a main verb, the Path component constitutes a suffix to it. The same affixal nature of the Path element is also observed in the Russian example in (3e), the differences being that the Path element in Russian is a prefix and on some occasions is required to be encoded by two syntactic elements.

The examples discussed in (3) are all *self-agentive motion events* or *directed motion events* and the subjects—i.e., the Figures—control the onset and pace of the event. There is another type of motion in which the displaced Figure argument is instantiated as the syntactic object and does not control the motion itself, which is controlled by the syntactic subject that triggers the motion event. This type is usually called *caused motion event*, illustrated by the examples in (4). The Figure arguments in these examples are underlined and, as can be observed, occupy the direct object position. In Mandarin, these arguments are usually introduced by the disposal particle *ba* and situated in the preverbal position.

(4)   a. John waltzed <u>Matilda</u> across the floor.

        b. Mary jumped <u>the horse</u> over the fence.

                                                            (Folli and Harley, 2006: 123)

        c. He sneezed <u>the tissue</u> off the table.

                                                            (Mateu, 2001a)

        d. Zhanmusi   ba   <u>qiu</u>   da-chu-lai.

           James   BA   ball   hit-out-hither

           'James hit the ball out.'

e. zenme   ba   <u>wo</u>   ti-chu-lai   le   a?

   why   BA   I   kick-out-hither   LE   PART

   'Why have you kicked me out?'

<div align="right">(Mandarin: adopted from McElvenny, 2006: 3)</div>

f. Ég   rúllaði   <u>tunnunni</u>   út   úr   húsinu

   I.NOM   rolled   barrel:the.DAT   out   of   house:the.DAT

   'I rolled the barrel out of the house.'

<div align="right">(Icelandic: from Croft et al., 2010: 212)</div>

g. Juan   lanzó   <u>una pelota</u>   al   tejado.

   Juan   threw   a ball   to.the   roof

   'Juan threw a ball to the roof.'

h. Juan   catapultó   a <u>su gato</u>   al   tejado.

   Juan   catapulted   to his cat   to.the   roof

   'Juan catapulted his cat to the roof.'

i. Juan   tiró   <u>una piedra</u>   a la ventana.

   Juan   threw   one stone   to the window

   'Juan threw a stone to the window.'

<div align="right">(Spanish: from Fábregas, 2007: 170)</div>

The aim of this chapter is to account for the motion events in Mandarin from the perspective of the typology of lexicalization patterns and argument structure. This chapter is organized as follows: Section 2.1 reviews and discusses Talmy's (1985, 1991, 2000) lexicalization patterns. The classification of satellite-framed languages and verb-framed languages, established in Talmy (1991, 2000), will be discussed. The issues regarding the motion events in Mandarin will be discussed in section 2.2 and section 2.3: section 2.2 will offer the lexical-syntactic analysis of the motion events in Mandarin; section 2.3 will briefly discuss the issue on whether the motion events in Mandarin are compounds or serial verb constructions. Section 2.4 will discuss the place in the typology occupied by Mandarin. Section 2.5 attempts to offer possible explanations for cross-linguistic variation from the lexical-syntactic perspective. Finally, section 2.6 concludes this chapter.

2.1 Verb-framed Languages and Satellite-framed Languages

In this section, Talmy's (1985, 1991, 2000) typological studies will be reviewed. What is most important for the purpose of this chapter is the distinction between verb-framed and satellite-framed languages. In subsection 2.1.1, the lexicalization patterns will be presented. In subsection 2.1.2, these lexicalization patterns will be adopted into the lexical-syntactic framework that will be applied later in the chapter for the analysis of Mandarin motion events. That is, the semantically based components employed in Talmy's (1985, 1991, 2000) studies can be encoded in lexical-syntactic terms. This section will show the advantages of this adoption, from both theoretical and empirical perspectives. Theoretically, as long as Talmy's cognitive insights are adopted in lexical-syntactic terms, the semantic interpretations can be read off the syntactic structures. Empirically, once the semantic interpretations can be read off the syntactic structures, the accounts of cross-linguistic variation can be syntactically transparent. Subsection 2.1.3 presents some challenges to the verb-framed and satellite-framed typology.

2.1.1 Talmy's Lexicalization Patterns

Before we see the lexicalization patterns proposed by Talmy, it is worth dedicating some space to the organization of the basic semantic components which constitute the conceptual structure of events. For Talmy, an event consists of a framing event and a co-event, and the latter bears a support relation to the former. The framing event is further composed of figure entity, ground entity, activating process, and association function. Taking the conceptual structure of motion events as instance[1],

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[1] The event structure proposed by Talmy (1991, 2000) has a wider application than to motion events. It can also be applied to temporal contouring (i.e., aspect), state change, action correlating, and realization. Below are examples, from Talmy (2000), that show the different patterns of encoding in different languages regarding these event types. These examples show that the semantic entities encoded in the main verbs in the examples in (a) are encoded in non-verbal elements in (b).

(i) *Temporal Contouring*
      a. Terminé de escribir la carta.   (Spanish: 'I finished writing the letter.')
      b. Ich habe den Brief fertiggeschrieben.   (German: 'I wrote the letter to completion.')
(ii) *State Change*
      a. Murió atragantado por un hueso.   (Spanish: 'He died choked by a bone.')
      b. He choked to death on a bone.   (English)
 (iii) *Action Correlating*
      a. Yo lo acompañé tocando la melodía. (Spanish: 'I accompanied him [by] playing the melody.')
      b. I played the melody along with him.   (English)
(iv) *Realization*

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Manner and Cause may be the support relation that the co-event bears to the framing event, consisting of figure entity (Figure), ground entity (Ground), activating process (Motion), and association function (Path). The core schema is formed either by Path alone or by Path together with Ground. This conceptual structure is illustrated in (5), adopted from Talmy (2000: 221).

(5) [Figure Motion Path Ground]$_{\text{framing event}}$ ←support relation [Event]$_{\text{co-event}}$
                                                        Manner/Cause

An important point that is worthy of attention in this conceptual structure is that not all semantic components have equal status. That is, not all semantic components belong to the same dimension. While Path is situated at the same level as Motion, Manner and Cause are not. As can be observed, Path and Motion are situated at the same level, namely, that of framing event, whereas Manner and Cause constitute the supporting relation outside of the framing event. Now, we are set to delve into the relation between the semantic components and the syntactic instantiation.

Talmy's (1985, 1991, 2000) series of studies deals with exploring meaning-surface relations. However, it should be noted that these studies approach meaning-surface relations from two different directions. Talmy (1985: 58) points out that there are two directions for this exploration: one direction is "to hold constant a selected surface entity, and to observe which semantic entities are variously expressed in it" and the other one is "to hold a particular semantic entity constant and observe the surface entities in which it can appear". The former direction yields the *Motion-actuating typology*, while the latter perspective yields the *Motion-framing typology*, terms from Ibarretxe-Antuñano (2005). Talmy's (1985) study and Talmy's (1991, 2000) studies represent these two different ways of approaching the same issue. Regarding the motion events, in Talmy (1985) languages are distinguished by the different semantic entities encoded in surface verbs: a verb can encode Motion + Path, Motion + Manner, and Motion + Figure. In Talmy (1991, 2000), the point of view is focused on the semantic Path complement, and languages are classified according to the site on which this semantic entity is encoded. Depending on whether Path is encoded in a verbal element

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  a. Nān avanai konrēn.   (Tamil: 'I killed him.')
  b. wo sha si le ta.   (Mandarin : 'I killed him die.')

or in a non-verbal element, languages can be classified as either verb-framed or satellite-framed languages. The focus of this chapter regarding Talmy's lexicalization patterns is towards encoding Path; that is, I will concentrate on the established distinction between satellite-framed and verb-framed languages[2].

Let us exemplify the aforementioned conceptual structure with concrete examples from Spanish and English in (6), with the conceptual structure below each of them. These examples express the identical motion event, which narrates that the bottle moved into the cave in the manner of floating. They consist of the same semantic conceptual components: Figure, Motion, Path, Ground, and Manner. The framing event expresses the event of the bottle's moving into the cave; the co-event *float* bears the manner support relation to the framing event. In addition to the existence of the universal semantic components, in these two examples it can be observed that the co-event that bears the support relation to the framing event may either appear as an external subordinate unit to the framing event, as in Spanish, or fuse with the framing event, as in English. That is to say, the different ways of organizing the conceptual components may lead to the different syntactic instantiations in different languages, as the examples in (6) show.

(6)   a. La botella   entró   a la cueva   (flotando).   (Spanish)
           the bottle   moved-in   to the cave   (floating)
           [Figure   Motion + Path   Ground]   [Manner]
           'The bottle floated into the cave.'
        b. The bottle   floated   into   the cave.   (English)
           [Figure   Motion + Manner   Path   Ground]

                                                                     (Talmy, 1985: 69)

On the one hand, from the perspective of the motion-actuating typology, when the main verb is held constant, Spanish, in the example in (6a), belongs to the Path conflated type and English, in the example in (6b), corresponds to the Manner conflated

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[2] Ibarretxe-Antuñano (2005: 327) has pointed out that prior to Talmy, the different lexicalization patterns in verb-framed and satellite-framed languages have been previously noticed by linguists such as Bally (1965) and Tesnière (1959) in languages like French and German.

type[3]. On the other hand, based on the motion-framing typology, according to which the core schema is held constant, languages can be classified as either verb-framed or satellite-framed depending on the syntactic elements that encode the core schema, Path in motion events. According to this criterion, Spanish is classified as a verb-framed language while English is classified as a satellite-framed language, because in the former Path is encoded in the main verb of the clause and in the latter Path is syntactically realized by the satellite, which is defined by Talmy (1985: 102) as follows: "satellites are certain immediate constituents of a verb root other than inflections, auxiliaries, or nominal arguments. They relate to the verb root as periphery (or modifiers) to a head. A verb root together with its satellites forms a constituent in its own right, the 'verb complex'… It is this constituent as a whole that relates to such other constituents as an inflectional affix-set, an auxiliary, or a direct object noun phrase".

From this pair of examples, the claim that not all semantic components have equal status may obtain empirical support. For example, Path and Manner are not of the same status and, thus, do not have the same importance in relation to the syntactic encoding. It can be observed in the examples in (6) that the Path component, but not the Manner component, is the obligatory one. For example, in a verb-framed language such as that in the example in (6a), the encoding of the Manner component is not required and can be implicit.

Since in motion events the indispensable component that constitutes the core schema is the path by which a motion event can be measured, there is no doubt that Path must always be present and must be encoded by some syntactic element. "Without a path verb or satellite or other path element, there is no motion event", as Slobin (2004: 238) claims. Keeping this component constant, Path must be realized in the two available syntactic components: the main verb or the satellite. As a result, world languages can be classified as either verb-framed or satellite-framed. Languages such as Romance, Semitic, and Japanese are classified as verb-framed languages; satellite-framed languages may include Chinese, Slavic languages, and Indo-European languages except Romance, etc.

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[3] There is another type in which the conflated element is Figure. Atsugewi and Navajo belong to this type. See Talmy (1985: 75, 2000).

Even though languages can in theory be classified as either verb- or satellite-framed, intra-linguistically many languages do not fall to only one type of encoding, but have access to both patterns. The existence of intra-linguistic variations is employed by some linguists to argue against Talmy's binary proposal. The examples in (7) show how satellite-framed languages like English and Mandarin permit both patterns to describe the same motion event: the satellite-framed encoding in (7a) and (7b) and the verb-framed encoding in (7a') and (7b'). In a verb-framed language like Spanish, there are also claims to a satellite-framed pattern being observed. The examples in (8) are found in studies by Aske (1989) and Zubizarreta and Oh (2007). These examples in (8) are apparently formed by the combination of verbs that denote activities and prepositional phrases that denote the paths that these activities take.

(7)　　a. John danced into the room.

　　　　a'. John entered the room dancing.

　　　　b. Zhangsan pao-jin-le　　　fangjian.

　　　　　Zhangsan run-enter-LE　　room.

　　　　　'Zhangsan ran into the room.'

　　　　b'. Zhangsan pao-zhe　　　jin-le　　　　fangjian.

　　　　　 Zhangsan run-ZHE　　　enter-LE　　　room

　　　　　'Zhangsan entered the room (by) running.'

(8)　　a. La　botella　　　flotó　　　　hacia　　　la cueva.

　　　　　the　bottle　　　　floated　　　towards　　the cave

　　　　　'The bottle floated towards the cave.'

　　　　b. Juan　　　caminó　　　hasta　la cima.

　　　　　Juan　　　walked　　　until　the top

　　　　　'Juan walked up to the top.'

(Aske, 1989)

　　　　c. Juan caminó　　　de aquí　　　a la escuela.

　　　　　Juan walked　　　from here　　to the school

　　　　　'Juan walked from here to the school.'

　　　　d. El bebé　　gateó　　　　de aquí　　　a la puerta.

　　　　　the baby　　crawled　　　from here　　to the door

　　　　　'The baby crawled from here to the door.'

(Zubizarreta and Oh, 2007: 155)

Such counterexamples might suggest that Talmy's (1985, 1991, 2000) two-way typology may not be well-grounded. To give an account of examples that seem to violate the verb-framed/satellite-framed distinction, some authors, including Aske (1989), Beavers et al. (2010), Slobin (2004, 2006), Slobin and Hoiting (1994), and Son (2007, 2009), among others, either propose factors that contribute to the tolerance of the existence of counterexamples or propose further types to accommodate these examples. However, such a conclusion would be too hasty, because the apparent counterexamples might be illusionary and might not be counterexamples at all. Besides, even though the counterexamples might exist, the validity of the binary typology does not necessarily have to be abandoned. According to Talmy (1985: 62), such diversity with respect to motion encoding is expected, even though only one type is considered characteristic, under the three criteria in (9).

(9)   a. It is *colloquial* in style, rather than literal, stilted, etc.

        b. It is *frequent* in occurrence in speech, rather than only occasional.

        c. It is *pervasive*, rather than limited.

In my opinion, if the binary typology of Talmy is accepted, what needs to be explained is the distinct tolerance of counterexamples that the languages of the two types demonstrate. As we have seen in the examples in (7), satellite-framed languages allow both the same motion events to be expressed by satellite- and verb-framed patterns; the same does not happen for verb-framed languages. For example, while in a verb-framed language like Spanish the example in (10a) is expected because Path is encoded in the main verb, the satellite-framed pattern of the same event is not allowed as the unacceptability of the example in (10b) shows.

(10)   a. Juan entró   en la habitación   bailando.

           Juan entered   in the room   dancing

           'Juan entered the room bailando.'

b. *Juan bailó   en la habitación[4,5].   (*directional interpretation)

Juan danced   in the room

Intended: 'Juan danced into the room.'

Moreover, it should be noted that the criteria in (9) are external language factors and are not relevant for the lexical-syntactic approach pursued here. Such irrelevance would be obvious as long as Talmy's typological approach is adopted in generative/lexical-syntactic terms. That is to say, the contrastive difference shown in the examples in (7) and (10) could be accounted for without the need of the criteria in (9).

This typological view of the formation of motion events according to Talmy (1985, 1991, 2000) is insightful. Following Mateu (2002), Mateu and Rigau (2002), and Acedo Matellán (2010), among others, such a typological approach can be adopted in generative terms. This is the issue that will be dealt with in the next subsection.

2.1.2 Talmy's Lexicalization Patterns from the Lexical-syntactic Perspective

As seen in the previous chapter, the framework adopted is the revisited version of Hale and Keyser's (1991, 1992, 1993, 1997a, 1997b, 1998, 2002, 2005) lexical-syntactic study by Mateu (2002). I would like to first summarize the key issues in order to show how Talmy's (1985, 1991, 2000) conceptual structures can be adopted into the lexical-syntactic analysis here.

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[4] This example is ungrammatical on the directional interpretation but grammatical on the locative interpretation. It can be interpreted as *Juan danced in the room*.

[5] The examples in (ib) and (iib) might suggest the acceptability of the satellite-framed pattern in Spanish. However, not all speakers accept the satellite-framed encoding of these events. That is, for some speakers the examples in (ib) and (iib) are unacceptable. The (un)acceptability of these examples may have something to do with the semantic properties of the main verbs: while *caminar* 'to walk' and *nadar* 'to swim' are activities that usually involve displacement, this is not necessarily so for *bailar* 'to dance'.

(i)   a. Juan fue   a la estación   caminando.
         Juan went   to the station   walking
         'Juan went to the station (by) walking.'
      b. [??]Juan caminó a la estación.
         Juan walked to the station
         'Juan walked to the station.'
(ii)   a. Juan fue   a la otra   orilla del lago   nadando.
         Juan went   to the other   shore of.the lake swimming
         'Juan went to the other side of the lake (by) swimming.'
      b. [??]Juan nadó   a la otra orilla   del lago.
         Juan swam   to the other shore   of.the lake
         'Juan swam to the other side of the lake.'

According to Mateu (2002), there are three types of lexical heads. The first one is the head that takes neither complement nor specifier, as in (11a); the second is the head that selects only a complement, as in (11b); the third is the head that takes both a complement and a specifier, as in (11c). In Mateu's (2002) words, these three structures are associated with a *non-relational element*, an *eventive relation*, and a *non-eventive relation*.

(11)

    a.   b.   c.

```
a.            b.   x              c.      x
   x               / \                   / \
                  x   y              z   x
                                         / \
                                        x   y
```
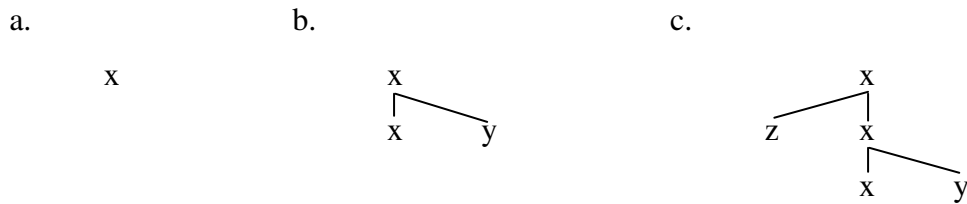
The eventive relation can be either *source relation* or *translational relation* depending on the presence and absence of external argument. When an eventive relation is instantiated as a translational relation, it selects a non-eventive relation as its complement. The complement and the specifier of this non-eventive relation complement are interpreted as Ground and Figure, respectively. The resultant structure would be an unaccusative structure, as in (12a). When a structure associated with eventive relation is instantiated as source relation, the existence of the external argument is required. Moreover, the head of this eventive relation may take two kinds of elements as its complement. When it takes a non-relational element as its complement, an unergative structure will be formed, as in (12b). When a structure of non-eventive relation is taken as the complement, the result is a causative structure, as in (12c).

(12)   a. *Unaccusative Structure*

```
   x1_____
   |                          \
   x1                          x2
translational relation    z2    x2
                        Figure   / \
                                x2   y2
                       non-eventive relation   Ground
```

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b. *Unergative Structure*

```
            F
           |
Agent    F
         |
         F ----- x1
              |
         x1        x2

     source relation    Incremental Theme
```

c. *Causative Structure*

```
              F
             |
Agent/Causer F
             |
             F ----- x1
                  |
             x1         x2
                       |
     source relation  z2      x2
                            |
              Figure    x2       y2

              non-eventive relation    Ground
```
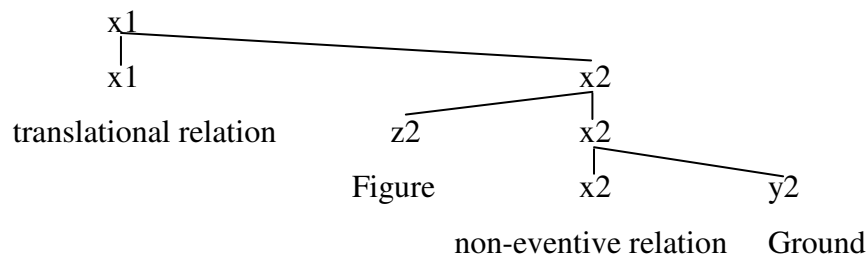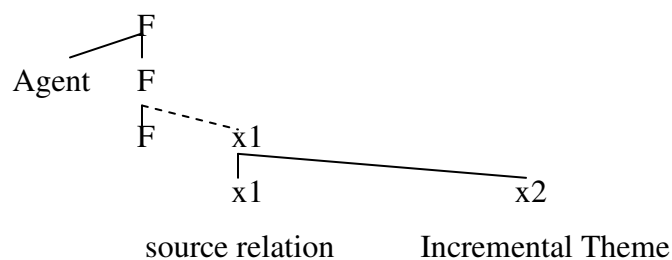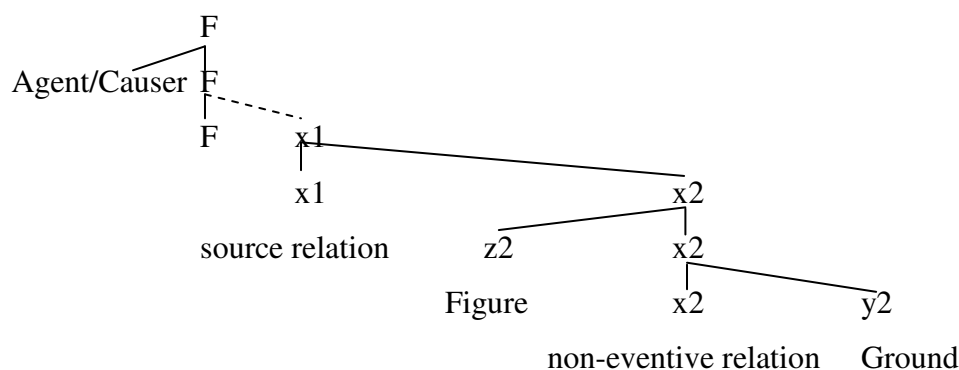
The structures in (12a) and (12c) are similar to the conceptual structure of motion events in Talmy (2000). Firstly, the activating process may have the value of transition or fixity. In the word of Talmy (2000: 218), it "is a process by which the figural entity either makes a transition or stays fixed with respect to the ground entity… it is the component conceived as contributing the factor of dynamism to the event". The activating process can be translated into the eventive relation, for example, the translational relation, *x1* in the structures in (12a), or the source relation, *x1* in the structure in (12c). Secondly, the association function "sets the figural entity into a particular relationship with the ground entity" and it can be treated as the head of the non-eventive relation structure, *x2* in the structures in (12), which relates Figure to Ground. As a result, Talmy's (2000) conceptual structure, in (13a), can be adopted into the syntactic structure in (13b). It is worth noting that not all the semantic components are included in this structure; for example, the important component, Manner, does not occupy any place in this structure. This is not only expected but also desirable because the structure in (13b) represents only the conceptual structure of the framing event. Since Manner represents the supporting relation that the co-event bears to this framing event, it must be outside of this structure.

(13)   a. *Conceptual Structure of the Framing Event in Talmy (2000: 221)*

⎡ Figural   Activating   Association   Ground ⎤
⎣ entity   process   function   entity ⎦ framing event

                   | └────┬────┘
              ⎧ Transition ⎫   Core scheme
              ⎩ fixity   ⎭

b.

x1
|
x1   x2
activating process   z2   x2
Motion   Figure   x2   y2
                                    association function   Ground
                                            Path

                            ⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵
                                core schema

        ⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵⎵
                        framing event
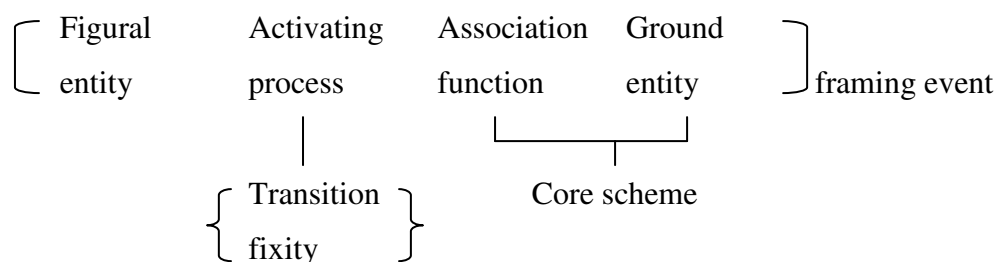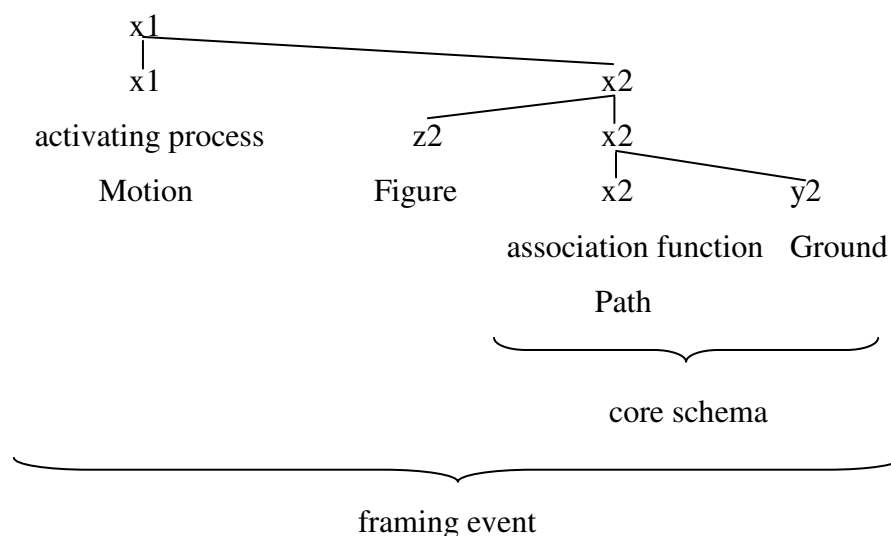
Talmy's typological insights gain explanatory power when adopted in lexical-syntactic terms. The structural semantics can be read off the syntactic structures, which in turn limit the number of possible semantic interpretations. For example, it is not a coincidence that there are only four components in the framing event of Talmy's (2000) conceptual structure, in (13a): figural entity, ground entity, activating process, and association function. There are only four because there are only four possible sites from which they can be derived in the syntactic structure, as in (13b). In this spirit, Talmy's typological work is compatible with lexical-syntactic and neo-constructionist frameworks.

The other important issue of the cross-linguistic variation of the encoding of motion events is the interaction of Manner and Path. At this point, we have determined the component Path structurally. The next step is to account for how this component interacts with the Manner component. I claim that the argument structure in (13b) is universal for all languages and the cross-linguistic distinction regarding the argument realization between satellite- and verb-framed languages results from the interaction between the Manner component and the framing event illustrated in (13b). The two

remaining important issues are how motion events in Mandarin are organized and how the cross-linguistic variation can possibly be explained. These will be covered in the following sections and beforehand I would like to discuss some challenges to the verb- and satellite-framed typology in the next subsection.

2.1.3 Challenges to the Verb-framed and Satellite-framed Typology

After having presented the lexicalization patterns in Talmy (1991, 2000), in this section I will present some challenges to this two-way typology, principally from the viewpoint of cognitive linguistics. The revisions of the lexicalization patterns appear because certain problems or limitations observed apparently challenge the binary classification.

The most obvious problem is that, according to the lexicalization patterns proposed by Talmy (1991, 2000), the slot occupied by the main verb must be identifiable. However, in some languages this is not an easy task, especially those with serial verb constructions, such as Thai (see Zlatev and Yangklang, 2004), and some West-African languages, such as Ewe and Akan (see Ameka and Essegbey, in press), as it is not so clear which component can be claimed to be the main verb. In the example in Mandarin in (14b), for instance, in contrast to that in (14a) with only the presence of the Path component, the Manner component is usually treated as a verb, while the categorical status of the Path component is not so clear. There is no consensus on whether the Path component should constitute a verb or a non-verbal element. Even if it can be proved to be a verb, another problem will arise regarding: which contains the main verb, Path or Manner?

(14)   a. Zhangsan   jin-le   fangjian.
          Zhangsan   enter-LE   room
          'Zhangsan entered the room.'
        b. Zhangsan   pao-jin-le   fangjian.
          Zhangsan   run-enter-LE   room
          a. 'Zhangsan entered the room (by) running.'
          b. 'Zhangsan ran into the room.'

For the example in (14b), because of the syntactic uncertainty of the category of the Path component, there are two possible analyses: the first, *Zhangsan entered the room (by) running*, will be yielded to if the Path component is treated as the main verb/verb-root, while the Manner component is interpreted as a subordinate adjunct; in order to obtain the second reading, *Zhangsan ran into the room*, the Manner component is required to play the role of the main verb and the Path component is treated as a satellite. Even though the analysis I will offer in section 2.2 supports the main verb status of the manner expression, the example in (14b) itself cannot escape from the debate on the main verb status. As a result, in the literature, as in Chen (2005, 2007), Chen and Guo (2009), and Slobin (2006), Mandarin is usually used as a language to question the two-way classification of Talmy.

Another problem is pointed out by Ibarretxe-Antuñano (2008: 204) and named *intra-typological variation*, according to which "languages that share the same lexicalization pattern, and therefore, a similar habitual expression of motion, show a different degree of detailed elaboration of semantic components". For example, even though both Spanish and Japanese are verb-framed languages, their treatment of the manner component of motion is different: manner expressions are used much more frequently in Japanese than in Spanish due to the large lexicon of mimetics of the former.

In addition to such intra-typological variations in the languages of the same lexicalization pattern, the intra-typological variations can also be found in the same language. As we have seen previously in footnote (1), in page 71, in this chapter, not only motion events but also other kinds of events in a language, such as events of change of state or events of realization, etc., prefer a certain kind of lexicalization pattern. This correlation between motion events and events of change of state can be observed in the examples in (15).

(15)   a. John ran **up** to the hill.

        a'. John hammered the metal **flat**.

b. Juan	**subió**	a la montaña	corriendo.	(Spanish)
Juan	went.up	to the mountain	running	

        'Juan went up the mountain running.'

b'. Juan   **aplanó**   el metal   martilleándolo.

  Juan   flatten   the metal   hammering.it

  'Juan flattened the metal hammering it.'

According to Talmy (2000), the core schema in motion events in English is encoded in the satellite; therefore, English is a satellite-framed language. This is true both for the motion event in (15a) and for the event of change of state in (15a'). In motion events, the core schema is presented as Path plus Ground; in events of change of state, the core schema is presented as a transition type plus Ground. As Spanish is a verb-framed language, the core schema should be encoded in the main verb. This predication is borne out as the examples in (15b) and (15b') show. However, as more languages are analyzed, counterexamples emerge. As Son (2007, 2009) points out, there are verb-framed languages, e.g., Korean and Japanese, in which motion events of the type in (15a) are not allowed while adjective resultatives, which are predicted impossible, are allowed, as the examples in (16)[6] show.

(16)   a. Yenghi-ka   sikthak-ul   kkakkusha-key   takk-ass-ta. (Korean)

         Yenghi-NOM   table-ACC   clean-KEY   wipe-PAST-DC

         'Yenghi wiped the table clean.'

       b. John-ga   teeburu-o   kiree-ni   huita.   (Japanese)

         John-NOM table-ACC   clean-NI   wiped

         'John wiped the table clean.'

                                                              (From Son, 2007: 136-137)

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[6] Note that these examples are classified by Washio (1997) as weak resultatives. These two languages show different levels of tolerance to the so-called strong resultatives as the examples in (i) show. Even though the example (ia) in Korean is claimed as resultative by Son (2007), Shim and den Dikken (2009) do not share the same opinion and argue that it is not a resultative construction because it should be compared with the example *Inho pounded the can until (it is) flat*. That is, the predicate with –*key* is actually an adjunct to VP. See also Acedo Matellán (2012) and Mateu (2012). The resultative construction will be discussed in chapter four.

(i)   a. Inho-ka   kkangthong-ul   napcakha-key   twutulki-ess-ta.   (Korean)
           Inho-NOM   can-ACC   flat-Key   pound-PAST-DC
          'Inho pounded the can flat.'
         b.*John-ga   kinzoku-o   taira-ni tataita.   (Japanese)
           John-NOM   metal-ACC   flat-NI   beat
          Intended: 'John beat/pounded the metal flat.'
                                                              (From Son, 2007: 136-137)

In response to the problems mentioned above—i.e., the identification of the main verb, the existing different patterns in languages of the same group of classification, and the existence of different patterns in the same language—there is no doubt that many different factors must be taken into consideration because they interact to contribute to the complex behaviors shown with respect to the correspondence between syntactic presentation and semantics. There are proposals for the third type other then the binary types proposed by Talmy and these can be found in Berman and Slobin (1994), Chen (2005, 2007), Chen and Guo (2009), Slobin (1996, 2006), and Slobin and Hoiting (1994), among others. There are also proponents who take different perspectives: one is that all the world's languages can be included in a cline of salience according to certain semantic components; another posits that typological complexity results from the availability of different resources in a certain language and, therefore, the reasons to why a language behaves as it does must be found in this specific language. The proposals from the former perspective can be found in Slobin (2004, 2006), Slobin and Hoiting (1994), and Ibarretxe-Antuñano (2008), while two examples of the latter can be found in Beavers et al. (2010) and Croft et al. (2010).

It cannot be denied that proposing a third pattern to include languages that cannot easily be included in either a verb- or satellite-framed pattern is a possible solution. Comparing discourse produced by speakers of serial-verb languages with that by speakers of verb- and satellite-framed languages may prove serial-verb languages as different from languages of the other two patterns. In order to prove that those languages behave differently, a statistics data comparison is necessary. However, when more languages are taken into consideration, the problem that would arise is the lack of well-defined criteria to deal with these data. Let us take the data from Ibarretxe-Antuñano (2008: 406), in (17), by way of illustration. These data show the percentage of use of minus-ground verbs vs. the use of plus-ground verb[7].

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[7] Minus-ground verbs refer to those that "appear alone or with a path satellite (English *fall* or *fall down* or Spanish *caer* 'fall')" and plus-ground verbs are those that "are accompanied by some path complement (English *fall down into the river* or Spanish *caerse al río* 'fall to the river')" (Ibarretxe Antuñano, 2008: 405).

(17)   *Minus-Ground and Plus-Ground Verbs*

Languages	Minus-Ground		Plus-Ground	
Chantyal[v][8]	0	%	100	%
Basque[v]	11.86	%	88.14	%
Swedish[s]	12	%	42	%
Icelandic[s]	14	%	71	%
English[s]	18	%	82	%
German[s]	26	%	74	%
Turkish[v]	27.27	%	72.72	%
Danish[s]	29.51	%	70.49	%
French[v]	31	%	69	%
Spanish[v]	37	%	63	%
Malay[v]	42	%	58	%
Mandarin Chinese[e]	48	%	52	%
Thai[e]	51	%	49	%
Tsou[e]	52	%	48	%
Tagalog[v]	55	%	45	%
Cebuano[v]	59	%	41	%
West Greenlandic[v]	60	%	40	%
Saisiyat[v]	61	%	39	%
Squliq[v]	64	%	36	%

From these statistics, the use of minus-ground verbs ranges from less to more. However, without concrete criteria, it would be difficult, if not impossible, to draw two lines between these languages to divide them into three different patterns of languages representing three types of ground encoding. This could be done, but such a classification would simply be arbitrary. Thus, if languages can be classified into three types, why can they not be classified into four types or more? We could ask *what reasons are there to insist that the typology should be trinary/trichotomized*, as Zlatev and Yangklang (2004: 181) do when they ask *what reasons are there to insist that the typology should be binary*.

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[8] [v]: verb-framed, [s]: satellite-framed, [e]: equipollently-framed

By turning Talmy's (1985, 1991, 2000) typological insight into the generative perspective, we are provided with a valuable tool to give an account of what languages have in common. For example, satellite- and verb-framed languages are different regarding motion events as the former involve the process of conflation while the latter do not (see section 2.5). Proliferating language types by taking into consideration observations belonging to different dimensions would blur this picture. Mandarin may behave differently from other satellite-framed languages in that compiling several path expressions in the same predicate is not possible. However, the argument that Mandarin cannot be a satellite-framed language and should belong to a third type is insufficient. It is the language-specific factors—in this case, the affixal nature of path expressions in Mandarin—that lead to the lack of compilation of path expressions in Mandarin. Arguing that Mandarin is a third type of language simply based on this language-specific factor would fail to account for its similarity with other satellite-framed languages: the process of conflation is involved in forming motion events.

Approaching the diversity of languages by entering language-specific factors, such as morphosyntactic, semantic, psycholinguistic, and pragmatic ones, etc., is a way to account for cross-linguistic variation. However, from a generative point of view, the importance of cross-linguistic analysis is to discover the factors that lead to the commonness of languages or the theoretical explanation behind the factors that contribute to cross-linguistic commonness, instead of merely presenting them. Therefore, language-specific factors should not be confused with the universal distinction between the two types of lexicalization patterns. In other words, languages may principally be divided into two main groups: verb- and satellite-framed, depending on whether or not the process of conflation is previously blocked by the process of incorporation. However, this does not mean that all languages can employ only one of these two patterns. Depending on a language's resources, different patterns such as double and symmetrical framings, and even opposite patterns (verb-framed in contrast to satellite-framed), may also employed. Even in the case of symmetrical patterns (serial or compounding), if one element in serial verbs or in the compounding can be proved to have more weight than the other, difficult though it might seem, these verbs can also be classified as verb- or satellite-framed, as Talmy attempted to prove in Ibarretxe-Antuñano (2005).

In the next section, I will apply the established syntactic encoding of motion events to Mandarin.

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2.2 Motion Events in Mandarin

In this section, the motion events in Mandarin will be analyzed. In Talmy (2000), depending on agentivity, motion events are distinguished as non-agentive, agentive, and self-agentive types. The examples of these types are offered in (18), from Talmy (2000: 28).

(18)   a. Non-agentive Motion Events
            The rock *slid/rolled/bounced* down the hill.
        b. Agentive Motion Events
            I *slid/rolled/bounced* the keg into the storeroom.
        c. Self-agentive Motion Events
            I *ran/limped/jumped/stumbled/rushed* down the stairs.

Syntactically speaking, the non-agentive and the self-agentive type can form a unitary type because the semantic difference with respect to the agentivity of the subject arguments does not affect the syntactic configuration. For instance, in the example in (19), *John* may roll down the hill either at his own will or unwillingly because somebody pushed him from behind. Such semantically different interpretations do not come from the different syntactic configurations, because in both cases what is involved is the subject's displacement regarding the space situation.

(19)   John rolled down the hill.

Therefore, the motion events can actually be classified as two types depending on their syntactic configurations: motion events with the unaccusative structure and motion events that involve the causative structure. Non- and self-agentive motion events follow the unaccusative structure, while agentive motion events follow the causative structure. The analysis of the motion events in Mandarin will be divided into these two types. Subsection 2.2.1 deals with motion events that involve the unaccusative structure; in

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subsection 2.2.2, the focus will be on motion events resulting from the causative structure.

2.2.1 Motion Events: Unaccusative Structure

The examples in (20a) and (20b) represent the self-agentive motion events because the subjects are responsible for triggering their own movement. The examples from (20c) and (20d) belong to the non-agentive motion types because the subjects cannot be responsible for their own displacement. In spite of this semantic difference, syntactically these two types are to be treated identically; thus, a unitary analysis should be available to account for them. In the brackets after each example are the semantic components encoded in the main verb.

(20)   a. Zhangsan shang-le   erlou.   (Motion + Path)

        Zhangsan ascend-LE   second.floor

        'Zhangsan went up to the second floor.'

      b. Zhangsan pao-shang-le   erlou.   (Motion + Manner)

        Zhangsan run-ascend-LE second.floor

        'Zhangsan ran up to the second floor.'

      c. qiu jin-le   shuigou.   (Motion + Path)

       ball enter-LE   ditch

       'The ball entered the ditch.'

      d. qiu gun-jin-le   shuigou.   (Motion + Manner)

       ball roll-enter-LE ditch

       'The ball rolled into the ditch.'

The two patterns, Motion plus Manner and Motion plus Path, represent the typical encoding of the two lexicalization patterns: the satellite-framed pattern and the verb-framed pattern in Talmy (2000), respectively. If Mandarin is a satellite-framed language, the examples in (20b) and (20d) are expected because the Manner component is encoded in the main verb and the satellite lexicalizes the Path component. However, in order to have an entirely clear picture, the existence of the examples in (20a) and (20c), which demonstrate the verb-framed pattern of encoding, needs to be accounted

for. In other words, the aim of this subsection is to explain how these two patterns are formed in Mandarin.

Just to recast the framework developed in the previous chapter and in section 2.1, the unaccusative structure is composed of a structure of eventive relation that selects a structure of non-eventive relation as its complement. The structure is that in (21). The head of the eventive relation, *x1*, introduces the eventive interpretation, while the structure of non-eventive relation associates the displaced element (Figure), in *z2*, with the referent point according to which the displaced element is moved (Ground), in *y2*.

(21)

$$
\begin{array}{l}
x1 \\
\quad | \\
\quad x1 \qquad\qquad\qquad\qquad x2 \\
\qquad\qquad\qquad z2 \quad\quad x2 \\
\qquad\qquad\qquad\qquad\quad x2 \qquad y2
\end{array}
$$
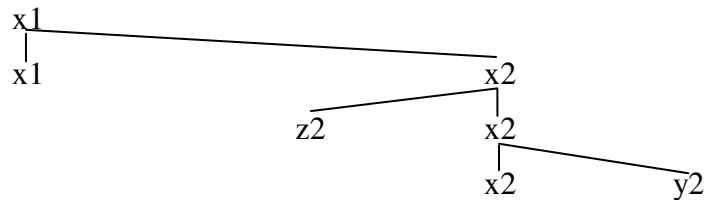
This structure enables us to give a good account of the relation between Figure and Ground. This relation can be both stationary and non-stationary, and the difference is determined by the semantic content of the elements that occupy the head of the structure of non-eventive relation. For instance, the examples in (22) can be explained by this assumption. These two examples have the original structures in (22a') and (22b'), respectively.

(22) a. Zhangsan zai   erlou.
         Zhangsan ZAI   two.floor
         'Zhangsan is on the second floor.'
      a'. [$_{x1p}$ [Ø] [$_{x2p}$ Zhangsan [$_{x2}$ zai erlou]]]
      b. Zhangsan shang   erlou.
         Zhangsan ascend   two floor
         'Zhangsan goes up to the second floor.'
      b'. [$_{x1p}$ [Ø] [$_{x2p}$ Zhangsan [$_{x2}$ shang erlou]]]

The element *zai* expresses the stationary meaning and specifies the location, Ground, in which Figure is located. When this stationary element is substituted by an element that

encodes directed motion, as in (22b), the sentence will encode a motion event. In both cases, the head of the structure of non-eventive relation, namely, x2, raises to the head position of the structure of eventive relation via the process of incorporation, discussed in the previous chapter; the Figure element raises to the syntactic subject position. As a result, the superficial order is obtained.

Let us concentrate on the events that involve displacement and leave the stationary cases aside. In the example in (22b), the Path component is incorporated into the head of the structure of eventive relation, in accordance with the head movement, and is syntactically realized as the main verb, which can be proved by the insertion of the aspectual particle *le*, as in (23a). The aspectual particle *le*[9] will be discussed in the next chapter.

(23)   a. Zhangsan shang-le   erlou.

          Zhangsan ascend-LE   two.floor

          'Zhangsan went up the second floor.'

        b.
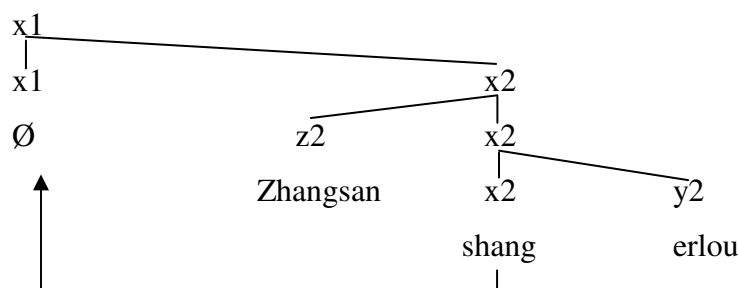
In this example, while the Path component is encoded by the main verb, there is no Manner component to specify how the up-going motion event is carried out. In other words, this is the typical encoding pattern of verb-framed languages.

Besides this verb-framed encoding, the satellite-framed pattern of encoding is frequently used in Mandarin. I will show that the satellite-framed pattern of encoding results from the conflation of the Manner component. Let us recall that in the previous chapter I established that the conflation mechanism adopted in the dissertation involves merging an unergative structure with a phonologically empty head. Following Mateu

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[9] In the next chapter we will see that the particle *le* has different functions, which can be (but not necessarily) related to argument structure; the particle *le* in the example in (23a) is not related to argument structure because it is the perfective *le*.

(2002) and Real Puigdollers (2010), I also adopt the view that the incorporation of Path blocks the conflation of Manner. In other words, the conflation of Manner can take place only when there is no previous incorporation of Path.

Taking the example in (24) by way of illustration, this example can be analyzed in the following way.

(24) Zhangsan pao-shang-le   erlou.
      Zhangsan run-ascend-LE   two.floor
      'Zhangsan ran up to the second floor.'

The Path encoding constitutes the "center of predication", in terms of Tai (2003). As for the Manner component, it is a modifier of the structure that encodes this main predication. Such semantic imparity of the Path component and the Manner component can be captured by the syntactic encodings in (25).

(25) a.   b.

```
x1                                         x3
│                                          │
x1──────────x2                             x3────y3
│           │                              │
Ø    z2────x2                              Ø      pao
     │     │                               ▲
  Zhangsan x2────y2                        └──────┘
           │
        shang   erlou
```

      c.

```
                        x1
                        │
              x1──────────────────x2
              │                    │
        x3────x1              z2────x2
        │     │                    │
     x3────y3 Ø          Zhangsan  x2────y2
     │                             │
    pao                         -shang   erlou
     ▲                                │
     └────────────────────────────────┘
```
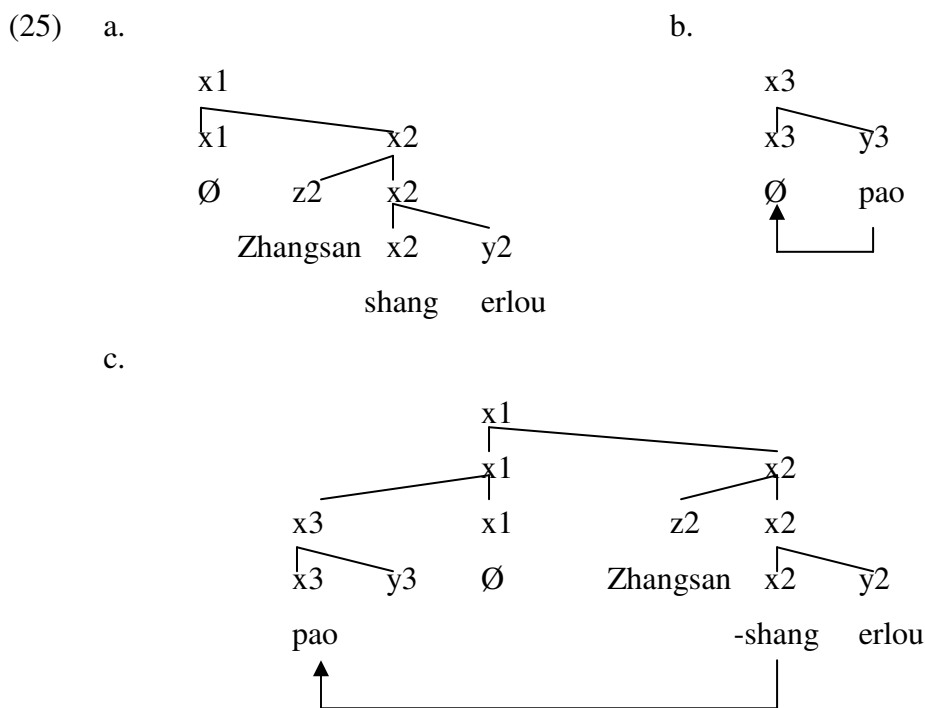
These two components generate from two independent lexical syntactic structures. First, the displacement is encoded in the same structure as that in (23), repeated in (25a). This structure encodes the displacement of the Figure argument regarding the Ground reference. Second, the Manner encoding originates from the unergative structure, in (25b). In this unergative argument structure, the phonologically empty head is saturated

by the phonological content of the complement via the process of incorporation. This manner encoding structure, via the process of conflation, conflates with the head of the unaccusative structure that serves as the center of predication. The Path component is attached to the Manner component because of its suffixal nature. Although for Kayne (1994) only left-adjunction is allowed in the syntax, the right adjunction is permitted here because of the suffixal nature of the Path component. As a consequence of the process of conflation, the conflated unergative structure serves as the modifier of the unaccusative structure, as in the structure in (25c).

These two patterns of encoding the Path and Manner components in Mandarin are comparable to those in English. Firstly, these two languages are similar in that they have access to both verb-framed and satellite-framed encodings. For the verb-framed pattern, the Path component derives from the complement position of the unaccusative structure and incorporates into the main verb position; for the satellite-framed pattern, the independent Manner-containing unergative structure conflates with the phonologically empty head of the unaccusative structure which contains the Path component. Secondly, English and Mandarin are different regarding how the Path component is presented in the satellite-framed pattern. After the conflation of the Manner component, the Path component stands alone as an independent morpheme in English, while the Path component adjoins to the Manner component in Mandarin because of its affixal nature[10,11]. This raises the question as to why the Path component is affixal in the presence of the Manner component but not so when the Manner

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[10] Acedo Matellán (2012: 7) observed that "in some (s(atellite)-framed) languages, there is a prefixation requirement on the element expressing the resultative predicate, so that it has to appear attached to the verb'. That Latin does not allow adjectival resultative predicates is explained by the fact that in Latin adjectives are morphologically complex and inflected. As a consequence, "head movement cannot prefix an already inflected form… the Path fails to get prefixed onto the verb" (Adedo Matellán, 2012: 17). When this criterion is applied to Mandarin, the affixation is possible because adjectives are not inflected morphologically in this language.

[11] Regarding the claim of the affixal nature of the Path component in Mandarin, Mateu (p.c.) pointed out to me two possible counterarguments. The first one is the existence of the example in (i). It seems that the Path component in English may also have the affixal nature; that is, the example in (i) could be analyzed as the following: after the conflation of the Manner component—dance—the Path component—out—adjoins to the Manner component. Therefore, instead of standing alone as an independent element, the Path component appears together with the main verb.

(i)   John **out**danced Mary.

The second one is that in German the Path component can be both affixal and non-affixal. My intuition is that there might be some language-specific factors that contribute to the affixal nature of the Path component. Nevertheless, what counts here is that in these examples the process of conflation is involved and this is expected in satellite-framed languages. As for what these language-specific factors actually are, further investigation will be needed and I will leave them open here.

component is absent. A possible answer[12] might be found in the typological shift and the constituent overlapping of Mandarin, based on Talmy in Ibarretxe-Antuñano (2005). Both issues will be addressed below. On the one hand, after the typological shift of Mandarin from a verb-framed to a satellite-framed language (Lamarre, 2005; Peyraube, 2006; Shi, 2002; Talmy, 2000; Talmy in Ibarretxe-Antuñano, 2005; Xu, 2008), the verb-framed feature does not disappear altogether. The coexistence of both the verb-framed pattern and the satellite-framed pattern can thus be observed. On the other hand, even though the satellite-framed pattern, as in (26a), can be argued to have originated diachronically from the verb-framed pattern, as in (26b), the semantic component Path in these two examples can be argued to be instantiated as two different syntactic categories, which share the identical morphological form. The example in (26b) involves the incorporation of the Path component into the verb; it therefore follows the verb-framed pattern. As for the Path component in the example in (26a), it is indeed a satellite, which has the role of a resultative predicate, and appears together with the Manner component to form a complex verb owing to its affixal nature[13].

(26)   a. Zhangsan pao-jin-le   jiaoshi.

          Zhangsan run-enter-LE   classroom

          'Zhangsan ran into the classroom.'

       b. Zhangsan jin-le   jiaoshi.

          Zhangsan enter-LE   classroom

          'Zhangsan entered the classroom.'

A characteristic of satellite-framed languages is that usually more than one satellite is allowed to modify the same motion event. For instance, in the examples in English and in German in (27), from Slobin (2004: 239), there are more than two path expressions.

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[12] We can treat the path component as free roots without the presence of the manner component and as bound roots with the manner component, and they simple coincide regarding the morphological form. Basciano (2010: 9) observes that "the boundary between free and bound roots is often not clear at all… and bound roots apparently maintain the characteristics they had when used as free roots… As a matter of fact, some bound roots in a proper morpho-syntactic context… can sometimes act as free roots, being able to fill a syntactic slot".

[13] Another possible account may be related to the quote from Snyder (1995: 35): "A language allows complex predicates if and only if it freely allows open-class, ordinarily non-affixal lexical items to function as affixes". That is, Mandarin is one of these languages that allow the use of open-class and usually non-affixal lexical items as affixes.

(27)	a. they decided to walk <u>outside</u> the house <u>down to</u> the back of the garden <u>out into</u> the bit of a forest there

b. plötzlich fällt der Hund <u>aus</u> dem Fenster <u>von</u> dem Fensterbrett herunter

'suddenly falls the dog <u>out</u> of the window <u>down hither from</u> the windowsill'

In the example in (27a), the motion modified by walking is specified by up to three path expressions: *outside*, *down to*, and *out into*. Such encoding of multiple path elements is possible because they do not occupy the main verb slot, which is "the only clause-obligatory lexical category", in the spirit of Beavers et al. (2010: 334). Since the main verb slot is occupied by the Manner component, several path expressions can be compiled. When the main verb slot is occupied by a Path component, the other path expressions cannot be encoded in the same clause and other methods, conjunction for example, will be needed.

If Mandarin is truly a satellite-framed language, the question to be answered is why Mandarin behaves differently from satellite-framed languages, such as English or German, in that only one path expression is allowed per clause. This divergence of Mandarin and other satellite-framed languages with respect to the encoding of numerous path expressions can be accounted for under the analysis adopted in this dissertation. As we have seen, Path components in motion events encoded in the satellite-framed pattern in Mandarin are affixal. Due to this affixal nature, in the satellite-framed encoding pattern of motion events, Path components must adjoin to Manner components. This affixal nature influences syntactic configuration. Even though both Mandarin and English are satellite-framed languages, they differ in that, in the latter, the accumulation of several Path elements in a single predicate is possible, but not in the former. Because of the affixal nature of the Path components in Mandarin, they adjoin to the main verb that expresses Manner. The existence of more than one Path supposes the competition between them to adjoin to Manner. No matter which one succeeds, the affixal nature of other Path elements will not be satisfied. As a result, the examples with more than one Path satellite will crash and, thus, be ungrammatical[14]. In the previous literature, the analyses of the affixal nature of the Path components can

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[14] The existence of possible multiple directional prefixation in Slavic languages, together with the conflation of Manner, is pointed out to my by Mateu (p.c.). I have to admit that this would be a problem for the system proposed here. The affixes of Mandarin and Slavic languages may have different properties. However, further research will be needed to prove that.

also be found, for example in Chao (1968: 459), in which Chinese directional complements are compared with German separable prefixes and the conclusion that Chinese "directional complements behave very much like German separable prefixes" is drawn. Further attempts to compare path satellites in Mandarin with path satellites in other languages can be found in Lamarre (2005). If the comparison between path satellites in Mandarin and Russian preverbal suffixes is proven to be correct, Snyder's claim (2012: 284) that Russian is similar to languages like Spanish would be questionable.

Such divergent behaviors in the languages of the same lexicalization pattern offer a strong support for the argument that factors other than those of the lexicalization patterns may influence the encoding of the semantic components in motion events; that is to say, the typology of lexicalization patterns is only one of these factors. By searching for these factors, the need to establish an additional type to accommodate apparent counterexamples will be reduced to the minimum.

So far, the examples analyzed are of self-agentive motion events, which permit either the encoding of the satellite-framed pattern or the verb-framed encoding pattern. As has been argued in the initial part of this subsection, this analysis can also apply to non-agentive motions, with the examples repeated in (28).

(28)   a. qiu jin-le   shuigou.
            ball enter-LE   ditch
            'The ball entered the ditch.'
        b. qiu gun-jin-le   shuigou.
            ball roll-enter-LE ditch
            'The ball rolled into the ditch.'

The example in (28a) involves the incorporation of the Path component into the main verb slot. To obtain the example in (28b), an unergative structure encoding Manner is merged with the phonologically empty head of an unaccusative structure, which represents the center of predication of the motion event, via the process of conflation. Path generates from the complement of this unaccusative structure and adjoins to Manner to form a compound with Manner because of the affixal property of Path. The union of the compound can later raise to the aspectual head, instantiated by the particle *le*.

Having dealt with non- and self-agentive motion events, in the next subsection I shall turn to the motion events that associate with the causative structure.

2.2.2 Motion Events: Causative Structure

Lamarre (2008) has observed that, while the verb-framed pattern is allowed for autonomous motion events (equal to the motion events with the unaccusative structure in this dissertation), this pattern is not allowed for causative motion events. That is, to encode the causative motion events, the encoding of the satellite-framed pattern is obligatory. Therefore, the Manner components are most likely to be present. In the absence of manner expression, dummy verbs must be employed as placeholders. When considering the examples, some apparent counterexamples to this claim might come up. Nevertheless, I will show that this claim can be maintained, because these apparent counterexamples are not real causative motion events. Let us start with the examples in (29). There are two ways to encode causative motion events in Mandarin. These two ways can be illustrated by the examples in (29a) and (29b).

(29)　　a. Zhangsan tui　　qiu jin　　　yundongchang.

　　　　　　Zhangsan push　　ball enter　　sport.ground

　　　　　　a'. 'Zhangsan pushed the ball into the sport ground.'

　　　　　　b'. 'Zhangsan went into the sport ground pushing the ball.'

　　　　b. Zhangsan ba　　qiu　　tui-jin　　　yundongchang.

　　　　　　Zhangsan BA　　ball　　push-enter　　sport.ground

　　　　　　'Zhangsan pushed the ball into the sport ground.'

The example in (29a) presents the parallel pattern as its counterpart in English, in (29aa'). This parallel pattern is reflected by the identical word order. The example in (29b), however, is more complicated regarding syntactic representation because of the disposal particle *ba*. Despite this syntactic complexity, I will show that the analysis of the example in (29b) is simpler than that in (29a). While the example in (29b) is the result of only one syntactic configuration, the example in (29a) may result from two different syntactic configurations, which lead to two distinct interpretations.

The example in (29a) has two possible interpretations, as the translation shows, but only one of them is of the type of causative motion event, namely, the one in (29aa').

For this interpretation, the focus is on *Zhangsan*'s action that leads to the ball's displacement to end in the sport ground. In order to obtain such a reading, the Figure and Ground arguments are encoded by *qiu* 'ball' and *yundongchang* 'sport ground', respectively. The subject is introduced by a functional projection. This configuration is represented by the structure in (30).

(30)

```
                F
                |
                F
                :
Zhangsan    F   :············ x1
                |             |
                x1            x2
                |           z2   x2
                Ø          qiu   |
                                x2   y2
                                |
                               jin   yundongchang
```

In the structure in (30), the head *x1* is phonologically empty. There are two possible ways to saturate this phonologically empty head. The first one involves incorporating of the Path component in the complement position of this head, i.e., the verb-framed pattern, and the other is by conflating an external structure with this head, namely, the satellite-framed pattern. Although these are two possible ways, the first is not feasible. The impossibility of the verb-framed pattern in causative motion events is not a particular phenomenon of motion events but a general one of causative constructions in Mandarin. Save a few exceptions such as the example in (31a)[15], most of the causatives follow the satellite-framed pattern and have the compound form, as the example in (31b) shows.

(31) a. Zhangsan   po-le   jilu.
        Zhangsan   break-LE   record
        'Zhangsan broke the record.'

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[15] Assuming that Mandarin underwent the typological shift from a verb-framed language to a satellite-framed language, I would like to suggest that the few exceptions, which are of the verb-framed pattern, might be the residues of such shift.

b. Zhangsan   da-po-le   jilu.

    Zhangsan   hit-break-LE   record

    'Zhangsan broke the record.'

This is in accordance with Lamarre's (2008) observation that the encoding of the verb-framed type is not available for causative motion events. The ungrammaticality of the example in (32) indicates the unfeasibility of the first option. This example shows that, unlike motion events that involve the unaccusative structure, causative motion events cannot be expressed by encoding the Path component in the main verb[16].

(32)   *Zhangsan jin   qiu   yundongchang.

    Zhangsan enter   ball   sport.ground

    Intended: 'Zhangsan caused the ball to go into the sport ground.'

As a result of the non-availability of the option of the incorporation of Path, the only way to saturate the phonologically empty head *x1* is via the conflation of an unergative structure. The resultant structure will be that in (33), which can be interpreted as *Zhangsan caused the ball into the sport ground in the manner of pushing (it).*

(33)
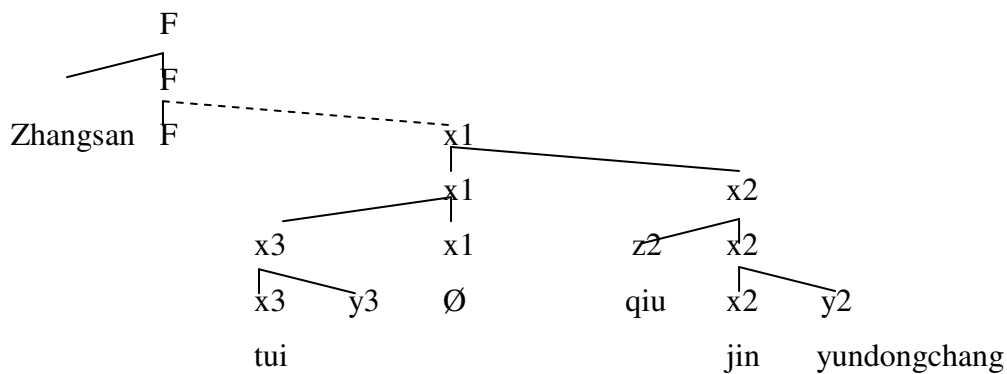
    Now, let us discuss the second interpretation of the example in (29a), repeated here in (34) for convenient consultation. For the same sentence in (34) to obtain the second interpretation, in (34b'), distinct from the causative interpretation in (34a'), a different structural configuration is involved. In this case, the structure involved is an

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[16] As we will see later in this chapter, this is not unique for causative motion events, but for most causative events in Mandarin.

unaccusative structure, in which Figure and Ground are *Zhangsan* and *yundongchang* 'sport ground', respectively. The structure in (34c) shows this motion event and the Figure-Ground configuration.
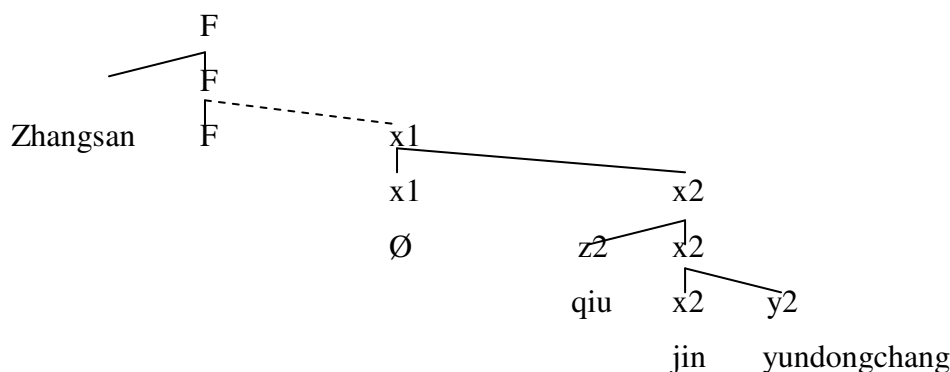
(34)   Zhangsan tui   qiu jin   yundongchang.
        Zhangsan push   ball enter   sport.ground
        a'. 'Zhangsan pushed the ball into the sport ground.'
        b'. 'Zhangsan went into the sport ground pushing the ball.'
        c.   x1
                |
                x1   x2
                Ø   z2   x2
                        Zhangsan   x2   y2
                                      jin   yundongchang
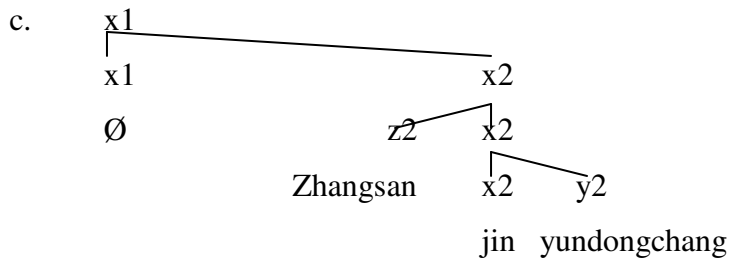
This structure is identical to that for motion events discussed in the previous subsection. The Figure argument raises further to the syntactic subject position. In other words, the second interpretation of the structure in (34) is that of a self-agentive (or non-agentive) motion event, which describes the displacement of the subject argument, derived from the Figure position. However, this example is different from that discussed in the previous subsection in that there is an additional argument, *qiu* 'ball' in the example in (34). To compare the example in (35), discussed in the previous subsection, with that in (34), it is clear that in (34) there is one more noun phrase, underlined, than in the example in (35).

(35)   Zhangsan   pao-jin   yundongchang.
        Zhangsan   run-enter   sport.ground
        'Zhangsan ran into the sport ground.'

Since the two possible argument positions of the main structure—i.e., those for Figure and Ground—are already occupied, one possible explanation is to be found in the conflated structure. The conflated unergative structure that we have seen hitherto involves the process of incorporation. That is, the phonological presentation of this unergative structure derives from the complement of this structure, as in (36a). However, the conflated unergative structure involved in the example in (34) has a different kind of

phonological instantiation. This conflated unergative structure involves instantiating the same indexed features with two different lexical items, à la Haugen (2009). Briefly then, the semantic features of the complement are incorporated into its head (see (36b)) and these two coindexed features are phonologically instantiated by two different lexical items, *tui* 'to push' and *qiu* 'ball'. For more details on this instantiation, readers are referred to subsection 1.2.4 in the previous chapter. According to the concept of incorporation established and discussed in the previous chapter, based on the study of Haugen (2009), the problems regarding the configuration in (36b) in Hale and Keyser's (1993, 2002) proposals are not problems any more.

(36)   a.   b.

$x1$ $x1$

$x1$ $y1$ $x1$ $y1$

$\emptyset$ pao $[\alpha, \beta, \ldots n]_i$ $[\alpha, \beta, \ldots n]_i$

                                             tui   qiu
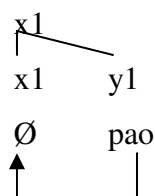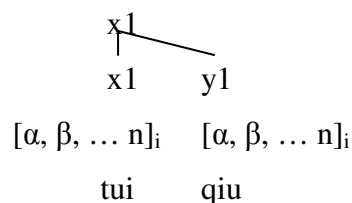
Consequently, to obtain the second interpretation of the example in (34), the structure in (37) will be necessary. The interpretation for the structure in (37) could be that *Zhangsan went into the sport ground pushing the ball*. After raising the Figure argument to the syntactic subject position, the order of the example in (34) will be obtained. There is no longer any need to propose the affixal nature of the path expression, *jin* 'enter'. As for whether this Path expression is affixal here, I will leave the question open, though I am inclined to claim that it is affixal, in accordance with the analysis in the previous subsection. Moreover, the existence of the example in (38) with the presence of the aspectual particle *le* does suggest the affixal nature of the path expression here. The path expression *jin* 'enter', owing to its suffixal nature, adjoins to the right of the union formed by *tui-qiu* 'push-ball'.

(37)

$x1$

$x1$ $x2$

$x3$ $x1$ $z2$ $x2$

$x3$ $y3$ $\emptyset$ Zhangsan $x2$ $y2$

tui   qiu   -jin   yundongchang
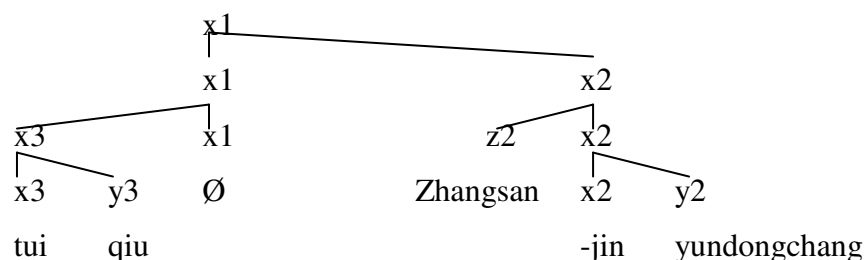
(38)   Zhangsan tui-qiu-jin-le   yuandongchang.
        Zhangsan push-ball-into-LE sport.ground
        'Zhangsan went into the sport ground pushing the ball.'

However, this proposal is not exempt from problems if we compare the example in (34) with its counterpart in English. The example in Mandarin may have two interpretations: a causative one, in (34a'), and an accompanying one, in (34b'). The examples in English in (39) only permit the causative reading. That is, the example in (39a) can only be interpreted as *John made the ball into the yard by pushing it* or *John made the ball into the yard by giving it a push*, but not *John went into the yard kicking the ball at the same time*. One possible explanation might be that in these examples the conflated unergative structure has to be that shown in (36a). However, this is certainly not a satisfactory explanation, because the example *John danced mazurkas across the room* (from McIntyre, 2004: 564) does have the accompanying interpretation. Future investigation is required to find a better solution.

(39)   a. John pushed the ball into the yard.
        b. John kicked the stone into the room.

The other problem is more serious regarding how the complement in the structure in (36b) can be interpreted as the Incremental Theme. As we have seen in subsection 1.2.5, the semantic interpretations are read off the syntactic structures and the complement of the unergative structure has the semantic interpretation of Incremental Theme. At first sight, it is difficult to believe that *qiu* 'ball' can be an Incremental Theme because a ball cannot measure out the event of pushing a ball. However, I would not like to discard this possibility in that the conceptual impossibility should not block the structural possibility. Let us compare the structure in (36a) with that in (36b). If both structures can be interpreted as [DO X] and the Incremental Theme is the complement that occupies the complement position, instead of the other way around, we may claim that *qiu* 'ball' could be interpreted as Incremental Theme because it occupies the position of the complement of the unergative structure, but not that *qiu* 'ball' could not occupy that position because it cannot be interpreted as the Incremental Theme.

The other possible solution is to abandon the proposal illustrated by the structure in (37) and to argue that, in order to obtain the second interpretation of the example in (34), this example should be analyzed as the example in (40a). The unaccusative analysis for the example in (34) with the second interpretation is maintained and what should be modified is that it actually deals with verb-framed encoding, as in (40b), instead of satellite-framed encoding, as in (37). As for the Manner component, it is an adverbial modifier of the sentence. I believe that future investigation is required to determine whether the analysis in (37) or that in (40b) is correct.

(40)   a. Zhangsan tui-zhe   qiu jin-le   yundongchang.
         Zhangsan push-ZHE   ball enter-LE sport.ground
         'Zhangsan entered the sport ground pushing the ball.'
         b.
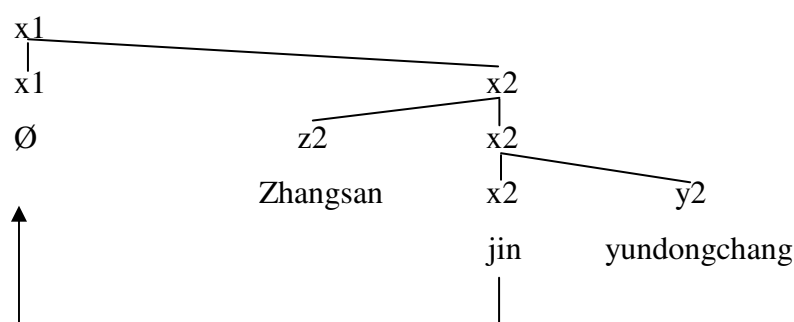
We will now turn to motion events with the disposal particle *ba*. Basically, the function of the disposal particle *ba* is to introduce the direct object argument in the preverbal position, as the examples in (41) indicate. When the disposal particle *ba* is present in motion events, as shown in the repeated example in (42), only the causative reading is available.

(41)   a. Zhangsan   gei-le   Lisi   yi-ben   shu.
         Zhangsan   give-LE   Lisi   one-CL   book
         'Zhangsan gave Lisi a book.'
        b. Zhangsan   ba   yi-ben shu   gei-le   Lisi.
         Zhangsan   BA   one-CL book give-LE   Lisi
         'Zhangsan gave Lisi a book.'

      c. *Zhangsan ba   Lisi   gei-le   yi-ben shu.

         Zhangsan BA   Lisi   give-LE   one-CL book

         Intended: 'Zhangsan gave Lisi a book.'

(42)   Zhangsan ba qiu   tui-jin   yundongchang.

       Zhangsan BA ball   push-enter   sport.ground

       'Zhangsan pushed the ball into the sport ground.'

Since the use of the proposal particle *ba* is not the issue here, I will not examine it further. More studies related to this particle can be found in Sybesma (1992, 1999) and Huang et al. (2009), among others. Since I am interested in the contrast between the accompanying reading of the example in (38) and the causative reading of the example in (42), I will try to explain why only the causative reading is plausible in the presence of the disposal particle *ba*, as in the example in (42). Let us compare the structure in (33), for the interpretation of causative motion, and the structures in (37) and (40b), for the interpretation of autonomous motion. In order to obtain the example in (42), the Figure argument in the structure in (33) should be raised to the preverbal position with the disposal particle *ba*, while in the structures in (37) and (40b), the complement of the modifying unergative structure or the complement of the modifying adverbial phrase should be raised. As we have argued that only direct object arguments can be introduced by the disposal particle *ba* and appear in the preverbal position, the complement of the modifying unergative structure in the structure in (37) and the complement of the modifying adverbial phrase in the structure in (40b) are thus not qualified and cannot be successful candidates for the raising process. As a result, the autonomous motion reading is not available with the presence of the disposal particle *ba* and the only available reading is causative.

Next I will discuss the use of dummy verbs. We have seen in the previous subsection that, for non- and self-agentive motion events, when no manner expression is present, the path expression may be incorporated into the main verb slot and, as a result, the motion of the verb-framed pattern is formed. However, the verb-framed pattern of encoding is not available for causative motion events. The example in (43a) indicates such a restriction. Instead, the use of dummy verbs is necessary. Nonetheless, the use of a dummy verb alone is insufficient to make a sentence of causative motion event available, as the example in (43b) shows. If the slot is occupied by a conflated

unergative verb, instead of being occupied by the dummy verb *nong* 'to make', the sentence will be grammatical, as in (29), repeated in (43c). Accompanied by the use of the dummy verb, the employment of the disposal particle *ba* is also required. If the BA construction (i.e., with the use of the disposal particle *ba*) is adopted, the ungrammaticality of the example in (43b) would disappear.

(43)   a. *Zhangsan **jin**   qiu yundongchang.

       Zhangsan enter   ball sport.ground

       Intended: 'Zhangsan caused the ball to go into the sport ground.'

      b. *Zhangsan **nong** qiu   jin   yundongchang.

        Zhangsan make ball   enter   sport.ground

        Intended: 'Zhangsan caused the ball to go into the sport ground.'

      c. Zhangsan **tui**   qiu jin   yundongchang.

       Zhangsan push   ball enter   sport.ground

       'Zhangsan pushed the ball into the sport ground.'

      d. Zhangsan **ba**   qiu nong-jin   yundongchang.

       Zhangsan BA   ball make-enter   sport.ground

       'Zhangsan made the ball into the sport ground.'

As previously mentioned in this subsection, the prohibition of the verb-framed pattern of encoding in causative motion events is not unique to motion events, but a general requirement for most causative constructions. My hypothesis is the following: the explanation to why the BA construction is necessary in order to obtain the interpretation of causative motion event when a dummy verb is employed, in contrast to the absence of this restriction when a non-dummy verb is present, may consist of the different ways of saturating the phonologically empty eventive head, $x1$ in (44), because both types share the same causative structure in (44), and the only difference lies in how the eventive head is phonologically instantiated.

(44)

```
            F
        ___/
      /    F
     /     |
Zhangsan  F - - - - - - - - - x1
          |                   |
          F                   x1 _____ x2
                              |                   |
                              Ø              z2 __ x2
                                             |     |
                                            qiu   x2 __ y2
                                                  |     |
                                                 jin   yundongchang
```
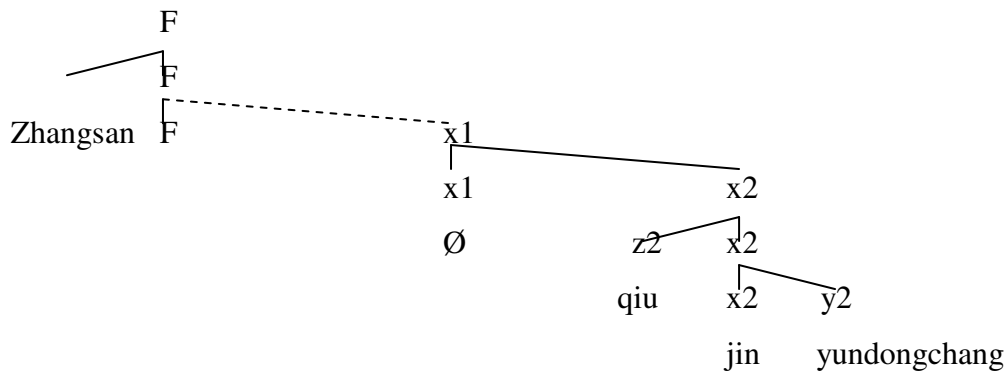
The phonologically empty head of the head *x1* in the structure in (44) can be satisfied by conflating an unergative structure encoding the manner expression, represented by *tui* 'to push'. In this way, the object *qiu* 'ball' may stay either in the post-verbal position, as in (29a), or in the preverbal position after the disposal particle *ba*, as in (29b), both repeated here.

(29)   a. Zhangsan tui   qiu jin   yundongchang.
          Zhangsan push   ball enter   sport.ground
          'Zhangsan pushed the ball into the sport ground.'
       b. Zhangsan ba   qiu   tui-jin   yundongchang.
          Zhangsan BA   ball   push-enter   sport.ground
          'Zhangsan pushed the ball into the sport ground.'

As for how the dummy verb *nong* 'to make' is instantiated in the structure (44), there are two possibilities. The first is that the dummy verb here is inserted at the head of *x1* merely as a placeholder or is construed copularly in the spirit of Hoekstra and Mulder (1990). The second, based on Haugen (2009) and Mateu (2010b, 2012), is that it results from the process of incorporation, by which the two different roots instantiate the same bundle of semantic features, shown in (45). It might be this kind of instantiation that triggers the use of the disposal particle *ba*.

(45)

```
                    F
                ╱  │
               ╱   F
   Zhangsan    F─────────────────── x1
                    x1                    │
                    │           x1              x2
              [α, β, … n]ᵢ            ╱  │
                 nong          qiu      z2      x2
                                       z2    │
                                          x2    y2
                              [α, β, … n]ᵢ  yundongchang
                                            jin
```
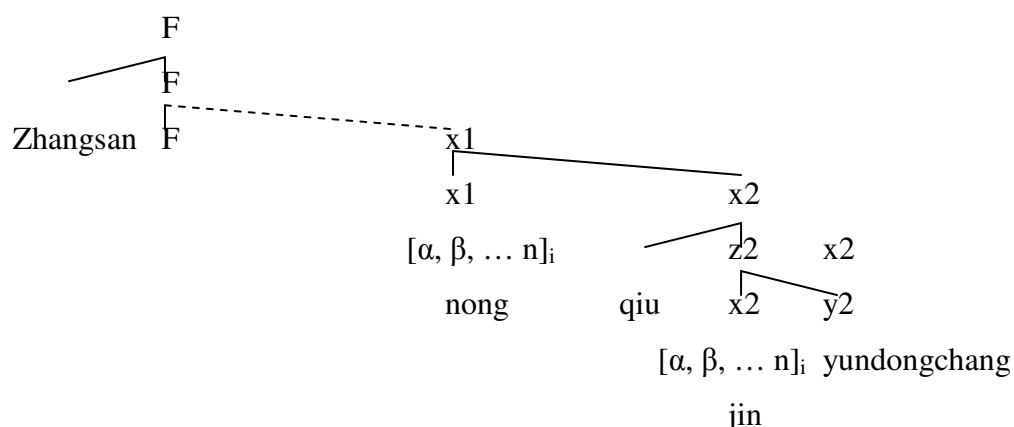
The concept of the instantiation of the same bundle of semantic features by two different roots has already been discussed in the previous chapter. Here I only briefly recall the key points. To explain the cases of expressions with hyponymous objects, Haugen (2009) makes use of the Copy Theory of Chomsky (1995) and Late Insertion of Distributed Morphology (Halle and Marantz, 1993, 1994; Harley and Noyer, 1999; Marantz, 2001) to develop the mechanism according to which, on the one hand, copies do not consist of morpho-phonologically specified elements but of a bundle of features. The head and trace of the copy can be treated as coindexed bundles of features. On the other hand, these coindexed bundles of features can be spelled out with more than one vocabulary item. This mechanism can be illustrated by the example and the structure in (46).

(46)   a. John danced a polka.

b.
```
              V
          │ ╱────────────────╲
          V                   N
      [α, β, … n]ᵢ         [α, β, … n]ᵢ
      √DANCE               √POLKA
```
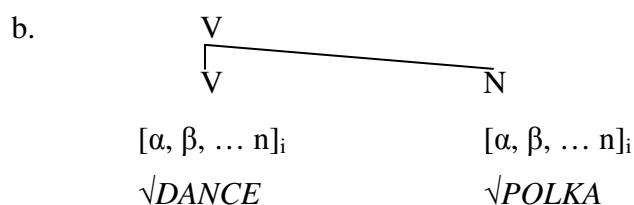
To summarize this section, I will use the examples in (47). The examples in (47a) and (47b) represent the autonomous motion event, and those in (47c) to (47e) belong to the causative motion event.

(47)　　a. Zhangsan pao-jin　　　　feijichang.

　　　　　Zhangsan run-enter　　　　airport

　　　　　'Zhangsan ran into the airport.'

　　　　b. Zhangsan jin　　　feijichang.

　　　　　Zhangsan enter　　airport.

　　　　　'Zhangsan entered the airport.'

　　　　c. Zhangsan kai　　　che　　　　　jin　　feijichang.

　　　　　Zhangsan drive　　vehicle　　　enter　airport

　　　　　'Zhangsan drove the car into the airport.'

　　　　　'Zhangsan went into the airport driving.'

　　　　d. Zhangsan ba　　　che　　　　　kai-jin　　　feijichang.

　　　　　Zhangsan BA　　　vehicle　　　drive-enter　airport

　　　　　'Zhangsan drove the car into the airport.'

　　　　e. Zhangsan ba　　　che　　　　　nong-jin　　feijichang.

　　　　　Zhangsan BA　　　vehicle　　　make-enter　airport

　　　　　'Zhangsan made the car into the airport.'

The example of the autonomous motion event in (47a) involves merging a modifying unergative structure with the main unaccusative structure expressing the motion event, while the same modifying unergative structure offers the phonological content to the head of the unaccusative structure. Owing to the suffixal nature of Path, path expression adjoins to manner expression, and the surface order is obtained after the Figure argument is raised to the syntactic subject position. Besides this satellite-framed pattern of encoding, the verb-framed pattern is also allowed, as in (47b). When a manner expression is not available, no dummy verb is needed and path expression may be incorporated into the head of the unaccusative structure.

　　　　As for causative motion events, the typical pattern can be shown by the example in (47c), with both manner and path expressions available. The encoding of this example also follows the satellite-framed pattern. The difference between this example and that in (47a), also pertaining to satellite-framed encoding, consists in the different syntactic presentation of the Figure argument. In (47a), the Figure argument raises to the syntactic subject position while, in (47c), it stays in the object position and the syntactic subject position is filled by an element introduced by a functional projection.

It should also be noted that the example in (47c) has two interpretations: the aforementioned interpretation of the causative motion event, and the autonomous motion event. To obtain the causative reading, *che* 'vehicle' derives from the Figure position and *Zhangsan* is an external argument. In order to obtain the reading of autonomous motion event, in addition to that *Zhangsan* is the Figure, I have proposed two hypotheses: one involves conflating the unergative structure [kai che][17], and the other involves analyzing *kai-che* 'drive-vehicle' as an adverbial adjunct. The difference between these two distinct hypotheses is not trivial, because in the first hypothesis, *che* 'vehicle' is derived from the argument structure, which is not so in the second one. I have left the question open as to which one is the correct.

The ambiguity between the causative and the autonomous interpretations disappears when the BA construction—consisting of introducing the object argument in the preverbal position by means of the disposal particle *ba*—is applied. This disambiguation is shown by the example (47d), in which the autonomous motion reading disappears and only the causative motion reading is allowed. This interpretive distinction can be explained by the different syntactic configurations under analysis here. Only the Figure argument of the unaccusative structure can be introduced by the disposal particle *ba* in the preverbal position, but not an element originated from the modifying conflated structure, because only the direct object can be introduced by the

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[17] Again, the problem for this analysis is that *che* 'vehicle' should be interpreted as Incremental Theme. However, if *kai-che* 'to drive: drive-vehicle' is analyzed as other activities such as *chi-fan* 'to eat: eat-food', *shui-jiao* 'to sleep: sleep-dream', *tiao-wu* 'to dance: jump-dance', or *qi-ma* 'to ride a horse: ride-horse'—that is, the cognate objects are required for the intransitive use and these cognate objects should disappear when the specific objects are present, as shown in (i) and (ii)—, *che* 'vehicle' in *kai-che* 'to drive' should be analyzed as a cognate object. As a result, *kai-che* 'to drive' would have the same structure as that in (46). To reiterate the point mentioned earlier in this subsection, in order for this hypothesis to be valid, we should claim that the element that occupies the complement of the structure of eventive relation should be interpreted as Incremental Theme, but not that only Incremental Theme can occupy this position.

(i)   a. Zhangsan   xihuan   tiao-wu.
           Zhangsan   like   jump-dance
           'Zhangsan likes dancing.'
      b. Zhangsan   xihuan   tiao   folangmingge.
           Zhangsan   like   dance   flamenco
           'Zhangsan likes dancing flamenco.'
(ii)   a. Zhangsan   xihuan   kai-che.
           Zhangsan   like   drive-vehicle
           'Zhangsan likes driving.'
      b. Zhangsan   xihuan kai   kache.
           Zhangsan   like   drive   truck
           'Zhangsan likes driving truck.'

particle *ba* and only the Figure argument of the unaccusative structure is associated with the direct object.

With respect to causative motion events, even though the BA construction is not indispensable when the manner expression is present, as in the examples in (47c) and (47d), it does become indispensable when the manner expression is absent. A dummy verb is necessary in the absence of the manner expression, as shown in the example in (47e). This phenomenon is related to the general requirement that the causative structures in Mandarin are usually satellite-framed.

Before finalizing this subsection, we could compare the encoding of the satellite-framed pattern of the motion events in Mandarin with the employment of verb prefixation in Russian (see Spencer and Zaretskaya, 1998) or that of complex denominal verbs in Germanic languages such as German (see Mateu, 2001b) by making use of the examples in (48).

(48)   a. Ona **is**-*pisala*   svoju   ručku.   (Russian)

         she   IZ(out)-write   her   pen.ACC

         'Her pen has run out of ink.'

                                                                     Spencer & Zaretskaya (1998: 17)

       b. Er   ver-gärtner-te   sein   gesamtes   Vermögen. (German)

         he   **VER**(away)-*gardener*-ed   his   whole   fortune

         'In gardening, he used up all his fortune.'

                                                                              Stiebels (1998: 285)

Even though these examples do not deal with physical motions, they do deal with metaphorical motions. The example in (48a) could be analyzed as something like *she made her pen out of ink by writing (so much)*. Since both Russian and German are classified as satellite-framed languages, the verb should be instantiated by the Manner element, while the Path element is encoded by the satellite. However, Russian and German are unlike English and more like Mandarin regarding the presentation of the Path element in that the Path element adjoins to the main verb due to the affixal nature of these path expressions, as can be shown in the examples in (48). Because of the

affixal nature of path expressions[18] in Mandarin, this language is different from most satellite-framed languages in that only one path expression per clause is allowed.

The next chapter will discuss whether the path expression and the manner expression in motion events in Mandarin form serial verb constructions or compounds.

2.3 Compounds or Serial Verb Constructions

As is well-known, Mandarin is a language with a poor morphological system with respect to inflections; therefore, some issues that are taken for granted in other languages, such as the verbal status of certain elements, are not so clear in Mandarin. For example, in English or in Spanish, there is no debate on the distinction between verbal elements and non-verbal elements because only verbs can take inflections such as tense and aspect. In Mandarin, whether an element is a verb or not is unclear in certain cases. For instance, according to the previous proposed analysis, in the example in (49), Path is treated as a non-verbal element; concretely, it is analyzed as a satellite. However, for some linguists, Slobin (2004, 2006) for example, Path is treated as a verb and forms a serial verb construction with Manner.

(49)   Zhangsan zou-jin-le   fangjian.
        Zhangsan walk-enter-LE   room
        'Zhangsan walked into the room.'

In this section, I will not deny the possibility of analyzing motion events in Mandarin as serial verb constructions. Owing to the lack of consensus about what serial verb constructions should ultimately be, what I pretend to show in this section is that they need not be analyzed as such and can indeed be treated as compounds, as analyzed up to now. See Nishiyama (1998) and Paul (2004) for more discussions on serial verb constructions relating to Mandarin.

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[18] The affixal nature of path expressions is related to the affixal nature of the aspectual particle *le* and the resultative predicates. The diachronic development will be discussed in section 3.6 of the next chapter.

I will start with the basic definitions on which most of the linguists who study serial verb constructions agree: Collins (1997) and Aikhenvald (2003) in (50) and (51), respectively.

(50)   *Collins's (1997: 462) definition of serial verb construction*
        A serial verb construction is a succession of verbs and their complements (if any) with one subject and one tense value that are not separated by any overt marker of coordination or subordination.

(51)   *Aikhenvald's (2003: 1) definition of serial verb construction (adopted from Newmeyer (2004: 1))*
        A serial verb construction is a sequence of verbs which act together as a single predicate, without any overt marker of coordination, subordination or syntactic dependency of any other sort. Serial verbs describe what can be conceptualized as a single event. They are monoclausal; their intonational properties are those of a monoverbal clause, and they have just one tense, aspect and polarity value.

From these two different versions of definition, we can see that the consensus on what serial verb constructions really are is that they have one tense, a single predicate, and represent a single event. However, these definitions do not help very much when we attempt to clarify what a serial verb construction really is. Different researchers have different criteria for classifying the constructions they study as serial verb constructions.

One influential study by Collins (1997) on Ewe, an African language, concludes that argument sharing[19] is the main property of serial verb constructions. There are also attempts to apply the argument sharing restriction to Mandarin, as in Paul (2004). The constructions that this author analyzes applying Collins's definition are those in (52).

(52)   a. ta [$_{vP}$ song-le [$_{V1P}$ yi-ge xiangzi tv [$_{vp2}$ *pro* lai]]]
            3SG send-PERF   1-CL suitcase   come
            'He sent a suitcase over here.'
        b. ta song-lai-le   yi-ge   xiangzi.
            3SG send-come-PERF   1-CL   suitcase

                                                            (Paul, 2004: 17)

---

[19] The shared argument refers to the internal argument.

In the same way that Collins's (1997) criteria of argument sharing of serial verb constructions are used by Paul (2004) to defy Li & Thompson's (1981) classification of four types[20] of serial verb constructions, other constructions will inevitably be analyzed as serial verb constructions if different criteria of what serial verb constructions should be applied, which is very probable owing to the lack of consensus[21].

As a result, I do not want to include or exclude the serial verb status of motion events in Mandarin. Next, two related studies are worth mentioning: those by Nishiyama (1998) and Larson (1991). The purpose of presenting these studies is to demonstrate that even the classification of serial verb constructions and compounds is not absolute and that classifying the motion events in Mandarin as the instantiation of compounds is not altogether incompatible with that analyzing them as serial verb constructions.

Based on data in Japanese, Nishiyama (1998) [22] claims that serial verb constructions and compounds actually share the same underlying syntactic structure. This is supported by conceptual and empirical evidence: for example, both serial verb constructions and compounds prohibit the existence of two objects and both obey the Temporal Iconicity Condition. The simplified structure of this underlying structure may be that in (53).

(53)

    V   complement

    cause   effect

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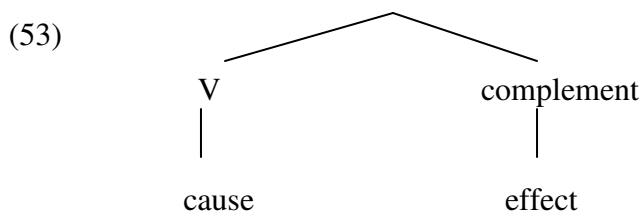
[20] These four types are: first, that expresses "two or more separate events" (Li & Thompson, 1981: 595) that can be interpreted as consecutive, purpose, alternating and circumstance relations; second, that in which "one verb phrase or clause is the subject or direct object of another verb; third, that in which a noun phrase… is simultaneously the subject of the second verb and the direct object of the first verb; fourth, that in which "involves a transitive verb whose object is 'described' by a following clause".

[21] See Basciano (2010: 39), who claims that "'serial verb construction' in Chinese does not indicate a single structure with a predictable set of properties, but different constructions with their specific properties (cf. Paul 2008). This is why there is no clear consensus in the literature on what a serial verb construction is in Chinese: different authors… seem to hold different views about what kind of verb sequences can be labeled as serial verb constructions, since under this label one can put different kind of subordinate or coordinate structures, which in Chinese do not require any overt marker…'.

[22] For more detailed discussions on Nishiyama (1998), readers are referred to Tomioka (2006).

On the one hand, if the complement in the structure in (53) is a verbal phrase, a serial verb construction will be obtained. On the other hand, if this complement—whether a verbal (in the case of Japanese), adjectival, or prepositional phrase—is affixal and adjoins to the verbal head, a compound will be formed. As a consequence, a unitary account could be applied to the so-called serial verb constructions and compounds. Applying this analysis to motion events in Mandarin, we may claim that they are compounds, owing to the affixal nature of the path expressions, but at the same time they share the same structure of serial verb constructions.

Larson (1991) compares serial verb constructions with secondary predicate constructions. Firstly, both constructions have the same range in interpretation: conjunctive, modificatory, and causative readings, as shown in the examples in (54) to (56) (from Larson, 1991: 185, 197).

(54)   Conjunctive reading
        Serial verb construction: Kofi   kɔɔe   baae.
                                        Kofi   went   came
                                        'Kofi went and came.'
        Secondary predicate construction: John left the party [angry].

(55)   Modificatory reading
        Serial verb construction: Wọn   mu   ọtí   yó.
                                        They   drank wine   drunk
                                        'They drank wine until they were drunk.'
        Secondary predicate construction: Jude ate the fish [raw].

(56)   Causative reading
        Serial verb construction: Amma   free   Kofi   baae.
                                        Asiba   called Kofi   came
                                        'Asiba called Kofi (to come) in.'
        Secondary predicate construction: Lloyd called us [in].

Besides these interpretational similarities, both constructions express inclusive and exclusive aspectual relations, in terms of Awoyale (1987). In the inclusive relation, one event delimits another, while in the exclusive relation, two events are separated. Using the examples of Awoyale, adopted from Larson (1991: 198), these two relations are shown as follows. In (57), the event of swimming is delimited by that of leaving. The

swimming event lasted until Aje was gone; that is, the swimming event is included in the leaving event. In (58), one event happens after the other.

(57)   *Inclusive Relation*

Aje wè lọ
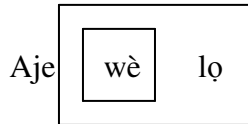
Aje   swam go/away
'Aje swam away.'

(58)   *Exclusive Relation*

Aje wè lọ
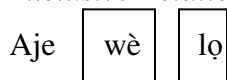
Aje   sway go/away
'Aje swam before leaving.'

Larson (1991: 201) concludes that "the single-event status of serializations (at least with causatives) can be attributed to the secondary predicate's standing in a delimiting, or "inclusive" relation to the event expressed by the main verb". Besides the identical interpretations, both serial verb constructions and secondary predicate constructions also share the same structure, the same as claimed by Nishiyama (1998), a claim that I support in this dissertation.

To conclude this section, classifying motion events in Mandarin as serial verb constructions or compounds is not a decisive factor for the explanation of such events. However, based on Nishiyama (1998) and Larson (1991), there is reason to believe that motion events in Mandarin can be analyzed as compounds, formed by the adjunction of the path expression to the manner expression. Readers are also referred to Mateu (2012) in which the resultative V-V compounds in Mandarin are related to the serial verb constructions in Yoruba. As pointed out by Mateu (2012: 270), if the resultative V-V compounds are treated as serialization, the following remark in Kratzer (2005: 38) can be valid: "whatever forces compounding for serial verb constructions can be assumed to force compounding for adjectival resultatives as well". For example, Mendívil (2003) proposes that in resultative constructions the main verb and the resultative predicate form a complex verb that denotes one unique event. The same formation of a complex verb is applicable to serial verb constructions. That is, for Mendívil, it is the possibility

of forming a unique event that permits the formation of both resultatives and serial verb constructions.

Since there is still no consensus on the definition of serial verb constructions and there would be no difference between analyzing the V-V compounds in Mandarin as serial verbs[23], I will leave the discussion of serial verb constructions behind and treat the discussed Mandarin examples as compounds from now on. The next section will show that Mandarin is indeed a satellite-framed language as classified by Talmy.

2.4 Mandarin as a Satellite-framed Language

Having discussed the issue of the typology of motion events in general in the previous sections, this section will focus on examples in Mandarin. Let us start with the typical example of motion events in Mandarin, in (59), which involves both the Manner component, in bold, and the Path component, in italics.

(59)   Zhangsan   **pao**-*jin*-le   fangjian.
        Zhangsan   run-enter-LE   room
        a. 'Zhangsan entered the room running.'
        b. 'Zhangsan ran into the room.'

We have seen that Mandarin's morphological opacity makes it difficult to know which element of Path and Manner is the main verb or main verb root, and this has been a topic of debate. While the concept satellite is easily identified in some languages, such as English, in which the satellite can be either "a free word or an affix" (Talmy, 1985: 102), it is not so easy in others, of which Mandarin is one. Two analyses seem possible, but it is not easy to tell which is the most appropriate. On the one hand, if the Path component is treated as the main verb or main verb root, this will result in the verb-framed analysis in (59a). On the other, treating Manner as the main verb or main verb root will lead to a satellite-framed analysis, as in (59b). Talmy (1985, 1991, 2000) analyzes Mandarin as a satellite-framed language: treating the Manner component in the example in (59) as the main verb and the Path component, termed resultative

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[23] See Basciano (2010: 43), "[s]uperficially, any [V V]$_V$ compound can be regarded as a serial verb compound, since it represents a sequence of juxtaposed verbs".

complement, as the satellite. This view is objected to by studies such as Slobin and Hoiting (1994), Slobin (2004), Tai (2003), and Chu (2004), etc. Tai (2003) argues that Mandarin is a verb-framed language, while Slobin (2004) establishes an additional type, the equipollently-framed pattern[24], to include serial verb languages, and Mandarin is considered as one of these languages.

Subsection 2.4.1 will discuss the problems arising from the claim that Mandarin is a satellite-framed language, and subsection 2.4.2 will conclude that there is support for classifying Mandarin as a satellite-framed language.

2.4.1 Challenges to Mandarin as a Satellite-framed Language

To review the problems of treating Mandarin as a satellite-framed language, let us first return to the example in (59). Theoretically, the classification should not be a difficult task because, as Peyraube (2006) argues, if Mandarin is a verb-framed language, the example in (59) should be understood as "enter in running"; if Mandarin is a satellite-framed language, that example should be interpreted as "run in"; if Mandarin is classified as an equipollently-framed language, this example should be analyzed as "run and enter". However, in reality, due to the absence of morphological clarity in Mandarin, there is no agreement on whether it belongs to the verb- or satellite-framed pattern. Even though Mandarin is classified by Talmy (1991, 2000) as a satellite-framed language, this classification is questioned by many linguists. Tai (2003), Wang (1995), and Yong (1997) are some of them.

According to Tai (2003), the example of motion event in (59) is analyzed parallel to the resultative construction consisting of the action-result semantic relation. The 'result' is treated as the center of predication and can be used independently as a verb, while the 'action' cannot. Translating the 'action-result' relation to motion event will obtain a 'manner-path' relation. This is shown in (60), from Tai (2003: 309-310). The contrast of the pair in (60b) and (60c) shows that the center of predication is the Path and not the Manner component, which cannot constitute the main verb alone in the example in (60c). As a result, Tai (2003) treats Mandarin as a verb-framed language because the Path component constitutes both the center of predication and the main verb.

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[24] In Slobin's (2004: 249) words, equipollently-framed languages are those in which "path and manner are expressed by equivalent grammatical forms" and include the following three patterns: "Manner verb + Path verb (serial-verb languages), [Manner + Path]$_{verb}$ (bipartite-verb languages), and Manner preverb + Path preverb + verb".

(60) a. John   fei   guo   Yingjili Haixia
         John   fly   pass   English Channel
             FIGURE   MOTION/MANNER   PATH GROUND

      b. John   guo   le   Yingjili Haixia
         John   pass   ASP   English Channel
             FIGURE   MOTION/PATH   GROUND

      c. *John   fei   le   Yingjili Haixia
          John   fly   ASP   English Channel
              FIGURE   MOTION/MANNER   GROUND

Determining the main verb status according to the contrast shown in the examples in (60) and claiming that the semantic Path component is realized as the syntactic main verb is problematic. As shown in Li (2009), regarding the resultative construction, applying this method to other examples will lead to the invalidity of the method because a totally contradictory conclusion will result. The contrast in the examples in (61), (62), and (63), from Li (2009: 37-38), may lead to the conclusion that Mandarin may at the same time have V1, i.e., the Manner component, as the head[25], have double heads, and be headless, respectively.

(61) a. Zhangsan   xi-ganjing-le   yifu.
         Zhangsan   wash-clean-PERF   clothes
         'Zhangsan washed his clothes clean.'

      b. Zhangsan   xi-le   yifu.
         Zhangsan   wash-PERF   clothes
         'Zhangsan washed his clothes.'

      c. *Zhangsan ganjing-le   yifu.
          Zhangsan clean-PERF   clothes
          Intended: 'Zhangsan cleaned the clothes.'

(62) a. yifu   xi-ganjing-le.
         clothes   wash-clean-PERF
         'The clothes were washed clean.'

<hr>

[25] Another left-headed proposal can be found in Basciano (2010).

b. yifu　　　　xi-le.

　　　clothes　　　wash-PERF

　　　'The clothes were washed.'

　　c. yifu　　　　ganjing-le.

　　　clothes　　　clean-PERF

　　　'The clothes became clean.'

(63)　a. Zhangsan　kan-dun-le　　　　dao.

　　　Zhangsan　cut-blunt-PERF　　knife

　　　'Zhangsan cut something with the knife and as a result it became blunt.'

　　b. *Zhangsan　kan-le　　　dao.

　　　　Zhangsan　cut-PERF　　knife

　　　Intended: 'Zhangsan cut (something) with the knife.'

　　c. *Zhangsan　dun-le　　　dao.

　　　　Zhangsan　blunt-PERF　　knife

　　　Intended: 'Zhagnsan made the knife blunt.'

As a result, the elimination of the components as a criterion to decide the head of the union Manner-Path in Mandarin is questionable. The argument of Tai (2003) to rule out Mandarin as a satellite-framed language, based on the elimination of the component, is not well-founded and cannot therefore be an argument against Mandarin as a satellite-framed language.

Besides being reclassified as a verb-framed language, Mandarin has been claimed to belong to a third type, an equipollently-framed type, in Slobin (2004), Chen (2005), and Chen and Guo (2009), based on analyses of motion events at the level of discourse. As we have seen in the previous section, proposing a third type is not a feasible way to solve the problem. If we differentiate sentence level from discourse level, it is still possible to determine the lexicalization pattern of Mandarin at sentence level, leaving aside possible factors that might lead Mandarin to behave in different ways from the typical realization according to the lexicalization pattern.

In my analysis, the semantic concept 'center of predication' need not coincide with the syntactic verb status. I agree with Tai (2003) that in motion events, the Path component is the center of predication because it constitutes the core schema. However,

this does not mean that it need be instantiated as the main verb. If it were, there would be no distinction between verb-framed and satellite-framed languages, since Path always constitutes the center of predication and satellite-framed languages would therefore not exist at all. In the approach adopted in this dissertation, the center of predication, represented by *framing event*, has the structure in (64). The Path component can either stay in the projection of *x2* or be incorporated into the head *x1*. The former projection will result in the satellite-framed pattern after the process of conflation takes place, while the latter instantiation leads to the verb-framed pattern after the process of incorporation takes place.

(64)
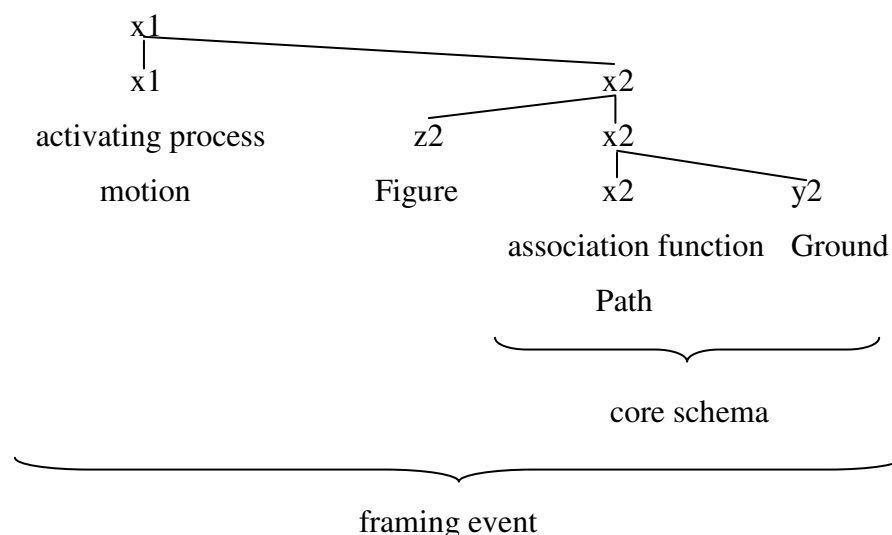
In the next subsection, Mandarin will be argued to be a satellite-framed language.

2.4.2 Mandarin as a Satellite-framed Language

Besides Talmy (1991, 2000), proponents of Mandarin as a satellite-framed language include Lamarre (2005), Peyraube (2006), Shi (2002), Xu (2008), and Zhou (2007). These authors, Talmy (1991, 2000) included, not only advocate the satellite-framed pattern of Mandarin, but also uniformly claim that Mandarin experienced a typological shift from the verb-framed pattern to the satellite-framed pattern [26].

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[26] Lamarre (2005: 16): "Chinese underwent a typological shift from a V-language (verb-framed language) to an S-language (satellite-framed language)".

Diachronic supports for Mandarin now as a satellite-framed language can be obtained from the studies of these authors. In this subsection, I will concentrate on two studies, namely Lamarre (2005) and Talmy's interview in Ibarretxe-Antuñano (2005), for the diachronic supports from current data for Mandarin.

Lamarre (2005) offers evidence to argue for the satellite-frame pattern of Mandarin from phonetic, morphological, and cross-linguistic perspectives. The first is phonetic evidence. The core schema in motion events is the Path component, making this, and not the Manner component, indispensable. In Mandarin, when only the Path component is present, it is instantiated as the main verb, as in (65a). When both are present, both components will form a compound or a serial verb construction, as in (65b).

(65)   a. Zhangsan **jìn**-le   fangjian.

         Zhangsan enter-LE room

         'Zhangsan entered the room.'

    b. Zhangsan pao-**jin**-le   fangjian.

         Zhangsan run-enter-LE   room

         'Zhangsan ran into the room.'

Lamarre (2005) observes that the tonal feature is maintained when the Path component is instantiated by the main verb. When it is encoded by the so-called co-event verb, *jin* 'enter' in (65b), the tonal feature will be lost. The phonetic reduction of the tonal contrast may be treated as an indication of the grammaticalization in Mandarin.

Morphologically speaking, path satellites constitute a "closed-class category" and their formation with manner verbs is restricted (Lamarre, 2005: 8). Only eight non-deictic path satellites and two deictic path satellites are included; in order to form a

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Peyraube (2006: 121): "Chinese has undergone, some ten centuries ago, a typological shift from a verb-framed language to a satellite-framed language". "These directional complements, after having undergone a process of grammaticalization, are functional words".

Shi (2002: 181): "The lexicalization of VR (Verb + Resultative) phrases has changed the typology of Chinese in a certain sense… Modern Chinese belongs to Type… like English, but Old Chinese belonged to Type… like Romance and Japanese. This typological transition was caused by the emergence of the resultative construction".

Talmy (2000: 118): "Chinese appears to have undergone a typological shift in direction just the reverse of that exhibited by the Romance languages: from a Path conflation pattern (verb-framed pattern) to a Co-event-conflation pattern (satellite-framed pattern)".

Xu (2008: 175): "Chinese changed typologically from a verb-framed language to a satellite-framed language".

compound or a serial verb construction, the non-deictic path satellite precedes the deictic path satellite, while the union of both follows the main verb. These facts point to the high degree of grammaticalization of these path satellites.

In the series of studies by Slobin and Talmy, it has been pointed out that verb- and satellite-framed languages show different patterns regarding manner information. In verb-framed languages, manner information is usually absent. When it appears, this information will be foregrounded. In satellite-framed languages, the presence of the manner information does not call for foreground attention. The translation of an example from a satellite-framed language to a verb-framed language usually leaves implicit manner information, while in the translation from a verb-framed language to a satellite-framed language, manner information is usually added. If Mandarin is a verb-framed language, the limited use of manner information will be observed. However, this is not the case. By comparing the translation from Mandarin to Japanese, a verb-framed language, and that from Japanese to Mandarin, Lamarre (2005) shows that Mandarin behaves more like a satellite-framed language in that even though no useful information is conveyed, manner information is added in the translation from Japanese to Mandarin. Moreover, the frequent use of dummy verbs in Mandarin, as *nong* 'to do' and *gao* 'to do', in place of Manner components also suggests that these dummy verbs serve as the placeholder of the main verb slot. The other related support comes from the set of verbs that semantically encode path information. This set of verbs includes *diao* 'to fall down', *sheng* 'to rise (in the air)', *fu* 'float, emerge', and *chen* 'sink', etc. Even though path information is semantically encoded in these verbs, when they are used with deictic elements, the employment of the non-deictic element is also necessary, which seems redundant. The examples in (66) are offered by this author.

(66)　a. diao-xia-lai　　　　　　　*diao-lai
　　　　　fall.down-descend-come
　　　　　'to fall down'
　　　b. sheng-shang-qu　　　　　*sheng-qu
　　　　　rise-ascend-go
　　　　　'to rise up'
　　　c. chen-xia-qu　　　　　　　*chen-qu
　　　　　sink-descend-go
　　　　　'to sink down'

d. fu-shang-lai　　　　　　　　　*fu-lai

　　emerge-ascend-come

　　'to emerge'

The obligatory presence of these non-deictic elements suggests that what counts here is not the verbal meaning of these elements but the satellite function that specifies path information. That is, instead of being lexical verbs, these non-deictic elements are more like elements whose existence serves the grammatical function of satellites.

　　　　The empirical evidence offered by Lamarre (2005) is quite convincing and I will take it as evidence that Mandarin is a satellite-framed language in this dissertation. In addition to these empirical examples, we may find theoretical factors in Ibarretxe-Antuñano (2005). In this interview, Talmy deals with some troublesome languages that are usually classified by Slobin (2004) as equipollently-framed languages. This author proposes a series of factors, in (67), and claims that the main verb status can be determined by the interaction of these factors. In Talmy's words, "[t]he more factors that converge on a particular constituent type in a language, the more that that constituent type is being privileged with main verb status" (Ibarretxe-Antuñano, 2005: 330).

(67)　　*Factors that tend to mark a particular constituent type as the main verb (root)*

　　　　Of two constituent types in a language that can be considered for having main verb status, one of them ranks higher for that status.

　　　　(a)　　　　morphology

　　　　if it can take inflections or clitics for such semantic categories as tense, aspect, mood, evidentiality, negation, causation, voice, transitivity, or the person, number, and gender of the subject (and object).

　　　　(b)　　　　syntax

　　　　if, as head, it directly or nestedly forms constructions with such other sentence constituents as: adverbs; particles for place, time, aspect, quantity (e.g., floats), negation, etc.; or a subject or object nominal.

　　　　(c)　　　　co-occurrence patterns

　　　　if its presence is required across a range of construction types, while the other constituent type need not or can not be present in some of those construction types.

(d) class size

if it has more morpheme members or is open-class while the other constituent has fewer morpheme members or is closed-class.

(e) phonology

(e1) if its morpheme members have a greater average phonological length.

(e2) if its morpheme members vary over a greater range of phonological length or pattern.

(e3) if its morpheme members include phonemes ranging over a greater portion of the phonemic inventory of the language.

(f) semantics

(f1) if the meanings of its member morphemes tend to have more substantive content greater specificity, and a greater number of more varied conceptual components associated together in more intricate relationships, while those of the other constituent type tend to have less of these.

(f2) if the meanings of its member morphemes range over a greater variety of concepts and types of concepts and trail off into more outlying conceptual areas, while those of the other constituent type tend to fit a more stereotyped semantic category.

(f3) if it is experienced by speakers of the language as contributing the criterial component of *actuation* to the proposition that is otherwise represented by the sentence.

When these factors are applied to Mandarin motion events, the Manner component has the higher ranking status because more factors converge on Manner. The factors include those in (67b), (67c), (67d), and (67f1). As for (67b), syntactically, adverbs modify Manner rather than Path in the examples in (68). As for the co-occurrence patterns of (67c), a manner verb can be present alone to express activity meaning without the presence of a path expression. Where the contrast of open-class and closed-class of (67d) is concerned, it is obvious that manner components consist of an open-class with abundant verbs of this type, while path components have a very limited list, which is also observed in Lamarre (2005) and Peyraube (2006). Regarding the semantic properties in (67f), it is clear that Manner components have more substantive content and range over a greater variety of concepts than Path components.

(68) a. Zhangsan   manmande   pao-jin   fanjian.
          Zhangsan   slowly   run-into   room
          'Zhangsan ran into the room slowly.'

      b. Zhangsan   henshao   pao-jin   fanjian.
          Zhangsan   seldom   run-into   room
          'Zhangsan seldom runs into the room.'

As well as the interaction of these factors to decide main verb status, another important feature pointed out by Talmy is that "two syntactically distinguishable constituent types may share some but not all of their morpheme members". Talmy distinguishes prepositions from satellites. While prepositions form a unit with a nominal, satellites are the sister of the main verb. Despite this syntactic distinction, they may coincide in their morphological forms. The examples offered are those in (69). *In* in (69a) is a preposition but it is treated as a satellite in (69b). "The two constituent types… can be judged to be neither identical nor unrelated, but rather partially overlapping and hence moderately distinct" (Ibarretxe-Antuñano, 2005: 338).

(69)   a. She is *in* the room.
       b. She hurried *in*.

The type of analysis of the two overlapping constituents can be applied to the analysis of Mandarin path verbs and path satellites. This leads to the conclusion that the same form that expresses the Path component, *guo* 'to cross' in the pair of examples in (70), from Ibarretxe-Antuñano (2005: 339), actually deals with two different syntactic elements that overlap morphologically. As a result, it is safe to attribute the main verb status to the Path element in (70a) and the satellite status to the Path component in (70b). The morphological overlapping does not impede the same Path component from being realized by two different syntactic categories.

(70)   a. ta   guo   le   gongyuan.
          he/she   pass   PERF   park
          'He/she passed/crossed[27] the park.'
       b. ta   zou   guo   le   gongyuan.
          he/she   walk   pass   PERF   park
          'He/she past/across the park.'

To briefly summarize this section: in section 2.2, Mandarin is analyzed as a satellite-framed language and motion events in Mandarin are analyzed as of satellite-

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[27] For Talmy, the *crossing* reading does not exist. However, as a native speaker, this reading is not excluded for me.

framed encoding. In this section, supports are presented for such a claim. The objections to this claim are refuted and evidence is offered. In a motion event which accommodates both Manner and Path, supports for claiming the Path component as a satellite come from both empirical and theoretical evidence. Empirically, examples drawn from diachronic data show that Mandarin has experienced the typological shift from a verb-framed language to a satellite-framed language. Synchronic evidence can be found in the study by Lamarre (2005), which provides evidence in support of the satellite status of Path components. Apart from the empirical evidence, Talmy offers two theoretical points for deciding the main verb status of the constituents that form motion events: first, that the interaction of several factors may determine the higher rank of a constituent to be the main verb or the main verb root; second, that the path satellites and the path verbs may simply overlap morphologically and be related semantically, while being syntactically independent.

The next section will be dedicated to the issue of cross-linguistic variation.

2.5 Possible Explanations to Cross-linguistic Variation

Cross-linguistic variation will be discussed from two perspectives: the macro-parametric and the micro-parametric. Son (2007, 2009) and Son and Svenonius (2008) abandon analyzing directed motion events from the macro-parametric perspective and embrace micro-parametric analysis. However, approaches from both perspectives have some advantages over the other, and it is not impossible to reconcile them in order to account for cross-linguistic variation.

2.5.1 Macro-parametric Approaches

According to macro-parametric approaches, there is a correlation between the different behaviors of motion events and the availability of resultative constructions. Let us compare the examples in (71) from English and Spanish, representatives of satellite-framed languages and verb-framed languages. While English permits the presence of a prepositional phrase with an unergative verb to express the semantic goal interpretation, as in the example in (71a'), this is not possible in Spanish, as the ungrammaticality of

the example in (71c') indicates. This pattern of (dis)allowance of goal-encoding prepositional phrases in motion events also shows in resultative constructions with adjectival phrases. For example, there is no problem in adding an adjective *flat* after the object *the metal* in the example in (71b) as the secondary predication, resulting in the example in (71b'); this relation of secondary predication cannot be established in the example in Spanish in (71d') by simply adding an adjective that denotes the semantic result interpretation. These examples are adopted and modified from Son (2007).

(71)   a. The bottle floated.

        a'. The bottle floated into the cave.

        b. John beat the metal.

        b.' John beat the metal flat.

        c. Juan gateó.

          Juan crawled

          'Juan crawled.'

        c'. *Juan gateó   a la tienda.

          Juan crawled   to the store

          Intended: 'Juan crawled to the store.'

        d. Juan golpeó la carne.

          Juan pounded the meat

          'Juan pounded the meat.'

        d'. *Juan golpeó   la carne plana.

          Juan pounded   the meat flat

          Intended: 'Juan pounded the meat flat.'

Since Mandarin is analyzed as a satellite-framed language, forming motion events and resultative constructions by, superficially speaking, combining a path expression (in motion events) and a result expression (in resultative constructions) with a manner expression should be predictable. This is indeed the case as the examples in (72) show. This correlation can be treated as another support for the claim that Mandarin belongs to the group of satellite-framed languages.

(72)   a. Zhangsan pao-le.

       Zhangsan run-LE

       'Zhangsan ran.'

    a'. Zhangsan pao-jin-le   fangjian.

       Zhangsan run-enter-LE   room

       'Zhangsan ran into the room.'

    b. Zhangsan qiao-le   guanzi.

       Zhangsan pound-LE   can

       'Zhangsan pounded the can.'

    b'. Zhangsan qiao-bian-le   guanzi.

       Zhangsan pound-flat-LE   can

       'Zhangsan pounded the can flat.'

The correlation between the availability of motion events and resultative constructions in these languages leads to proposals of a common parameter/principle or a collection of common parameters/principles that contributes to it; see, for example, Snyder (1995, 2001, 2005a, 2005b, 2012) and Mateu (2002).

Snyder (1995, 2001, 2005a, 2005b, 2012) attempts to unify accounts of the fact that these constructions are available in satellite-framed languages, but not in verb-framed languages, under the parameter known as the (N-N) Compounding Parameter. When a language has the positive value of the Compounding Parameter, it has productive root compounding of the following type, for example, *frog man* 'man of the kind associated with frogs' (from Snyder, 2005b) or *banana box* 'box in which bananas are stored' (from Snyder, 2005a). This language would also permit both resultative constructions and directed motion events converted from activities. Those languages that have the negative setting of the Compounding Parameter—not allowing productive root compounding such as *frog man* or *banana box*—also do not allow these two constructions. The correlation of the availability of N-N compounds and the availability of these two constructions is illustrated by the languages in (73), from Snyder (2005a: 1). The availability of separable particles in certain languages in (73) is equivalent to the availability of motion events in these languages.

(73) | Language | Separable particles? | Transitive resultatives? | Novel N-N compounds? |
| --- | --- | --- | --- |
| Estonian | Yes | Yes | Yes |
| Dutch | Yes | Yes | Yes |
| Mandarin | Yes | Yes | Yes |
| Thai | Yes | Yes | Yes |
| Japanese | No | Yes | Yes |
| Basque | No | No | Yes[28] |
| Egyptian Arabic | No | No | No |
| Javanese | No | No | No |
| Spanish | No | No | No |

In these languages, Japanese and Basque are two exceptions in that the availability of novel N-N compounds, transitive resultatives, and separable particles is not predictable. Mateu (2008) also points out that the prediction that relates the formation of complex predicates, such as resultatives or motion events, to the existence of the Compounding Parameter is borne out in some languages like English and Catalan but not in other languages such as Russian and Basque. For example, Russian does have resultative constructions[29] but lacks productive N-N compounding; conversely, Basque has productive N-N compounding but lacks resultative constructions. For the proposal of Compounding Parameter to be valid, one possibility is to claim that language-specific factors may influence the formation of these constructions. This is exactly the way that Snyder (2005a, 2005b) follows by attributing the lack of the examples with separable particles to the characteristics of the adposition system of Basque, which has a very limited inventory of adpositions.

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[28] In his early studies, Snyder (1995, 2001, 2005a) classifies Basque as a language that permits novel N-N compounding. However, Snyder (2012) considers that Basque was misclassified and that "Basque should not be regarded as allowing bare-root endocentric compounding of the English type".

[29] But Russian lacks adjectival resultatives.

Mateu (2002) offers an alternative analysis to the correlation between the formation of directed motion events and that of resultative constructions. In terms of this dissertation, the availability of these constructions is related to the availability of the process of conflation. The availability of the process of conflation is in turn conditioned by the availability of the process of incorporation of the core schema. This correlation is reflected by Talmy's (1985, 1991, 2000) lexicalization patterns, which can be expressed as follows: on the one hand, verb-framed languages permit the incorporation of the core schema into the head of the unaccusative structure, thereby blocking the process of conflation of an unergative structure; and on the other, as the incorporation of the core schema into the head of the unaccusative structure is not a priority in satellite-framed languages, this unsaturated head can be filled by the conflation of an unergative structure. Both patterns are illustrated by the structures in (74).

(74)   a. *Verb-Framed Pattern*
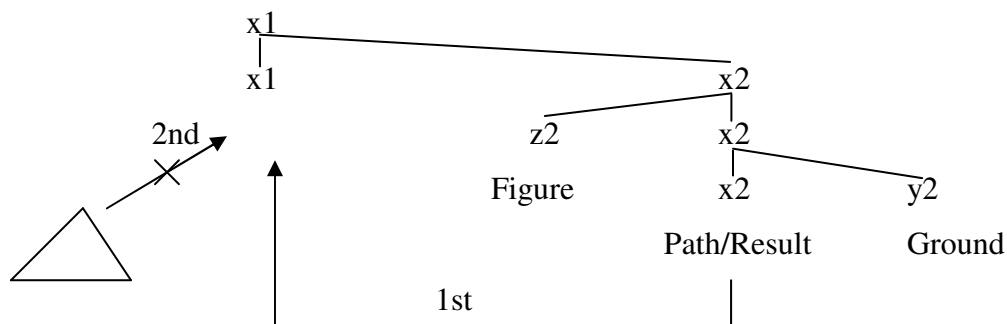
b. *Satellite-Framed Pattern*
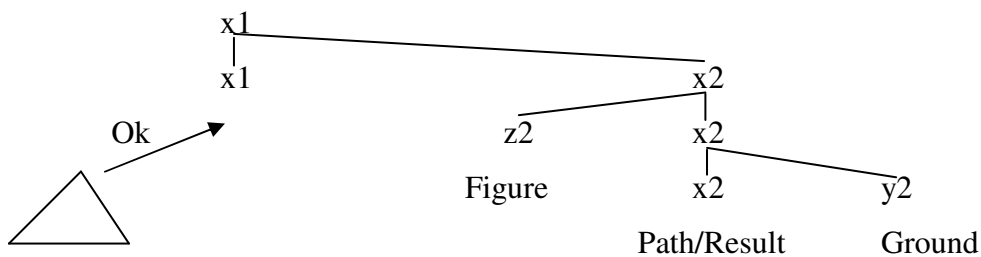
The structure in (74a) shows that the first incorporation of the Path component prevents the conflation of the unergative structure[30]. This incompatibility of the incorporation and conflation processes can be illustrated by the examples in Spanish in (75). In these examples, the main verb slot is occupied by a core schema and the manner expression cannot conflate. If the manner expressions are to be present, they appear as adjunct. English, a satellite-framed language, also has access to such a pattern of encoding, as shown by the examples in (76). The examples in (77) illustrate the free conflation of an unergative structure to the main verb slot because it is available as it has not been saturated. In these structures, the core schema is shown in boldface and the conflation of the co-event in italics.

(75) a. Juan entró   en la habitación   (bailando).
         Juan entered   in the room   dancing
         'Juan entered the room (by dancing).'
         [[**entrar$_i$** + Ø] [Juan t$_i$ en la habitación]]

      b. Juan aplanó   la caja   (golpeándola).
         Juan flattened   the box   hammering.it
         'Juan flattened the box (hammering it).'
         [Juan… [[**aplanar$_i$** + Ø] [la caja t$_i$]]]

(76) a. John entered the room.
         [[**enter$_i$** + Ø] [John t$_i$ the room]]

      b. John flattened the box.
         [John… [[**flatten$_i$** + Ø] [the box t$_i$]]]

(77) a. John ran into the room.
         [[*run* + Ø] [John **into** the box]]

      b. John hammered the box flat.
         [John… [[*hammer* + Ø] [metal **flat**]]]

In other words, the cross-linguistic difference with respect to the typology of lexicalization patterns is conditioned by the (un)availability of the process of conflation, which is conditioned by the process of incorporation.

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[30] See Zhou (2007: 198) for a similar proposal.

Both these proposals, the Compounding Parameter of Snyder (1995, 2001, 2005a, 2005b) and the availability of the process of conflation of Mateu (2002), are applicable to Mandarin. Applying either proposal to the analysis of examples of these two constructions in Mandarin would give the desired result, and their predicative power would be proved, at least for Mandarin. Firstly, Mandarin does have N-N compounds such as *wa-ren* 'frog-man' and *xiangjiao-he* 'banana-box', and both aforementioned constructions are available. Secondly, as we have seen in section 2.2, the formation of motion events in Mandarin involves the conflation of the unergative structure, as the structure in (78) indicates; unlike the structure in (74b), motion events in Mandarin involve the process of adjoining the core schema to the resultant union of the unergative structure and the conflated head, owing to the affixal nature of such core schema. As will be seen in chapter four, the same formation is also involved for the resultative construction.

(78)
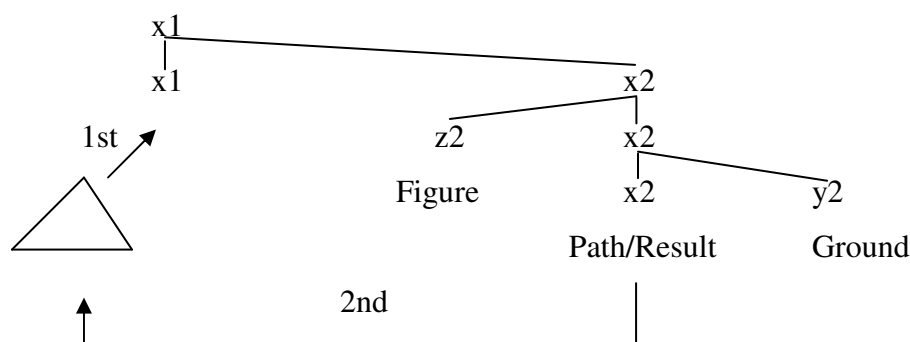
Despite the validity of these two proposals, the conflation proposal has advantages over the compounding proposal. If the process of conflation of an unergative structure with an unpronounced semantically full head is comparable to the compounding process, only the conflation proposal can explain what prevents such a process—i.e., the conflation process and the compounding process—from happening in verb-framed languages. In other words, in the proposal of conflation analysis, it is the process of incorporation that prevents conflation from happening in verb-framed languages; it is, however, unclear why the Compounding Parameter is available only in satellite-framed languages but not in verb-framed languages in the compounding analysis. An attempt to unify these two proposals can be found in Mateu (2010b, 2012),

in which the availability of the process of conflation may be connected to Snyder's Compounding Parameter.

In the next subsection, I will deal with several micro-parametric approaches.

2.5.2 Micro-parametric Approaches

While macro-parametric approaches treat prepositional phrases in motion events in the same way as adjectival phrases in resultative constructions, Aske (1989) and Slobin and Hoiting (1994) point out that not all prepositional phrases behave the same. For example, even though the example in (79a) is ungrammatical for the directional motion interpretation, the change of the preposition, as in the example in (79b), will make the example grammatical. These authors propose the Boundary-Crossing Constraint, which governs the acceptability of the combination of a prepositional phrase with an unergative predicate to form a directional motion event.

(79) a. Juan bailó   en la habitación.

       Juan danced   in the room

       'Juan danced in the room.'   (Locative reading available)

       'Juan dance into the room.'   (Directional reading unavailable)

    b. Juan bailó   hasta la habitación.

       Juan danced   until the room

       'Juan danced until the room.'   (Directional reading available)

The dissimilar nature of different prepositions calls into question the macro-parametric approaches to the formation of motion events and the resultative construction. In addition to the argument that not all prepositions are to be treated in the same way is the argument that the formation of motion events should not be treated in the unitary way as the formation of the resultative construction. Son (2007, 2009) and Son and Svenonius (2008) show the discrepancy between both types of constructions by offering examples of languages such as Czech, Hebrew, Indonesian, Japanese, and Korean, etc. For instance, according to this author, Korean and Japanese lack goal preposition phrases that are compatible with unergative predicates to form direction motion events, but adjectival resultatives, however, are allowed. On the contrary, in

Hebrew and Indonesian, goal prepositional phrases are able to form directed motion events, while adjectival phrases cannot form the resultative construction. Finally, Czech does not have resultative constructions with adjectival resultatives, but has telic path prepositions which can form directed motion events. The existence of different behaviors between directed motion events and adjectival resultative constructions suggests that these two constructions may not be associated, contrary to the claim of macro-parametric approaches.

Son (2007, 2009) and Son and Svenonius (2008) claim that constructions of directed motion events and adjectival resultative constructions should be dissociated from each other. As for the cross-linguistic variation in directed motion events, it is connected with the internal structure of the adpositions. Together with Svenonius (2010), these authors adopt the approach of decomposition to prepositional phrases, according to which "a prepositional or postpositional head is further decomposed into Path and Place with Place being embedded under Path", as illustrated in (80), from Son (2007: 150).

(80)

PathP
Path   PlaceP
     Place   DP
                  …
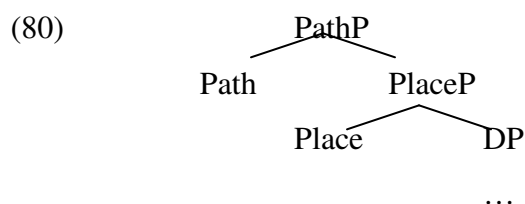
Concerning why some languages such as Spanish allow atelic path expressions, but lack telic path expressions, to form directed motion events, these authors attribute it to the lack of Path projection in these telic path expressions; that is to say, these path expressions actually have a locative function. For example, even though the preposition *a* in Spanish is usually translated as *to* in English, as the example in (81a) shows, Son (2007, 2009) argues that it is not a directional but a locative preposition, following Fábregas (2007). The locative use of the preposition *a* can be shown in the examples in (82b) and (82c), although it cannot be used as a locative preposition alone, as the example in (82a) shows. The apparent directional interpretation of the preposition in (81a) is due to the inherent directional feature of the verb. The preposition *a* can appear in directed motion events only with types of verbs like "inherently directional verbs", such as *go* or *come*, and "punctual transition verbs" like *fall*, etc, in terms of this author,

because the directionality originates from the inherent lexical semantics of these verbs and not from the preposition.

(81) a. Juan fue   a Barcelona.
         Juan went   to Barcelona
         'Juan went to Barcelona.'

      b. *Juan corrió   a Barcelona[31].
         Juan ran   to Barcelona
         Intended: 'Juan ran to Barcelona.'

(82) a. *Juan está a   la casa.
         Juan be   LOC   the house
         'Juan is at home.'

      b. El ratón   está   al   lado   del   libro.
         the mouse   is   LOC.the   side   of.the book
         'The mouse is beside (next to) the book.'

      c. Juan está   al   fondo de la habitación.
         Juan is   LOC.the   end   of the room
         'Juan is at the end (or bottom) of the room.'

<p style="text-align:right">(From Son, 2007: 152)</p>

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[31] This example is acceptable for some speakers, which may have something to do with the world knowledge that the activity of running is usually associated with a certain kind of displacement. Such divergent criteria with regard to this example disappear when the verb *corrió* 'ran' is substituted for *bailó* 'danced', for example. The association between the activity of dancing and displacement is not as strong as between the activity of running and displacement. This phenomenon is compatible with the (un)availability of the directional interpretation of the example in (i).

(i)   a. John ran in the room.   (locative reading, directional reading)
       b. John danced in the room.   (locative reading, *directional reading)

However, for those who accept the example in (81b), this example only has a directional but not a locative reading. To obtain the locative reading, the employment of the preposition *en* 'in' is necessary, shown in the example in (ii), from den Dikken (2010: 45).

(ii)   Maria corrió   en la casa.
       Maria ran   in the house
       'Maria ran in(*to) the house.' (locative, *directional)

Curiously, the proposal according to which it is the inherent directional feature of the verb that makes the example in (81b) acceptable for some speakers should be equally valid for the interpretation of the example in (ii). However, this is not the case; only the locative interpretation is available for the example in (ii).

In other words, for the micro-parametric analysis of Son (2007, 2009) and Son and Svenonius (2008), not only directed motion events are not to be associated with resultative constructions, but finer-grained subclasses could also be found. Behind these different classes or subclasses are independent factors, e.g., the internal structure of prepositional phrases.

As we have seen in section 2.2, the claim that Mandarin is satellite-framed, like English, is maintained, and the syntactic difference shown in both languages is related to the affixal nature of the Path component in Mandarin. This fact may suggest that the micro-parametric analysis—i.e., path expressions in Mandarin have their own affixal properties— is not necessarily incompatible with the macro-parametric perspective—i.e., to maintain the satellite-framed pattern of Mandarin. In the next subsection, I will discuss how conciliation is possible under the lexical-syntactic account.

2.5.3 Conciliation

Apart from Son (2007, 2009) and Son and Svenonius (2008), other authors, such as Folli and Ramchand (2005), Beavers (2008), Gehrke (2008), Mateu (2008), and Croft et al. (2010), have also observed that languages of a lexicalization pattern may have examples or usages of the other pattern. The existence of apparent counterexamples does not necessarily suppose the abandonment of the macro-parametric analysis, even though embracing the micro-parametric analysis may be an alternative explanation. Sometimes, these counterexamples can be proved to be apparent but not true.

For the proponents of micro-parametric approaches, macro-parametric approaches fail because some languages have access to either resultative constructions or constructions of directed motion events, but not both. The macro-parametric method should therefore be abandoned and replaced by other mechanisms. This is precisely what Son (2007, 2009) and Son and Svenonius (2008) propose by looking into the internal structure of prepositional phrases. According to these authors, the disparate nature of the preposition system may lead to differences regarding the availability of the construction of directed motion events. However, the necessity of proposing a new mechanism to account for the intra-linguistic/cross-linguistic difference need not invalidate analyses from the macro-parametric perspective. See also Acedo Matellán

(2010), according to which the adoption of the decomposition of prepositional phrases, seen in (80), does not necessarily mean the abandonment of the macro-parametric view.

In this dissertation, I propose the macro-parametric method to explain both directed motion events and resultative constructions. I claim that they share the same argument structure in the lexical-syntactic framework. The macro-parameter established for analyzing directed motion events is the process of conflation (of Manner), conditioned by the process of incorporation (of Path)[32]. The availability of the process of conflation leads to the availability of satellite-framed encoding. However, the availability of the process of conflation does not mean its obligatory application. Therefore, the satellite-framed encoding is not obligatory. According to this assumption, what we expect is a system in which motion events may have a different way of encoding from resultative constructions. This discrepancy can even be observed in the same motion event or the same resultative construction, which has already been proved empirically.

The existence of this macro-parameter does not rule out the existence of other language-specific principles or mechanisms that contribute to different ways of encoding, because the proposed universal macro-parameter and the language-specific mechanisms may be situated at different levels. The analysis presented until now deals with the macro-parametric perspective: while satellite-framed languages may involve the process of conflation, i.e., the merging of an unergative structure, this process is not allowed in verb-framed languages, in which the process of incorporation is required. I argue that this parametric view is universal. As for other mechanisms that regulate the formation of the resultative construction and the construction of directed motion events, they pertain to the language-specific level and can, for example, prevent the process of incorporation or the process of conflation from happening. Affixal nature is one of these language-specific factors and is observed, in addition to in Mandarin here, in Slavic

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[32] The incompatibility of the Manner component and the Path component in a single host is also indicated by den Dikken (2010: 31), who claims that "the MANNER component and the incorporating P_{Dir} compete for the single adjunction position to GO that the theory countenances; (17a) and (17b) <my (ia) and (ib): SF>, below, both violate the ban on multiple adjunction to a single host".

(i)   a.*[$_{GO}$ P_{Dir} [$_{GO}$ MANNER [$_{GO}$ GO]]]
        b. *[$_{GO}$ MANNER [$_{GO}$ P_{Dir} [$_{GO}$ GO]]]

languages, i.e., Russian[33], in Germanic languages, i.e., German, or in Latin, as pointed out in Mateu (2001b, 2002) and Acedo Matellán (2010, 2012).

In other words, the languages of the world can still be classified into two groups as shown by Talmy's lexicalization patterns. These two patterns can be illustrated by the structures in (83).

(83)   a. *Verb-Framed Pattern*

$$
\begin{array}{l}
x1 \\
\quad x1 \qquad\qquad\qquad\qquad x2 \\
\qquad\qquad z2 \qquad\qquad x2 \\
\qquad\qquad \text{Figure} \qquad x2 \qquad\qquad y2 \\
\qquad\qquad\qquad\qquad \text{Path/Result} \qquad \text{Ground}
\end{array}
$$

b. *Satellite-Framed Pattern*

$$
\begin{array}{l}
x1 \\
\quad x1 \qquad\qquad\qquad\qquad x2 \\
\qquad\qquad z2 \qquad\qquad x2 \\
\qquad\qquad \text{Figure} \qquad x2 \qquad\qquad y2 \\
\qquad\qquad\qquad\qquad \text{Path/Result} \qquad \text{Ground}
\end{array}
$$
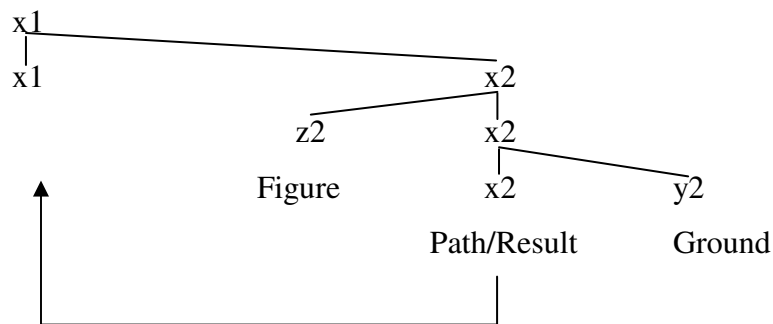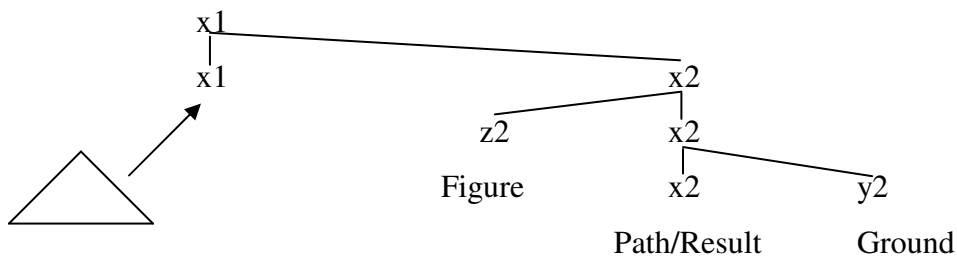
Despite the fact that languages can initially be classified into these two patterns, when language-specific factors are taken into consideration, a language may have access to the encoding of the other pattern. As we have seen through this chapter, one important factor is the characteristics of the core schema. Let us look at examples from Mandarin, Russian, and Spanish of how the different nature of the co-event element affect the basic two-way classification depicted in (83).

Unlike in satellite-framed languages such as English for example, in Mandarin, the core schema adjoins to the conflated element. This is illustrated by the structure in

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[33] The fact that some languages permit complex resultative constructions but do not allow them when an adjectival resultative predicate is involved is also observed in Gehrke (2008), Son and Svenonius (2008), and Svenonius (2004), among others.

(78), repeated in (84). The same analysis is applicable to examples with the separable prefix in German and the verb prefixation in Russian or Latin.

(84)
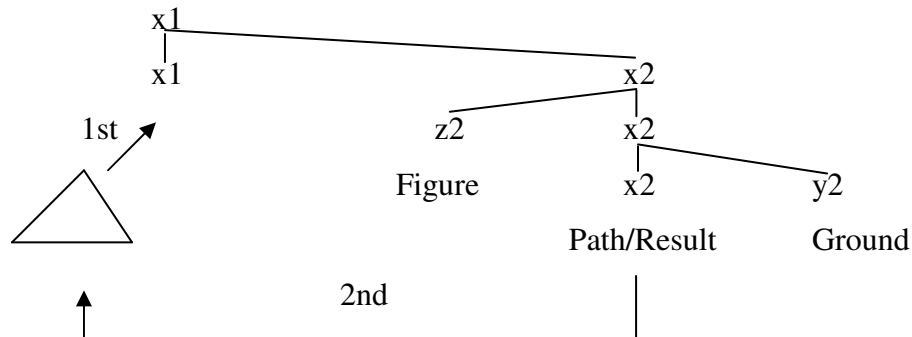
The examples in (85), from Spencer and Zaretskaya (1998: 28), can be adopted for the illustration of the verb prefixation in Russian. It can be observed that the syntactic property of the core schema in these examples in (85) seems to be the combination of the property of the separable particle in English and that of the suffix in Mandarin, the difference being that it is a prefix in Russian.

(85) a. Ona v-bežzla   v magazine.
          she   V-ran   into the shop.ACC
          'She ran into the shop.'
      b. Rebënok   pod-lez   pod stol.
          baby   POD-crawled under table.ACC
          'The baby crawled under the table.'

While further detailed language-specific research is needed, a possible explanation for these double realizations of the same core schema may be a morphological reason. On the one hand, the affixal nature of this element requires it to be adjoined to the conflated element; on the other hand, the original syntactic position of this core schema is required to be phonologically saturated. Since the process of conflation is necessary in order to obtain the examples in (85), these examples can still be claimed to follow the satellite-framed pattern.

Spanish is a verb-framed language but the examples in (86) of this language seem to show the satellite-framed pattern because the path expression is expressed by the prepositional phrase while the main verb encodes the manner expression.

(86)   a. La botella   flotó   hacia   la cueva.

         the bottle   floated   towards   the cave

         'The bottle floated towards the cave.'

     b. Juan   caminó   hasta la cima.

         Juan   walked   until   the top

         'Juan walked up to the top.'

(From Aske, 1989: 3, 7)

To give an account of the examples of this type, Aske (1989) proposes the Boundary-Crossing Constraint: this pattern is allowed as long as the path expression does not involve boundary-crossing. For instance, (86a) is grammatical because the boundary is *la cueva* 'the cave', and *la botella* 'the bottle' only floated towards it, instead of crossing it. In this way, this example would be analyzed as an unaccusative structure: while the bottle is Figure, the cave is Ground, and Path is encoded in the preposition *hacia* 'towards'. Under the analysis proposed here, the explanation would be that the path expression does not incorporate into the main verb and stays in the satellite position. As a consequence, the absence of a phonologically full element in the main verb position permits the conflation of the manner expression. If this analysis were correct, there would be a serious problem for the binary typology established here, because this is the typical satellite-framed pattern, and no distinction could be made between satellite-framed languages like English and verb-framed languages like Spanish. This problem can be solved by Mateu (2012), according to which the examples in (86) are not true directed motion events because the prepositional phrases do not really constitute the core schema that associates Figure with Ground. They are actually adverbial modifiers to the verbal predicates. That is to say, these examples should be analyzed as involving the unergative structure and the prepositional phrases do not constitute part of the argument structure. Therefore, they do not constitute any challenge to the binary typology.

In sum, the lexical-syntactic analysis proposed here should be used in correlation with language-specific factors to account for the cross-linguistic distinction. In this way,

both approaches from the macro-parametric and micro-parametric perspectives contribute to the explanations of the cross-linguistic variation. On the one hand, from the macro-parametric viewpoint, the typology of lexicalization patterns—the verb-framed and satellite-framed pattern—governs the basic encoding pattern of languages. On the other hand, from the micro-parametric point of view, language-specific factors lead to encodings other than the typical one. According to this proposal, both macro-parametric and micro-parametric approaches can be retained.

2.6 Conclusions

In this chapter, I analyze motion events in Mandarin from the lexical-syntactic perspective. In section 2.1, Talmy's typology of lexicalization patterns is reviewed and is adopted into a syntactic configuration, in accordance with the lexical-syntactic analysis. In terms of syntactic configuration, the verb-framed encoding pattern involves the process of incorporation: copying the bundle of features of the complement to its head, while the satellite-framed encoding pattern results from the process of conflation: merging an unergative structure to the phonologically empty head of an unaccusative/causative structure. Because of the existence of language-specific factors, Talmy's (1991, 2000) two-way typology is questioned by some linguists. The revision includes proposals that augment the possible patterns and those that argue for replacing these patterns with available factors. Based on the lexical-syntactic configuration incorporating Talmy's (1991, 2000) insightful lexicalization patterns, I show that maintaining the two-way typology is not problematic despite the existence of counterexamples, some of which are illusory.

In section 2.2, the motion events in Mandarin are classified as two types according to their syntactic structures: one involves the unaccusative structure and the other deals with the causative structure. When Manner is present, the encoding of this component is carried out by the process of conflation. Therefore, Mandarin is shown to be a satellite-framed language. The issue on the relation between serial verb constructions and compounds is then discussed in section 2.3. Because of the lack of consensus on the exact nature of serial verb constructions, studies are presented to show that the distinction between both types of constructions is not really meaningful.

Mandarin is classified by Talmy (1991, 2000) as a satellite-framed language but this classification is questioned. In section 2.4, problems for analyzing Mandarin as a satellite-framed language are presented and are proved not to be problems. Furthermore, the literature contains some diachronic evidence that supports the satellite-framed pattern of Mandarin.

Cross-linguistic variation is presented in section 2.5 and can be accounted for under the analysis proposed here: the distinction between verb-framed languages and satellite-framed languages is based on the availability of the process of incorporation and the process of conflation. These processes are universal mechanisms to which all languages have access. However, access to these processes is not the only factor that determines the syntactic behaviors of motion events. The formation of motion events is more complicated because different language-specific factors are involved. The interaction of universal and language-specific factors enhances the possible ways of encoding motion events in a language.

The analysis proposed here has the following advantages. Firstly, in the literature one characteristic claimed for satellite-framed languages is that more than one path expression is permitted in one clause. However, this is not so in Mandarin. This discrepancy regarding the characteristic behavior between Mandarin and other satellite-framed languages can be explained without needing to abandon the established classification of Mandarin as a satellite-framed language. The proposal of the affixal nature of path expressions in this chapter will provide evidence that Mandarin is a satellite-framed language. Secondly, the analysis in the spirit of the homomorphism between syntax and semantics[34], the basis of this dissertation, allows us to explain the ambiguity of examples like that in (87) with independently motivated mechanisms without having to resort to pragmatic or extra-linguistic factors.

(87)   Zhangsan tui qiu   jin yundongchang.
        Zhangsan push ball   enter sport.ground
        a. 'Zhangsan pushed the ball into the sport ground.'
        b. 'Zhangsan entered the sport ground pushing the ball.'

---

[34] The proposal of the identical mapping relation can be related to Perlmutter and Postal's (1984) Universal Alignment Hypothesis (UAH) and Baker's (1988) Uniformity of Theta Assignment Hypothesis (UTAH).

Thirdly, the analysis proposed here can account for why ambiguity disappears when the object, *qiu* 'ball', is introduced by the disposal particle *ba* in the preverbal position. As we have seen previously, the two interpretations in the example in (87) result from two different syntactic instantiations. Only the structure from which the causative meaning derives may have this element raised to the preverbal position. Since this process is not available for the structure interpreted as a directed motion event, the ambiguity of the example in (87) disappears in the context of the BA-construction.

In the next chapter, I will discuss the particle *le* and show that certain aspects of this particle are related to the issue of argument structure in Mandarin.

Chapter 3: The Aspectual Particle *le*

In this chapter I will deal with the particle *le*. Superficially, the morpheme *le* may occur either immediately after the main predicate, as in (1a), or in the sentence-final position, as in (1b). The aspectual particle *le* refers to the first while the second type is usually termed sentence *le* or sentential *le*. As can be observed from the English translation of these two sentences, it may seem that this morpheme *le* has no interpretational difference, irrespective of site. Partly because of this often subtle difference, there are debates on whether the particle *le* and the sentence *le* are the instantiation of the same morpheme or whether they are two different morphemes. The same morphemic analysis can be found in Li (1989), Rohsenow (1977), and Shi (1988), while Chao (1968), Li and Thompson (1981), Sybesma (1999), and Wu (2005) are among those who argue for the analysis of two different morphemes. Since my aim in this chapter is to study the *le* that appears immediately after verbs, it would be too far removed for me to enter these debates.

(1)   a. Zhangsan   zuotian   qu-le madeli.
           Zhangsan   yesterday   go-LE Madrid
           'Zhangsan went to Madrid yesterday.'
        b. Zhangsan   zuotian   (zhongyu)   qu madeli le.
           Zhangsan   yesterday   (finally)   go Madrid LE
           'Zhangsan (finally) went to Madrid yesterday.'

I will limit myself to the claim that in certain specified contexts only one of them would be suitable. For example, in the context in which the speaker wants to emphasize the fact that the event of Zhangsan's going to Madrid has been carried out, the example in (1a) would be far better than that in (1b). In the other context in which *Zhangsan* had been resisting going to Madrid before (for whatever reasons) and finally went to Madrid yesterday, (1b) would be the adequate choice. The adverbs *zhongyu* 'finally' intensifies this function of the sentence *le*.

The particle *le* is analyzed as an aspectual marker in some studies, such as Chao (1968), Li and Thompson (1981), Smith (1997), Wu (2000), and Yang (2011), among others. In somewhat loose terms, it is usually associated with the perfectiveness, completion, termination, or endpoint of events. By events, in contrast to states, I refer to the dynamic events that have an internal temporal structure, such as initial point, process, and endpoint. Since states do not have an internal temporal structure, the incompatibility of the aspectual particle *le* and states is expected. This can be witnessed in the ungrammatical examples in (2).

(2)   a. *Zhangsan zhidao-le Lisi   qu nali.
          Zhangsan know-LE Lisi go where
          Intended: 'Zhangsan knew where Lisi had gone.'
       b. *Zhangsan xiang-le Lisi.
          Zhangsan miss-LE Lisi
          Intended: 'Zhangsan missed Lisi.'

Since this dissertation deals with argument structure in Mandarin Chinese, the question to answer might be how the aspectual particle *le* and argument structure are related. This and other key questions that should be answered are given in (3). In this chapter I will try to offer the answers to these questions.

(3)   a. What functions does the aspectual particle *le* have?
       b. What is the relation between the aspectual particle *le* and argument structure?
       c. What is the syntactic status of the aspectual particle *le*?
       d. What are the advantages of the lexical-syntactic analysis for explaining *le*?

This chapter progresses in accordance with how the aforementioned questions are answered and is organized in the following way. Firstly, to answer the question (3a), based on the two-tier analysis of aspect in Smith (1997), I claim that the aspectual particle *le* may have one of the following three roles: resultative predicate, inchoative marker, and perfective aspect marker. Secondly, with regard to question (3b), I will show that this particle is related to argument realization via the first two roles it plays, i.e., that of resultative predicate and of inchoative marker. The first question, (3a), will be addressed in sections 3.1 and 3.2. In section 3.3, the aspectual particle *le* is related to

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argument structure, to answer the question (3b). Thirdly, the details of these proposed answers will be put forward in section 3.5 after the data are presented in section 3.4. The analysis in section 3.5 leads to the conclusion that when the aspectual particle *le* is embedded under the VP, depending on the different sites that it occupies, it can be analyzed either as a resultative predicate or an inchoative marker. When it occupies the same position as a resultative predicate in a resultative construction, it plays the role of resultative predicate. When it derives from the head of the unaccusative structure, it is interpreted as an inchoative marker. Moreover, it can also be a functional head of the aspectual projection above VP when it plays the role of perfective marker. These concluding remarks answer the question (3c). In section 3.6, the aspectual particle *le* is treated from the diachronic point of view. The studies of the particle *le* from the diachronic perspective shed light on the suffixal nature of resultative predicates. Finally, in order to answer the question (3d), my lexical-syntactic analysis is compared with that of Sybesma's (1997, 1999) resultative predicate analysis, in section 3.7, and Wu's (2000) functional head analysis, in section 3.8. Section 3.9 concludes this chapter.

3.1 Situation Aspects and Viewpoint Aspects

Smith (1997) argues that the concept of aspect is actually of two different types: the **situation aspect** and the **viewpoint aspect**, and that these aspects interact with each other. In this author's words, "Aspectual viewpoints function like the lens of a camera, making objects visible to the receiver. Situations are the objects on which viewpoint lenses are trained. And just as the camera lens is necessary to make the object available for a picture, so viewpoints are necessary to make visible the situation talked about in a sentence" (Smith, 1997: 61). In what follows in this section, these two types of aspects and their interaction will be discussed.

First of all, let us consider the situation aspect. As Smith (1990: 309) claims that "Aspect is a traditional term for the domain of temporal structure, and the classification of event types is an aspectual one", the classification of event types, also called *aktionsart* in the literature, is an important subject in the studies of the concept of aspect. Since Vender (1957, 1967) and Dowty (1979), events are usually classified as four types: states, activities, achievements, and accomplishments. Besides these four types,

Smith (1991) adds semelfactives as another type. These five types are listed, with examples for each type, in (4), from Dowty (1979: 54) and Smith (1997).

(4)   *The Classification of Event Types*

States	*Activities*	*Accomplishments*	*Achievements*	*Semelfactive*
know	run	paint a picture	recognize	cough
believe	walk	make a chair	find	blink
have	swim	deliver a sermon	lose	tap
desire	push a cart	draw a circle	reach	peck
love	drive a car	recover from illness	die	kick

These five types result from the composition of more basic features. These compositional features may vary according to author, but generally accepted features are stativity/dynamism, durativity, and telicity. One illustration of the decomposition of these event types is found in Smith (1997: 20), in (5). Since the semelfactive type is not relevant to the present study, it will not be included for further discussion[1].

(5)   *Temporal Features of the Situation Types*

Situations	Stative	Durative	Telic
State	[+]	[+]	[–]
Activity	[–]	[+]	[–]
Accomplishment	[–]	[+]	[+]
Semelfactive	[–]	[–]	[–]
Achievement	[–]	[–]	[+]

Of the three features in (5), the most important for the discussion here is telicity. Yang (2011: 387) assumes that "telicity necessarily involves a scalar change (i.e.,

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[1] For the consideration of homogeneity, semelfactives can be classified together with activities as belonging to the same group. For example, as will be seen immediately, if a thirty-minute running event is divided into three parts of ten-minute running sub-events, each part is identical to the whole event. The identical part-whole relation can also be observed in a coughing event. Therefore, it would not be surprising to find both in the unselected object construction, as in (i) and (ii).

(i)   a. The joggers ran the pavement thin.
         b. *The joggers ran the pavement.
(ii)   a. Harry coughed himself into insensibility.
         b. *Harry coughed himself.

(Goldberg and Jackendoff, 2004: 537, 558)

change of state, change of position, or change of volume/extent)". That is to say, while a telic event is temporally bounded, an atelic event is temporally unbounded. For example, on the one hand, activities are temporally unbounded and, therefore, atelic. Since it is unbounded with respect to its temporal structure, each part of the activity event is equivalent to the whole event. Thus, if one is realizing such an event, it can be argued that such an event has been realized. If we take a thirty-minute running event, for instance, and divide it into three ten-minute running sub-events, there is no difference between each of the ten-minute running sub-events and the whole thirty-minute running event. Both the part and the whole can be called *running*. The runner says that he has run after thirty minutes of running. He can say the same even if he only runs for ten minutes. The oft-employed test for atelicity is durative adverbials headed by *for*, as *for thirty minutes* in *He ran for thirty minutes*. On the other hand, accomplishments and achievements are temporally bounded, i.e., telic. They differ in durativity. While achievements are instantaneous, accomplishments are durative. As a consequence, only accomplishments can be divided into sub-events. In contrast to the part-whole homogeneousness of activities, in which a whole event is composed of many sub-events equal to the whole, one sub-event of a whole event of accomplishments is not identical to the whole event. Since an accomplishment event consists of different sub-events, realizing only one part of the whole event cannot be enough to claim total realization. For example, regarding the event of *painting a picture*, a picture cannot be argued to be painted when only one third of it is completed. If a painter needs thirty minutes to paint a picture, after ten minutes of painting, he can only say that he has been painting, but not that he has painted a picture. The completive adverbials, such as *in thirty minutes* in *He painted a picture in thirty minutes*, are used as the test for telicity. Since achievements are telic, the same test also applies.

It is worthwhile noting that the classification of event types should be discussed at sentence level. As can be seen in the aforementioned examples, telicity is studied at sentence level; therefore, not only verbs but also arguments should be taken into consideration. The fact that a direct object may influence the telicity of a predicate has been pointed out by authors such as Dowty (1991) and Tenny (1992), even though this direct object-telicity relation is questioned by Jackendoff (1991, 1996)[2]. The examples in (6) and (7) are cited from Harley (2005). The examples in (6) show that the telicity of

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[2] Readers are referred to Verkuyl (1972) for more references in aspect literature.

these sentences is determined by the boundedness of the direct objects. With a bounded direct object, the sentence is telic, as in (6b); with an unbounded direct object, the sentence is atelic, as in (6c)[3]. The examples in (7) seem to constitute counterexamples to this boundedness determinism, since the telicity of these sentences is not sensitive to the direct objects but to the goal arguments. Although the direct objects in the example (7a) and (7c) are bounded ones, the sentences are atelic.

(6)   a. Sue drank/wrote   for hours/#in five minutes.

           b. Sue drank a pint of beer/wrote a story   #for hours/in five minutes.

           c. Sue drank beer/wrote stories   for hours/#in five minutes.

           d. Sue wrote at a story   for hours/#in five minutes.

(7)   a. Sue pushed the cart   for an hour/#in an hour

           b. Sue pushed the cart to the field   #for an hour/in an hour

           c. Sue kicked the ball   for an hour/#in an hour

           d. Sue kicked the ball to the center   #for an hour/in an hour

So far in this section, the aspects refer to something inherent to the predicates, that is, the situation aspects, which tell us the internal temporal structures of the events. They involve notions such as dynamism, duration, and endpoint. Now, let us turn to the viewpoint aspects. As the name suggests, viewpoint aspects represent the view or perspective via which one may approach certain event types, and they are needed in order for these internal temporal structures to be visible. As Smith (1997) argues, the internal temporal structure of an event will not be visible without viewpoint aspect. There are two ways[4] to approach the internal temporal structure of an event. The first is to view the internal temporal structure of an event as a whole. This function is carried out by the perfective aspect. The second is to focus on the internal stages of the situation. This is achieved by using the imperfective aspect. Both viewpoint aspects may be morphologically covert.

In order to see how situation aspects interact with viewpoint aspects, let us see how the three dynamic types of event, that is, accomplishments, activities, and

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[3] For more studies on boundedness and telicity, readers are referred to Harley (1999, 2002).

[4] Besides perfective and imperfective viewpoints, Smith (1997) also deals with natural viewpoints, which are not relevant here.

achievements, interact with the perfective and imperfective aspects. Firstly, let us take the event of *running to the park* by way of example. This event is an accomplishment regarding its situation aspect. As we have mentioned earlier, accomplishments are events with the most complicated internal temporal structure because they involve both a durative process and a natural endpoint[5]. In the event of *running to the park*, the process component is *running* while the endpoint is *being in the park*. Now, we can illustrate its interaction with the two viewpoint aspects with the schemes in (8) and (9). In these schemes, the process is represented by successive dots and the endpoint is represented by an X.

(8)   *Accomplishment Situation + Perfective Viewpoint*

a. John ran to the park.

b.   Run   to the park

…………………………………………………………...X

Ø (perfective aspect)
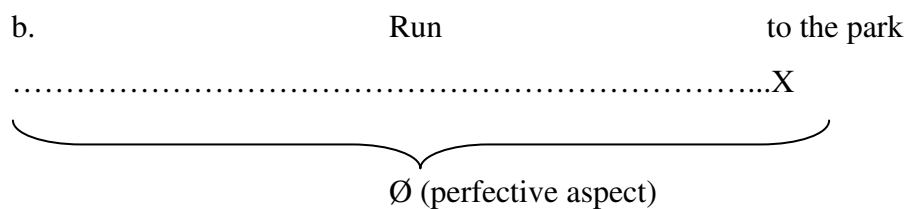
(9)   *Accomplishment Situation + Imperfective Viewpoint*

a. John was running to the park.

b.   Run   to the park

…………………………………………………...X

be …ing (imperfective aspect)
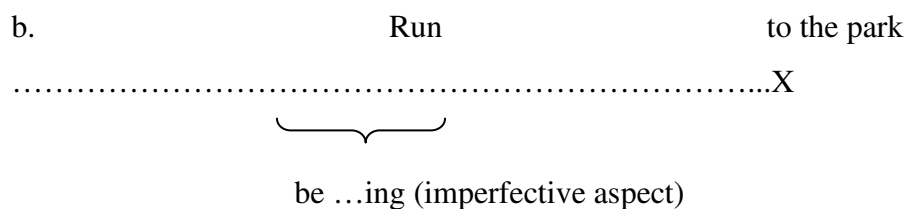
Through the employment of the perfective aspect, covert in English in (8), both the process and the end point are made visible because the perfective aspect leads one to see the event as a whole. In this case, by uttering *John ran to the park*, one knows that the event has completed, i.e., John ended in the park as a result of his running activity. When the imperfective aspect—represented by the progressive form—is applied, only the internal process is viewed. Therefore, the event cannot be argued to be completed,

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[5] In Travis (2010), the element that determines the endpoint of an event is Inner Aspect. See also Depraetere (1995), in which (a)telicity, a label for potential endpoints, is distinguished from (un)boundedness, actual temporal boundaries, and MacDonald (2008), for the syntax of Inner Aspect.

but to be terminated when the context allows. This difference can be observed in the contrast pair in (10).

(10) a. *John ran to the park, but he did not get there.
      b. John was running to the park, but he did not get there.

Secondly, when a situation type lacks an endpoint as in the case of activities, the difference between the perfective and imperfective aspects lies in the emphasis on the entire event as a whole or in the focus on the interval; see (11) and (12). Since there is no natural point, such an event could last forever under ideal circumstances. It would, therefore, never be completed but terminated. We can also see in these schemes that the partial event is identical to the whole event, except for size. This supports the part-whole homogeneous property, i.e., the unboundedness, of activities.

(11) *Activity Situation + Perfective Viewpoint*
      a. John ran in the park.
      b.   Run
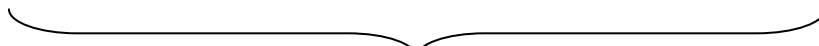
      …………………………………………………………......
      Ø (perfective aspect)

(12) *Activity Situation + Imperfective Viewpoint*
      a. John was running in the park.
      b.   Run

      …………………………………………………………......
      be …ing (imperfective aspect)

Thirdly, the instantaneous situation type, achievements, is theoretically incompatible with the imperfective aspect because it lacks any interval on which the imperfective aspect might focus. Thus, it can only be treated as a whole and is compatible with the perfective aspect alone. This is demonstrated in the examples in (13).

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(13) a. John knew the truth.   (achievement + perfective aspect)

b. *John is knowing the truth.   (achievement + imperfective aspect)

c. John loved Mary.   (achievement + perfective aspect)

d. *John was loving Mary.   (achievement + imperfective aspect)

Theoretically, achievements are not compatible with the imperfective aspect, but empirically it is not impossible to find achievements with the progressive marker, as the examples in (14) show. However, I will claim that it is only illusory that the progressive marker in these examples is a marker of the imperfective aspect. The progressive form here refers to the preliminary stage of achievements, instead of the interval of the events on which the imperfective aspect may focuses. If this is true, the contrast between the examples in (15) and the examples in (16) can be accounted for in the following way. Whenever there is a process, it can be stopped. This fact is illustrated by the examples in (15) for activity and accomplishment events. If the progressive form in (14) were the imperfective aspect, which focuses on one internal part of an event, it would be expected to be compatible with the predicate heading by *stop*. The examples in (16) show that this is not the case, and hence the examples in (14) cannot be counterexamples to the claim that achievements are incompatible with the imperfective aspect.

(14) a. John is dying.

b. John is arriving.

c. John is winning the game.

(15) a. John stopped running.

b. John stopped writing a letter.

(16) a. *John stopped dying.

b. *John stopped arriving.

c. *John stopped winning the game.

To sum up briefly, this section presents the two-tier notion of aspect in Smith (1991, 1997): **situation aspects** and **viewpoint aspects**. The situation aspects represent the inherent properties of predicates. Dynamic events are divided into situation types as activities, achievements, and accomplishments, depending on their different internal temporal structures. The viewpoint aspects include types such as the perfective and

imperfective aspects. The main characteristics of these two viewpoint aspects can be summarized by the words of Smith (1990: 325), "perfective viewpoints focus on the event as a whole, taking an external perspective, whereas imperfective viewpoints focus on part of the event". In the next section, I will focus on these two tiers of aspects in Mandarin.

Before going to the next section, it is worth noting that this notion of two types of aspects is adopted by other authors under different terminologies. To avoid any possible confusion, I list, in (17), the different terms used by Sybesma (1997, 1999) and Wu (2000), whose analyses will later be compared with mine.

(17)   Smith (1991, 1997)   Sybesma (1997, 1999)   Wu (2004)

        Situation aspect   End point   Completive

        Viewpoint aspect   Realization   Perfective

For the convenience and easiness of understanding, I adopt the terminology of Smith (1991, 1997) and will translate that of Sybesma (1997, 1999) and Wu (2000) into that of Smith (1991, 1997).

3.2 Situation Aspects and Viewpoint Aspects in Mandarin

This section deals with the application to Mandarin of situation and viewpoint aspects. I would like to start with the two viewpoint aspects because of consensus on the existence of both the perfective and imperfective aspects. Where situation aspects are concerned, there is uncertainty as to how many primitive types exist. Regarding Mandarin situation aspects, I would claim that accomplishments are to be excluded from the basic primitive situation types[6].

There is less doubt about the existence of both perfective and imperfective aspects. In Smith (1997), two Mandarin perfective aspects and three imperfective aspects are offered. The two perfective aspects are *-le* and *-guo*. The difference between these two perfective aspects is that the viewpoint *-guo* presents discontinuity with the present or another reference time while the viewpoint *-le* focuses on marking the whole

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[6] See also MacDonald (2008).

event as having occurred. Let us consider the examples in (18), from Smith (1997: 266-267) with my translation. The example in (18a) expresses that the event of going to Hong Kong is an event that occurred in the temporal frame of last month. With respect to the relation between this event and the reference time, i.e., the present, the most natural interpretation is that they are still there. As for the example in (18b), if we also take the present as the reference time, the viewpoint *-guo* conveys the discontinuity between the time in which the event takes place and the present. We only have the information of their being in Hong Kong last month. From last month to now, they may still be there; they may not be there now; they may even have left and entered Hong Kong several times. All these speculations are not relevant, since the viewpoint *-guo* only tells us their experience (of being in Hong Kong) at that moment and nothing else.

(18)   a. tamen   shang-ge yue   qu-le   Xiang Gang.
           they   last-CL month   go-LE   Hong Kong
       'They went to Hong Kong last month.'
       b. tamen   shang-ge yue   qu-guo   Xiang Gang.
           they   last-CL month   go-GUO   Hong Kong
       'They went to Hong Kong last month.'

In some languages the presence of viewpoint aspects is obligatory. This is certainly not so in Mandarin, as pointed out by Smith (1997: 263). The example in (19b) shows the syntactic optionality of viewpoint aspects. Since the focus of the utterance is not on the internal temporal structure but on the information of the place, the use of viewpoint aspects is not necessary. This focus is clearly shown in the interrogative sentence in (19a), to which the sentence in (19b) is the answer.

(19)   a. tamen   shang-ge yue   qu   nali?
           they   last-CL month   go   where
       'Where did they go last month?'
       b. tamen   shang-ge yue   qu   Xiang Gang.
           they   last-CL month   go   Hong Kong
       'They went to Hong Kong last month.'

As for imperfective viewpoint aspects, three are posited in Smith (1997): *zai, -zhe*, and a null morpheme (Ø). I will just illustrate the use of *zai* with the examples in (20)[7], also from Smith (1997: 272). In the examples in (20), the imperfective viewpoint aspect *zai* presents an internal interval of a durative process.

(20)   a. tamen   zai   da qiu.

　　　　they   ZAI   play ball

　　　　'They are playing ball.'

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[7] Note that *zai* is treated here as a functional projection above the verbal predicate. That is, the structure involved for the examples in (20) is the unergative structure. However, based on Bolinger's (1971) empirical evidence of analyzing *–ing* of progressive in English as a prepositional phrase with the preposition being deleted, Mateu (2002) analyzes the progressive construction in English as involving a lexical argument structure embedded under the locative unaccusative structure. In other words, the central coincidence relation is involved. For instance, the example in (ia) would be analyzed as that in (ib) and can be paraphrased as in (ic).

(i)   a. John was laughing.
          b. [be [John centrally located in [process [do [laugh(s)]]]]]
          c. John was centrally located in the process of DOing laugh(s).

(Mateu, 2002: 144)

This analysis has empirical evidence from languages such as Spanish and Mandarin in that both the progressive and the locative share the same morphological component, in (ii).

(ii)   a. Juan está   en París.   (Spanish)
             Juan ESTAR   in Paris
             'Juan is in Paris.'
          b. Juan está   nadando.
             Juan ESTAR   swimming
             Juan is swimming.'
          c. Zhangsan zai   Bali.   (Mandarin)
             Zhangsan ZAI   Paris.
             'Zhangsan is in Paris.'
          d. Zhangsan zai   youyong
             Zhangsan ZAI   swim
             'Zhangsan is swimming.'

Despite the different analyses in Mateu's (2002) analysis and mine, a common feature is that an embedded unergative structure is involved in (ia). Nevertheless, if we recall my analysis, both achievements and accomplishments receive uniform syntactic analysis. If this is indeed so, what Mateu's (2002) analysis should explain is why the progressive can be applied only to accomplishments but not achievements, as in (iii). Under my analysis, following Smith (1991, 1997), achievements have no internal parts on which to focus, so application of the progressive is not possible.

(iii)   a. [??]He was finding his keys.
          b. [??]He was recognizing his faults.
          c. [??]He was losing his keys.

My intuition is that, as the perfective aspect *le* in Mandarin is claimed to have undergone the shift from a resultative complement *liao* (see section 3.6), *zai* may have undergone a similar reanalysis. It may originate as a VP-internal projection and be reanalyzed as a functional projection. Since the imperfective aspect is not the main subject here, I will leave this hypothesis to future study.

b. Zhangsan   zai   xie   yi-feng xin

Zhangsan   ZAI   write   one-CL letter

'Zhangsan is writing a letter.'

Having reviewed the viewpoint aspects in Mandarin, let us look at the situation aspects. The example in (20b) is a good starting point for discussion. The example in (20b) is classified as an accomplishment event by Smith (1997), according to Vendler-Dowty's four-way aspectual classification. However, Tai (1984) calls into question the existence of accomplishments as a basic type; see also MacDonald (2008) for a similar claim. In Tai's (1984: 293) words, "Chinese doesn't have the category of accomplishment verbs". Since we have seen that situation types are to be discussed at sentence level, whether Chinese has the category of accomplishment verbs is not relevant. In what remains in this section, I will establish the situation types in Mandarin, while focusing on whether Mandarin has the accomplishment type.

There is no doubt that activities and achievements figure among the three dynamic event types. Let us consider the syntactic behaviors of activities. First, an activity event is compatible with durative adverbials. Unlike English, in which a durative adverbial is differentiated from a completive adverbial by the prepositions employed (i.e., *for* for the former and *in* for the latter), in Mandarin durative adverbials and completive adverbials are different in the syntactic positions that they occupy: the completive adverbials are situated in the pre-verbal position while the durative adverbials are in the post-verbal position. The example in (21) shows the compatibility of both adverbials. The temporal phrase in the post-verbal position, *san-ge xiaoshi* 'three hours', is interpreted as the durative adverbial, while that in the pre-verbal position, *yi-tian* 'one day', is interpreted as the completive adverbial.

(21)   Zhangsan   yi-tian   pao-le   san-ge xiaoshi.

Zhangsan   one-day   run-LE   three-CL hour

'Zhangsan ran for three hours in one day.'

Second, an activity event can be stopped, shown in (22). Third, the example in (23) shows that it is compatible with the imperfective aspect. Fourth, if one is realizing some activity, this implies that such an activity has been realized. The example in (24a) implies the example in (24b). From these examples the existence of activities is proven.

(22) Zhangsan tingzhi kuqi.

Zhangsan stop cry

'Zhangsan stopped crying.'

(23) Zhangsan zai ku.

Zhangsan ZAI cry

'Zhangsan is crying.'

(24) a. Zhangsan zai ku.

Zhangsan ZAI cry

'Zhangsan is crying.'

b. Zhangsan ku-le.

Zhangsan ku-LE

'Zhangsan has cried'.

As for the achievement situation, there is also clear syntactic proof to show their existence. They are not compatible with the imperfective aspect *zai*, owing to their instantaneous property, or with *jieshu* 'finish'. The unacceptability of the examples in (25) illustrates this incompatibility.

(25) a. *[/#]Zhangsan zai dao.

Zhangsan ZAI arrive

Intended: 'Zhangsan is arriving.'

b. *[/#]Zhangsan jieshu dao.

Zhangsan finish arrive

Intended: '*Zhangsan stops arriving.'

c. *[/#]Zhangsan zai si.

Zhangsan ZAI die

Intended: 'Zhangsan is dying.'

d. *[/#]Zhangsan jieshu si.

Zhangsan finish die

Intended: '*Zhangsan stops dying.'

The picture is not so clear for accomplishments. An event of *writing a letter* is usually treated as an accomplishment event because it involves a writing process and a

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natural endpoint, that is, with a letter written. Does the same event behave the same in Mandarin? The answer is negative. In Mandarin, writing a letter does not necessarily lead to a letter being written. As such, the same event of *writing a letter* in these two languages differs as to whether an attainment of goal is implied. This difference is shown by the example in (26), adopted from Tai (1984: 292). The event of *writing a letter* does not imply any attainment of goal in Mandarin; therefore, while the Mandarin sentence in (26) passes the "contradiction test", a term borrowed from Lin (2004), introduced by the conjunction *keshi* 'but', the translation to English sounds odd, if not unacceptable, because an attainment of goal is obligatory.

(26) wo   zuotian   xie-le   yi-feng xin, keshi mei   xie-wan.
      I   yesterday   write-LE   one-CL letter, but   not   write-finish
      '$^?$I wrote a letter yesterday, but I didn't finish it.'

Based on this observation, Tai (1984) argues against the accomplishment type as one basic event type in Mandarin. This author argues for the "three categories of verbs pertaining to the notion of time": states, activities, and results (a category necessary to form achievements and accomplishments). The same argument is also found in Lin (2004), who claims that activities and states are the only two primitive verb types in Mandarin. In the syntactic proposal of this author, even achievements are not a primitive type.

With this in mind, the question that needs to be answered is whether accomplishments exist, even as a derived form. In Tai (1984), even though both accomplishments and achievements are derived, their difference is not clearly expressed. In Lin (2004), accomplishments refer to changes of state, together with achievements. Following Pustejovsky (1991), Tenny (1987), and Verkuyl (1993), Lin (2004: 20) points out that whether the duration, which distinguishes achievements from accomplishments, is "a property inherent to the verb, or the result of real-world, extra-linguistic knowledge" is unclear. By offering the event of *typing a letter* as an example, Verkuyl (1993) argues that the distinction between achievements and accomplishments results from real-world knowledge. The event of *typing a letter* can be either durative or punctual. When the letter refers to correspondence, the letter-typing event would be durative; it would be punctual when the letter refers to an alphabetic letter. Similarly, Pustejovsky (1991) treats achievements and accomplishments as a unitary type:

transition. In the same spirit, achievements and accomplishments are analyzed uniformly in Lin (2004) in which both involves changes of state.

I agree with Lin (2004) that traditionally termed achievements and accomplishments have no syntactic differences, and my analysis will support this claim in section 3.5. However, Smith (1990) suggests that the duration of achievements can be syntactically tested. I argue that this author's arguments are not necessarily correct for the following reasons. It is often argued that in Mandarin a monosyllabic verb does not usually imply an endpoint reading. In order for the endpoint reading to be conveyed, a resultative construction is necessary. This is shown in (27).

(27)　a. Zhangsan xie-le　　　　yi-feng xin.
　　　　Zhangsan write-LE　　　one-CL letter
　　　　'Zhangsan wrote a letter. (The letter was not necessarily to be finished).'
　　b. Zhangsan xie-wan-le　　yi-feng xin.
　　　　Zhangsan write-finish-LE one-CL letter
　　　　'Zhangsan wrote a letter. (The letter was finished).'

It has been observed that the resultative construction is not compatible with the imperfective, shown in (28). If the sentence in (28b) included the process of writing and the endpoint of having the letter written, ungrammaticality of the sentence in (28b) would not be expected because, theoretically, the imperfective can focus on the internal interval. Since the event in (28b) cannot be focused on its internal interval, the conclusion that can be drawn is that it lacks duration. That is, it deals with an achievement event instead of an accomplishment event.

(28)　a. Zhangsan　zai　　xie　　yi-feng xin.
　　　　Zhangsan　ZAI　　write　one-CL letter
　　　　'Zhangsan is writing a letter.'
　　b. *[/#]Zhangsan　　　　zai　　xie-wan　　yi-feng xin.
　　　　 Zhangsan　　　　　ZAI　　write-finish　one-CL letter
　　　　 Intended: 'Zhangsan is writing a letter.'

This argument would not be accepted by Smith (1990), who thinks that the incompatibility of a resultative construction with the imperfective marker is irrelevant at

the moment of deciding whether an event belongs to the achievement type or accomplishment type. Smith (1990) argues that durativity can be tested by the verb *hua* 'to take'. Therefore, although the resultative constructions are not compatible with the imperfective, some can be used with the verb *hua* 'to take' while others cannot. This would suggest that even among resultative constructions, achievements and accomplishments can be distinguished. Some examples offered by Smith (1990) are in (29).

(29)   a. tamen   hua-le   san-nian   gai-hao   nei-ge qiao.

           they   take-LE   three-year   build-RVC   that-CL bridge

           "They took three years to build that bridge.'

       b. *e-si   hua-le ta   san-ge yue.

          die-of-hunger   take-LE he   three-CL month

          Intended: 'It took him three months to die of hunger.'

Smith's (1990) argument for the achievement/accomplishment distinction would not be well grounded, because I do not think the verb *hua* 'to take' is a good test for durativity in Mandarin. Here are my reasons. First of all, the verb *hua* 'to take', besides the meaning *to take*, can also mean *to spend*. In such a case, it is more suitable to be analyzed as a test for agentivity[8]. The examples marked as ungrammatical, the type of (29b) for instance, are not bad if the volition of the entities is involved. For example, one may try to commit suicide by not eating anything. For this context, the example in (29b) would be perfectly acceptable. Let us take the event of falling in love by way of illustration; the event of falling in love, *ai-shang* in Mandarin, is clearly an achievement event. One can be in love with someone for a period of time, but falling in love with somebody occurs in an instant. However, it is not incompatible with the verb *hua* 'to take', as in the example in (30), as long as the volition is involved.

(30)   Ai-shang Lisi   hua-le Zhangsan   san-nian.

       Love-RVC Lis   take-LE Zhangsan   three-year

       'It took Zhangsan three years to fall in love with Lisi.'

---

[8] See Levin and Rappaport Hovav (2005: 89) for the claim that "[c]ertain diagnostics purported to single out achievements actually turn out to be sensitive to agentivity, picking out achievements because they are typically nonagentive".

Secondly, as can be observed in the example in (30), the time *san-nian* 'three years' does not mean that there is a period of three years during which the event of *ai-shang* 'falling in love' takes place. Instead, it refers to the preliminary stage before the achievement event takes place. One may spend three years "trying" to love somebody and, finally, after three years, may fall in love with that person, as the result of one's efforts. Therefore, according to Smith (1990), the example in (29a) is an accomplishment event; for me, however, it is an achievement event. Moreover, this difference is not reflected by the syntactic structure. The example involves a punctual event in which the bridge is built, and time is introduced by the verb *hua* 'to take', thus providing the preliminary stage before the bridge is built.

Thirdly, the tests of the scope of the adverbials as *chayidian* 'almost' and *jihu* 'almost' and the negative scope offer other empirical evidence that the resultative constructions involve only punctual achievement events. As Tai (1984) points out, the kind of scope ambiguity that English accomplishments show with the aforementioned adverbials does not arise in Mandarin. While the adverbial *almost* in the English translation in (31) may have the scope over either the result state or the whole bridge-building event, *chayidian* 'almost' only has the scope over the result component. That is, in both examples in (31), the *bridge-building* event must have been started and not finished.

(31)   a. Zhangsan chayidian   jian-hao-le   na-zuo qiao.
          Zhangsan almost   build-RVC-LE   that-CL bridge
          'Zhangsan almost built that bridge.'   (result reading only)
       b. Zhangsan mei   jian-hao   na-zuo qiao.
          Zhangsan no   build-RVC   that-CL bridge
          'Zhangsan did not build that bridge.'   (result reading only)

In sum, to establish the classification of basic event type in Mandarin, the task consists of determining the existence of the achievement type and the accomplishment type, since both states and activities clearly exist. In Mandarin a monosyllabic verb usually denotes only activities or states. In order for an endpoint to be expressed, a resultative verb complement is necessary. The question raised is whether such a combination of an activity verb and a resultative verb complement or a resultative

predicate presents an achievement event or an accomplishment event. In English, the imperfective aspect is used to distinguish one event type from the other because it permits a reader or a listener to focus on the internal interval of a durative process. I argue that the same test is also valid for such a distinctive function in Mandarin. Together with Lin (2004), I conclude that accomplishments do not constitute a primitive event type in Mandarin; see also MacDonald (2008).

In the next section, the relationship between the aspectual marker *le* and argument structure will be discussed.

3.3 The Relationship between the Aspectual Particle *le* and Argument Structure

It is obvious that the study of the aspect of an event is not limited to verbal level. Instead, it should be treated at sentence level. If arguments in an event are not arguments of the main verb but of construction, these arguments are expected to participate in determining the aspects of the event. It has been noted that the inherent properties of the arguments of a predicate are closely related to the aspectual characteristics of the predicate. For example, the different bounded nature of the direct objects in the events of *John ate an apple* and *John ate apples* leads to the different bounded nature of these events. This relation between the inherent properties of a direct object and the aspect of an event is referred to by Tenny (1987, 1992) as "measuring out". In fact, not only the direct objects have the measuring out power; other arguments, such as subjects and path phrases, for example, may also have the same function. In the examples in (32), the argument in subject position measures out the event, while in the examples in (33), it is the path phrase introduced by *to* that has this measuring-out function. All these arguments that can measure out an event are called 'incremental theme' in Dowty (1991). For more works on the object-event homomorphism, see Krifka (1998) and Harley (2005).

(32)   a. Water gradually filled the boat.

        b. Water descended the mountain for hours.

(Jackendoff, 1996: 314)

(33)   a. Bill pushed the cart to NY in/$^{??}$for two days.

b. Bill pushed the cart for/$^{?}$in two days.

<div align="right">(Jackendoff, 1996: 308)</div>

Let us see now how the aspectual particle *le* affects the aspectual interpretation. We have seen, in the previous section, that when a sentence has a monosyllabic verb in Mandarin that denotes an activity, the natural culmination of the event is not reached without the appearance of a resultative verb complement. Therefore, even though the examples in (34) can normally have the interpretation that *yi-zhang hua* 'one picture' and *yi-feng xin* 'one letter' have been drawn and written, i.e., with an endpoint, this endpoint is not syntactically guaranteed. As can be seen in (35), the presupposed result reached can be cancelled by the contradictory phrases led by the conjunction *keshi* 'but'. This contrast of examples in (34) and (35) suggests that the normally implied endpoint in the examples in (34) is not encoded at all.

(34)   a. Wo zuotian   hua-le   yi-zhang hua.

I yesterday   draw-LE   one-CL picture

'I drew a picture yesterday.'

b. Wo zuotian   xie-le   yi-feng xin.

I yesterday   write-LE   one-CL letter

'I wrote a letter yesterday.'

(35)   a. Wo zuotian hua-le   yi-zhang hua,   keshi mei hua-wan.

I yesterday draw-LE   one-CL picture,   but NEG draw-RVC

'$^{??}$I painted a picture yesterday, but I did not finish it.'

<div align="right">(Tai, 1984: 292)</div>

b. Wo zuotian xie-le   yi-feng xin,   keshi mei xie-wan.

I yesterday write-LE   one-CL letter,   but NEG write-RVC

'$^{??}$I wrote a letter yesterday, but did not finish it.'

In contrast, in English, it is impossible to say that I wrote a letter yesterday but did not finish it. Thus, for the same events of letter writing or picture drawing, the endpoint is encoded in English but not in Mandarin. One way to explain this contrast, in the spirit of Smith (1991, 1997), is to argue that the same events, such as drawing a picture and writing a letter, do represent two different situation types in these two languages. These

events belong to accomplishment situation type in English, while they are events of activity in Mandarin. According to this view, the particle *le* is treated as a perfective aspect marker and does not affect the situation types of the predicates.

How can the same event as drawing a picture or writing a letter present as two different situation types in two different languages? The answer might be found in different tolerances of these two languages for partial objects of the types distinguished between "NO Partial Object" and "Allows Partial Object" in Soh and Kuo (2005), following Chan (1996). In Mandarin, *yi-feng xin* 'a letter' and *yi-zhang hua* 'a picture' are of the 'Allows Partial Object' type because, even though a letter and a picture are not finished, they can still be treated as a letter and a picture. As a consequence, *xie yi-feng xin* 'to write a letter' and *hua yi-zhang hua* 'to draw a picture' are activities, since the divided sub-events relate to the whole event.

Nevertheless, the particle *le* may also have measuring-out power. The examples in (36) suggest that the aspectual particle *le* might have other meanings than a pure perfective aspect marker.

(36)   a. #Wo zuotian mai-le yi-liang che, keshi mei mai-diao.

I yesterday sell-LE one-CL car, but NEG sell-RVC

Intended: '#I sold a car yesterday, but did not get to sell it.'

b. #Wo zuotian reng-le na-shuang xie, keshi mei reng-diao.

I yesterday throw-LE that-CL shoe, but NEG throw-RVC

Intended: '#I threw that pair of shoes away, but didn't get to throw it away.'

Taking the event of *mai yi-liang che* 'selling a car' in the example (36a) for instance, without a resultative verb complement, *mai* 'to sell' does not entail any endpoint. If this is true and if the particle *le* is treated as a perfective aspectual marker, the ungrammaticality in the example in (36a) is not expected. Also in the spirit of Smith (1991, 1997), the possible explanation might be that *mai* 'to sell' does imply the endpoint, and the supposed perfective aspect marker *le* makes the endpoint visible. Therefore, with the endpoint visible, it cannot be denied. However, this explanation is not feasible. If the particle *le* here were truly the perfective aspect marker, it would not be expected to be compatible with modal verbs such as *xiang* 'to think of, to want to', *yao* 'to want to, to be going to', *jiang* 'will', or *keyi* 'to be allowed to, to be able to'.

However, as the examples in (37) show, these modal verbs are compatible with the aspectual particle *le* in the examples in (36a) and (36b).

(37) a. wo xiang   mai-le   yi-liang che.
      I   want to   sell-LE   one-CL car
      'I want to sell one car.'
    b. wo keyi   reng-le   na-shuang xie.
      I   be allowed   throw-LE   that-CL shoe
      'I am allowed to throw that pair of shoes away.'

Since I claim that the aspectual particle *le* in the examples in (34) is a perfective aspect marker, it should not be able to appear with modal verbs. This is proven in the examples in (38).

(38) a. *wo xiang hua-le   yi-zhang hua.
      I want to   draw-LE   one-CL picture
      Intended: 'I want to draw a picture.'
    b. *wo yao   xie-le   yi-feng xin.
      I want to write-LE   one-CL letter
      Intended: 'I want to write a letter.'

The compatibility of the aspectual particle *le* with the modal verbs in the examples in (37) and the incompatibility of this particle with them in the examples in (38) strongly argue for the different statuses of this particle. They might be two different elements that share the same morphological form. That is, they are two words with the same morpheme. On the one hand, the particle *le* in the examples in (38) is the head of the functional projection of the perfective aspect, so it is incompatible with modal verbs. Let us call it **perfective *le*** henceforth. It belongs to the viewpoint aspect. On the other hand, the particle *le* in the examples in (37) is comparable to the resultative verb complements in the resultative verb constructions. I will show in the section 3.5 that they should be analyzed in the same way as the resultative verb compounds. That is, the examples with the particle *le* which is compatible with modal verbs are actually examples of the resultative construction. It is this type that is related to argument

structure and the classification of event types. Let us call it **endpoint** *le*, because it is related to the endpoint of the achievement situation aspect.

In this section, the relation between the aspect and argument realization is firstly discussed. Furthermore, the two different functions of the same morpheme of the aspectual particle *le* are distinguished. These two functions correspond to each of the two aspectual tiers of Smith's (1991, 1997) two-tier analysis of the concept of aspect. The first function of this particle is to mark an event as an achievement by offering the undeniable endpoint. The particle *le* for this function is called endpoint *le*. The other function is that of the perfective viewpoint of the viewpoint aspects. The particle *le* for this function will be called the perfective *le*. With the application of the perfective *le*, the endpoint of the situation type will be visible. It is from this perspective that the endpoint *le* is related to the resultative construction and, thus, related to the argument structure. Having identifying two different *le*s, I will present detailed data in the next section from the perspective of semantic interpretations and syntactic distribution.

3.4 The Aspectual Particle *le*: the Data

Recall that the aspectual particle *le* studied here refers to the type which immediately follows the verb, instead of the sentence; while the particle *le* that immediately follows the verb is called verb *le*, the particle *le* which follows the whole sentence is termed sentence *le*. In this subsection, I will present the semantic properties and the syntactic behaviors of this particle. Semantically speaking, it is related to inchoativity, perfectiveness, and completion (endpoint). Syntactically, the possible interaction of the verb *le* with the sentence *le* and the interaction between the verb *le* and resultative verb complements will be discussed.

3.4.1 Semantic Interpretations

First of all, the particle *le* may express change of state, i.e., **inchoativity**. The inchoative use of *le* is more obvious with adjectival predicates, although it is also compatible with verbal predicates. Let us take the examples in (39) for illustration. The predicates of these examples do not simply describe the states of the subjects. With the

presence of the particle *le*, the subjects must have undergone some change. The leaves in (39a) are not simply yellow but have undergone the process of turning into this color. The table in (39b) has undergone the drying process and becomes dry as a result.

(39)   a. shu-ye   huang-le.

         tree-leaves yellow-LE

         'The leaves turned yellow.'

    b. zhuozi   gan-le.

         desk   dry-LE

         'The desk became dry.'

As for the particle *le* with verbal predicates to express inchoativity, the examples are offered in (40). The two examples in (40) also express change of state. However, while the change in the examples in (39) involves a change of the internal state of the subject of which the adjectival predicates are predicated, the change of state in the examples in (40) refers to the external situation. For example, for the situation in sentence (40a), *Zhangsan* burst out in laughter, the change of state involves a shift in the state from *Zhangsan* not being laughing to that of being laughing. As for the example in (40b), the change refers to the presence of *Zhangsan*. *Zhangsan* is there before the activity of running being carried out and *Zhangsan* is not there afterwards.

(40)   a. Zhangsan   xiao-le.

         Zhangsan   laugh-LE.

         'Zhangsan burst out in laughter.'

    b. Zhangsan   pao-le.

         Zhangsan   run-LE

         'Zhangsan ran away.'

Besides the inchoative interpretation, the particle *le* may express the **perfectiveness** of an event. Let us take a look at the translation of the example in (41a). As seen previously, in English when the sentence *he wrote an article last night* is uttered, it implies that the article must not only have been written but also finished last night. In fact, this is also the interpretation by default in Mandarin. However, the ad hoc completion reading is refutable by specifying that the article is written but not finished,

as the conjunctive sentence in (41b) shows. The same refutation is not allowed in English. Therefore, a sentence like *he wrote a letter but did not finish it* would not be well-formed.

(41)   a. ta zuotian wanshang xie-le   yi-pian wenzhang,

          he yesterday night write- LE   one-CL article

          'He wrote an article last night,'

       b. keshi mei xie-wan.

         but not write-finish.

         'but did not finish it.'

This phenomenon indicates that the particle *le* here does not necessarily imply that the event that it modifies will reach its natural endpoint. It only specifies that the event is realized. In the temporal contour, the particle *le* here only says that the event of writing an article has been realized and nothing more. Whether the article is finished is not syntactically encoded and can be influenced by the context.

       Since the particle *le* here has the function of marking an event as realized, it is expected that, without it, this implication would disappear. This is in fact also expected if the particle *le* in (41a) is erased. Let us compare the example in (42) with that in (43). Without the particle *le* in the sentences in (42), it can be interpreted that he started to write the article yesterday and is still writing it now; that is, he has been writing the article since last night until now without interruption. In the case of the sentences in (43), the interruption is expected. The natural interpretation would be that he wrote an article yesterday without finishing it, and then he stopped the writing event. After that, at a certain point in time, he restarted the writing event and had been writing until now. This contrast clearly suggests the function of the particle *le* discussed here as realization, instead of completion. As a consequence, the realized, but not finished, event can be restarted and continued.

(42)   ta zuotian wanshang xie yi-pian wenzhang.   dao xianzai hai zai xie.

        he yesterday night write one-CL article.   until now still ZAI write

        'He wrote an article last night. He is still writing it now.'

(43)   ta zuotian wanshang xie-le yi-pian wenzhang.   dao xianzai hai zai xie.

         he yesterday night write-LE one-CL article.   until now still ZAI write

         'He wrote an article last night. He is still writing it now.'

Thirdly, the particle *le* does have the function of marking the **completion** of an event. This means that with the particle *le*, in this circumstance, the culmination of the event is obligatorily obtained. Because of this obligatory culmination, in contrast to the sentences with the particle *le* which indicates only the realization of an event, sentences with the particle *le* which indicates the completion of an event do not allow the refutation of this event. The particle *le* with the car-selling event in (44a), for example, does have the completion function. Once the sentence (44a) is uttered, (44b) cannot be used to refute it.

(44)   a. wo zuotian mai-le   wo-de qiche,

            I yesterday sell-LE I-GEN car

            'I sold my car yesterday,'

         b. keshi mei mai-diao.

            but NEG sell-fall

            'but did not achieve to sell it.'

In this example, it is clear that the particle *le* here contributes semantically to the completion. Once the culminating point is reached, it can no longer be denied. Unlike the particle *le* that only leads to realization and not culmination, which may be reached by contextual inference, the particle *le* that leads to completion does encode the telos overtly expressed by the particle *le*.

Having presented the different semantic interpretations that the particle *le* may contribute to a sentence, I will turn to its syntactic distribution in the next subsection.

3.4.2 Syntactic Distribution

At the start of this chapter, we differentiated the verb *le* from the sentence *le*. Basically, as the name suggests, verb *le* appears right after a predicative verb while the sentence *le* appears after a sentence. The verb *le* may appear with other syntactic elements in the same sentence. The patterns in which we are interested are those listed

in (45). Firstly, the pattern in (45a) is the basic verb-*le* pattern that has been discussed previously. Secondly, it can also appear with the resultative constructions, which will be discussed in the next chapter, as the pattern in (45b) shows. It could actually be the same syntactic instance of the pattern in (45a) because the V1-V2 union is to be treated as the main predicate. As a consequence, the particle *le* in (45a) and (45b) must have one of the three semantic interpretations mentioned in the previous subsection because the particle *le* in (45a) and (45b) is the verb *le*, and the three semantic interpretations mentioned in the previous subsection are those related to the verb *le*. As for the pattern (45c) and (45d), they can be treated as the addition of the sentence *le* to the pattern (45a) and (45b), respectively. This phenomenon of coexistence suggests that the verb *le* and the sentence *le* are actually the same morphological instantiation of two different syntactic elements. We have already mentioned that the sentence *le* marks a change of state, a marker that differentiates the state before a certain point of time from that after it. In what follows, let us consider the details with some examples.

(45)　　a. V1-le
　　　　 b. V1-V2-le
　　　　 c. V1-le… le
　　　　 d. V1-V2-le… le

As the example in (46) shows, to illustrate the patterns in (45a) and (45c), sentence *le* may appear optionally with the verb *le* in the same sentence. In cases of both the verb *le* and the sentence *le* coexisting, the sentence expresses the sum of the main predicate, with the semantic interpretation specified by the verb *le*, and the change of situation, indicated by sentence *le*. On the one hand, the verb *le* tells us that the event denoted by the main predicate *kan* 'to see' has been realized. That is, the verbal *le* here codifies perfectiveness. On the other hand, the sentence *le* marks a change of situation, which may be understood according to the corresponding context. A possible context could be that *Zhangsan* had been refusing to see this movie because he did not like this kind of movie, but eventually he saw it, for whatever reason. If the speaker wants to express this change, the sentence *le* could be employed to fulfill this aim.

(46)　　Zhangsan kan-le　　　zhe-bu dianying　　　(le).

　　　　Zhangsan see-LE　　　this-CL movie　　　(LE)

　　　　'Zhangsan saw this movie.'

　　　As for illustrating the patterns in (45b) and (45d), let us look at the example in (47). The sentences in (46) and (47) are different in that they show a simple and complex predicate form, respectively. This morphological difference, however, does not lead to any interpretational difference of the two *le*s. The verb *le* describes that the event of *xi-ganjing yifu* 'to wash-clean the clothes' has been realized, and the sentence *le* describes a contextually understood change. Again, a possible background situation might be offered for the implicated change of state. There were too many clothes and the speaker was surprised when he saw that all the clothes were washed clean. The sentence *le* makes a point in time before which *Zhangsan* had not washed all the clothes clean and after which *Zhangsan* had already done that.

(47)　　Zhangsan xi-ganjing-le　　　　　suoyoude yifu (le).

　　　　Zhangsan wash-be clean-LE　　　　all clothes (LE)

　　　　'Zhangsan washed all the clothes clean.'

　　　In what follows of this subsection, I will deal with some troublesome cases and offer some disambiguating ways to determine whether a particle *le* is the verb *le* or the sentence *le*.

　　　In the previous subsection, in order to see the semantic interpretations of the verb *le*, some examples were presented as intransitive for the purpose of simplicity. Those examples consisted of only the subject and the predicate followed by the particle *le*, which was treated as verb *le* by default in order to reach the conclusion about semantic interpretations. Such a conclusion can be easily invalidated if it can be proven that that particle *le* is the instantiation of the sentence *le*. To avoid this possible counter-argument, I am obliged to prove the syntactic status of the particle *le* as verb *le*, which was treated as something ad hoc.

　　　To follow the order of presentation in the previous subsection in which the main predicates are divided into adjectival and verbal types for illustrating the interpretation of inchoativity, I will first discuss examples of adjectival-type predicates, followed by examples of verbal-type predicates.

Firstly, the predicate in the example in (48a) is adjectival, and it has been argued that the semantic interpretation involved is inchoativity. Syntactic opacity would disappear and the verb *le* status would be maintained if the particle *le* may appear as an intervening word between the main verb and the other element, as long as the same semantic interpretation would suffer no change. Measure words can be used for this purpose, as shown in the example in (48b). The measure word *wu gongfen* 'five centimeters' specifies the growing event without alternating the semantic interpretation of the predicate. Since the particle *le* in both sentences has the same denotation, it can be argued to have the same syntactic status. As a consequence, the argument for the verb *le* status here can thus be maintained.

(48) a. Zhangsan   gao-le.

      Zhangsan   tall-LE

      'Zhangsan became tall.'

    b. Zhangsan   (yi nian nei)   gao-le   wu gongfen.

      Zhagnsan   (one year in)   tall-LE   five centimeter

      'Zhangsan grew five centimeters (in one year).'

Secondly, let us consider the example in (49a) in which the main predicate is verbal. The semantic interpretation of the particle *le* here can be inchoativity. Aside from the perfective interpretation, the example can simply mean that *Zhangsan* changes the state from being into the state of not being. The particle *le* in (49) may be employed to express such change. Now, let us apply the same test of the measure word to the example in (49a) and see if the examples in (49a) and (49b) express the same denotation.

(49) a. Zhangsan   pao-le.

      Zhangsan   run-LE

      'Zhangsan ran away.'

    b. Zhangsan   (yi-nian)   pao-le   san-ci.

      Zhangsan   (one-year)   run-LE   three-time

      'Zhangsan ran away three times (in one year).'

By comparing the examples in (49), it is apparent that the inchoative interpretation in (49a) suffers no change in the example in (49b) when the measuring

time is added. Since the particle *le* in (49b) is not in the sentence-final position and the same interpretation can be obtained, the claim that the particle *le* in (49a) is a verb *le* can also be maintained.

To sum up this section, the data of the particle *le* are given. They are presented according to their semantic interpretations and their syntactic distribution. Semantically, the particle *le* has three functions: first, the inchoative property; secondly, it can express the realization of an event and is the perfective marker of an event; and thirdly, it offers a natural endpoint to an event and, with its presence, culmination will be assured. In order to discover the corresponding interpretation of the particle *le* in a sentence, we will first need to exclude the possibility of the particle *le* being the sentence *le*. Therefore, in the second subsection, the interaction of the verb *le* and the sentence *le* is presented. After that, some examples in which the particle *le* might be viewed as both the verb *le* and the sentence *le* are discussed. In order to decide the syntactic status of the particle *le* in such cases, a disambiguating way is put forward.

In the next section, I will propose a lexical-syntactic account of this particle *le*. Owing to the lexical-semantic homomorphism that I pursue in this dissertation, we will see how the different semantic interpretations result from the different syntactic configurations.

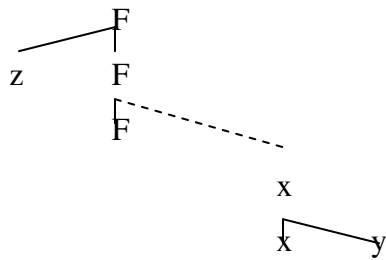## 3.5 The Aspectual Particle *le*: a Lexical-syntactic Account

In the last section, the data of the aspectual particle *le* was presented and I concluded that, according to the semantic interpretations of the particle *le*, it can be classified as endpoint *le*, inchoative *le*, or perfective *le*. Since the central idea of this dissertation is that the semantic interpretations are read off the syntactic structures, these three different interpretations would then be expected to be the fruits of the various syntactic configurations. In this section, I will offer explanations from the perspective of argument structure. The endpoint interpretation is discussed in subsection 3.5.1, and the inchoative interpretation and the perfective uses are presented in subsections 3.5.2 and 3.5.3, respectively.

Let us remember that the basic argument structures are those in (50), which result from the combination of the non-relational element, the structure of eventive

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relation, and the structure of non-eventive relation, according to the head-complement and specifier-head relation. The non-relational element is an element that takes neither a complement nor a specifier. The structure of eventive relation is the structure that takes only a complement as its argument. The structure of non-eventive relation involves a head that relates a complement with a specifier.

(50)

  a. *Unergative Structure*

```
        F
   z    F
        F
              x
            x    y
```

  b. *Unaccusative Structure*

```
  x1
  x1
           x2
       z2    x2
            x2    y2
```

  c. *Causative Structure*

```
        F
   z3    F
        F
              x1
            x1
                   x2
               z2    x2
                    x2    y2
```
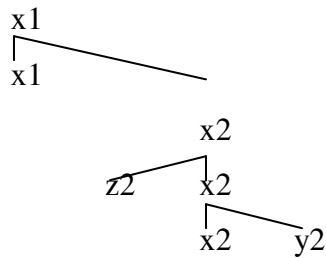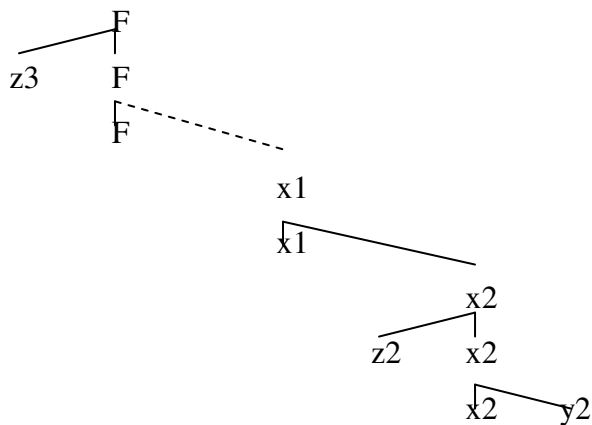
The unergative structure in (50a) involves the structure of an eventive relation embedded under the functional projection which introduces the external argument. The unaccusative structure in (50b) is the combination of the structures of eventive and non-eventive relations. As for the causative structure in (50c), it is distinct from the unaccusative structure in that the functional projection is involved.

By making use of these syntactic structures, we will see how the different interpretations of the particle *le* are derived syntactically. Before we start this task, we may see how these lexical relational structures embedded under the functional projection are related to situation aspects. As we have seen previously, I adopt the view that there is no syntactic difference between accomplishments and achievements. To follow Lin (2004), both accomplishments and achievements are analyzed as involving a change of state. In other words, there are only two types of dynamic events: activities as one type, and accomplishments and achievements together as another type. This kind of analysis is captured by the structures in (50). In (50), the functional projection aside, there are actually only two structures involved. These are, first, the structure of eventive relation that has a non-relational element as a complement and, second, the structure of eventive relation that has a structure of non-eventive relation as its complement. The first type is the instantiation of the activity type, while the second encodes a change of state, specified by the non-eventive structure, and can result in the accomplishment and achievement types.

3.5.1 The Aspectual Particle *le* as a Resultative Predicate

The example in (51) represents the type in which the particle *le* works as marking the culmination of the event, i.e., the endpoint. This event has been argued to have the endpoint encoded because it cannot be refuted by the contradiction test. In Mandarin, when a letter is written as in *xie-le yi-feng xin* 'wrote a letter', the letter does not need be finished; on the contrary, when a car is sold as in *mai-le yi-liang che* 'sold a car', the car has to be disposed of.

(51)   Zhangsan zuotian   mai-le   ta-de che.
        Zhangsan yesterday   sell-LE   he-GEN car
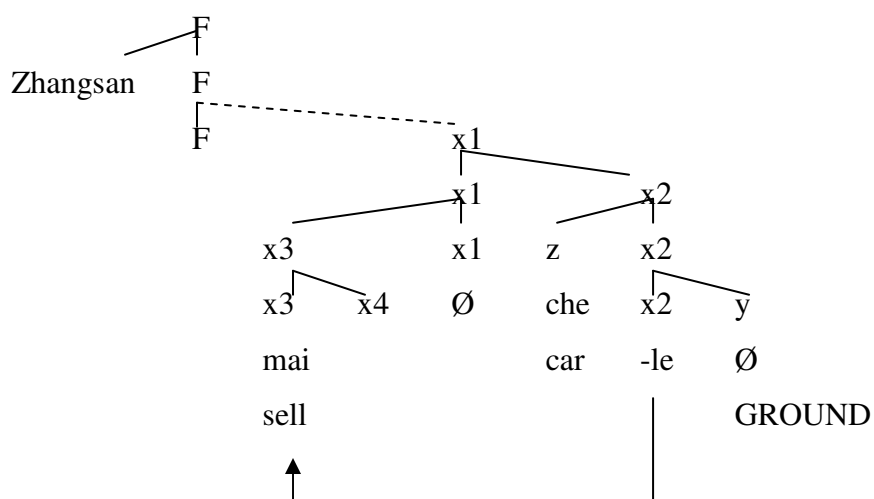   'Zhangsan sold his car yesterday.'

Since the endpoint is guaranteed in the example (51), it is expected that it would be compatible with the temporal frame adverbial as *yi-tian nei* 'in one day'. This is indeed so as shown in the example in (52).

(52)   Zhangsan yi-tian nei mai-le   ta-de che.

        Zhangsan one-day in sell-LE   he-GEN car

        'Zhangsan sold his car in one day.'

The presence of the endpoint leads to the telic interpretation of this event. The telic interpretation is related to the so-called 'non-central/terminal coincidence relation' in Hale (1986). According to Hale (1986: 240), the terminal coincidence relation refers to "the location of the figure corresponds to its trajectory (if moving) or its linear arrangement (if stationary), which can be viewed as ending… or beginning…". In the example in (51), the figure is *ta-de che* 'his car', while the location or the ground is not specified.

The terminal coincidence relation can be expressed by the structure of the non-eventive relation which relates Figure to Ground, as indicated in (53). The structure in (53) is causative, whereby the head of the structure of eventive relation is phonologically empty and needs to be provided with phonological content at PF. There are two possible ways to satisfy this requirement: though incorporation or through conflation. Here, the only feasible way is via conflation, which adjoins a structure of eventive relation, headed by *x3*, to this phonologically empty head, *x1*. The incorporation is not available here for the following reason. In the structure in (53), in order not to violate the Head Movement Constraint (Travis, 1984; Baker, 1988), there are two possible sources for the process of incorporation: one is the head *y* and the other is the head *x2*. However, neither of them is a possible candidate, owing to the phonological reason: in the former case, the head *y* is phonologically empty and, in the latter case, the head *x2* is a suffix and needs to be attached to a phonologically full element.

(53)

```
                    F
                  /
                  |
     Zhangsan     F
                  [
                  F - - - - - - - - - - x1
                  |                    /|
                      x1              x2
                    /  |            /  |
                  x3   x1         z    x2
                 / \    |         |    / \
               x3  x4   Ø       che   x2  y
               mai              car   -le  Ø
               sell                   GROUND
                  ↑_____|
```
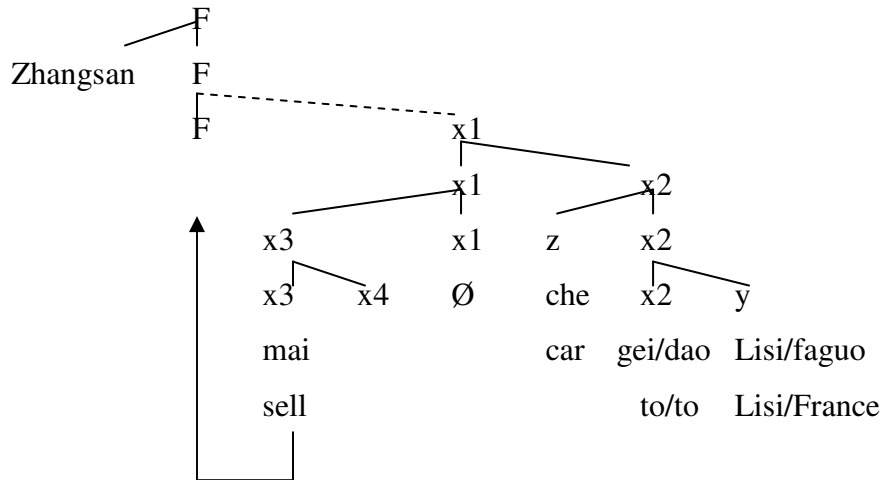
This analysis can be supported by the examples in which both the endpoint and Ground are explicit. In the examples in (54), *ta-de che* 'his car' ends in the hands of *Lisi* and in *faguo* 'France', the morphological presentations of Ground. In these cases, the terminal coincidence relation is presented by the prepositions *gei* 'to' and *dao* 'to'. The morphological instantiations of the preposition depend on the semantic properties of Ground. The preposition g*ei* 'to' usually goes with animate grounds and the preposition *dao* 'to' is normally followed by places. When the endpoint and Ground positions are saturated, the examples in (54), even without the endpoint *le*, transmit the meaning that the endpoint is reached.

(54) a. Zhangsan zuotian   mai-(le)   ta-de che   gei Lisi.
       Zhangsan yesterday   sell-(LE)   he-GEN car   to Lisi
       'Zhangsan sold his car to Lisi yesterday.'
      b. Zhangsan zuotian   mai-(le)   ta-de che   dao faguo.
       Zhangsan yesterday   sell-(LE)   he-GEN car   to France
       'Zhangsan sold his car to France yesterday.'

We can see in these examples that the particle *le* (in the brackets) can still appear. However, the particle *le* here does not entail the endpoint, but rather perfectiveness. The structure for the examples in (54) is that in (55), in which the particle *le* originates from the aspectual functional projection above. In this structure, the head that should be

saturated with the phonological content is *x1* and this requirement is satisfied via conflation.

(55)

```
                    F
                   /
                  |
       Zhangsan   F
                  [
                  F - - - - - - - - - x1
                  |                   |
                / x1              x2
               |   |            /     |
              x3   x1          z      x2
             /  \   |          |     /   \
            x3   x4 Ø         che   x2    y
            mai              car  gei/dao  Lisi/faguo
            sell                   to/to   Lisi/France
```

Readers might ask how we know that the particle *le* here is not the endpoint *le*. Firstly, if the particle *le* in (54) had the same semantic property as that in the examples in (51), these examples would show the same behavior with respect to the contradiction test. If the particle *le* in both the example in (51) and those in (54) involves the endpoint, we would not expect the contradiction test to work differently. That is, without this particle *le*, all these examples would be refutable. However, this is not the case, because the examples in (54) without the particle *le* cannot be refutable, while the example in (51) can. This contrast is shown in the examples in (56) and suggests that the particle *le* offers the endpoint reading in the example in (51) but not in the examples in (54).

(56)   a. Zhangsan mai ta-de che,   keshi mei mai-diao.
            Zhangsan sell he-GEN car,   but NEG sell-RVC
            'Zhangsan tried to sell his car, but he did not get to sell it.'
        b. #Zhangsan mai ta-de che gei Lisi,   keshi mei mai-cheng.
            Zhangsan sell he-GEN car to Lisi,   but NEG sell-RVC
            Intended: 'Zhangsan tried to sell his car to Lisi, but didn't achieve it.'

The second way is to prove the perfectiveness of the particle *le* in the examples (54) by its incompatibility with modal verbs. As for the example in (51), it behaves differently in that it is compatible with modal verbs. The examples in (57) show this contrast.

(57)　　a. Zhangsan xiang　　mai-le　　　　ta-de che.

　　　　　　Zhangsan want to　sell-LE　　　　he-GEN car

　　　　　　'Zhangsan wants to sell his car.'

　　　　b. *Zhangsan xiang　mai-le　　　　ta-de che　　　gei Lisi.

　　　　　　Zhangsan want to sell-LE　　　　he-GEN car　　to Lisi.

　　　　　　Intended: 'Zhangsan wants to sell his car to Lisi.'

From the discussion so far, we may conclude that the particle *le* can express the endpoint of an event, and the example in (51), repeated in (58) for the convenience of consulting, is one of these cases. Even though the particle *le* can be interpreted as an endpoint, it is worth noting that the particle *le* can be interpreted as an endpoint with a very limited number of verbs. Lü (1980) lists 28 monosyllabic verbs[9] with which the particle *le* does not indicate perfectiveness. Instead, when the particle *le* appears after these verbs, it offers an endpoint interpretation to events.

(58)　　Zhangsan zuotian　　mai-le　　　　ta-de che.

　　　　Zhangsan yesterday　sell-LE　　　　he-GEN car

　　　　'Zhangsan sold his car yesterday.'

Let us remember that the monosyllabic verbs, except those of the adjectival forms, have an unergative structure and are therefore interpreted as activity. In order for the change-of-state interpretation to apply, the form of resultative constructions would be necessary. In other words, when the particle *le* is interpreted as an endpoint, it can be treated as a resultative predicate. The example in (58) is actually a type of resultative construction.

This type is comparable to what Li and Thompson (1981) term *phase resultative verb compounds*. According to Li and Thompson (1981), such resultatives express the completion of an event. This type differs from the typical resultative construction that we will see in the next chapter in the predicative relation between the resultative

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[9] These twenty eight verbs include *wang* 'forget', *diu* 'throw, get rid of', *guan* 'close, shut', *he* 'drink', *chi* 'eat', *yan* 'swallow', *tun* 'swallow', *po* 'splash', *sa* 'spill', *reng* 'throw, get rid of', *fang* 'release', *tu* 'scribble', *mo* 'wipe', *ca* 'wipe', *peng* 'bump', *za* 'break', *shuai* 'throw', *ke* 'crack', *zhuang* 'hit', *cai* 'step on', *shang* 'injure', *sha* 'kill', *zai* 'kill', *qie* 'cut', *chong* 'flush', *mai* 'sell', *huan* 'return', *hui* 'destroy' (Lü, 1980: 316, *apud* Wu, 2000: 419).

predicate and its predicated subject. This predicative distinction can be captured by my lexical-syntactic account. In the typical resultative constructions that will be studied in the next chapter, a resultative predicate derives from the complement of the embedded structure of non-eventive relation. It is a non-relational element in the complement position and is predicated of the non-relational element in the specifier position of the head that relates them. As for the particle *le* that expresses the endpoint reading, it is the morphological instantiation of the head which relates an unspecified Ground and its predicated subject. The constructions of these two types are compared in (59).
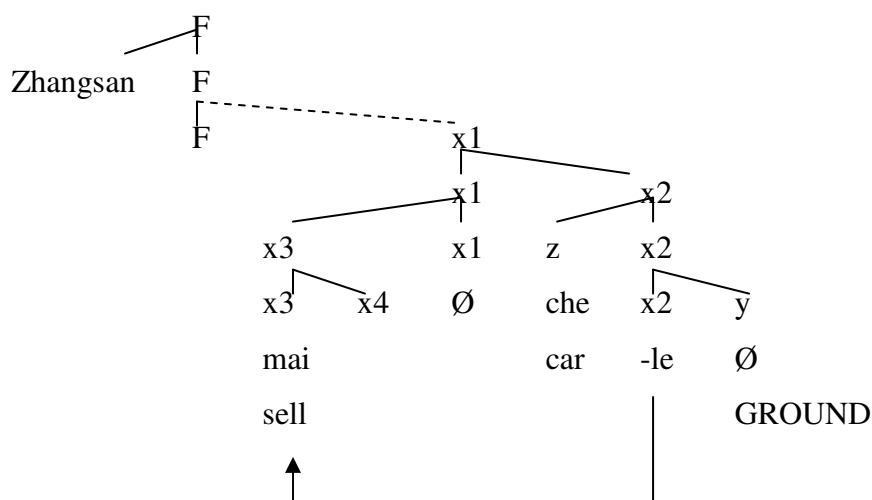
(59)

    a. *The Resultative Construction*

          Zhangsan qiao-po   men.

          Zhangsan hammer-break   door

          'Zhangsan hammered the door broke.'
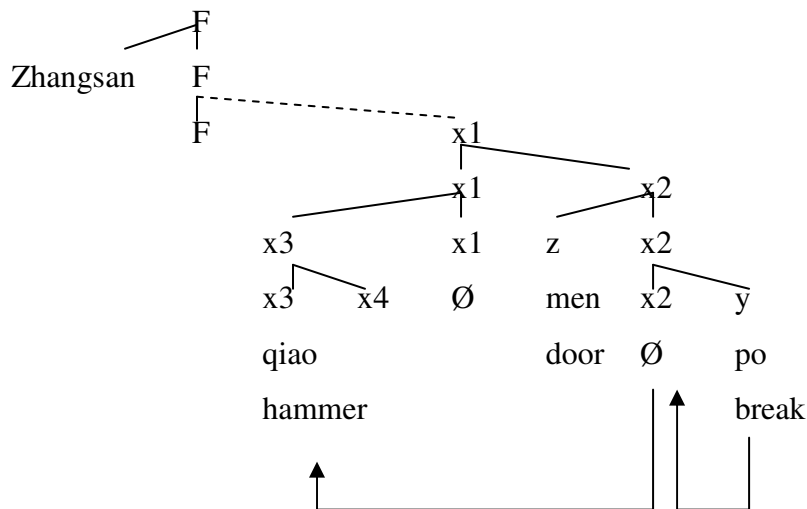
b. *The Particle* le *as an Endpoint*

Zhangsan   mai-le   ta-de che.

Zhangsan   sell-LE   he-GEN car

'Zhangsan sold his car.'

```
                          F
                          |
        Zhangsan     F
                     [
                     F              x1
                     |              |
                              x1         x2
                              |          |
                     x3       x1    z    x2
                     |             |     |
                  x3   x4   Ø     che   x2   y
                  mai              car  -le   Ø
                  sell                        GROUND
```

So far in this subsection, I have presented how the particle *le* that expresses an endpoint of an event can be accounted for under the lexical-syntactic approach. Moreover, this approach has the advantage of being able to associate the construction with the particle *le* that expresses the end point with the resultative construction.

Finally, there are other morphological presentations of an endpoint of an event that are parallel to the particle *le* that expresses endpoint and can be analyzed in the same way. In the following examples in (60), we can observe that the resultative verb complements mark the endpoint of the events in these examples. As is the case with the particle *le*, these resultative verb complements are not predicated of the syntactic objects literally, as can be seen in the examples in (61). These resultative verb complements have the same syntactic role as the particle *le* which denotes the endpoint of an event. However, the use of the particle *le* to denote the endpoint of an event is more restricted than the use of this type of resultative verb complements. For example, if the resultative verb complements in the examples in (60) are substituted by the particle *le*, the endpoint interpretation will be lost. The particle *le* with these verbs can only express perfectiveness. This observation suggests that the particle *le* might be sensitive to certain semantic properties of the verbs in order to be able to transmit the endpoint

interpretation. When the endpoint interpretation is not available, the only possible interpretation left is that of perfectiveness.

(60)   a. Zhangsan kan-wan   na-ben xiaoshuo.

          Zhangsan see-RVC   that-CL novel

          'Zhangsan finished reading that novel.'

          b. Zhangsan xie-hao   zuoye.

          Zhangsan write-RVC   homework

          'Zhangsan finished writing his homework.'

          c. Zhangsan zhao-dao   ta-de yaoshi.

          Zhangsan search-RVC   he-GEN key

          'Zhangsan found his keys.'

(61)   a. *na-ben xiaoshuo   wan-le.

           that-CL novel   RVC-LE

           Intended: 'That novel has been read.'

          b. *zuoye   hao-le.

           homework   RVC-LE

           Intended: 'The homework has been done.'

          c. *ta-de yaoshi   dao-le.

           he-GEN key   RVC-LE

           Intended: 'His keys have been found.'

3.5.2 The Aspectual Particle *le* as an Inchoative Marker

In this subsection, I will give an account of the inchoative reading of the particle *le*. The particle *le* with the inchoative reading often occurs with predicates of adjectival forms, although there are verbal predicates that can also have the particle *le* with the inchoative denotation.

First, let us look at the examples with the adjectival predicates in (62). The sentences are composed of the combination of adjectival predicates and the particle *le*. Because of the presence of this particle *le*, these sentences cannot be interpreted merely as stative events.

(62)   a. shuye   huang-le.

tree.leaf   yellow-LE.

'The leaves turned yellow.'

b. jilu   po-le.

record   break-LE

'The record broke.'

c. Zhangsan   zui-le.

Zhangsan   drunk-LE

'Zhangsan got drunk.'

The example in (62a) does not mean that *the leaves were yellow*. It can only be interpreted as inchoative and involves the change of state. It has been pointed out by Sybesma (1992, 1997) that adjectives in Mandarin are dynamic, unlike adjectives in European languages. Sybesma argues that adjectives in European languages have the positive degree as the unmarked option, and the counterparts in Mandarin need to go with the positive degree marker *hen* to have the same meaning, as the example in (63a) shows. The dynamic nature of adjectives in Mandarin is supported in the example in (63b), in which the adjective is ready to combine with a modal verb.

(63)   a. Zhangsan hen pang.

Zhangsan HEN fat

'Zhangsan is fat.'

b. Zhangsan hui pang.   (adopted and modified from Sybesma, 1997: 228)

Zhangsan can fat

'Zhangsan can become fat.'

What is the origin of inchoative predicates? Through the observation of the examples in (64), Lin (2004: 12) claims that "change of state predicates derive from underlying stative verbs". According to this author, a change of state is derived from a state, and the particle *le* leads to this derivation. That is, the particle *le* contributes to the reading of inchoativity and functions as a marker of inchoativity. For more examples about the derivation of the inchoative predicates from the stative predicates, readers are referred to Lin (2004).

(64) a. shu gao shi gongfen.

   tree tall ten centimeter

   'The tree is ten centimeters tall.' (e.g., a bonsai tree)

   b. shu gao le shi gongfen.

   tree tall LE ten centimeter

   'The tree grew ten centimeters.'

(Lin, 2004: 12)

If in Mandarin, as in English, the claim that inchoative predicates derive from stative predicates[10] is correct, let us first see how inchoative predicates are formed in English. Some examples are given in (65), in contrast to the stative forms from which they are derived. The examples in (65a) and (65b) show that suffixes such as –*en*, and –*ify* contribute to the inchoative interpretation, even though not all the inchoative reading needs be specified morphologically. The example in (65c) does not show the alternative morphological stative/inchoative form. We may argue that the example in (65c) involves a morphologically empty morpheme, which leads to the inchoative interpretation.

(65) *Inchoative*   ←   *Stative*

   a. The leaves reddened.   ←   The leaves were red.

   b. The attacks intensified.   ←   The attacks were intense.

   c. The sky cleared.   ←   The sky were clear.

To compare these examples of stative/inchoative alternation in English with those in Mandarin, the most obvious difference is the use of the copula verb. In the English state predicates, the use of the copula verb is obligatory, while this is forbidden in Mandarin state predicates. In Mandarin, instead of the copula verb, what is needed is the positive degree marker *hen*. This difference is expected because the adjectives are stative in English but dynamic in Mandarin. When the inchoative predicates are derived, both the copula verb and the positive degree marker disappear. In English, the copula verb is

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[10] According to Lin (2004), inchoative predicates derive from stative predicates, and causative predicates derive from inchoative predicates. However, not all languages behave the same. In some languages the inchoative predicates have more complicated morphological forms. This is a problem for causativization analysis. As for the question of causativization and anticausativization, readers are referred to Alexiadou (2010) and Alexiadou et al. (2006), among others.

substituted by the suffixes such as –en, -ify, etc. In Mandarin, the particle *le* is added. Owing to this similarity, these suffixes and the particle *le* may be analyzed in the same way.

The inchoative predicates in Mandarin and in English follow the unaccusative structure. The unaccusative structure in (66) could be the structure for the example in (65a). In this structure, the suffix *–en*, which introduces the inchoative reading, is the morphological head of the eventive structure, which can be translated into transitional relation. The complement of the structure of non-eventive relation incorporates into its head and then successively into the head of the structure of eventive relation. As for the argument in the specifier, it raises to the position of syntactic subject because of the absence of the functional projection.

(66)
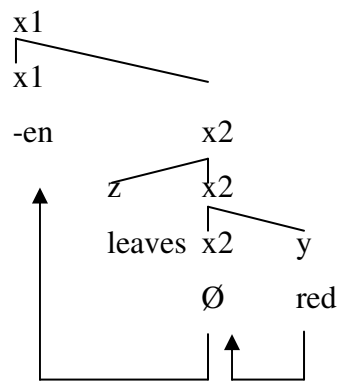
The inchoative predicates of Mandarin can be analyzed in the same manner, in (67b). Incorporation occurs in the same way as in English for the same reason: to offer phonological content to the head *x1*. As for the syntactic subject, it is also derived from the internal subject position, i.e., the specifier position, and serves as the subject to be predicated of in the structure of non-eventive relation.

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(67)　a. shuye　　　huang-le.

　　　　tree.leaf　　yellow-LE.

　　　　'The leaves turned yellow.'

　　b.　　　　x1
　　　　　　／
　　　　　x1
　　　　　-le　　　　x2
　　　　　　　z　　　x2
　　　　　　　shuye　x2　　y
　　　　　　　leaves　Ø　　huang
　　　　　　　　　　　　　　yellow
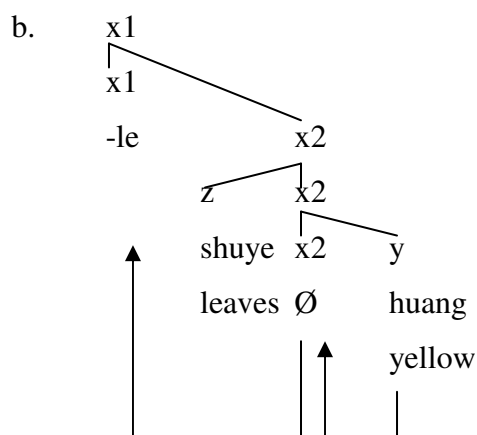
This analysis is supported theoretically and empirically. Theoretically, this analysis can be treated as an inchoative projection with a stative predicate projection embedded into it. This claim captures the derivational direction mentioned earlier, according to which inchoative predicates derive from stative predicates. In Lin (2004), two verbalizing heads are proposed. One is equivalent to BECOME, which introduces change of states, and the other is equal to BE, which introduces states. Empirically, this analysis allows us to distinguish the particle *le* which expresses inchoativity from the particle *le* which may denote endpoint or perfectiveness. Firstly, the sentence with the particle *le* which denotes the endpoint can be distinguished from the inchoative predicates in the following way. In a sentence in which the particle *le* encodes the endpoint of the event, without it, the eventuality of the sentence will be changed from an event with culmination to one without it: from telic to atelic. In inchoative predicates, the endpoint is already indicated by the superficial verb, derived from the complement position of the structure of non-eventive relation. Secondly, inchoative predicates are different from the sentences with the perfective *le* in that the inchoativity denoting particle *le* is compatible with modals, as in (68).

(68)　dao xia-ge yue　　　na-ke shu　　jiu hui　　　gao-le san gongfen.

　　　until next-CL month　that-CL tree　then will　　tall-LE three centimeter

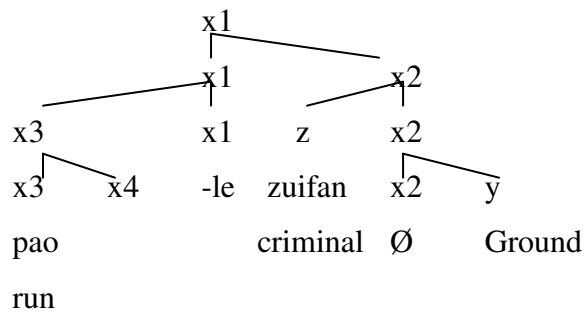　　　'That tree will grow three centimeters until next month.'

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We have seen inchoative predicates with adjectival forms. Next, let us turn to those with verbal forms, in (69). These examples are more complicated at first sight because the verbs involved are apparently verbs of activities. If the activities are unergative, whereby the morphological content of the complement of the structure of eventive relation incorporates into the head position, there would no longer be a syntactic position from which to generate the inchoative denoting *le*. If this is true, how does the inchoative interpretation arise?

(69)　　a. Zhangsan ku-le.

　　　　　Zhangsan cry-LE

　　　　　'Zhangsan burst out in tears.'

　　　　b. niao fei-le.

　　　　　bird fly-LE

　　　　　'The bird flew away.'

　　　　c. zuifan pao-le.

　　　　　criminal run-LE

　　　　　'The criminal ran away.'

I will use the example in (69c) for the analysis here. If the particle *le* is analyzed as a verb *le*, this sentence may have two different interpretations. The first is the perfective interpretation. For this interpretation, the particle *le* is a perfective viewpoint: the instantiation of an aspectual functional head. The sentence would mean that *the criminal has run* o *the criminal has carried out the running activity*. This is not of interest here. The second interpretation is inchoative. The inchoative reading involves a change of state: from being to not being. This interpretation would be that *the criminal ran away* or *the criminal escaped*. How are the inchoative predicates with activity verbs analyzed?

My claim is that, even though the verbs in these examples are activity verbs, the structure for the inchoative reading is still unaccusative, in (70). Activity verbs are actually the modifiers of the unaccusative structure. Unlike inchoative predicates with adjectival forms, by which the change state is specified, when the activity verb form is in an inchoative predicate, the change of state is specified by the covert Ground. The structure of the activity verb adjoins the head *x1* in the structure (70) to offer phonological content.

(70)

```
                        x1
                        |
                 x1              x2
                 |            /      \
         x3      x1      z      x2
         |              criminal  |
      x3    x4   -le          x2    y
      |                       |
      pao                     Ø     Ground
      run          criminal
```

In this type of inchoative predicates, superficial verbs are modifiers of the unaccusative structure. The verbs specify the manner in which the change of state takes place, while in the adjectival type the verbs specify the change of state. As such, the reasonable interpretation of the structure in (70) would be that the criminal went away by running. However, it is worth noting that this is the most natural interpretation, even though it might only be a metaphorical way of expressing how the criminal escaped. The same default reading is obtained with other activity verbs which may involve displacement. In the example (69b), the most natural way for a bird to leave is by flying. Owing to this interpretive difference, the other possible analysis is the one seen in section 1.2.4 in Chapter one, according to which some superficial unergative verbs may be analyzed as copular/light verbs. In this way, the process of conflation does not take place. Whichever the analysis might be, what counts is that what is involved for the inchoative predicates is an unaccusative structure. As for the sentences as *Zhangsan xiao-le* 'Zhangsan burst into laughter' and *Zhangsan ku-le* 'Zhangsan burst out in tears', they describe the change of state of *Zhangsan* from that of not laughing to laughing and from that of not crying to crying.

So far, the particle *le* which expresses inchoativity has been analyzed. It is the instantiation of the head of the eventive structure. Two types are distinguished, according to the superficial verb form. Both types can be satisfactorily explained by the unaccusative structure and the difference lies in the distinct ways of satisfying the phonological content of this structure: the process of incorporation and that of conflation.

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3.5.3 The Aspectual Particle *le* as the Perfective Viewpoint Aspect

When the aspectual particle *le* denotes perfectiveness, it is an instantiation of the functional head Aspect above the lexical syntactic structures. As a result, the presence/absence of the particle *le* with the perfective interpretation does not affect argument realization.

The particle *le* that denotes perfectiveness need not be phonologically explicit and can be phonologically empty. Let us take the sentence in (71) for illustration. It is interpreted as a perfective event, even though there is no presence of the perfective aspectual particle *le*. With the presence of the temporal adverbial *zuotian* 'yesterday', the sentence can only be perfective. This resembles the perfectives in English. In the translation of the example in (71) in English, there is no explicit aspectual marker either. Although there is no morpheme that expresses perfectiveness, in the simple past tense in English it has been argued that the perfective aspectual projection is morphologically empty (see Smith, 1997).

(71) Zhangsan zuotian   da-po-(le)   zhe-pian boli.
      Zhangsan yesterday   hit-break-(LE)   this-CL glass
      'Zhangsan broke this glass yesterday.'

According to Smith's (1997) double-tier analysis of the concept of aspect, aspect projection is indispensable, even though it is not phonologically explicit. Viewpoint aspects are necessary in order for situation aspects to be visible. The perfective viewpoint means that an event is viewed as a whole. In the example in (71), the perfective reading will not be altered when the particle *le* is added. That is, phonologically explicit or not, a viewpoint aspect must exist.

There are cases in which the particle *le* must be phonologically implicit. When the endpoint of an event is introduced by the particle *le*, the perfective aspect must be morphologically empty. That is, on no occasion will there be two adjacent particle *le*s[11]. In sentences with the resultative *le* and sentences with inchoative *le*, the perfective viewpoint is expected to be phonologically empty. This phonological requirement is displayed by the example in (72a) and it can be explained by the fact that the elements

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[11] See Fan (2008) and Wu (2000) for the analysis of the particle *le* as the instantiation of both the perfective aspect and the endpoint.

with the resultative *le* or the inchoative *le* must later be raised to the head position of the Aspect projection. As a consequence, the raised *le* acquires the perfective interpretation[12]. We will see in the next chapter that the endpoint can also be expressed by resultative verb complements. The particle *le* in the example (72a) can be replaced by the resultative verb complement *-diao*, as in the example (72b). When there is no particle *le* adjacent to the predicate, the perfective viewpoint can be phonologically explicit. As indicated by the example (72b), the particle *le*, in brackets, can be both implicit and explicit without altering the perfectiveness and the grammaticality of the sentence.

(72)   a. Zhangsan zuotian   mai-le-*(le)   ta-de che.

          Zhangsan yesterday   sell-LE-*(LE)   he-GEN car

          'Zhangsan sold his car yesterday.'

    b. Zhangsan zuotian   mai-diao-(le)   ta-de che.

          Zhangsan yesterday   sell-RVC-(LE)   he-GEN car

          'Zhangsan sold his car yesterday.'

To sum up, in this section the lexical-syntactic account is proposed for the particle *le*. It is associated with three different interpretations: endpoint, inchoativity, and perfectiveness. These diverse interpretations arise from the different syntactic positions that the particle *le* occupies. Firstly, the endpoint *le* derives from the head position of the structure of non-eventive relation, which is the complement of the structure of eventive relation. Secondly, the inchoative *le* is the instantiation of the head of the structure of eventive relation that takes a structure of non-eventive relation as its complement. Finally, the perfective *le* is the morphological representation of the head of the functional projection of the perfective aspect. According to Smith (1997), the functional projection of the perfective viewpoint aspect is obligatory in a perfective sentence in order for the situation aspects to be visible. Therefore, perfective *le* is expected to be compatible with inchoative predicates or predicates that have the endpoint encoded. However, the perfective aspect cannot be phonologically explicit

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[12] Sybesma (1999: 78) attributes the impossibility of two adjacent *le*s to phonological reasons. This author argues that "the reason is purely phonological: Mandarin does not allow two stressless or toneless non-bound morphemes in a string".

when the endpoint *le* or the inchoative *le* is present, as both *le*s end up acquiring the perfective interpretation after being raised to the perfective functional head.

In the next section, I will deal with the particle *le* from the diachronic point of view. Hopefully, from the diachronic perspective the three uses of the particle *le* can be accounted for as having the same origin. From this perspective, the incorporation approach will also be justified.

3.6 The Particle *le*: From the Diachronic Point of View

The particle *le* has been argued to have originated from the resultative verb complement, *liao*. It assumes the role of resultative verb complements, namely, delimiting the events by offering the endpoint, and literally means *complete*. In the examples in (73), from Shi (2002: 134-136), without this resultative verb complement *liao*, these examples would be of the activity type, whereas with the resultative verb complement, the eventuality switches from activity—without the endpoint—to achievement/accomplishment—with the endpoint.

(73)   a. fa   ji   fu   liao.
          doctrine   already   teach complete
          'The Buddhism doctrine has been already taught.'
        b. zao   shuo   liao   ye.
          early   say   complete   Prt.
          'I said it a long time ago.'
        c. jinzhang   yi   pu   liao
          silk-quilt   already   set   complete
          'The silk-quilt has been already set.'
        d. taizi   cai   wen   liao
          crown-prince   just   ask   complete
          'The crown prince just asked.'

The examples that appear in (73) are all intransitive sentences and follow the same pattern as typical intransitive resultative constructions. The resultative verb complement

liao can also appear in transitive sentences. When it appears in transitive sentences, unlike the transitive resultative constructions in which the resultative verb complements appear before the objects of which they are predicated, the resultative verb complement *liao* appears after the objects, illustrated by the examples in (74), from Shi (2002: 133).

(74)　a. tian　se　　wei　　liao.

　　　　fill　color　not　　complete

　　　　'(Someone) has not completely filled in the color.'

　　b. tan　　　zhi　　yi　　　　liao.

　　　　praise　　it　　already　　complete

　　　　'He already praised it.'

To compare the examples in (74) with the use of the particle *le* denoting the endpoint, it may be observed that this morpheme has undergone a shift of order, from the post-object to the pre-object position. Such a shift of order is not surprising if *liao* is analyzed as a resultative verb complement. Resultative verb complements occupy the post-object position initially and have undergone the shift of order. The examples in (75) illustrate this shift. Sentence (75b) would be the one used nowadays to describe the same event expressed by (75a), from Shi (2002: 49). Sentence (75a) is called the separable resultative structure.

(75)　a. huan　　　Jiang-lang　　jue!　(A.D. 425)

　　　　call　　　Jiang-lang　　awake

　　　　'Call Jiang-lang awake.'

　　b. jiao-xing　　Jiang-lang.

　　　　call-awake　Jiang-lang

　　　　'Call Jiang-lang awake.'

Shi (2002) argues that the shift of the pattern of the resultative construction from separable to inseparable is motivated most importantly by factors such as disyllabification and adjacent structure. There was a tendency to disyllabification in Mandarin as a result of the simplification of the phonological system. Many

phonological devices were abandoned[13] during simplification and many words became homonyms. Disyllabification is a way to compensate for this simplification. See Basciano (2010) and Shi (2002) for further explanations.

In the case of the resultative construction, disyllabification is enabled firstly by the adjacency of V1 and V2 in the intransitive type. As we have seen in the examples in (73), the activity verbs and the verb *liao* are in the adjacent places. At the beginning, this adjacency of the activity verb and the verb *liao* was possible only in intransitive sentences. Later, this pattern extended to transitive sentences when the boundary between these two verbs had been lost. In the words of Shi (2002: 137) "only when *liao* has lost its lexical status and fused into a verb compound with V, can the "V-*le*" phrase have an object". The hypothesis of the lost boundary is clearly supported by the fronting of the formerly intervening adverbs and negatives.

This reanalysis of the resultative verb complements and the reanalysis of *liao* to *le* can be explained in the following way according to the lexical-syntactic account. The contrast of the examples in (75) would be a good starting point for the comparison. In the example in (75a), the resultative verb complement is a non-relational element. During the derivation of the syntactic process, it does not incorporate. Later, this resultative verb complement incorporates into the head of the structure of non-eventive relation in the example in (75b) and loses its "lexical status", in the words of Shi (2002), transforming into a clitic-like or particle-like suffix. In the case of *liao*, it experienced the phonological reduction and became *le*. Besides this phonological difference, the unincorporated and incorporated resultative verb complements *liao* and *le* show different behaviors regarding the predicative relation. This predicative difference is shown in the following examples in (76). The example (76a) is from Shi (2002: 63). In these examples the subject is a clause and the unincorporated resultative verb complement *liao* can be predicated literally of it, while the incorporated particle *le* cannot.

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[13] Here are some abandoned phonological devices, from Shi (2002: 73).

(i)   a. All of the three stop consonants at coda position – [p], [t] and [k]– disappeared.
        b. The distinctive features "voiced" and "voiceless" are neutralized, and, as a result, the set of voiced consonants all merged with their corresponding voiceless counterparts, fore example, [b] became [p] and [d] became [t].
        c. During the transition from Old to Middle Chinese, the long entering tone merged with the falling tone.
        d. The 35 consonants used as initials in Middle Chinese were reduced to 20 in Modern Chinese.
        e. As for the finals, 16 sound categories were reduced to 12.

(76) a. dashi shuo   jie   yi   liao. (A.D. 700)
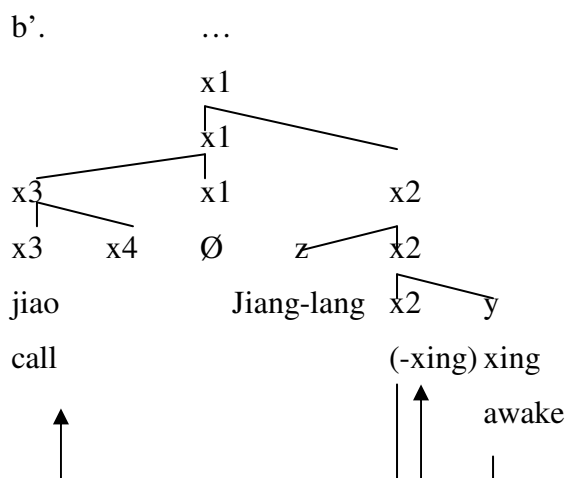   master explain   Buddhist-verse   already complete
         'The master already explained Buddhism verse completely.'
      b. *laoshi   jieshi   na-shou shi   yi   le.
          teacher   explain   that-CL poem already   LE
          Intended: 'The teacher already explained that poem completely.'

The structures of the incorporated and the unincorporated resultative verb complements are those in (77). The structure in (77a') represents the separable resultative structure and the structure in (77b') is that of the resultative construction in Modern Mandarin.

(77) a. huan   Jiang-lang   jue!   (A.D. 425)
         call   Jiang-lang   awake
         'Call Jiang-lang awake.'   (From Shi, 2002: 49)
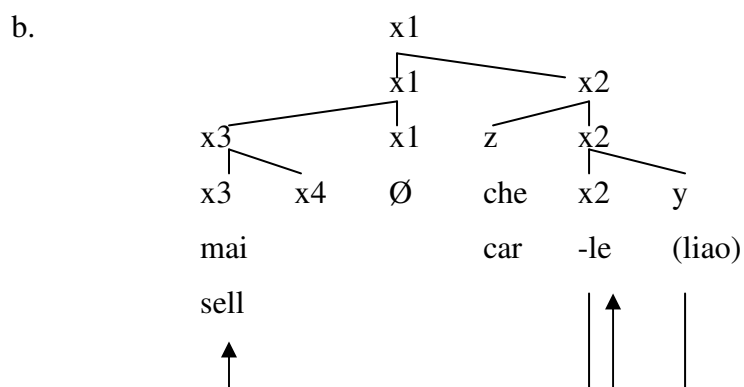   a'.   …

         x1
         x1
      x3   x1   x2
      x3 x4   Ø   z   x2
      huan   Jiang-lang x2   y
      call   jue
                              awake

b. jiao-xing   Jiang-lang.

   call-awake Jiang-lang

   'Call Jiang-lang awake.'

b'.   …
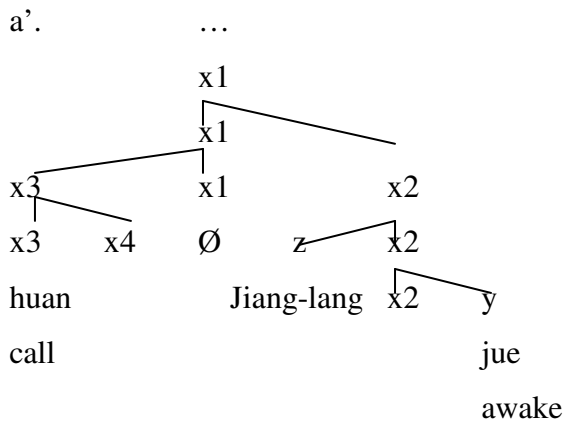
```
                    x1
                    x1
         x3         x1           x2
      x3    x4    Ø      z       x2
      jiao         Jiang-lang  x2    y
      call                (-xing) xing
                                awake
```

In the structure (77b'), it can be observed that the resultative verb complement generates from the non-relation element position. Likely, the resultative verb complement *liao* first incorporated into the head of the structure of the non-eventive relation and later underwent phonological reduction and became *-le*. The final structure with the endpoint *le* is that in (78b).

(78)   a. Zhangsan mai-le che

         Zhangsan sell-LE car

         'Zhangsan sold the car.'

b.
```
                         x1
                         x1           x2
            x3           x1     z      x2
         x3    x4      Ø      che   x2    y
         mai                 car   -le  (liao)
         sell
```

In this section, based on the existing literature on the study of resultative construction from a diachronic perspective, we see that the data from Middle Chinese[14] offer some clue that the particle *le* is derived from the resultative verb complement *liao*. This derivational process can be analyzed by the mechanism of incorporation.

My hypothesis has been that the incorporation of the resultative verb complement from the position of the non-relational element into the head of the structure of the non-eventive relation contributes to the reanalysis of the resultative construction. As a result, the separable resultative construction changed to the inseparable resultative construction. This diachronic change has very much to do with the tendency to disyllabification. During the process, the incorporated resultative verb complements acquired the suffixal property which led to their adjacency with the verb.

This development of the resultative verb complement *liao* into the particle *le*, which is suffix in nature, gives us an important insight into resultative construction in Mandarin. Let us recall that, in the previous section, Mandarin is classified as a satellite-framed language. A question that has been raised is why the presence of the resultative element in the main predicate does not saturate the empty head of the structure of the eventive relation as in verb-framed languages. Let us compare English, a satellite-framed language, with Spanish, a verb-framed language, in (79). It is argued that in Spanish the main predicate is saturated by the resultative element, *plano* 'flat', and, as a result, the manner component, *martilleándola* 'hammering.it', cannot conflate into it. In English, the main predicate is not saturated by the resultative element, *flat*; therefore, the manner component, *hammer*, can conflate. As for the example in Mandarin in (79c), at first sight, it seems strange to claim that Mandarin is also a satellite-framed language because both the manner component, *chui* 'to hammer', and the resultative element, *bian* 'flat', co-exist in the main predicate.

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[14] The stages of Chinese for the sake of grammatical evolution from Shi (2002) are the following: Old Chinese (700-200 B.C.), Middle Chinese (200 B.C. - A.D. 900), Early Modern Chinese (A.D. 900-1500), and Modern Chinese (A.D. 1500 - present).

(79)   a. John   hammered   the can   flat.

                      [Ø + manner]   result

        b. Juan   aplanó   la lata   martilleándola.

          Juan   flattened   the can   hammering.it

          [Ø + result]   manner

      'Juan flattened the can (by) hammering it.'

      'Juan hammered the can flat.'

    c. Zhangsan   chui-bian   guanzi.

      Zhangsan   hammer-flat   can

        [Ø + manner + result]

      'Zhangsan hammered the can flan.'

The question to be answered is why, in Mandarin, the presence of the resultative element in the main predicate does not impede the conflation of the manner component. The answer is that the resultative verb complements in Mandarin have diachronically undergone reanalysis which results in their suffixal nature. Unlike the incorporation of resultative elements into the main predicates in verb-framed languages, the presence of resultative verb complements in the main predicates in Mandarin, a satellite-framed language, results from their suffixal nature, instead of the process of incorporation. Since the process of incorporation is not involved, conflation is free to take place.

     The proposed lexical-syntactic account captures the possible diachronic derivation in the following way. The observed diachronic derivation is related to the process of incorporation, so the natural site from which all three interpretations of the particle *le* are derived is the most embedded one. In other words, an element in the lower complement position can undergo the shift and become another element after landing in a higher position. We could therefore expect a resultative complement to shift to a perfective aspectual marker, but not vice versa. In the next two sections, I will compare the present analysis with the resultative predicate analysis of Sybesma (1997, 1999) and the functional head analysis of Wu (2000).

3.7 Resultative Predicate Analysis: Sybesma (1997, 1999)

In this section, I will compare my analysis of the particle *le* with Sybesma's (1997, 1999) analysis. In my analysis, the particle *le* can be the morphological instantiation of different syntactic configurations. While the perfective *le* is the projection above the VP, the inchoative *le* and the endpoint *le* are projections under the VP. However, Sybesma (1997, 1999) claims that the particle *le* is a resultative predicate embedded in the VP and denies the functional head analysis of this particle[15].

This author points out that, since Wang (1965), the particle *le* has been analyzed as an aspectual perfective particle and can be compared with its negated counterpart, realized as *mei* 'not' or *meiyou* 'not.have'. The particle *le* and the negative adverbials *mei* 'not' and *meiyou* 'not.have' have a complementary distribution: the particle *le* appears in affirmative sentences while the negative adverbials *mei* 'not' and *meiyou* 'not.have' appear in negative sentences. These negative adverbials are considered as the negative morphologic realizations of the head of the perfective projection. This contrast is shown by the contrastive examples in (80).

(80)   a. wo xie-le   yi-ben shu.
            I write-LE   one-CL book
            'I wrote a book.'
        b. wo meiyou   xie-(*le)   yi-ben shu.
            I   not.have   write-(*LE)   one-CL book
            'I did not write a book.'

<div align="right">(Sybesma, 1997: 215)</div>

Sybesma (1997) questions this functional head analysis by offering one distributional problem and two interpretive problems. These problems are presented in what follows and I will then present my objections to these claims. By doing so, I will attempt to prove that the particle *le* can indeed be analyzed as the head of the functional projection in certain cases.

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[15] Sybesma (1997: 215): "This paper develops the proposal that the so-called aspect marker verb- *le* is not the head of some higher functional projection, like IP or AspP, but that, on the contrary, it is deeply embedded in the structure of the Chinese sentence".

The distributional problem involves the comparison of "cluster resultatives", in (81a), and "*de*-resultatives"[16], in (81b), in terms of Sybesma (1997: 216). Sybesma claims that both cluster resultatives and *de*-resultatives have the same underlying structure[17]. If the particle *le* in the example in (81a) is indeed the head of the perfective aspect, what is not expected is the impossibility of the same particle in the example in (81b).

(81)   a. ta   ku-shi-le   shoujuan.
            he   cry-wet-LE   handkerchief
            'He cried such that the handkerchief got wet.'
        b. ta   ku-(*le)-de-(*le)   shoujuan   quan shi-le.
            he   cry-(*LE)-de-(*LE) handkerchief   all   wet-LE
            'He cried such that the handkerchief got all wet.'

<div align="right">(Sybesma, 1997: 220)</div>

However, if these two constructions do not share the same underlying syntactic structure, this distributional problem will disappear. That is, the impossibility of the presence of the particle *le* in (81b) cannot be an argument against the aspectual analysis of this particle.

Next, let us see the two interpretive problems. The first is that even with the presence of the particle *le*, no endpoint is guaranteed. The examples in (82) show that the particle *le* does not signal completion.

(82)   a. ta sha-le   Li Si san-ci,   keshi mei   sha-cheng.
              he kill-LE Li Si three-times, but not.have kill-success
          'He went through the motions of killing Li Si three times, but he did not succeed.'
        b. ta zuotian   xie-le   yi-feng xin,   keshi mei   xie-wan.
            he yesterday write-LE   one-CL letter, but not.have   write-finished
            'He was writing a letter yesterday, but he did not finish it.'

<div align="right">(Sybesma, 1997: 218)</div>

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[16] Readers are referred to Huang (1988) for more details on *de*.
[17] This unitary analysis of both constructions is given up in Sybesma (1999).

Again, these examples cannot be counterexamples to the argument that the particle *le* here is the functional head of the perfective projection because the perfective aspect is not a completion marker of an event. According to Smith (1997), what the perfective aspect does is to make an event visible as a whole. If this event does not have an endpoint, it will not have the completion reading even with the presence of the perfective aspect.

The second interpretative problem involves the inchoative examples, as that in (83). Sybesma (1997) points out that the sentence in (83) does not convey completion because if it did, the example would imply that *Zhang San* will not be taller any more. Indeed, the particle *le* in the example (83) is not the instantiation of the perfective head. As we have seen in my analysis, the particle *le* which leads to the inchoative interpretation generates from a position under the VP. Therefore, it cannot be an argument against the perfective analysis of the particle *le* in other circumstances.

(83)   Zhang San gao-le.

       Zhang San tall-LE

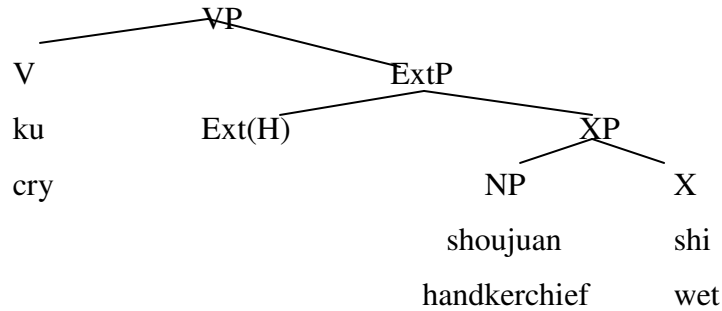   'Zhang San is tall.'

<div align="right">(Sybesma, 1997: 218)</div>

By refuting Sybesma's (1997) objections to the analysis of the particle *le* as a perfective particle, I have been trying to prove that the particle *le* can indeed be analyzed as a functional perfective projection. In what follows, let us see how Sybesma (1997, 1999) gives an account of the particle *le*.

In Sybesma (1997), based on the framework of Hoekstra (1988, 1992), the particle *le* is analyzed as a resultative verb complement. The structure for both cluster resultatives, in (81a), and *de*-resultatives, in (81b), is that in (84). In this structure, there is "an additional projection between the matrix V and the result denoting small clause" (Sybesma, 1997: 221). To offer the phonological content to this projection, there are two possible ways: by the incorporation of an embedded predicate, *shi* 'wet' in (84), or by the insertion of a dummy, *de*. While the former results in a cluster resultative, the latter results in a *de*-resultative. As for the particle *le*, it generates from somewhere below the matrix verb and it appears in the matrix level only when the incorporation takes place. When the particle *de* is inserted, the particle *le* must stay in the embedded clause. In Sybesma's (1997: 221) words, "*le* is generated below matrix verb level and

gets to matrix verb level if another embedded item raises to matrix verb level, taking *le* along".

(84)

```
                              VP
              ┌───────────────┘
         V                    ExtP
                         ┌──────┘───────┐
        ku            Ext(H)            XP
                                     ┌───┘───┐
        cry                         NP       X

                                 shoujuan    shi

                                handkerchief wet
```
                                              (Sybesma, 1997: 220)

The question to answer is where the particle *le* is generated and to that end, Sybesma (1997: 222) claims that "*le* is a predicate… *le* is a resultative predicate, essentially just like *shi* 'wet' in (2a) <my (85a): SF> and *thin* in (7) <my (85b): SF>". In other words, the example in (86a) would have the underlying structure in (86b), both from Sybesma (1997: 222).

(85) a. ta   ku-shi-le   shoujuan.
          he   cry-wet-LE   handkerchief
          'He cried such that the handkerchief got wet.'
       b. The joggers run [the pavement thin].

(86) a. ta   mai-le   ta-de   nei   ji-tou   zhu.
          he   sell-LE   he-GEN   that   several-M   pigs
          'He sold those few pigs of his.'
       b. ta   mai   [[ta-de   nei   ji-tou   zhu] [le]]
          he   sell   he-GEN   that   several-M   pigs LE

If the particle *le* is really a resultative verb complement, namely, *X* in the structure in (84), a problem arises when the particle *le* appears together with other resultative verb complements, as the example in (85a). When the particle *le* and a resultative verb complement appear together, this supposes that the particle *le* and this resultative verb complement are required to compete for the same site in the syntax. This would be a problem. Moreover, Sybesma (1997, 1999) and Sybesma and Shen

(2006) argue that only dynamic verbs with an open temporal range or an open end can be matrix verbs of resultative constructions, which are delimited by resultative verb compounds. If a resultative verb complement does delimit an event, how could the particle *le* further delimit an already delimited predicate, as *ku-shi* 'cry-wet' in (85a)?

To solve these two problems, Sybesma proposes the following solutions. Sybesma claims that the compound *ku-shi* 'cry-wet' as a whole is still atelic, i.e., an activity predicate. Such a claim is supported by the possible stacked de-resultatives, in (87a). The examples in (87) have the same structure, in (88). The point is that without the particle *le*, the combination of *he-zui* 'drink-drunk' is a dynamic open-ranged predicate; therefore, it can be further delimited.

(87)   a. ta   he-de   zui-de   zhan-bu-qi-lai.
          he   drink-DE   drunk-DE   stand-not-up-come
          'He drank himself drunk to the extent that he could not stand up.'
       b. ta   he-zui-le.
          he   drink-drunk-LE
          'He got drunk.'

(88)   a. [$_{VP}$ he [$_{ExtP}$ [$_{Result}$ zui [$_{ExtP}$ [$_{Result}$ zhan-bu-qi-lai]
       b. [$_{VP}$ he [$_{ExtP}$ [$_{Result}$ zui [$_{ExtP}$ [$_{Result}$ le]

(Sybesma, 1997: 227)

Two obvious problems arise here. If the activity-result compounds are really activities, why aren't they compatible with the imperfective marker, i.e., the progressive aspectual marker, as shown in (89a)? Another problem is that this analysis allows recursion. If only the particle *le* can mark the completion, we would expect resultatives with more than two verbs. However, the example in (89b) suggests that this does not seem possible.

(89)   a. *wo zai   he-zui.
          I   ZAI   drink-drunk
          Intended: 'I am drinking myself drunk.'
       b. *wo he-zui-shui-le.
          I   drink-drunk-sleep-LE
          Intended: 'I got drunk and (as a consequence) fell in sleep.

These aforementioned questions do not constitute any problem in my analysis. Let us recall that, in my analysis, there is an important distinction between the endpoint and perfective uses of the particle *le*. In the event *mai-le che* 'sell-LE car', the car must be sold because *le* here is an endpoint *le*; in the event of *xie-le xin* 'write-LE letter', the letter need not be finished because *le* here is a perfective aspect. In other words, the particle *le* in (85a) is a perfective *le* and need not compete for the same position with the resultative complement, *shi* 'wet'.

There is another serious problem and it is related to the different interpretations that the particle *le* may lead to. As we have seen, this particle may express both endpoint and realization. Sybesma (1997) contributes such differences to the specificity of the objects. On the one hand, when the objects are discrete and specific, there is a boundary of the event. In this case, the particle *le* as the head of the small clause in the resultative construction delimits the event and is interpreted as a completion marker. On the other hand, if the objects are not discrete, for example, mass nouns, no boundary will be set for the events. Therefore, the particle *le* will only be a realization marker.

This explanation is not satisfactory. This way of explaining the two different uses of the particle *le* by attributing it to the internal properties of the objects may be applied to the pair of examples in (90). The object is concrete in (90a) and is a mass noun in (90b). However, the different behavior regarding the telicity of these examples is a question that belongs to two different levels, and is not only a question about the internal property of the objects. For example, each subpart of the event in (90b) does lead to the tulips being flattened. The realization interpretation of the example (90b) results from the reiterative interpretation. See Borer (2005) for more discussion on this aspect.

(90)   a. He watered the tulip flat (in one second).
        b. He watered tulips flat (all the morning).

Sybesma (1999) does have two different syntactic configurations for these two different interpretations. The analysis of the particle *le* as the head of a small clause in Sybesma (1997) is now reserved only for the particle *le* which denotes the endpoint. As for the *le* that denotes realization, it is still instantiated as the head of another small clause. This syntactic structure is presented in (91).

(91)

```
        VP
       /|
      / |
     V  XP
        /|
       / |
      X   YP
      |   /|
     le  NP  Y
   realization  (endpoint)
```
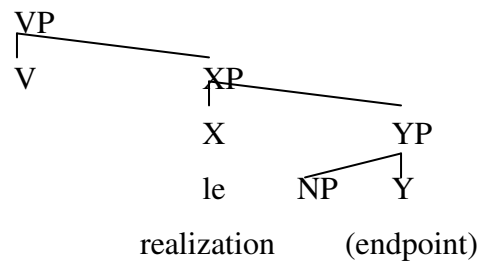
There are at least three problems with this modification. First of all, Sybesma (1999) points out that the surface word order obtained from the structure in (91), based on Kayne (1994), should be Y-*le*-V, while the correct order should be V-Y-*le*. According to Sybesma (1999: 76), obtaining the right surface order requires the stipulation that this order is somehow determined in the lexicon. This stipulation is not needed in my analysis.

The second problem deals with the requirement of an endpoint in order for the realization *le* to be interpreted as such. For Sybesma (1999), on the one hand, the semantic relation between the head X and the small clause YP is that the presence of X implies that the event expressed by YP is carried out. This is exactly the function of the perfective aspect. On the other hand, according to the structure in (91), it seems that the presence of the small clause YP is obligatory for the presence of the projection XP because without the previous presence of YP, there is no way to tell if the particle *le* denotes realization or endpoint. These two suppositions are not compatible in the following way: the perfective interpretation does not require the presence of an endpoint. For example, in the example *ta youyong-le* 'he swam', the perfective marker *le* expresses that the swimming activity has been carried out without making any reference to the endpoint.

The third problem involves the distinction between the inchoative reading and the perfective interpretation. In Sybesma's (1999) analysis, these two readings are reflected by the same syntactic node, that is, the realization *le*. Sybesma analyzes the examples in (92) in the following way. The example in (92a) is to be interpreted as "asserting the existence of the coming about of the state of his being tall" and the example in (92b) says "the existence of the coming about of the state of his face being red".

(92) a. ta   gao-le.

    he   tall-LE

    'He has become tall.'

    b. ta-lian   hong-le.

    he-face   red-LE

    'His face reddened.'

(Sybesma, 1999: 82)

There is a problem with this formulation of the comparison between the inchoative and perfective interpretations of *le*. Under my analysis, the sentences with the inchoative reading should be distinguished from the sentences with the perfective interpretation as this difference results from the configuration of distinct syntactic structures. I will take the example in (93) by way of illustration. The example in (93a) has two interpretations with the particle *le*: the perfective and the inchoative.

(93) a. San-ge   fanren   pao-le.

    three-CL   prisoner   run-LE

    i. 'Three prisoners ran.'

    ii. 'Three prisoners ran away/escaped.'

    b. pao-le   san-ge   fanren.

    run-LE   three-CL   prisoner

    'Three prisoners ran away/escaped.'

In my analysis, the interpretation of the particle *le* in (93ai) is perfective. For this interpretation, the subject is an external argument introduced by the functional head Voice. The embedded VP is an unergative structure. In order to obtain the reading of (93aii), the embedded VP in question is an unaccusative structure. The syntactic subject derives from the specifier position of the structure of non-eventive relation; that is, the subject is actually base-generated as an internal argument. This analysis is supported empirically by the example in (93b). When the subject stays in the internal subject position, the only possible interpretation is the inchoative. Another difference is related to the interpretation of the verb. For the perfective reading in (93a), the verb encodes an activity. For the inchoative reading, the predicate encodes a change of state, namely,

running away, and the verb is simply a modifier of the predicate, which specifies the manner in which this event is carried out. That is, the interpretive difference results from the different underlying structures. Such structural difference is explained under my analysis but not under Sybesma's (1997, 1999) analysis.

To briefly conclude this section, Sybesma's (1997, 1999) analysis has been presented and compared with my lexical-syntactic analysis. In both versions of this author's analysis, the particle *le* is treated as a resultative predicate, the difference being that in Sybesma (1997) there is only one terminal node, i.e., the head of a small clause, while in Sybesma (1999) the particle *le* is the instantiation of two different nodes. Sybesma (1997, 1999) rules out the possibility that the particle *le* can be the instantiation of the functional projection Aspect by the distributional comparison between cluster resultatives and *de*-resultatives, the interpretive problems related to the inchoative predicates, and the examples in which the particle *le* does not signal completion. I argue against these objections and conclude that they cannot be real objections for the particle *le* to be realized as the perfective aspect. In addition to the fact that the arguments against the aspectual head analysis cannot stand, there are problems with analyzing the particle *le* solely as the instantiation of the head of a small clause or the head of two different small clauses. These three problems involve, first, the surface word order of the construction, second, the obligatory association of the realization *le* and the endpoint *le*, and, third, the distinction between the inchoative reading and the perfective reading. These problems can be avoided under my analysis and this has been shown in this section.

3.8 Functional Head Analysis: Wu (2000)

In this section I will review the functional head analysis of the particle *le* in Wu (2000). We have seen in the last section that Sybesma (1997, 1999) argues against the analysis of the particle *le* as the head of some functional projection. Wu (2000) argues for a totally opposite view: the particle *le* can be a functional head of past tense and aspect. As for the concept of aspect, this author adopts the binary-tier proposal of Smith (1997). The aspectual instantiations of the particle *le* are of two types: the completive

aspect and the perfective aspect. The former is equivalent to the situation aspect in Smith (1997), while the latter belongs to the viewpoint aspect.

Both my analysis and Wu's (2000) adopt Smith's (1997) two-tier analysis of aspects. The essential difference between Wu's (2000) approach and mine lies in the distinct syntactic configuration of the situation aspect. In my analysis, while the viewpoint aspect is encoded above VP, the situation aspect is embedded in VP. In Wu (2000), both types of aspects are the heads of the functional projections above VP. In other words, besides the perfective aspect, the situation aspect is also VP-external functional projection. The basic structure is the one in (94)

(94)
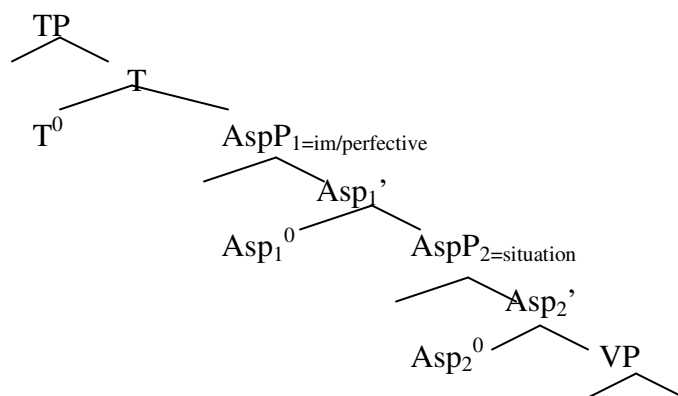
(Wu, 2000: 390)

Wu (2000) argues that this hierarchical structure is supported by the Mirror Principle of Baker (1985). The lineal ordering of the suffixes is exactly the opposite of the lineal ordering of the corresponding functional heads. For example, if the two aspectual heads in (94) are instantiated as suffixes, the superficial order of these heads with the verbal head would be V-Asp_2^0-Asp_1^0. This is indeed the expected order, as shown in the example *xi-ganjing-le* 'wash-clean-LE'.

Wu (2000) further argues that the head of the situation aspect, Asp_2^0, is derived from the resultative verb complement *liao*, and it is further reanalyzed as the head of the perfective aspect, Asp_1^0. Wu (2000) is one of the proponents of the analysis that the particle *le* as situation aspect is related to the resultative verb complements. Both the resultative verb complements and the particle *le* have undergone the shift of word order shown in (95). The shift in (95a) represents the process of the shift of the resultative construction and that in (95b) is the shift of the particle *le*, originally *liao*. The apparent

re-positional process which took place during almost the same period of time is the clue that the particle *le* and the resultative verb complements derive from the same element.
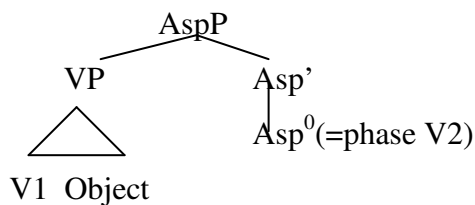
(95)   a. V1 Object V2   →   V1-V2 Object

           b. V Object liao/le   →   V-liao/le Object

Since the particle *le* has its origin as a resultative verb complement in the analysis of Wu (2000), I will take some time to review this author's analysis of the resultative construction. The aim of the remaining section is to prove that my analysis of the resultative construction has more advantages over that of this author and thus my analysis of the particle *le* is more adequate than that of Wu (2000).

The diachronic study of the resultative construction and the particle *le* in Wu (2000) can be resumed as follows. Firstly, there was only resultative construction in which the word order was V1 Object V2. At this time the resultative verb complements necessarily formed the predicative relation with the objects. Secondly, all resultative verb complements underwent the "switch in focus". The focus of the resultative verb complements switched from the predicative relation with the objects to the telic aspectual contribution to the whole event composed of both the V1 and the object. In this step, the resultative verb complements are reanalyzed as situation aspect. Thirdly, the situation aspect *liao* were further reanalyzed as the perfective Aspect head *le*.

Wu (2000) argues that when a resultative verb complement is reanalyzed as a functional Aspect head, this functional head selects a single argument VP in its leftward Specifier position, as in (96).

(96)

$$
\begin{array}{c}
\text{AspP} \\
\diagdown \\
\text{VP} \quad\quad \text{Asp'} \\
\triangle \qquad | \\
\text{V1 Object} \quad \text{Asp}^0(=\text{phase V2})
\end{array}
$$

In this structure the linear order is V1 Object V2, distinct from the linear order of the resultative construction nowadays: V1 V2 Object. This means that there must be some other factors at work so that the V2 will be adjacent to V1. The motivation of this reanalysis is directionality. It can be observed that the structure (96) is a head-final

structure. However, Mandarin is a head-initial language and "there is constant pressure towards uniformity in the directionality of selection in a language" (Wu, 2000: 342). The syntactic configuration in (96) is head-final and therefore requires reanalysis. The result of reanalysis is that V2 is further reanalyzed as an aspectual suffix which attaches to V1 in the lexicon. In the spirit of the Minimalist Program of Chomsky (1995), an affix that is base-generated on a lexical head but instantiates a functional category will have to be raised from the base-generated lexical head position to a higher functional head position in order to be licensed. Owing to this reanalysis, the AspP can be generated to the left of VP, which satisfies the head-initial requirement. The resultant structure is that in (97), from Wu (2000: 353). In this structure, the resultative predicate *kan-wan* 'read-finish' is formed in the lexicon and further raises to the head Asp^0 in LF in order to be licensed.

(97)   (yaoshi)   wo   kan-wan shu,…

       (if)   I   look-finish book

       'If I finish reading the book,…'
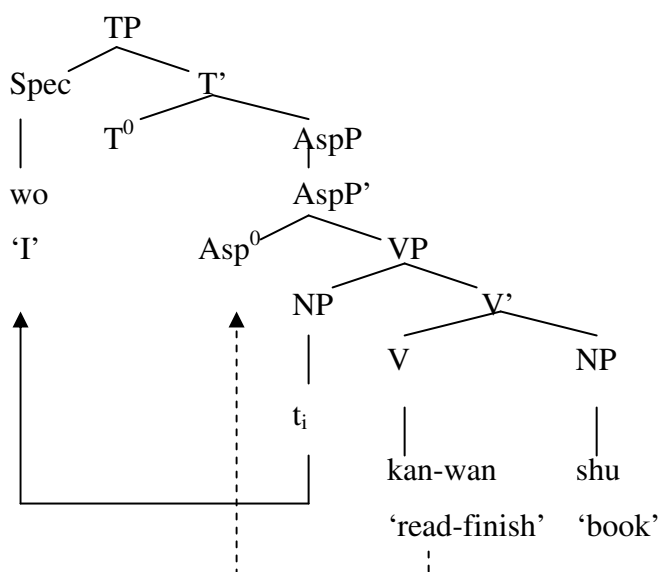
       Several problems arise here. First of all, it is not clear why reanalysis of the resultative verb complements as an Aspect head is required to take the VP as its argument in the leftward Specifier position. If an element is reanalyzed as the head of a functional projection, it is unclear why such a functional projection does not satisfy the head-initial or head-final requirement of a language initially. Moreover, there is no reason to treat the VP as occupying the Specifier position because, in order for a

specifier to be able to exist, there should first be a complement, which is lacking in (96). Wu (2000) realizes this problem and reinterprets the leftward VP as a leftward-branching complement. However, it is still unclear why a VP has to occupy the left node.

The second problem involves the concept of aspects. If the diachronic development of the situation aspect and the perfective aspect in Wu (2000) is true, this would strongly suggest that, before reanalysis of the resultative verb complements as a situation aspect head, there would be neither accomplishments nor achievements because there was no functional head which could contribute to the bounded telic reading of events. Moreover, there would be no way to express the perfective reading of events because, in order for the perfective reading to be expressed, the situation aspect head must be formed first for subsequent further reanalysis as the perfective functional head. However, it does not seem probable that a language, even in its developing or preliminary stage, lacks the means to express the change of state (achievements and accomplishments) because this is the basic cognitive ability human beings have in order to be able to express the phenomena of the real word. It needs not be a linguistic primitive but it would be strange if it were not a cognitive primitive. As for the perfective aspect, if Smith (1997) is correct in asserting that viewpoint aspects are obligatory in order for the internal temporal structure of events to be visible, the perfective aspect would be expected to exist before reanalysis of the particle *le*. If the situation aspectual head and the perfective aspectual head indeed existed before reanalysis of the resultative verb complements, it would be unreasonable that the reanalyzed situation aspectual head should be first head-final and then later corrected as head-initial.

The third problem, which is the most important, is that this analysis seems to merely leave the question of the formation of the resultative construction to the lexicon. In order for this analysis to work, it will be necessary to define what the lexicon really is and how a resultative verb complement can work as an aspectual suffix to adjoin to another verb in the lexicon. The troublesome cases regarding direct object restriction and multiple interpretations, etc., which will be addressed in the next chapter, cannot be explained under this analysis.

My analysis offers the solution to the aforementioned problems. I will use the example in (98a) for illustration. The reanalysis of the resultative verb complements as

the situation aspect (endpoint) can be explained in the following way. As Wu (2000) claims, the resultative verb complements were firstly predicated of the objects only. This predicative relation is reflected by the Complement-Specifier relation based on the head *x2*. The resultative verb complements were reanalyzed as situation aspect, i.e., to express bounded telicity, via the incorporation to the head to which they were complements, *x2* in (98b). This reanalysis is represented by the dotted arrow line.

(98)   a.   Zhangsan   mai-le   ta-de che.

              Zhangsan   sell-LE   he-GEN car

              'Zhangsan sold his car.'

       b.
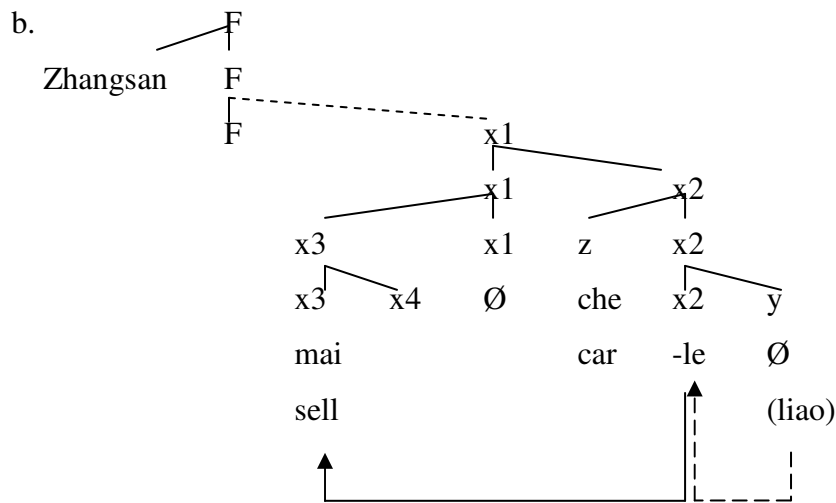
By incorporation and phonological change, the incorporated elements acquired the suffixal property. This conversion into suffixes might be connected in some way to the tendency to disyllabification in the development of Mandarin. Before reanalysis, the incorporation of the resultative verb complements occurred for a phonological reason, namely, to offer phonological content to the head x2, and these complements remained after the objects, as the example in (99a) shows. Only when they were reanalyzed as the instantiations of the situation aspect and, hence, acquired the suffixal nature, did they adjoin to the conflated verb. This reanalysis ends in the pre-object position of these resultative verb complements, in (99b).

(99)   a. huan   Jiang-lang   jue!   (A.D. 425)

         call   Jiang-lang   awake

         'Call Jiang-lang awake.'   (From Shi, 2002: 49)

b. jiao-xing   Jiang-lang.

   call-awake Jiang-lang

   'Call Jiang-lang awake.'

In this way, no functional projection is involved and the concept of situation aspects is interpreted at the level of the predicates. By assuming this, no leftward Specifier position need be involved. Most importantly, there is no need of another level, as the lexicon, and the formation of the resultative construction and the particle *le* can be explained directly.


3.9 Concluding Remarks

In this chapter I propose a lexical-syntactic analysis of the particle *le*. Three main semantic interpretations of this particle have been emphasized: perfective interpretation, resultative/endpoint reading, and inchoative use. One example of each of these readings is offered in (100a), (100b), and (100c), respectively. These uses of the particle *le* must first be distinguished from the use of the sentence *le*, shown by the example in (100d). The sentence *le* is a marker which distinguishes a change of state in the temporal structure. In (100d), it marks a certain point in the time structure before which *Zhangsan* smoked and since which he no longer smoked up to the reference time. With the presence of the sentence *le*, no other contextual information is needed and a reader or a listener can clearly know that *Zhangsan* smoked before, even though it is not mentioned explicitly.

(100)   a. Zhangsan youyong-le.   (perfective)

         Zhangsan swim-LE

         'Zhangsan swam.'

      b. Zhangsan mai-le   ta-de fangzi.   (resultative/endpoint)

         Zhangsan sell-LE   he-GEN house

         'Zhangsan sold his house.'

    c. Zhangsan pang-le.   (inchoative)

        Zhangsan fat-LE

        'Zhangsan became fat.'

    d. Zhangsan bu chouyan   san nian   le.

       Zhangsan no smoke   three year   LE

        'Zhangsan has not been smoking for three years'

My analysis is based on the assumption that there is homomorphism between the syntax and the structural semantics. Therefore, the different semantic interpretations must result from different syntactic configurations. These different syntactic configurations can be illustrated by the syntactic structure in (101).

(101)
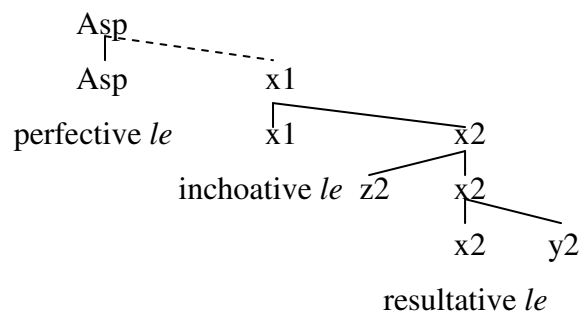
Furthermore, based on the two-tier analysis of the concept of aspect in Smith (1997), my analysis differentiates the functional from the predicative use of the particle *le*.

Functional use refers to the use of *le* as a perfective aspect. This corresponds to the viewpoint aspect in Smith (1997). This functional projection makes the internal temporal structure of an event visible. Following Vendler (1957, 1967) and Dowty (1979), we may classify events into Activities, Achievements, Accomplishments, and States, depending on their internal temporal structure. Activities and States can be situated on one side, while Achievements and Accomplishment are situated on the other side, with respect to the homogeneity of events. Activities and States are unbounded because no endpoint, or Inner Aspect (Travis, 2010), is involved to delimit these events. Achievements and Accomplishments are bounded events because a culmination is involved to be served to delimit these events. In Mandarin, I claim that Accomplishments do not constitute a basic event type and that Accomplishments and Achievements are not differentiated configurationally. The viewpoint aspects make the

internal temporal structure of these events visible: the imperfective viewpoint makes the internal point of these events visible, while the perfective viewpoint emphasizes the temporal structure as an undivided whole. The example (100a) illustrates the use of the particle *le* as the perfective viewpoint aspect. The particle *le* makes the internal temporal structure of the situation type, i.e., Activity here, visible. With *le*, the example (100a) asserts that swimming activity has been carried out. Since no endpoint is involved, it is an atelic event, even with the presence of the particle *le*. On the other hand, when an event involves an endpoint, the perfective *le* makes it visible, as in (102).

(102)   a. Zhangsan qiao-bian-le   guanzi.
              Zhangsan hammer-flat-LE can
              'Zhangsan hammered the can flat.'
          b. Zhangsan xie-wan-le   zuoye.
              Zhangsan write-finish-LE homework
              'Zhangsan finished his homework.'

In these examples, the endpoints are explicitly expressed in the forms of the resultative construction. The results can either be specified by the literal resultative verb complements which describe the ending states, such as *bian* 'flat' in (102a), or simply expressed by the phase resultative verbal complements, such as *wan* 'finish', *hao* 'good', or *dao* 'arrive', etc., which only make the achievement of the culmination explicit but do not specify the resultative state, as in (102b).

As for the resultative/endpoint reading of the particle *le*, there is diachronic evidence that it derives from the original resultative verb complement *liao*. Being a resultative verb complement, it provides an endpoint for otherwise homogeneous events. The structure for this derivation is repeated in (103b). It derives from the non-relational element position, *y*, and incorporates into the head of the structure of the non-eventive relation, *x2*. Because of its suffixal nature, it is forced to adjoin to the matrix verb, morphologically presented by *mai* 'sell'. This derivation is exactly the same process of the formation of the resultative construction, which will be discussed in the next chapter. Similarly, the phase resultative verb complements, such as *wan* 'finish', *hao* 'good', or *dao* 'arrive', etc., are to be analyzed in the same way as the particle *le* that denotes endpoint.

(103)　a. Zhangsan mai-le　　ta-de fangzi.

　　　　　Zhangsan sell-LE　he-GEN house

　　　　　'Zhangsan sold his house.'

　　b.
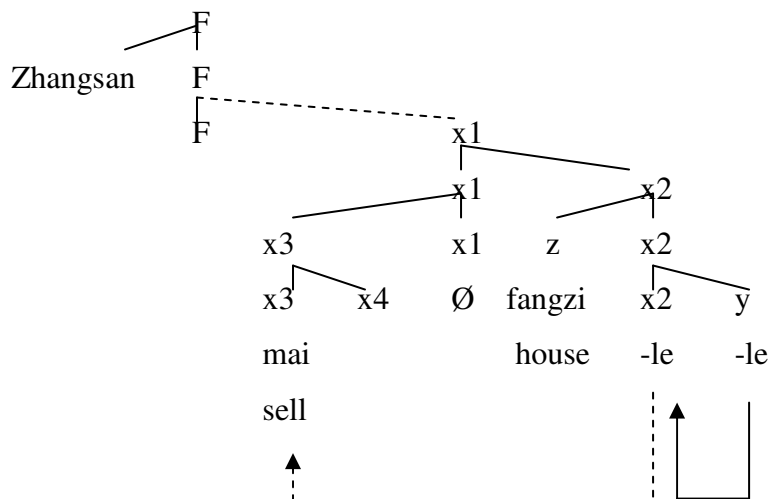
The inchoative use has the independent syntactic explanation under this lexical-syntactic analysis, since the particle *le* that denotes inchoativity is different from both the perfective *le* and the endpoint *le*. If we compare the example in (104) in Mandarin with its counterpart in English, under the lexical-syntactic analysis they can be accounted for with a unitary analysis. Both subjects derive from the internal subject position, *z*, and are raised to the syntactic subject position. The particle *le*, as the suffix *–en* in English, is the morphological instantiation of the head of the structure of eventive relation, *x1*. Distinct from the particle *le* that denotes endpoint, which derives from the structure of non-eventive relation, the inchoative *le* occupies the head of the structure of eventive relation. Therefore, the inchoative *le* is compatible with other elements that denote endpoint, i.e., *hong* 'red' in (104b). The inchoative *le* is also distinct from the perfective *le* because the latter is the head of the functional projection that can be situated above the structure in (104), i.e., Aspect. These facts support the claim that the inchoative *le* is different from both the endpoint *le* and the perfective *le*.

(104)　a. shuye　　　hong-le.

　　　　　tree.leaf　　red-LE

　　　　　'The tree leaves reddened.'

　　　　　'The tree leaves turned red.'

b.

```
x1
 |
x1
-le        x2
-en    z    x2
     ↑  shuye  x2    y
        leaves  Ø    hong
                     red
```
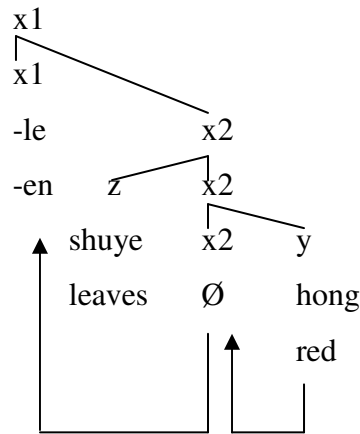
One thing to note is that we would expect the endpoint *le* and the inchoative *le* to appear with the perfective *le* because they belong to different levels: the former are embedded under VP, while the latter is a projection above VP. However, there is no such morphological realization. A possible answer may be that the particle *le* can be the instantiation of both the perfective head and the inchoative head or the perfective head and the endpoint head. That is to say, both inchoative *le* and endpoint *le* will be raised and end in the projection Aspect, acquiring the perfective interpretation. .

Lastly, my analysis compares with Sybesma's (1997, 1999) resultative predicate analysis and Wu's (2000) functional head analysis. In my analysis, the particle *le* can be the instantiation of both the functional perfective head above VP and the two heads of lexical relational structure embedded under VP. The proposals of Sybesma (1997, 1999) and Wu (2000) also distinguish different uses of the particle *le*. Both studies distinguish the perfective *le* from the endpoint *le*. Unlike my analysis, in which the endpoint *le* is a VP-internal instantiation and the perfective *le* is a VP-external functional instantiation, both are VP-internal instantiations in Sybesma (1997, 1999), while both are VP-external functional projections in Wu (2000). I have shown that the distinction between the functional projection and the lexical relational projection is necessary in order to give a full account of the particle *le*.

Chapter 4: The Resultative Construction

The resultative construction is a much studied topic because of its particular nature regarding argument realization. Some examples of the resultative construction in Mandarin in (1) are to be compared with the examples of the resultative construction in English in (2). The most obvious difference is the site the resultative predicates occupy. In English, resultative predicates stand alone as independent syntactic elements and appear after syntactic objects. In Mandarin, resultative predicates appear with verbs and form compounds with them. As a consequence, resultative predicates appear before syntactic objects. In addition to the different order between syntactic objects and resultative predicates, the syntactic difference impacts on the syntactic presentation of functional projections such as the tenses and aspects. In Mandarin, as the examples in (1) show, the aspectual projection *le* adjoins to the union of the verb and the resultative predicate, while in English, as in (2), the projections of the tense and the (phonologically empty) aspect attach to the verb directly.

(1)   a. ta   chui-bian-le   guanzi.
            he   hammer-flat-LE   can
            'He hammered the can flat.'
        b. ta   chang-lei-le.
            he   sing-tired-LE
            'He sang (himself) tired.'
            'He sang so much as to become tired.'
        c. ta   pao-huai-le   ta-de xiezi.
            he   run-rugged-LE   he-GEN shoes
            'He ran his shoes rugged.'
(2)   a. He hammered the can flat.
        b. He sang himself tired.
        c. He ran the shoes rugged.

The resultative construction has been studied by Carrier and Randall (1992), Dowty (1979), Hoekstra (1988), Kratzer (2005), Levin and Rappaport Hovav (1995), Mendívil Giró (2003), Simpson (1983), and Tomioka (2006), to list just a few. As for the resultative construction in Mandarin Chinese, it is also a topic that has undergone considerable study. It has been studied from several perspectives and within broad frameworks. According to the different approaches that different authors adopt, these studies include the following: first, the lexical accounts of Cheng and Huang (1995), Li (1990, 1998, 2005), and Li (2008), etc.; second, the syntactic accounts of Basciano (2010, 2011), Huang (2006), Lin (2004), Sybesma (1999), Wang (2010), and Zhang (2001), among others; and, third, the lexical-syntactic accounts of Cheng (1997), Fan (2008), and Lin (1996, 1998), etc. The constructionist account can be found in Huang (2008).

This chapter fulfills two aims. The first is to explain how the resultative construction in Mandarin is constructed, which leads to the compound pattern of this construction. The second is to compare the resultative constructions in Mandarin and in English. The analysis of the resultative construction in Mandarin will involve comparing its differences with the resultative construction in English.

There are at least three issues to address in order to give an account of the resultative construction in Mandarin: the Direct Object Restriction, the possible multiple interpretations, and causativity. I briefly present these issues as follows.

The first issue involves the Direct Object Restriction. The example in (1b) and its translation to English show that in Mandarin, resultative predicates are readily predicated of the syntactic subjects, while in English this is avoided by adding reflexives to the syntactic object position. It seems that the Direct Object Restriction can be violated in Mandarin in the following two ways. First, in an intransitive sentence the resultative predicate can be predicated of the subject without the need of a reflexive in the object position, as in (1b). Second, even with the presence of an object, the resultative predicate can be predicated of the subject, as the interpretation (3b) shows. The question of the Direct Object Restriction is the first mentioned issue to be answered.

(3)   Zhangsan   zhui-lei-le   Lisi.

        Zhangsan   chase-tired-LE   Lisi

        a. 'Zhangsan chased Lisi and (as a result) Lisi got tired.'   (object-oriented)

        b. 'Zhangsan chased Lisi and (as a result) Zhangsan got tired.' (subject-oriented)

        c. 'Zhangsan got Lisi tired as a result of Lisi's chasing him.' (causative[1])

The second issue involves the possible multiple interpretations of the same sentence of the resultative construction in Mandarin. For the example in (3), three readings are available. For the interpretation (3a), the resultative predicate is predicated of the syntactic object and the syntactic subject is the argument that initiates the chasing event. As for the interpretation (3b), the syntactic subject is still the one that initiates the chasing event; however, it is this argument that the resultative predicate is predicated of. That is, even with the presence of an object argument, the resultative predicate can still be predicated of the subject argument. Again, together with the example in (1b), this apparently violates the Direct Object Restriction. This issue requires explanation as to why resultative predicates may have different predicative patterns. As for the third reading of the example in (3), the requirement of the Direct Object Restriction is satisfied. However, the chasing event is initiated by the syntactic object. The phenomenon that a sentence may involve different interpretations needs to be explained.

The third issue is related to causativity. As we have seen in the third interpretation of the example in (3), there are many examples in which the syntactic subjects are purely the causer, as in (4).

(4)   a. zhe-pian lunwen   xie-lei-le   wo.

           this-CL thesis   write-tired-LE   I

           'This thesis got me tired as a result of my writing it.'

        b. zhe-tiao kuzi   xi-lei-le   wo.

           this-CL pant   wash-tired-LE   I

           'These pants got me tired as a result of my washing them.'

---

[1] This resultative construction of this type is also called inverse object-oriented or flip-flop resultative in the literature since the two arguments seem to be reversible with respect to their syntactic positions (cf. Wu, 2003).

    c. zhe-ben shu   kan-hua-le   wo-de yanjing.

       this-CL book   read-blur-LE   I-GEN eye

       'This book got my eyes blurred as a result of my reading (so much).'

    d. zhe-jian shi   qi-si-le   wo.

       this-CL issue   angry-dead-LE   I

       'This issue made me angry to death.'

        Literal: 'This issue got me dead as a result of my being angry.'

In these examples, the subjects are the entities that cause or trigger the events to happen and the resultatives are predicated of the objects. However, these subjects do not pattern in the same manner with the main predicate. On the one hand, the subjects are the participants of the event described by the main predicate: *wo xie zhe-pian lunwen* 'I wrote this thesis', as in (4a), and *wo xi zhe-tiao kuzi* 'I wash these pants', as in (4b). On the other hand, they need not necessarily participate in the events described by the main predicates. This claim is most obvious in the example (4d), in which both the argument of the main predicate—the event of being angry—and that of the secondary predicate—the state of being (literally) dead—refer to the same one, the object *wo* 'I'. The question to be answered is where these arguments come from[2].

Having previewed the main issues, I will summarize these issues as the questions in (5) to be resolved. Brief answers will be immediately advanced for some of these questions and the chapter will be organized as these questions are covered.

---

[2] In spite of the differences mentioned above, the examples in (4) can be claimed to be from the same syntactic structure and this uniformity can be captured by the uniform predicative relation in the examples in (i). This will be clear in section 4.5.

(i)   a. wo   xie-lei-le.
             I   write-tired-LE
             'I got tired as a result of writing.'
      b. wo   xi-lei-le.
             I   wash-tired-LE
             'I got tired as a result of washing (something).'
      c. wo-de yanjing kan-hua-le.
             I-GEN eye   read-blur-LE
             'My eyes blurred as a result of my reading (so much).'
      d. wo   qi-si-le.
             I   angry-dead-LE
             'I was angry to death.'

(5)   a. How are the resultative compounds formed and classified?

        b. How can the resultative construction be represented structurally?

        c. What are the advantages of the lexical-syntactic analysis presented here?

These questions will be answered under the lexical-syntactic analysis following the lexical relational streams of Hale and Keyser (1991, 1992, 1993, 1997a, 1997b, 1998, 2002, 2005) and Mateu (2002). The question (5a) actually has two parts. The first is how the resultative compounds are formed. Compared with English, the formation of the resultative construction in Mandarin seems to be more flexible, as long as the main predicate (V1) and the resultative predicate (V2) form a compound that has the semantic 'cause-result' relation. Both these predicates can be either activity verbs or stative verbs. The second part is the classification of the resultative construction, which I will classify according to the transitive and intransitive patterns. Each pattern will be divided into sub-types according to the predicative relation. The classification will be dealt with in section 4.1 and the formation of the resultative compounds will be discussed in section 4.2. Through these two sections, the data of the resultative construction are presented in more detail.

The question (5b) can be treated from three different perspectives. These are exactly the three issues mentioned earlier and will be treated in three sections, from section 4.3 to section 4.5. In section 4.3, the relation between the resultative construction in Mandarin and the Direct Object Restriction will be discussed. Even though the validity of the Direct Object Restriction for Mandarin has been called into question in the literature (see Basciano (2010), Cheng and Huang (1995), Huang (2006), Tang (1997), and Zhang (2001, 2007), *inter alia*), I will show that the Direct Object Restriction should be maintained, at least for the data in Mandarin. In section 4.4, the possible multiple interpretations of the same sentence will be argued as being derived from different syntactic configurations. The different interpretations of the arguments arise from the different positions they occupy in the lexical syntactic structures governed by the head-complement and the specifier-head relations. In section 4.5, the issue of causativity will be discussed. It will be claimed that in Mandarin, as in English, the functional head Voice is bundled together with the head CAUSE, following Pylkkänen (2002). This can be empirically proven in Mandarin by the impossibility of the example *Zhangsan xiao Lisi* 'Zhangsan laughed at Lisi' to have causative interpretation, which would be something like *Zhangsan made Lisi laugh*.

Finally, in sections 4.6 and section 4.7, my lexical-syntactic analysis of the resultative construction in Mandarin will be compared with lexical/lexical-semantic accounts and syntactic approaches, respectively. Besides being able to serve as the answer to the question in (5c), the comparison of these different approaches to the resultative construction in one specific language, Mandarin, can also supply additional empirical support to the conclusion obtained in chapter one in which the lexical-syntactic approaches are claimed to be more suitable theoretically for the analysis of the resultative construction in languages in general. In the lexical-syntactic approach adopted in my analysis, the primitives and the principles are better restricted than those of the lexical-semantic approaches, and the lexical-syntactic approach is therefore more appropriate when accounting for cross-linguistic variation, in order to establish the typology of the resultative construction cross-linguistically. Section 4.8 concludes this chapter.

4.1 The Resultative Compounds: the Data

In the few examples presented until now in this chapter we may observe that the most obvious difference between the resultative construction in Mandarin and in English is the syntactic presentation of the resultative predicate. While the resultative predicate in English resultative construction stands alone as a secondary predicate, in (6a) and (6b), in Mandarin, the resultative predicate must adjoin to the main predicate and form a compound with the verb, in (6c) and (6d).

(6)   a. John washed the pants clean.

      b. John wiped the table dry.

      c. Zhangsan   xi-ganjing-le   kuzi.

         Zhangsan   wash-clean-LE   pant

         'Zhangsan washed the pants clean.'

      d. Zhangsan   ca-gan-le   zhuozi.

         Zhangsan   wipe-dry-LE   table

         'Zhangsan wiped the table dry.'

This contrastive pattern has also been observed in the examples of motion events in these two languages, as in (7a) and (7b). In the examples in (7a), the directional phrase *into the room* is clearly independent from the main verb *run*. This can be proven by the fact that the functional projections, such as tense, affect only the main verb, but not the directional element. As for the example in (7b), the directional element is attached to the verb *pao* 'to run' and forms a compound with it. As for the functional projection of aspect, it immediately follows this compound.

(7)   a. John ran into the room.

        b. Zhangsan   pao-jin-le   fangjian.

          Zhangsan   run-enter-LE room

          'Zhangsan ran into the room.'

As we have seen in Chapter two, both Mandarin and English are satellite-framed languages. However, the resultative constructions of both languages are apparently subject to different constraints and the formation of the resultative construction in Mandarin seems to be less restricted than in English. This relatively smaller restriction in the formation of the resultative construction can be observed in the following three aspects: the variety of the resultative predicates, the constraints on the main verb (V1) and the resultative predicate (V2), and the application of the Direct Object Restriction.

Firstly, as already observed in the literature (Wechsler (2005a, 2005b) and Basciano (2010), for example), not all adjectives can serve as resultative predicates in the resultative construction in English. For example, a table cannot be wiped dirty, but it can be wiped clean; a plate can be wiped dry but not wet; a metal can be hammered flat or smooth, but not beautiful or tubular. These are reflected in the examples in (8)

(8)   a. He wiped <u>it</u> *clean / dry / smooth / *damp / *dirty / *stained / *wet*.

        b. He <u>the metal</u> *flat / smooth / *beautiful / *safe / *tubular*.

        c. <u>The puddle</u> froze *solid / *slippery / *dangerous*.

                               (From Wechsler, 2005a: 256; 2005b: 465)

Compared with English, Mandarin is more flexible when it comes to selecting a resultative predicate to form the resultative construction. In the Mandarin compound

resultative construction, a shirt can be washed either clean or dirty; a table can be wiped both dry and wet. This flexibility is shown in the examples in (9).

(9)   a. wo   ba   chenyi   xi-zang   le.

           I   BA   shirt   wash-dirty   ASP

           'I washed the shirt dirty.'

           'I washed the shirt dirty (e.g. in a river), but it came out dirtier than before.'

    b. (ta) ba   ta de   zhuozi ca-zang   le.

           she BA   he DE table   wipe-dirty   ASP

           'She wiped his table dirty.'

                                 (Adopted from Basciano, 2010: 296, 299)

The second issue regards the constraints on the components of the resultative compounds. Generally speaking, as long as the main verb and the resultative predicate can express a cause-result relation, they may form a resultative compound. However, the ease with which a resultative predicate can appear in a resultative construction in Mandarin does not mean that there are no constraints on the components that form resultative compounds. Compared with V2, the V1 of the resultative compounds is subject to fewer constraints. Basciano (2010: 287) points out that "[a]lmost all transitive and unergative verbs can appear as V1. Moreover, some unaccusative verbs too can appear as V1". While some unaccusative verbs like *po* 'to break' and *zui* 'to get drunk' can be an V1 as in compounds *po-sui* 'break-smash, break into pieces' and *zui-dao* 'get drunk-fall', other unaccusative verbs like *si* 'to die' cannot. Basciano (2010: 288) argues that even though both types are verbs of change of state that have an encoded result, only the former type may further specify the result state. As a consequence, only unaccusative verbs that may further specify the result state can be the V1 of a resultative compound. As for the V2 of the resultative compounds, they are "mostly deadjectival verbs or other verbs of change of state" (Basciano (2010: 289). Even though unergative verbs are unlikely to appear in the V2 position, some unergative verbs like *ku* 'to cry', *xiao* 'to laugh', *zou* 'to walk', and *pao* 'to run', etc., can appear as V2. However, as we will see later in this chapter, they are used as unaccusative rather than unergative verbs.

Before we continue, it should be noted that V2 often has an adjectival form. However, adjectives in Mandarin are treated by some linguists, Li (1990: 177) for example, as verbs because adjectives in Mandarin may be employed as predicates

without the presence of the copular verbs. There are reasons to treat adjectives as verbs in Mandarin if adjectives are compared with stative verbs. In the previous chapter, we excluded accomplishments as a basic eventive type in Mandarin. The only basic types are activities and states. As the examples in (10) show, the stative verbs are compatible with the positive degree modifier *hen*, degree modifiers *feichang* 'very' and *bijiao* 'more', but not with the progressive marker *zai*. The gradable adjectives in the examples in (11) behave exactly the same. The gradable adjectives need the positive degree modifier *hen* in order to be predicates if there are no other modifiers presented.

(10)   a. Zhangsan hen/feichang/bijiao   ai   Lisi.

           Zhangsan   HEN/very/more   love   Lisi

           'Zhangsan loves Lisi very much/better than somebody else does.'

      b. *Zhangsan zai   ai   Lisi.

           Zhangsan ZAI   love   Lisi

           Intended: '??Zhangsan is loving Lisi.'

      c. Zhangsan hen/feichang/bijiao   renshi Lisi.

           Zhangsan HEN/very/more   know Lisi

           'Zhangsan knows Lisi very well/better than somebody else does.'

      d. *Zhangsan zai   renshi Lisi.

           Zhangsan ZAI   know Lisi

           Intended: '??Zhangsan is knowing Lisi.'

(11)   a. Zhangsan hen/feichang/bijiao   pang.

           Zhangsan HEN/very/more   fat

           'Zhangsan is {fat / very fat / fatter than somebody}.'

      b. *Zhangsan zai pang.

           Zhangsan ZAI fat

           Intended: 'Zhangsan is fat.'

      c. Zhangsan hen/feichang/bijiao   lei.

           Zhangsan HEN/very/more   tired

           'Zhangsan is {tired / very tired / more tired than somebody}.'

      d. *Zhangsan zai lei.

           Zhangsan ZAI tired

           Intended: 'Zhangsan is tired.'

As we have also seen in the previous chapter, some activity verbs can have the inchoative use with the presence of the inchoative *le*, as in (12a) and (12b). As for the non-gradable adjectives, such as *si* 'dead', *xing* 'awake', and *po* 'broken', etc., the inchoative *le* is needed in order for these adjectives to be predicated of the subjects, as the examples in (12c) and (12d) show. Moreover, measure words can be added to specify the duration of the state and behave in the same way as activity verbs. The examples in (13) show that both activity verbs and non-gradable adjectives pattern in the same way regarding the addition of the measure word.

(12)　　a. Zhangsan　pao-le[3].

　　　　　Zhangsan　run-LE

　　　　　'Zhangsan ran away.'

　　　　b. niao　　　fei-le.

　　　　　bird　　　fly-LE

　　　　　'The bird flied away.'

　　　　c. Zhangsan　si-le.

　　　　　Zhangsan　dead-LE

　　　　　'Zhangsan is dead.'

　　　　d. beizi　　　po-le.

　　　　　cup　　　　broke-LE

　　　　　'The cup is broken.'

(13)　　a. Zhangsan　pao-le　　　san-tian.

　　　　　Zhangsan　run-LE　　　three-day

　　　　　'Zhangsan has been away for three days.'

　　　　b. niao　　　fei-le　　　liang-tian.

　　　　　bird　　　fly-LE　　　two-day

　　　　　'The bird has been away for two days.'

　　　　c. Zhangsan　si-le　　　san-tian.

　　　　　Zhangsan　dead-LE　　　three-day

　　　　　'Zhangsan has been dead for three days.'

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[3] Recall that the particle *le* in the example in (12c) and (12d), besides the inchoative use, also has the perfective aspectual use. See chapter three for the detailed discussion.

d. Zhangsan   xing-le   yi-ge xiaoshi.

   Zhangsan   awake-LE   one-CL hour

   'Zhangsan has been awake for one hor.'

Thirdly, the Direct Object Restriction has been proposed to explain the unacceptability of the examples in (14a) and (14b). According to the Direct Object Restriction, a resultative predicate must be predicated of the object and not of the subject. In order for these examples to be grammatical, a reflexive is inserted, as in (14a') and (14b').

(14)   a. *John sang hoarse.

         a'. John sang himself hoarse.

         b. *Mary ran tired.

         b' Mary ran herself tired.

However, the Direct Object Restriction seems to be violated in Mandarin, as the examples in (15) indicate. We will discuss in greater detail the issues related to the Direct Object Restriction in section 4.3.

(15)   a. Zhangsan   chang-ya-le.

         Zhangsan   sing-hoarse-LE

         'Zhangsan sang himself hoarse.'

         b. Lili   pao-lei-le.

         Lili   run-tired-le

         'Lili ran herself tired.'

Now that we have presented the constraints on the formation of the resultative compounds, let us now look at how these compounds are formed from the combination of V1 and V2. Following Basciano (2010), I will present the data based on two criteria: the involvement or non-involvement of an object in resultative construction and the relation between the V1 of the resultative compound and the object.

As we have just seen in the examples in (15), there are resultative constructions in Mandarin which have no syntactic object while their counterparts in English must employ the fake reflexives. That is to say, the resultative construction in English seems

to be obligatorily transitive. This, however, is not true because there is another kind of intransitive resultative construction in Mandarin which has its counterparts in the intransitive form in English, as in (16). Unlike the V1 in the examples in (15), which are unergative verbs, the V1 in these examples are unaccusative verbs that express the result state which can be further specified by the V2.

(16)   a. pingzi   po-sui-le.

          vase   break-smash-LE

          'The vase broke into pieces.'

      b. he   dong-ying-le.

          river   freeze-hard-LE

          'The river froze solid.'

                                   (Adopted from Basciano, 2010)

We have seen that the V1 in a resultative compound is usually an unergative or a transitive verb. When the resultative construction with this compound has an object, three possible situations arise. When the V1 is an unergative verb, the object must be a non-subcategorized object for the V1. When the V1 is a transitive verb, the object can be either a selected object or an unselected object. The examples in (17) show these three types, respectively.

(17)   a. Zhangsan   ku-*(shi)-le   shoupa.

          Zhangsan   cry-wet-LE   handkerchief

          'Zhangsan cried so much that the handkerchief got wet.'

      b. Zhangsan   ca-(gan)-le   zhuozi.

          Zhangsan   wipe-clean-LE   table

          'Zhangsan wiped the table clean.'

      c. Zhangsan   ti-po-le   xiezi.

          Zhangsan   kick-break-LE   shoe

          'Zhangsan kicked something and as a result his shoes got broken.'

In (17a), the verb *ku* 'to cry' is an unergative verb and cannot select any direct object; therefore, it is obvious that *shoupa* 'handkerchief' cannot be a subcategorized argument of the V1. Without the V2, the sentence would be ungrammatical. In (17b), the presence

of the V2 is not obligatory because the object can be the direct object selected by the V1. The example in (17c) can be treated as that in (17b) in the sense that Zhangsan kicked the shoes and as a result they broke. Besides this interpretation, there is another in which the shoes are not the objects kicked and they broke as a result of Zhangsan's kicking something else. The question to be answered is where the object comes from. There are at most four possible hypotheses. One is that it is selected by the V1, but this hypothesis would not be able to explain the example in (17a). The second is that it is selected by the V2, since the V2 is predicated of the object in all these examples. The third is that it is selected by the resultative compound formed by the V1 and the V2. And the last is that it is not the argument of the verb at all; it is the argument of the construction. This chapter will address this issue and show that these hypotheses are not altogether incompatible.

In the next section, the data of the resultative construction in Mandarin will be classified for further analysis in later sections.

4.2 The Classification of the Resultative Construction

Having seen the restrictions of the formation of V1-V2 compounds in the Mandarin resultative construction in the previous section, in this section I will explain how V1-V2 compounds interact with their arguments. Several questions arise from here.

Regarding transitivity, the resultative construction can be divided into two groups: intransitive and transitive. The two examples in (18) are intransitive and represent two subtypes of the intransitive resultative construction. The subject of the example in (18a) seems to be the entity that carries out the singing event, i.e., the agent, while the subject of the example in (18b) seems to be the entity that undergoes the change of state, that is, the theme. It is worth noting that if we compare the example in (18a) with its translation to English, we may see that the intransitive counterpart of this example in English is impossible; a reflexive must be inserted in order to ensure the grammaticality. The need to insert a reflexive in this case leads linguists such as Simpson (1983) and Levin and Rappaport Hovav (1995) to formulate the syntactic restriction which states that resultative predicates must be predicated of the underlying

object argument. Levin and Rappaport Hovav (1995: 34) call this the Direct Object Restriction. The Direct Object Restriction on Mandarin will be discussed in section 4.3.

(18)   a. Zhangsan chang-ya-le.

Zhangsan sing-hoarse-LE

'Zhangsan sang *(himself) hoarse.'

b. Zhangsan lei-si-le[4].

Zhangsan tired-dead-LE

'Zhangsan was so tired that he died.'

The transitive type can be further divided into three subgroups, according to the different predicative relations of the resultative predicates—see also Chang (2003). Normally, with the presence of an object, the resultative predicate is predicated of the object, as the examples (19a) and (19b) show. These two examples differ in that, in the example in (19a), the object seems to be thematically selected by the matrix verb, which is not the case for the example in (19b), in which the selected object is introduced by the VP adjunct, [*ti qiu*] 'kick ball'. Following the terms established in the literature, Wechsler (2005a) for example, the first is called the Control resultative and the second, the Exceptional Case-Marking resultative. Both will be included in the type termed **the object-oriented transitive type**.

(19)   a. Zhangsan   da-**teng**-le   **Lisi**.

Zhangsan   beat-hurt-LE   Lisi

'Zhangsan beat Lisi and (as a result) Lisi got hurt.'

b. Lisi [ti qiu]   ti **po**   **xiezi** le.   (from Wang 2010: 92)

Lisi kick ball   kick break   shoe ASP

'Lisi kicked the ball and (as a result) his shoes were broken.'

'(As for) kicking balls, Lisi kicked and (as a result) his shoes were broken.'

Another type of transitive resultative construction permits the resultative predicates to be predicated of the syntactic subject even with the presence of the

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[4] The adjective *si* 'dead' as V2 may be a degree modifier and means extremely. This sentence could mean *Zhangsan was tired to death*, that is, *Zhangsan was extremely tired*. Actually, this metaphorical reading is more accessible than *Zhangsan was so tired that he died*.

syntactic object. Some authors[5] argue that in order for the resultative predicates to be able to be predicated of the subjects, the objects must be non-referential. This requirement is demonstrated by the examples in (20). In this way, the resultatives of this type express that the subjects undergo a change of state by carrying out the activities with the syntactic objects included as part of the activities. However, the non-referential requirement is not quite true because, as the examples in (21) show, it is not difficult to find transitive resultatives with referential objects, but the resultative predicates are still able to predicated of the syntactic subjects. Again, this seems to violate the Direct Object Restriction. I will call this type **the subject-oriented transitive type**.

(20)   a. **Zhangsan** qi-**lei**-le   ma.

Zhangsan ride-tired-LE   horse

'Zhangsan got tired by riding the horse.'

b. **Zhangsan** ti-**lei**-le   zuqiu.

Zhangsan kick-tired-LE   soccer

'Zhangsan got tired by playing soccer.'

(21)   a. **Zhangsan** zhui-**lei**-le   Lisi.

Zhangsan chase-tired-LE   Lisi

'Zhangsan chased Lisi and (as a result) Zhangsan got tired.'

b. **Zhangsan** wan-**ni**-le   na-ge youxi.

Zhangsan play-fed.up-LE that-CL game

'Zhangsan played so much the game that he got fed up.'

There is still another type, in (22), in which the resultative predicates are predicated of the syntactic objects; however, it is these syntactic objects that trigger the events denoted by the matrix verbs. For instance, in the example (22a), it is the object, *Zhangsan*, that carried out the writing event and as a result *Zhangsan* got tired. I will call this type **the causative type**. On the one hand, the causative type is different from the object-oriented transitive type, in (19), both thematically and syntactically: the syntactic subject is the thematic agent in the object-oriented transitive type, while the syntactic subject is the thematic theme in the causative type and the thematic agent is presented by the syntactic object. On the other hand, the causative type and the subject-

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[5] Cheng (1997), based on Hale and Keyser (1991), is one of them.

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oriented transitive type, in (20), are similar regarding the thematic interpretation: in both types, the resultative predicates are predicated of the thematic agents. They differ with respect to the syntactic realization of the subject and the object. The entity that triggers the event is realized as the subject in the subject-oriented transitive type, but as the object in the causative type.

(22) a. zhe-pian lunwen   xie-**lei**-le   **Zhangsan**.
         this-CL thesis   write-be tired-LE   Zhangsan
         'This thesis got Zhangsan tired as a result of his writing it.'
      b. zhe-tiao kuzi   xi-**lei**-le   **Zhangsan**.
         this-CL pant   wash-be tired-LE   Zhangsan
         'These pants got Zhangsan tired as a result of his washing them.'
      c. zhe-jian shi   qi-**si**-le   **Zhangsan**.
         this-CL issue   be angry-be dead-LE   Zhangsan
         'This issue made Zhangsan angry to death.'
          Literal: 'This issue got Zhangsan dead as a result of his being angry.'
      d. zhe-ben shu   kan-**hua**-le   **wo-de yanjing**.
         this-CL book   read-blur-LE   I-GEN eyes
         'This book got my eyes blurred as a result of my reading (so much).'

                                                        (Adopted from Huang, 2008; Li, 2008b)

In summary, the resultative construction in Mandarin can be first divided into two groups according to transitivity: transitive and intransitive. These two types can be further divided into subtypes, according to the predicative relations between the resultative predicates and the arguments that they are predicated of and the thematic relation between the matrix V1 and the arguments. Each subtype is offered with an example in (23). In these examples the predicative relation between the resultative predicates and the arguments that they are predicated of is indicated by the bold font.

(23)   *Types of the Resultative Construction in Mandarin*

  a. *The Object-Oriented Transitive Type*

    Zhangsan da-**teng**-le **Lisi**.

    Zhangsan beat-hurt-LE Lisi

    'Zhangsan beat Lisi and (as a result) Lisi got hurt.'

  b. *The Subject-Oriented Transitive Type*

    Zhangsan wan-**ni**-le   na-ge youxi.

    Zhangsan play-fed.up-LE that-CL game

    'Zhangsan played the game and (as a result) he got fed up.'

  c. *The Causative Type*

    zhe-pian lunwen xie-**lei**-le   **Zhangsan**.

    this-CL thesis   write-be tired-LE Zhangsan

    'This thesis got Zhangsan tired as a result of his writing it.'

  d. *The Intransitive Type with V1 Encoding Unergativity*

    Zhangsan chang-**ya**-le.

    Zhangsan sing-hoarse-LE

    'Zhangsan sang himself hoarse.'

  e. *The Intransitive Type with V1 Encoding Unaccusativity*

    Zhangsan lei-**si**-le.

    Zhangsan tired-dead-LE

    'Zhangsan was so tired that he died.'

    'Zhangsan was tired to death.'

One observation that has been made in the literature is that some sentences may have multiple interpretations, like the one seen previously, repeated in (24). A successful account will have to explain how a sentence can be interpreted in different ways.

(24)   Zhangsan zhui-lei-le   Lisi.

  Zhangsan chase-tired-LE Lisi

  a. 'Zhangsan chased Lisi and (as a result) Lisi got tired.' (object-oriented)

  b. 'Zhangsan chased Lisi and (as a result) Zhangsan got tired.' (subject-oriented)

  c. 'Zhangsan got Lisi tired as a result of Lisi's chasing him.' (causative)

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The two intransitive types will be analyzed in section 4.3 and the object-oriented transitive type and the subject-oriented transitive type will be covered in section 4.4. Finally, section 4.5 will deal with the causative type.

4.3 Intransitive Resultatives and the Direct Object Restriction

The requirement in English that in the resultative construction the secondary resultative predicates must be predicated of the objects is usually termed Simpson's Law or the Direct Object Restriction.

(25)   a. *Simpson's Law* (Simpson, 1983: 146)

The controller of a resultative attribute must be an OBJECT, whether that OBJECT is a surface OBJECT, as in transitive verbs, or an underlying OBJECT, as in passives and intransitive verbs of the Unaccusative class, or whether that OBJECT is a fake reflexive, as in intransitive verbs of the Unergative class (original emphasis).

b. *Direct Object Restriction* (Levin and Rappaport Hovav, 1995: 34)

A resultative phrase may be predicated of an immediately postverbal NP, but may not be predicated of a subject or of an oblique complement.

We may make use of the examples in (26) as an illustration of this restriction; for the ease of exemplifying, the resultative predicates and the objects of which they are predicated are marked in bold-faced letters.

(26)   a. John hammered **the metal (flat)**.

b. John ran **his shoes *(rugged)**.

c. John sang *(**himself) tired**.

d. **The icecream$_i$** froze t$_i$ **solid**[6].

e. I froze **the icecream solid**.

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[6] The examples in (26d) and (26e) are from Simpson (1983: 143).

The examples in (26a) and (26b) suggest that the resultative predicates must be predicated of the objects whether the objects are thematically selected by the verb or not. The example in (26c) also has the unergative verb as the matrix verb but it does not have the unselected object of the type in (26b). Since the subject cannot be argued as deriving from the underlying object position, as in (26d), the resultative predicate cannot be predicated of the syntactic subject. In order for this example in (26c) to be grammatical, a reflexive must be inserted into the underlying object position for the resultative predicate to be predicated of. Since it is inserted for the syntactic requirement only, it is also called a fake reflexive. As for the example in (26d), the resultative predicate can be predicated of the subject directly without either an unselected object, as in (26b), or a reflexive, as in (26c), because this syntactic subject does derive from the underlying object position. When the subject position is occupied, as in (26e), this argument remains in the object position and the resultative predicate must be predicated of it, instead of the subject[7].

Since then, there have been debates on whether the Direct Object Restriction is to be maintained or not. The Direct Object Restriction is considered a syntactic restriction which requires the predicative relation between the resultative predicates and the direct objects. There are attempts to account for the same phenomenon from the semantic perspective. Based on Krifka's (1998) event-argument homomorphism model and Hay et al. (1999), Kennedy (1999), and Kennedy and McNally's (1999, 2005) semantics of scalar adjectives, Wechsler (1997, 2005a, 2005b) tries to offer explanations to the questions related to the Direct Object Restriction. For example, Wechsler (2005a: 255, 272) argues that the resultatives "involve an abstract 'path' argument corresponding to *degrees along the scale*[8] denoted by the resultative

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[7] It should be noted that the requirement of the Direct Object Restriction disappears when the secondary predicates involved are of depictive, as the example in (i) shows. In this example, the depictive predicate describes the state of the subject during the event instead of the state resulting from the event. That is, the example in (i) means that John was drunk when he was hammering the metal instead of that John got drunk as a result of the event of hammering the metal.

(i)   **John** hammered the metal **drunk**.

[8] The measuring scale is related to event-argument homomorphism, which can be briefly summarized as follows: the quantification of an 'affected theme', argument of a verb, can be transferred from it to the whole event. This transfer of quantification can be exemplified by the examples in (i), from Wechsler (2005a: 260). The object argument is cumulative in (ia), while it is quantized in (ib). This difference, with respect to the quantification of the object arguments, leads to the different behaviors of the telicity of the events. The scale, in this case, refers to the physical volume of the wine, along which the object arguments and the events are measured. If the scale is open-ended, the events will be atelic. The events will be telic when the scale has an endpoint.

predicate" and that to the extent that the Direct Object Restriction holds, "it is just a side-effect of argument mapping generalization" and that "The Direct Object Restriction qua syntactic constraint would seem to be dead".

Syntactically speaking, there are some examples that are difficult to explain under the definitions offered in (25). Firstly, there are examples in which the resultative predicates can be predicated of the syntactic subjects with the presence of the object arguments. The examples in (27) are of this type, offered by Wechsler (1997, 2005a: 272). Secondly, there are examples in which the resultative predicates can occur with activity verbs without the need to insert either unselected objects or fake reflexives. Some examples of this type are offered by Rappaport Hovav and Levin (2001: 774), in (28).

(27)   a. **The wise men** followed the star **out of Bethlehem**.

         b. **The sailors** managed to catch a breeze and ride it **clear of the rocks**.

         c. **He** followed Lassie **free of his captors**.

(28)   a. A man grabbed and groped her and tried to get under her clothing, but **she** kicked **free** and fled.

         b. One woman gets up to leave, but Red-Eyes grabs her roughly by the arm and pulls her into his lap. **She** wriggles **free**, but remains seated obediently beside him.

         c. **[O]ne of his race cars** wiggled **loose** inside the transporter and caused damage to both of his cars.

Owing to the existence of these exceptions, Rappaport Hovav and Levin (2001) abandon the Direct Object Restriction. Despite Rappaport Hovav and Levin's (2001) abandonment of the Direct Object Restriction, Mateu (2002, 2005) argues to the contrary. Mateu (2002, 2005) studies the examples in (27) and argues that these

---

(i)   a. John drank wine (for an hour)/(*in an hour).
         b. John drank a glass of wine (*for an hour)/(in an hour).

It should be noted that since not all adjectives have the function of a measuring scale, it is expected that not all adjectives can be resultative predicates. Those adjectives that cannot serve as a measuring scale cannot possibly appear in the resultative construction as resultative predicates. Based on the semantics of adjectives, Wechsler (2005a: 263) classifies adjectives as follows. Adjectives can be divided into non-gradable and gradable adjectives. While gradable adjectives are compatible with degree modifiers and comparatives, non-gradable adjectives are not. Gradable adjectives can be further divided into open-scale and closed-scale adjectives. Closed-scale adjectives can be used with adverbs like *totally* or *completely*, open-scaled adjectives cannot. Finally, closed-scale adjectives can be divided into minimal end-point adjectives and maximal end-point adjectives.

examples do comply with the Direct Object Restriction and their incompatibility is illusory. As for the type of examples in (28), they could be analyzed as the examples in (29). This author proves that these examples are compatible with the Direct Object Restriction; therefore, the examples in (30) should not be ruled out by the Direct Object Restriction. At the same time, Mateu (2002) points out a possible account of the difference between the examples in (29) and (30): the Canonical Result Restriction in Wechsler (1997).

(29)   a. John danced into the room.

       b. The garage door rumbles open[9].

(30)   a. [#]John laughed into the room.

       b. [#]John laughed silly.

The crucial point established for the Direct Object Restriction on the resultative construction in Mateu (2002, 2005), based on Hoekstra's (1988, 1992) studies on Small Clause and Marantz's (1992) work on the *way*-construction, is that the Direct Object Restriction is to be maintained/regained as long as the arguments being predicated of are base-generated in the internal argument position of an unaccusative construction; that is, the subject of which the resultative predicate is predicated is the subject of the small-clause-like phrase. The examples in (28), and (29) would have the structure in (31a), while the examples in (27) are to be analyzed as "disguised unaccusative sentence" (Mateu, 2002: 269) and would have the structure in (31b)[10].
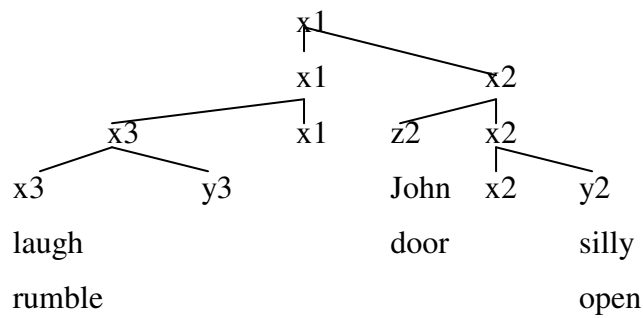
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[9] From Rappaport Hovav and Levin (2001: 768).

[10] According to Hoekstra (1988), the analysis of the examples in (27a) as unaccusative predicates has empirical support from Dutch, a language which has different auxiliary selections for unaccusative and unergative sentences. The example in (27a) may be analyzed as that in (i) in Dutch, in which the auxiliary verb is that for an unaccusative predicate. As for the prepositional phrase, it is analyzed as an adjunct modifier.

(i)	De politie *is*	the dief	tot zijn huis	gevogd.
	the police IS	the thief	to his house	followed

<div align="right">(Mateu, 2005: 72)</div>

(31)   a.

```
                          x1
                  x1              x2
            x3        x1      z2      x2
         x3     y3                x2     y2

         x3              x1      z2      x2
      x3     y3       John   x2     y2

      laugh                door     silly

      rumble                        open
```

b.   the wise man$_i$ GO [$_{SC/PP}$ t$_i$ AFTER the star] [$_{adjunctPP}$ out of Bethlehem]

```
            F
      man_i    F
               F      x1
                   x1      x2
                  GO    z2    x2
                             x2    y2
                       t_i   x2   y2
                          AFTER  star
```
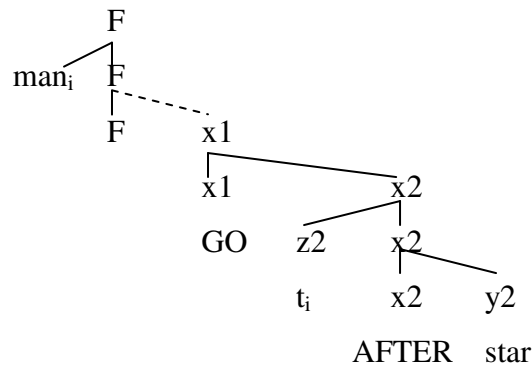
This analysis sheds light on the intransitive types of the resultative construction in Mandarin. Subsection 4.3.1 will discuss the intransitive type with V1 encoding unergativity, and subsection 4.3.2 will cover the intransitive type with V1 encoding unaccusativity.

4.3.1 The Intransitive Type with V1 Encoding Unergativity

When an English resultative construction consists of an intransitive activity matrix verb and an adjectival resultative predicate, the employment of an unselected object or a fake reflexive is necessary. This is shown by the examples in (32a) and (32b). Contrary to Simpson (1983), who treats these elements as mere syntactic placeholders without any semantic content, Mateu (2005) argues that the requirement of either unselected objects or fake reflexives does have semantic considerations and they are interpreted as Figure. However, regardless of whether the obligatory requirement of unselected objects and fake reflexives is syntactic or semantic, this does not apply to their counterparts in Mandarin. As a result, the examples in (32c) and (32e) are still grammatical without the unselected object or the fake reflexive.
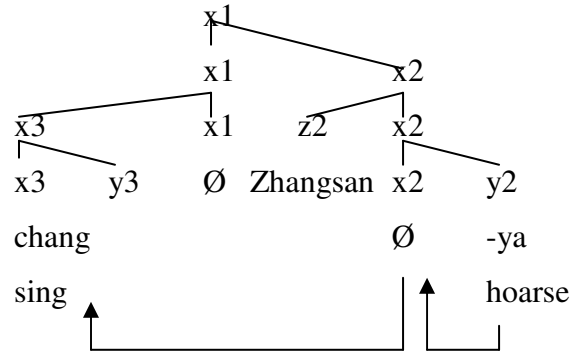
(32)　　a. John sang *(himself) hoarse.

　　　　b. John ran *(himself) tired.

　　　　c. Zhangsan (??guyi)　　　　chang-ya-le.

　　　　　Zhangsan (on purpose)　　sing-hoarse-LE

　　　　　'Zhangsan sang himself hoarse.'

　　　　d. Zhangsan (guyi)　　　　　chang-ya-le　　　　　ta-ziji.

　　　　　Zhangsan (on purpose)　　sing-hoarse-LE　　　he-self

　　　　　'Zhangsan sang himself hoarse (on purpose).'

　　　　e. Zhangsan (??guyi)　　　　pao-lei-le.

　　　　　Zhangsan (on purpose)　　run-tired-LE

　　　　　'Zhangsan ran himself tired.'

　　　　f. Zhangsan (guyi)　　　　　pao-lei-le　　ta-ziji.

　　　　　Zhangsan (on purpose)　　run-tired-LE　he-self

　　　　　'Zhangsan ran himself tired (on purpose).'

The non-requirement of unselected objects and fake reflexives does not prevent them from appearing in the resultative construction in Mandarin. Notwithstanding the above, it should be noted that the presence and absence of the reflexive in the Mandarin examples in (32) does lead to different interpretations. Let us compare the examples in (32c) and in (32d). Without the reflexive, the example in (32c) simply means that Zhangsan sang and as a result he got tired. To add the adverbial *guyi* 'on purpose' could make the example look odd. On the contrary, with the presence of the reflexive, the sentence in (32d) appears to be more tolerant of the adverbial *guyi* 'on purpose' because this example has a clearer causative denotation. Thus, the example in (32d) could mean that Zhangsan intentionally made himself tired by running (very much). In other words, the examples without the reflexive, as in (32c) and (32e), involve the unaccusative structure, while the examples with the reflexive, as in (32d) and (32f), involve the causative structure.
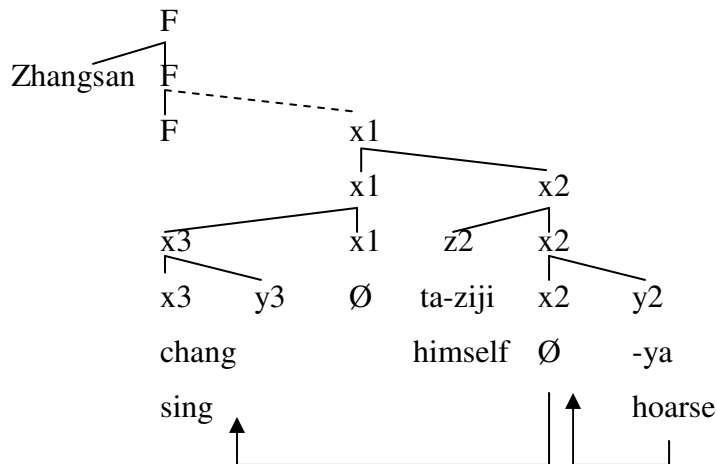
This interpretational difference can be accounted for if the syntactic subject in (32c) and (32e) derives from the internal subject position of an unaccusative structure, while the syntactic subject in (32d) and (32f) is introduced by a functional projection which contributes to the agent/causer interpretation. The examples in (32c) and (32e)

might have the structure in (33a), while the examples in (32d) and (32f) might have the structure in (33b).

(33)   a.

```
                              x1
                         x1          x2
                     x3      x1    z2    x2
                  x3    y3    Ø  Zhangsan x2    y2
                  chang              Ø        -ya
                  sing                        hoarse
```

    b.

```
                    F
           Zhangsan  F
                     F          x1
                           x1          x2
                       x3      x1    z2    x2
                    x3    y3    Ø  ta-ziji  x2    y2
                    chang          himself  Ø     -ya
                    sing                          hoarse
```

Both structures involve the process of conflation, in the spirit of Haugen (2009) and McIntyre (2004), with the modification that it is the whole unergative structure, instead of the root, that conflates. The unergative structure, headed by *x3*, conflates with the phonologically empty head of the unaccusative structure headed by *x1*. Given the suffixal nature of the resultative predicates seen in the previous chapter, the resultative predicate *ya* 'hoarse' adjoins to the unit phonologically presented by *chang* 'sing'. Since in both structures the resultative predicates, *y2*, are predicated of the internal subject, *z2*, the Direct Object Restriction can be claimed to be valid.

Until now, the intransitive type of the Mandarin resultatives in which the subject appears as the agent of V1 does satisfy the requirement of the Direct Object Restriction. In other words, this type of resultatives in Mandarin is parallel to the examples in (34a)

and in (34b). When the resultative predicates are prepositional phrases, as in (34b), they can be predicated directly of the subjects without the need of inserting either unselected objects or reflexives. The question that arises is how to explain the contrast between the examples in (34). They all satisfy the Direct Object Restriction because the elements of which the resultative predicates are predicated are raised from the internal subject position, i.e., the specifier of the structure of the non-eventive relation, and they all have the same semantic content: Figure. When the reflexive is present, as in the examples in (34c) and (34d), it has the semantic Figure role; the subjects are introduced by a functional projection, whereby causative interpretation is acquired. Despite the fulfillment of the Direct Object Restriction, the puzzle remains to be solved: what factors make the reflexives indispensable in (34c) and (34d); what factors make the unselected objects dispensable in (34b); and what factors make the presence of the reflexives impossible in (34a)?

(34)   a. The garage door rumbles (*itself) open[11].   (Huang, 2006: 8)

        b. John danced (Mary) into the room.

        c. John ran *(himself) tired.

        d. John sang *(himself) hoarse.

Four explanations are possible here, though each has its drawbacks. The first one is that offered by Wechsler (1997, 2005a). The fundamental stand of Wechsler's (1997, 2005a) analysis is the distinction between the control resultatives and the Exceptional Case-Marking resultatives. The definitions of these types are given in (35). The control resultatives must satisfy the Canonical Result Restriction in (36), while the Exceptional Case-Marking resultatives are not required to.

(35)   a. *Control Resultative*

        Resultative phrase whose predication subject is a semantic argument of the matrix verb.

---

[11] More examples, such as those in (i), are offered by Levin and Rappaport Hovav (2005: 110).

(i)   a. The door rolled open.
           b. The gate swung shut.
           c. The cookies burned black.
           d. The coats steamed dry.

b. *Exceptional Case-Marking Resultative*

Resultative phrase whose predication subject is NOT a semantic argument of the matrix verb.

(36)　*Canonical Result Restriction*

A control resultative must represent a 'canonical' or 'normal' result state of the type denoted by the verb.
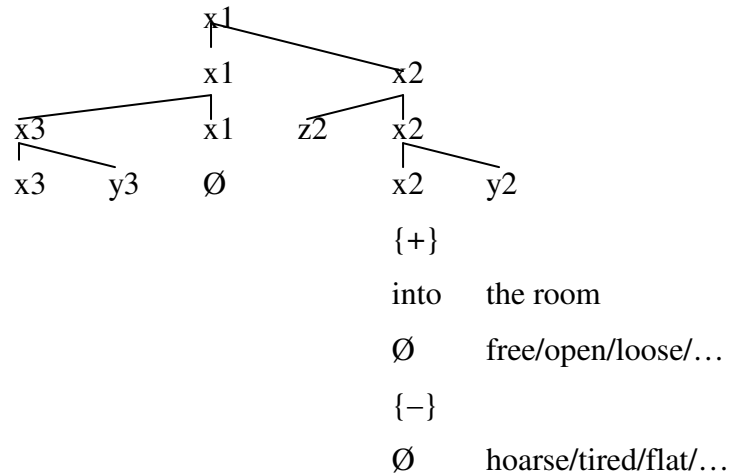
(Wechsler, 2007)

The examples in (34) can thus be explained in the following way. Because *tired* and *hoarse* are not the canonical result states of the running and singing events, **John ran tired* and **John sang hoarse*, being control resultatives, would not be acceptable. When the reflexives are inserted, *John ran himself tired* and *John sang himself hoarse*, they are possible because they are Exceptional Case-Marking resultatives. As for *dancing*, Wechsler (1997) would claim that it is treated as *running* and the normal result would be someone being in a new location; thus there would be no problem for John to dance into the room. However, if *open* is treated as the canonical result of *rumble* in (34a), which leads to the acceptability of this example without the reflexive, what cannot be explained is why the insertion of the reflexive is not possible.

The second likely explanation is based on the observation that some adjectival resultative predicates, such as *free*, *loose*, *open*, and so on, should be treated as particles. They can form complex predicates with the matrix verbs. The problem of such an analysis is that it cannot offer a satisfactory explanation for the resultative predicates of prepositional form as in *John danced into the room*.

The third possible way is related to the concept of causativity, based on the data in Mandarin. As we have seen in the examples in Mandarin in (32), the resultatives are obligatorily causative when the reflexives are present, otherwise they express the change of state. In the example, *The garage door rumbles open*, the change of state interpretation is permitted. The sentence **The garage door rumbles itself open* is not possible because a door cannot cause itself to be opened. By employing the reflexive one causes oneself to become tired by running or become hoarse by singing. However, this analysis could not explain why one cannot become tired simply as a result of running or become hoarse as a result of singing, as the impossible omission of the reflexives in the examples in (34c) and (34d) shows.

The last possibility is to discover the different properties of the head of the structure of the non-eventive relation, i.e., the projection that represents Path. Let us see the structure in (37) for illustration.

(37)

```
                              x1
                       ┌──────┘
                       x1              x2
                  ┌────┘          ┌────┘
              x3       x1     z2      x2
           ┌──┘     ┌──┘          ┌──┘
         x3   y3   Ø            x2   y2
                                {+}
                                into    the room
                                Ø       free/open/loose/…
                                {−}
                                Ø       hoarse/tired/flat/…
```

According to this proposal, different resultative predicates determine the semantic interpretation of the head of the structure of the non-eventive relation, $x2$, with which they are associated. While the semantic feature {+} allows the predication of the syntactic subject, the semantic {−} only permits the predication of the syntactic object[12]. For example, the head with which the resultative predicates like *free*, *open* and *loose* are associated is interpreted as having the semantic feature {+} while the head with which the resultative predicates like *hoarse*, *tired* and *flat* are associated is interpreted as having the semantic feature {−}. It is the different semantic interpretations of the head of the structure of the non-eventive relation that determine the different predicative behaviors between the resultative predicates and the heads of which they are predicated. The resultative predicates associated with the feature {+} may be predicated of either the syntactic object or the syntactic subject as long as they are derived from the position $z2$. As for the resultative predicates that are associated with the feature {−}, they can only be predicated of the syntactic object derived from the position $z2$, but not of the syntactic subject. As we have seen that some resultative predicates such as *free*, *open*,

---

[12] I am aware of the risk of this definition being a mere stipulation. It is simply proposed as a mechanism to differentiate two distinct properties of the head of the structure of the non-eventive relation. Nevertheless, as we will see soon, they do show different semantic properties: the resultative predicates that are associated with the semantic feature {+} are non-gradable, in the sense of Wechsler (1997, 2005a), in that they are compatible with neither degree modifiers nor comparatives, while the resultative predicates that are associate with the semantic feature {-} are compatible with these types of modifiers.

and *loose*, etc. are most likely to be predicated of the syntactic subjects and that there is an interesting coincidence that these adjectives correspond to non-gradable adjectives in Wechsler's (1997, 2005a) classification of adjectives, these facts may support the hypothesis that resultative predicates have different features.

In this subsection, I have presented the analysis of the intransitive type in which V1 encodes unergativity; that is, the subject appears as the agent of V1. In chapter one, we saw that such a thematic relation is only illusory because the matrix verb conflates with the head of the unaccusative/causative structure and it works as the modifier of the unaccusative/causative structure. In other words, the subject does not bear direct syntactic relation with V1. This aside, although the resultative predicates can be predicated of the subjects without the need of insertion reflexives or unselected objects, I show that the Direct Object Restriction is still satisfied, parallel to the English example, *The garage door rumbles open*.

As for the contrast between the possible predication of the syntactic subject in the example, *The garage door rumbles open*, and the impossibility of such predication as in the example, **John sang hoarse*, four possible solutions have been offered. Future studies will be needed to determine the best answer to this question.

In the next section, I will turn to the other intransitive type in which subjects appear as the theme of matrix verbs.

4.3.2 The Intransitive Type with V1 Encoding Unaccusativity

Unlike the type in the previous subsection, in which the matrix verb has the unergative form and the subject appears to have the agent role, in this type, shown in (38a) and (38b), the subject seems to be the semantic theme of this matrix verb, which in turn has the unaccusative form. This unaccusative relation is shown by the predicative relation in (38a') and (38b').

(38) a. na-tiao gou   e-si-le.

    that-CL dog   hungry-dead-LE

    'That dog was hungry to death.'

a'. na-tiao gou   hen   e.

   that-CL dog   HEN   hungry

   'That dog is hungry.'

b. Zhangsan lei-si-le.

   Zhangsan tired-dead-LE

   'Zhangsan was so tired that he died.'

   'Zhangsan was tired to death.'

b'. Zhangsan hen   lei.

   Zhangsan HEN   tired

   'Zhangsan is tired.'

In other words, in the previous type of intransitive resultatives, the subjects carry out the activities expressed by V1 and the resultative predicates express the state resulted from these activities. In this type, the subjects suffer some kind of change of state denoted by V1, and the resultative predicates simply specify the degree of this change of state. They are comparable to the examples in English in (39), in which the secondary resultative predicates specify the states denoted by the matrix verb in the unaccusative form.

(39)   a. The icecream froze solid.

        b. The butter melted to a liquid.

        c. The vase broke into little pieces.

                                                            (From Simpson, 1983: 143)

We have seen that the previous intransitive type of resultatives involves the conflation of an unergative structure with the phonologically empty head of an unaccusative structure. The conflated unergative structure modifies the unaccusative structure and specifies the manner in which the event is carried out. Superficially, V1 is originated from the unergative structure, while the resultative predicate derives from the unaccusative structure.

A possible explanation of the previous type is from Marantz (1992), who adopts the aspectual analysis of Tenny's (1987) direct argument. According to Tenny (1987), a direct argument can measure out the basic verb meaning. For example, the verb *sing* is an undelimited unergative verb, in (40a), but it can be delimited by a direct argument, the cognate object in (40b). In the resultative in (40c), it is the resultative predicate that

serves as the direct argument because it is the resultative predicate that measures out the event of hammering the nail.

(40)   a. Elmer sang for several hours.

b. Elmer sang a song in ten minutes.

c. Elmer hammered the nail flat.

<div align="right">(From Marantz, 1992: 181)</div>

Neither my analysis in the previous subsection nor the mentioned aspectual approach of Marantz (1992) are applicable to the examples in (38). Firstly, in my analysis, in the spirit of Mateu (2002: 175), for an argument structure to be able to conflate with the other one, "the conflation operation[13] always exhausts **all** the lexical material of the subordinate argument structure" (original emphasis). The structure of the matrix verb in (38a) is that in (41) and it cannot be a successful candidate for the conflation operation because the specifier of the structure of the non-eventive relation is not affected by the incorporation operation.

(41)

x_1

x_1　　　　　x_2

$\emptyset$　　z_2　x_2

　　　gou　x_2　y_2

　　　dog　$\emptyset$　e

　　　　　　　hungry
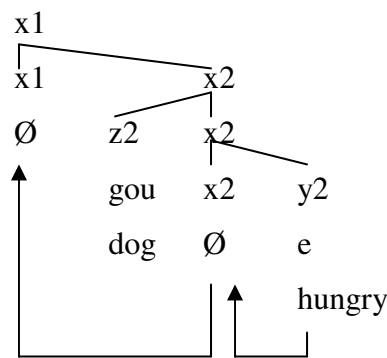
Secondly, Marantz's (1992) aspectual analysis does not work because the matrix verbs in the examples in (38) are not inherently unbounded. Since these verbs are aspectually bounded, they cannot be further measured out.

A clue to the explanation of this type of resultatives in Mandarin may be found in Mateu (2010b, 2012). Based on Incorporation and Conflation processes established in

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[13] Note that, in terms of this dissertation, it is incorporation operation.

Haugen (2009), Mateu (2010b, 2012) reformulates the distinction between strong resultatives and weak resultatives[14] on the syntactic ground, which were distinguished by Washio (1997) from the semantic perspective. According to Haugen (2009: 260), "*incorporation* is conceived of as head-movement (as in Baker, 1988; Hale and Keyser, 1993), and is instantiated through the syntactic operation of Copy, whereas *conflation* is instantiated directly through Merge (compounding)". These two processes can be illustrated by the structure in (42b): the root DANCE conflates with V while the root SORE incorporates to P. This definition leads Mateu (2012: 262) to make the following distinction: "weak resultatives involve incorporation of the root into P en route to V…, while strong ones involve conflation of the roots with V…".

(42)   a. The boy danced his feet sore.

       b.

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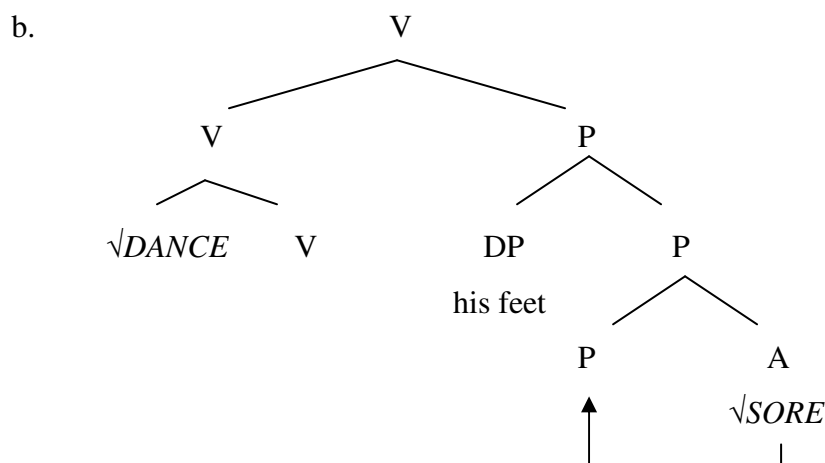
[14] Strong resultatives are those in which "the meaning of the verb and the meaning of the adjective are completely independent of each other" (Washio, 1997: 7). The resultative predicates create a new predication relation that is not predictable from the semantics of the verbs. Some examples are given in (i). Weak resultatives refer to those that are not strong and in which the verb may imply the resulting states. The examples in (ii) belong to weak resultatives.

(i)   a. The horses dragged the logs smooth.
      a'. uma-ga   maruta-o   subesube-ni   hikizut-ta.   (Japanese)
        Horse-NOM log-ACC   smooth   drag-PAST
      b. John hammered the metal flat.
      c. She kicked her son black and blue.
      d. The jockeys raced the horses sweaty.
      e. They beat the man bloody.
(ii)   a. Mary dyed the dress pink.
      a'. Mary-ga   doresu-o   pinku-ni   some-ta.   (Japanese)
        Mary-NOM dress-ACC   Pink   dye-PAST
      b. I froze the ice cream hard.

                                                                        (Washio, 1997)
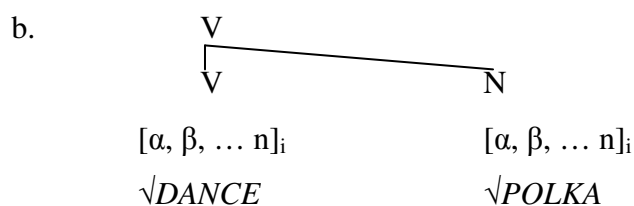
By the above mentioned definition, the example in English in (42a) is a strong resultative because it involves the process of conflation, i.e., the merging of the root DANCE with V. As for the weak resultatives, they can be illustrated by the example in Japanese in (43a) and the structure in (43b), from Mateu (2010b).

(43)   a. John-ga   kabe-o   buruu-ni   nut-ta.

            John-NOM wall-ACC   blue   paint-PAST

            'John painted the wall blue.'

        b.
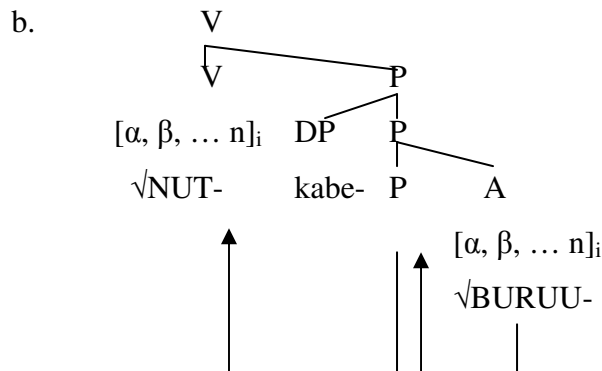
The example in (43a) is a weak resultative because only the process of incorporation, but not that of conflation, is involved. The process of conflation involves copying the semantic features of the complements to their heads. Concretely, the semantic features of A are copied and incorporated into P, and the same process occurs successively from P to V. In this case, the origin and the destiny of the process of incorporation are instantiated by two different roots. Under the Copy Theory of Chomsky (1995) and Late Insertion of Distributed Morphology (Halle and Marantz, 1993; Harley and Noyer, 1999; Marantz, 2001) adopted by Haugen (2009), the head movement involves the syntactic operation of Copy, which consists of the copying of the features, and given the Late Insertion, the original features and the copy of these features can be spelled out by more than one root. The structure in (44) can provide such an illustration. By the process of incorporation, the bundle of features of N is copied and moved into V; furthermore, these two heads are instantiated by two different roots.

(44)   a. John danced a polka.

      b.

```
                        V
                        ┌──────────────┐
                        V              N
        [α, β, … n]ᵢ              [α, β, … n]ᵢ
        √DANCE                   √POLKA
```

This way of accounting for the distinction between strong resultatives and weak resultatives captures Washio's (1997) insight that, in a strong resultative, the verb and the resultative predicate are independent of each other, while in a weak resultative they are dependent. This relation of (in)dependency is directly reflected in the structures in (42b) and (43b). In the structure in (42b), the verb, phonologically represented by the root √*DANCE*, and the structure with the resultative predicate have no dependent relation because they derive from two different resources; in the structure in (43b), however, the verb, √*NUT-*, and the resultative predicate, √*BURUU-*, are dependent because they originate from the same structure and are actually two different instantiations or copies of the same bundle of semantic features.

Now, let us turn to the intransitive type mentioned earlier in this subsection. The example in (45a) can be used to illustrate this type. Its transitive alternative is given in (45b).

(45)   a. ta de shou   dong-jiang-le.

        he GEN hand   freeze-stiff-LE

        'His hands froze stiff.'

      b. Zhangsan   dong-jiang-le   ta de shou.

        Zhangsan   freeze-stiff-LE   he GEN hand

        'Zhangsan froze his hands stiff.'

      c. The ice cream froze solid.

      d. John froze the ice cream solid.

The example in (45a) shows that "the verb lexically specifies that it (the object) undergoes some specific change of state", in the words of Washio (1997). Hence, it is a weak resultative. Therefore, it is analyzable as the example in (45c). In terms of Mateu (2010b, 2012), the verb and the resultative predicate are structurally dependent. Since it

is a weak resultative, only the process of incorporation, but not the process of conflation, is involved in its argument structure, represented in (46). In this structure, after the copy of the features from *y2* to *x1*(via *x2*), the roots √*dong* 'freeze' and √*jiang* 'stiff' are inserted into these two positions. If there is no syntactic subject, the internal subject argument *ta de shou* 'his hands' is raised to the subject position, resulting in the intransitive example in (45a). If a syntactic subject is inserted through a functional projection, the transitive alternate in (45b) will be formed.

(46)
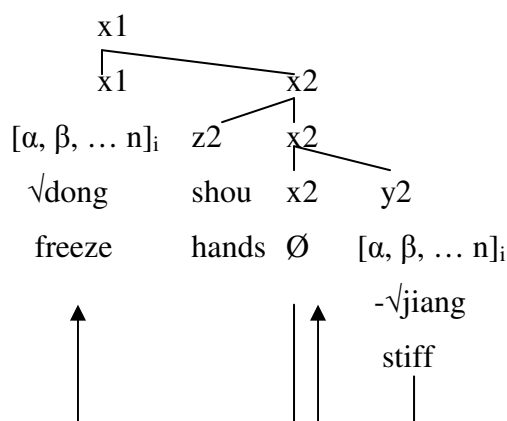
  To sum up briefly, in this section, two types of intransitive Mandarin resultatives are discussed. The **first** type, in which the subject appears to be the agent of V1, results from the process of conflation. Distinct from the process of conflation discussed in Haugen (2009), in which the conflated element is a root, the process of conflation adopted here involves the conflation of an unergative structure. This captures the insight in the literature that the matrix verbs in resultative construction must be aspectually unbounded. This type is a strong resultative. The **second** type, in which the main predicate has the adjectival form and in which the subject appears to be the theme of V1, is a weak resultative because the matrix verb already expresses that the object will undergo a certain change of state and the resultative predicate simply specifies this state. The structure is the result of the process of incorporation that has the instantiation of two coindexed bundles of features by two different roots.

  The different analysis of these two types of intransitive resultatives was previously proposed by Huang (2006). This author exemplifies his syntactic approach to argument structure in terms of Rappaport Hovav and Levin's (1998, 2001) event

structures. These two types of intransitive resultatives, in (47) from Huang (2006: 21), have the same lexical semantic template and the difference between them lies in the different modifying verbs, an unergative one, in (47a), and an unaccusative one, in (47b).

(47)   a. *Agent subject type*

   Inchoative (1): [BECOME$_{<UNERGATIVE>}$ [x $<STATE>$]]

   Zhangsan zhui-lei-le.

   Zhangsan chase-tired Perf/Inc

   'Zhangsan got tired from chasing.'

   b. *Theme subject type*

   Inchoative (2): [BECOME$_{<UNACCUSATIVE>}$ [x $<STATE>$]]

   Zhangsan lei-bing-le.

   Zhangsan tired-sick-Perf/Inc[15]

   'Zhangsan got sick from exhaustion.'

A common feature of Huang's (2006) and my analysis is that the different interpretations of the syntactic subjects—agent in (47a) and theme in (47b)—do not arise from the syntax because the subjects in both types derive from the same position: it is derived from the same position in the argument structure in my analysis and it is derived from the same position in the event structures in Huang's (2006) analysis. Moreover, both types share the same main predicative structure: both types have an unaccusative structure, in my analysis, and both types are of the inchoative type, in Huang's (2006) analysis. The different interpretations of the subjects may arise from pragmatic factors or world knowledge, but not from syntax. In my analysis, the subjects of both types should be interpreted as Figure, since they both occupy the specifier position of the structure of non-eventive relation. The other point that both analyses share is that both types have an identical predicate structure and the difference between them consists of the different ways of spelling out phonological presentation. In Huang (2006), the difference results from the various modifying structures that conflate into the main predicate structure; in my analysis, the difference results from the different processes involved: conflation or incorporation.

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[15] Inc: inchoative particle.

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According to Huang's (2006) approach, in the spirit of Lin (2001), Mandarin is claimed to be a highly analytic language[16] and hence has a very small or no lexical syntax, while English is a synthetic language and unergative verbs like *cry*, *chase*, or *run* enter the syntactic computation with their argument structure specified. That is to say, in English, the verb *cry* may have the argument structure {Agent} specified, and the verb *chase* may have the argument structure {Agent, Theme}, before they enter the syntactic computation; in Mandarin, verbs, such as *ku* 'to cry' and *zhui* 'to chase', will enter the syntactic computation as roots, i.e., without any previously assigned arguments. After establishing this typological analytic-synthetic distinction, Huang (2006) attempts to explain the difference with respect to the Direct Object Restriction in the two languages shown in (48), in the following way.

(48)   a. *John ran tired.
       b. Zhangsan pao-lei-le.
          Zhangsan run-tired-LE
          'Zhangsan ran so much, and as a result he got tired.'
          'Zhangsan ran himself tired.'

Both examples involve two identical elements: the inchoative template and a modifier morphologically presented as *run* and *pao* 'to run'. On the one hand, in English, *run* already has a specified argument structure, i.e., {Agent}. At the moment of modifying the inchoative template, this {Agent} feature should be checked; this will be an impossible task because when it merges with an inchoative structure, the subject of BECOME is a Theme or an Experiencer, and not an Agent. As a result, the example in (48a) is ungrammatical. On the other hand, in the case of Mandarin, the argument structure of the verb *pao* 'to run' is not previously specified, which means that it has no thematic features {Agent} to be checked. The example in (48b) is thus well-formed.

There are non-trivial problems for Huang's (2006) analysis, which adopts two different types of modifiers: unergative and unaccusative. Let us put aside the impossibility of the conflation of an unaccusative structure in my approach. If Huang's (2006) application of the typological difference between analytic and synthetic languages is correct, the analysis in (47) cannot be explained as proposed and the

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[16] See Basciano (2010) for the argument that Mandarin underwent the typological shift from a synthetic to an analytic language.

acceptability of the examples in (48) will become a mystery. Firstly, with respect to the analysis in (47), at the moment of modifying the inchoative template, the modifiers in Mandarin should not distinguish between unergativity and unaccusativity, because such a distinction is not well-grounded according to Huang's (2006) approach. Consequentially, the distinction between the templates in (47a) and (47b) would lose their validity, for this assumption contradicts this author's claim that in Mandarin the unergative-unaccusative distinction does not exist in the lexicon. Secondly, if it really is the case that the feature {Agent} of the unergative verb of *run* impedes it from modifying the inchoative structure, the well-formedness of the examples in (49) cannot be explained. According to Huang (2006), the examples in (49) would be analyzed as involving modifying an inchoative/unaccusative structure, which can be paraphrased as *John went into the room*, with an unergative verb, *dance* or *run*. However, the feature {Agent} of the unergative verbs, *dance* and *run*, would not be able to be checked. As a result, these examples would be predicted as ungrammatical, contrary to reality.

(49)   a. John danced into the room.
        b. John ran into the room.

In sum, until now, the two types of intransitive resultatives in Mandarin have been discussed. I claim that these two intransitive types are to be analyzed as having the same basic argument structure, namely, the unaccusative structure. The difference consists of the different processes involved at the moment of spell-out: conflation or incorporation. The process of conflation deals with the merge of an unergative structure with the phonologically empty head of the unaccusative structure. For instance, in *Zhangsan chang-ya-le* 'Zhangsan sing-hoarse-LE: Zhangsan sang himself hoarse', an unergative structure that contains the root √*chang* 'sing' merges with the empty head of the unaccusative structure which expresses the event of Zhangsan's becoming hoarse. The process of incorporation involves copying the semantic features from a complement to its head and these coindexed features can be instantiated by different roots. This can be observed in the example *Zhangsan dong-jiang-le* 'Zhangsan freeze-stiff-LE: Zhangsan froze stiff'. The two roots √*dong* 'freeze' and √*jiang* 'stiff' are inserted into two different positions in the same unaccusative structure, which are related via the coindexed bundles of semantic features. As for the syntactic subject, it is derived in the following way. On the one hand, the syntactic subjects in these two types of intransitive

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resultatives in Mandarin derive from the same position in the identical argument structure, i.e., the specifier of the non-eventive relational structure, and, therefore, they have the same semantic interpretation: Figure. On the other hand, the specifier of the non-eventive relational structure is predicated of by the complement of the same structure. In other words, the syntactic subjects in these two types of intransitive resultatives are predicated of by the resultative predicates. As a result, the Direct Object Restriction can be claimed to be respected and, thus, maintained. Regarding the different interpretations of the syntactic subjects of these two types of intransitive resultatives, i.e., as agent and as theme, the possible explanation is that they are side effects resulting from world knowledge.

In the next two sections, I will turn to the transitive resultatives.

4.4 Transitive Type of Resultatives

One example that has been considerably discussed in the literature is that in (50). The multiple interpretations of this example are what interests the linguists who study the Mandarin grammar most. The reading in (50a) is that of the typical type in English, in which the resultative predicate is predicated of the object and can be argued for supporting the Direct Object Restriction. The interpretation in (50b), however, seems to suggest that the Direct Object Restriction is challenged again because the syntactic object appears to be invisible to the resultative predicate, which is predicated of the syntactic subject neglecting the existence of the syntactic object. In order to save the Direct Object Restriction on the interpretation (50b), the process of internal-argument derivation of the syntactic subject would be needed. If this is true, the question which should be answered is where the syntactic object is from. If this is not true, does the Direct Object Restriction have to be claimed as a parametric restriction that can be violated in Mandarin? The analysis of this section will attempt to show that the apparent violation of the Direct Object Restriction of the intransitive resultatives might only be illusory because the subjects of the intransitive resultatives are in fact derived from the position of internal argument. The reading of (50c) seems more troublesome, even though the Direct Object Restriction is respected. Since the Direct Object Restriction is satisfied, it may be claimed that the syntactic object, of which the resultative predicate is

predicated, derives from the internal subject position and the syntactic subject was introduced by a functional projection as an external argument. If this is true, where does the interpretation that the syntactic object chases the syntactic subject come from? In other words, if this seems to be the same syntactic derivation that leads to the interpretation in (50a), why do they result in two different thematic interpretations?

(50)   Zhangsan   zhui-lei-le   Lisi.

           Zhangsan   chase-tired-LE   Lisi

           a. 'Zhangsan chased Lisi and (as a result) Lisi got tired.'   (object-oriented)

           b. 'Zhangsan chased Lisi and (as a result) Zhangsan got tired.' (subject-oriented)

           c. 'Zhangsan got Lisi tired as a result of Lisi's chasing him.'   (causative)

These questions will be answered in what remains of this section and the next. Concretely, the object-oriented transitive type will be discussed in subsection 4.4.1 and the subject-oriented transitive type will be analyzed in subsection 4.4.2. As for the causative type, it will be left for the next section.

One thing to note is that the object in the example in (50) is specified as a referential object on purpose. Let us recall that, as already mentioned in the literature, there is a claim that in order for the resultative predicates to be able to be predicated of the syntactic subjects when the syntactic objects are present, the syntactic objects must be non-referential, as the examples in (51) show. The examples in (50) and (52) demonstrate that, on the contrary, the non-reference is not an obligatory requirement for the predication of the syntactic subject even with the presence of the syntactic object.

(51)   a. **Zhangsan** chi-**bao**-le fan.

         Zhangsan eat-full-LE food

         'Zhangsan is full.'

      b. **Zhangsan** he-**zui**-le   jiu.

         Zhangsan drink-drunk-LE alcoholic.drink

         'Zhangsan is drunk.'

      c. **Zhangsan** qi-**lei**-le   ma.

         Zhangsan ride-tired-LE   horse

         'Zhangsan is tired of horse-riding.'

(52) a. **Zhangsan** wan-**ni**-le   na-ge youxi.

Zhangsan play-fed.up.LE that-CL game

'Zhangsan is fed up playing that game.'

b. **Zhangsan** kan-**ni**-le   na-ben xiaoshuo.

Zhangsan read-fed.up-LE that-CL novel

'Zhangsan is fed up with reading that novel.'

c. **Zhangsan** qi-**lei**-le   na-pi ma[17].

Zhangsan ride-tired-LE   that-CL horse

'Zhangsan is tired of riding that horse.'

4.4.1 The Object-oriented Transitive Type

The object-oriented transitive type of resultatives is the type that most resembles the English transitive resultatives in the sense that the syntactic objects are entities that suffer a change of state denoted by the resultative predicates. Depending on the different semantic relations between the matrix verb and the object, the object-oriented transitive type of resultatives can further be divided into two subtypes. One is the so-called control type, in which the subject directly acts upon the object and the object is apparently controlled by the matrix verb semantically. The other is the Exceptional Case-Marking resultative, in which the subject does not directly act upon the object and the object is not licensed by the matrix verb semantically. In the Exceptional Case-Marking type, without the presence of the resultative predicates, the sentence would not be grammatical. The examples in (53) correspond to these two types. In the example in (53a), the subject *Zhangsan* acted upon the object *na-ge guanzi* 'that can' and this became flat as a result. Without the resultative predicate, the agent-theme relation between the subject and the object is maintained. In the example in (53b), the subject directly acts upon the entity *qiu* 'ball' introduced by the VP adjunct, instead of the object *na-shuang xiezi* 'that pair of shoes'. Without the presence of the resultative predicate, the VP adjunct cannot exist because the object *na-shuang xiezi* 'that pair of shoes' must be the entity that the subject directly acts upon.

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[17] The object-predicative reading is also possible for this example. It would mean that that horse got tired as a result of Zhangsan's riding it. The parallel reading does not arise for the examples in (52a) and (52b) because it is obvious that neither that game nor that novel can be fed up as a result of someone's playing or reading them.

(53) a. Zhangsan chui-bian-le   na-ge guanzi.

  Zhangsan hammer-flat-LE   that-CL can

  'Zhangsan hammered that can flat.'

  b. Zhangsan (ti qiu)   ti-po-le   na-shuang xiezi.

  Zhangsan (kick ball)   kick-broke-LE   that-CL shoe

  'Zhangsan kicked that pair of shoes broken/threadbare.'

Having seen that the object-oriented transitive resultatives in Mandarin and their counterparts in English share the same semantic relation between the subjects and the objects, we now turn to the distinction between them. The most obvious difference is the word order. The resultative predicates appear after the objects as an independent component in English resultatives, while they adjoin to the matrix verbs to form compounds in Mandarin resultatives.

The analysis here should capture both the resemblance and the difference of these two languages. Under the lexical-syntactic analysis, the examples in (53) involve a unaccusative/causative structure, in (54a), and an unergative one, in (54b).

(54) a.   b.

c.
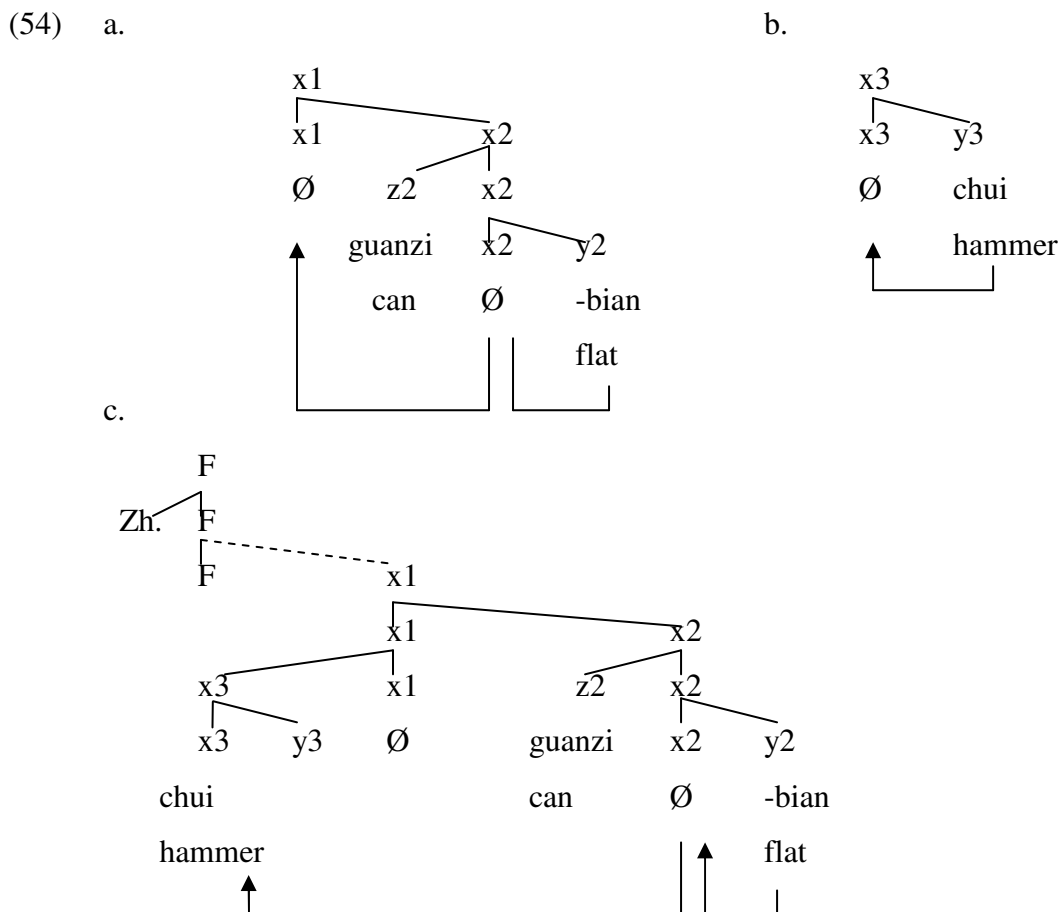
The two structures can exist independently and the phonological heads can be spelled out via the process of incorporation. This process will give rise to an unaccusative and an unergative sentence, as shown in the examples in (55a) and (55b), respectively. The subject in the unaccusative sentence is derived internally from the specifier position of the non-eventive relational structure, while the subject in the unergative is introduced by a functional projection.

(55)   a. guanzi   bian-le.
            can   flat-LE
           'The can became flat.'
        b. Zhangsan   chui-le.
            Zhangsan   hammer-LE
           'Zhangsan hammered (something).'

Besides the process of incorporation, the other way to saturate the phonologically empty head of the unaccusative/causative structure in (54a) is via the process of conflation. Chapter one showed that the process of conflation adopted here is that of conflating a structure which satisfies the exhaustive condition, i.e., the unergative structure. The structure in (54b) fulfills this requirement and the whole structure adjoins to the head *x1* in the structure (54a). The resulting structure is that in (54c). The syntactic subject can be raised from the internal subject position or further introduced by a functional projection.

By analyzing the resultatives in (53) in this way, we can explain both the resemblance and the difference between the English resultatives and Mandarin object-oriented transitive resultatives. The Mandarin object-oriented resultatives and English transitive resultatives parallel in the predicative relation between the resultative predicates and the objects because they share the same argument structure; they differ in the word order because of the different properties of the non-relational elements in the complement position of the non-eventive relational structure. Firstly, regarding **similarity**, the Mandarin object-oriented resultatives and English transitive resultatives share the same argument structure and the objects of which the resultative predicates are predicated in both languages derive from the same position in the argument structure. Given this, objects are the predicated arguments in both languages. Secondly, as for
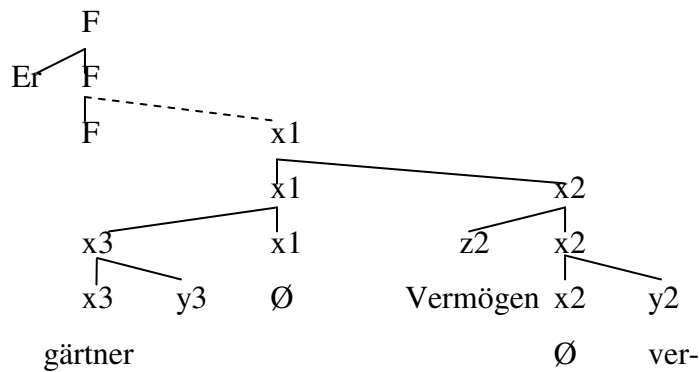
difference, the non-relational elements in the complement position of the non-eventive relational structure have different properties. In Mandarin, they are affixal, resulting from the diachronic development[18], seen in the previous chapter, while in English, they are independent elements. Because of the independent property of these elements in English, they would raise to the head of the non-eventive relational structure, $x2$ in the structure in (54c), and stop there. Owing to their affixal nature in Mandarin, these elements must adjoin to other phonologically full entities. In order to satisfy the Head Movement Constraint (Travis, 1984; Baker, 1988), the only possible candidate in the structure in (54c) is the union $[[x3\ y3][x1]]$. As a result, the compounds V1-V2 are formed for the resultative construction in Mandarin, while the resultative predicates in the English resultative construction have the status of an independent predicates.

This analysis is comparable to Mateu's (2001b, 2002, 2008) analysis of the Russian prefix in the example in (56a) and the German complex denominal verb in the example in (56b). Following Spenser and Zaretskaya's lexical subordination analysis (1998: 17), "the best way of regarding this case is to take the *iz* prefix as the core predicator in a complex structure, with the activity verb *pisat'* as a subordinate predicator", Mateu (2001b, 2002, 2008) analyzes the prefixes in these examples, *is-* in (56a) and *ver-* in (56b), as deriving from the main causative structure and being modified by an unergative structure which specifies the manner in which the main predicates are carried out. It is their affixal nature that forces them to adjoin to the complex head. Taking the example in (56b) by way of illustration, it would have the structure in (56c).

(56)   a. Ona is-pisala   svoju   ručku.   (Russian)

         she iz(out)-write   her   pen.ACC

         'Her pen has run out of ink.'

         lit. She has written her pen out (of ink).

                                  (Spenser and Zaretskaya, 1998: 17)

       b. Er ver-gärtner-te   sein   gesamtes Vermögen.   (German)

         he VER(away)-gardener-ed   his   whole fortune

         'In gardening, he used up all his fortune.'

                                        (Stiebels, 1998: 285)

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[18] In other words, they are treated as bound roots and, according to Basciano (2010: 8), "[t]he strong tendency of roots in Mandarin Chinese to be bound is related to the disyllabification process".

c.

```
              F
          Er     F
              ┌───────────────┐
              F          ╌╌╌╌╌ x1
                        ┌───────────────────┐
                        x1                  x2
                   ┌─────────┐         ┌─────────┐
                   x3       x1        z2        x2
                 ┌────┐                      ┌────┐
                 x3  y3     Ø      Vermögen  x2  y2

                gärtner                      Ø    ver-
```

(Adopted from Mateu, 2002: 202)

If the structure in (56c), for German, is compared with the structure in (54c), for Mandarin, it can be observed that the only difference is its affixal nature: the prefixal nature in German and the suffixal nature in Mandarin. In German, the prefix left-adjoins to the modified structure while, in Mandarin, the suffix right-adjoins to the modified structure.

The other alternative explanation to the difference regarding word order in Mandarin and in English has something to do with the possibility of allowing an intervening functional head. In order for this approach to be applied, a radical modification of the previously mentioned syntactic configuration must be proposed. The previously adopted syntactic configuration is one in which an eventive relational structure has a structure of non-eventive relation as its complement. The modification would be that a functional projection intervenes between these two structures. The hypothesis of an intervening functional projection between V1 and V2 has been proposed by Tang (1997) and Wang (2010).

It has been argued that Mandarin resultatives can be divided into two groups. The first type is discussed in this chapter in which the resultatives are compound, as in (57a), and the second type is phrasal resultative, the resultative predicates of which are introduced by the particle *de*, in (57b). The proposed existence of a functional projection between V1 and V2 is motivated by the potential marker *de* in phrasal resultatives or *de*-extent construction if they are treated as being derived from the same process as resultative compounds.

(57)   a. *Resultative Compounds or Resultative Verb Compounds*

Zhangsan   chui-bian-le   guanzi.

Zhangsan   hammer-flat-LE   can

'Zhangsan hammered the can flat.'

b. *Phrasal Resultatives or* De-*extent Construction*

Zhangsan   chui-de   guanzi bian-le.

Zhangsan   hammer-DE   can   flat-LE

'Zhangsan hammered the can flat.'

If we adopt this approach to the present analysis proposed, an eventive relational head would take as its complement a functional projection which in turn has a non-eventive relational structure as complement. If the functional head is phonologically empty, the Ground argument first raises to the non-eventive relational head and, furthermore, to the functional head. As for the phonologically empty head of the eventive relational structure, it is saturated by the merging, the process of conflation, of another eventive relation structure as a modifier interpreted as Manner. As a consequence, the Ground morphology is still in the satellite position and does not form a complex verb compound with the Manner component. Their morphologically juxtaposed appearance is only illusory owing to the poor morphological indication of Mandarin. This is illustrated by the structure in (58a). When the functional head is phonologically realized as *de*, on the one hand, the Ground argument—the non-relational complement of the non-eventive relational structure— raises to the non-eventive head and stops there; on the other hand, an unergative structure merges with the phonologically empty eventive relational head of the causative structure via the process of conflation. Thus, the linear order in (57b) is obtained, shown in (58b).

(58) a.
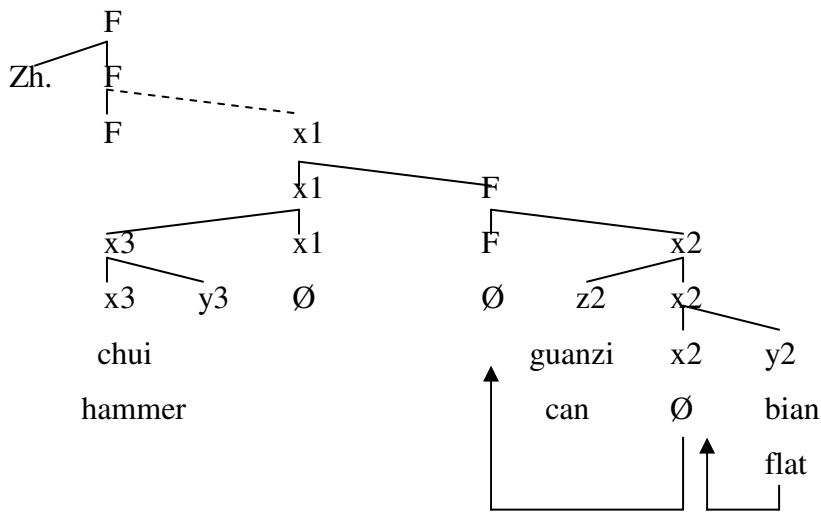
b.
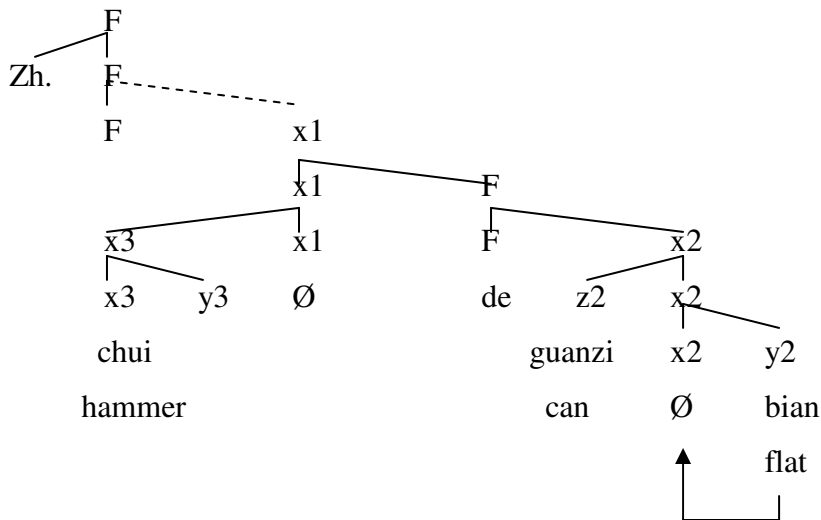
In this way, the proposal of the affixal nature of Ground arguments in compound-type resultatives in Mandarin seems to be unnecessary and, therefore, the intervening functional head proposal would be preferred, instead of the earlier affixal proposal, because the proposal of the affixal nature is not needed. However, it does not seem to be the case if this type of resultatives is scrutinized more closely. Returning to the example in (57a), we can see that the aspectual particle *le* goes after both V1 and V2. One possibility is that both V1 and V2 raise to two different positions superior to this aspectual functional head in the subsequent syntactic derivation. The other possibility is that, in some way, V1 and V2 form a compound-like unit and the unit raises to a position superior to the aspectual functional head *le* or to this functional head. For the

second possibility, the affixal nature is still a possible resource in order to obtain the compound-like form.

One possible argument against the analysis of the intervening functional head, from Hale and Keyserian lexical-syntactic approach, might be that the inclusion of a functional projection at the level of lexical syntax is not allowed because functional projections pertain to the level of sentential syntax. Such objection vanishes in my approach adopted from Mateu (2002) because no distinction between the level of lexical syntax and the level of sentential syntax is needed. Since both lexical syntax and sentential syntax are restricted by the head-complement and specifier-head relations, there is no clear-cut boundary that distinguishes one from the other.

Even if functional projections are allowed to intervene between the eventive relational structure and the non-eventive relational structure as the structures in (58) show, there is still another problem for treating the two types of resultatives in (57) in a parallel way. Let us return to the particle *le* in the examples in (57), repeated here in (59a) and (59b). If these two examples are derived in the same way, the different patterns with respect to the ellipsis of this particle would not be easy to explain.

(59)   a. *Resultative Compounds or Resultative Verb Compounds*

        Zhangsan   chui-bian-(le)   guanzi.

        Zhangsan   hammer-flat-LE   can

        'Zhangsan hammered the can flat.'

    b. *Phrasal Resultatives or* De-*extent Construction*

        Zhangsan   chui-de   guanzi bian-*(le).

        Zhangsan   hammer-DE   can   flat-LE

        'Zhangsan hammered the can flat.'

        'Zhangsan hammered (so much) that the can became flat.'

It is clear that the particle *le* in the example in (59a) is the perfective aspectual marker and hence it can show complementary distribution with modal verbs. This prediction is proven by the example in (60a). The same complementary distributional pattern does not apply to the particle *le* in the example in (59b), as the example in (60b) shows. As a consequence, the possibility of this particle in the example in (59b) being the perfective aspectual marker should be ruled out.

(60)   a. Zhangsan xiang   chui-bian   na-ge guanzi.

          Zhangsan want   hammer-flat   that-CL can

          'Zhangsan wants to hammer that can flat.'

        b. *Zhangsan xiang   chui-de   na-ge guanzi bian.

          Zhangsan want   hammer-DE   that-CL can   flat

          Intended: 'Zhangsan wants to hammer that can flat.'

If the comparison of the examples in (59) is correct, only two possible interpretations are available for this particle *le* in (59b): the sentence final *le* and the inchoative *le*. From the ungrammaticality presented by the example in (59b) without this particle, the possibility of the sentence final *le* should be rule out. The sentence final *le* is a marker that denotes a change of state, specified by the sentence before it, at a certain point in time. Therefore, the sentence before sentence final *le* should be grammatical even without its presence. The example and the figure in (61) may be taken for illustration. Without the sentence final *le*, the sentence would simply mean that *(at certain specific time) Zhangsan does not smoke* and nothing more. When the sentence final *le* is present, it can be seen as a marker in the temporal structure, *x* in the figure below, which indicates that, before, *Zhangsan* smokes and, after that, *Zhangsan* does not smoke (any more). That is, simply with the presence of the sentence final *le* in the example in (61a), a listener can infer that *Zhangsan* smoked before. Having said this, we can conclude that the possibility of the particle *le* in the example in (59b) being the sentence final *le* can be ruled out, since, if it were the sentence final *le*, the sentence before it should be grammatical by itself. As a result, the only possible interpretation for this particle is the inchoative particle *le*.

(61)   a. Zhangsan   bu chouyan le.

          Zhangsan   no smoke LE

          'Zhangsan does not smoke (any more).'

   b.

              smoke   x   not smoke
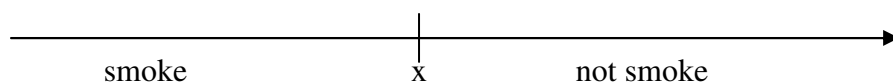
If the particle in (59b) must be analyzed as the inchoative *le*, a parallel analysis of the examples in (59) would be problematic. As we have seen in the previous chapter,

the inchoative *le* occupies the head of the unaccusative argument structure. As a result, the example in (59b) cannot be analyzed as involving an intervening functional projection between an eventive relational structure and a non-eventive relational structure. The more appropriate structure might be that in (62). This structure is thus distinguished from that of the type from which the resultative compounds are derived.

(62)
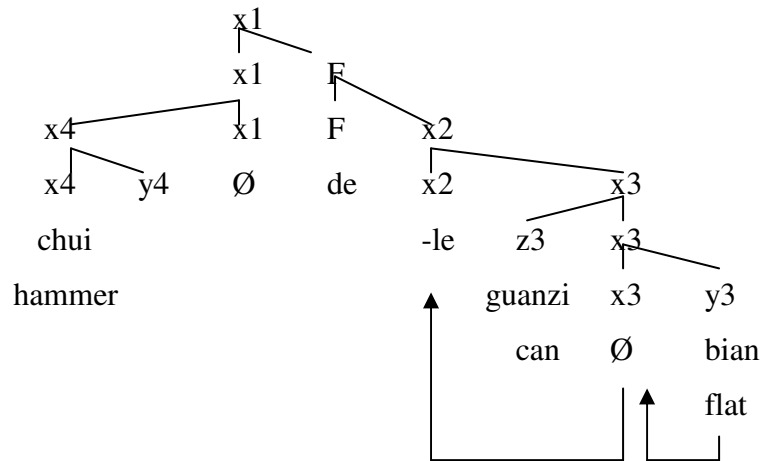
In other words, the two types of resultatives in (59) need not involve the same derivational process. The particle *de* can be viewed as a complementizer which introduces a subordinate phrase. The subordinate phrase is not limited to the unaccusative type. For example, the subordinate phrases in the examples in (63) include external arguments. The appearance of an external argument below the VP level is certainly not allowed in the compound type of resultatives. Again, this suggests that these phrasal resultatives and resultative compounds cannot be derived in the same way.

(63) a. Zhangsan ku-de   Lisi bu zhi suo cuo.

Zhangsan cry-DE   Lisi no know do

'Zhangsan cried (so much) that Lisi did not know what to do.'

b. Zhangsan pao-de   Lisi zhui bu shang ta.

Zhangsan run-DE   Lisi chase no up him

'Zhangsan ran (so much/fast) that Lisi could not catch him up.'

If this is true, the intervening functional projection approach would not be suitable for explaining the difference of the word order between resultatives in English

and resultatives of the compound form in Mandarin. The analysis of the Ground arguments as being affixal would still be necessary for this aspect.

Moreover, the affixal nature of the Ground arguments can be empirically supported by the fact that they do not stand alone either in phrasal resultatives or in resultative compounds. In resultative compounds, they always adjoin to the complex head resulting from the conflation of an unergative structure with the phonologically empty head of the unaccusative structure. In phrasal resultatives, the Ground arguments need either the presence of the inchoative *le* or the duplication of its form, as shown in the examples in (64). If the resultative predicates are not followed by the inchoative *le*, the duplication of their form will be necessary. When they are of the bi-syllabic form AB, the duplication will be AABB.

(64)   a. Zhangsan chui-de   guanzi bian-bian-de[19].
        Zhangsan hammer-DE   can   flat-flat-DE
        'Zhangsan hammered (so much) that the can became flat.'
    b. Zhangsan xie-de   xifu   ganganjingjing-de.
        Zhangsan wash-DE   cloth   clean-clean-DE
        'Zhangsan washed (so much) that the clothes became clean.'

To conclude this subsection, object-oriented transitive type resultatives include the traditionally termed Control resultatives, in which the objects seem to bear a selected relation with matrix verbs, and Exceptional Case-Marking resultatives, in which the objects are apparently not selected by the matrix verbs. Under the lexical-syntactic approach adopted here, they are analyzed in a parallel way. The objects are predicated of by the resultative predicates and they occupy the specifier and the complement positions of the non-eventive relational structure, respectively. The non-eventive relational structure is further selected by an eventive relational head. When these two structures have phonologically empty heads, these heads can be saturated via the process of incorporation or the process of conflation. The former, in a looser sense, consists of copying the phonological content of the complement and incorporating it into its head; the latter deals with merging an unergative structure with the phonologically empty head. Owing to the affixal nature of the resultative predicates in

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[19] *de* here is the adjective marker.

Mandarin, the resultative predicate must adjoin to V1 and form a compound with it. As for the subjects, they are introduced by a functional projection above the unaccusative structure. With the presence of this functional projection, the structure is thus a causative one. As a result, the distinction between Control resultatives and Exceptional Case-Marking resultatives disappears. The objects are not selected by the matrix verbs, but are rather selected by the causative structure. This unitary analysis of these two types of resultatives is also proposed by Hoekstra (1988), Kratzer (2005), and Mateu (2002), among others.

Furthermore, the affixal analysis of resultative predicates is compared to the analysis involving an intervening functional projection between the matrix verbs and the resultative predicates. The affixal property of resultative predicates is argued to be necessary in order to account for the difference between Mandarin and English as regards word order.

In the next subsection, we will turn to the subject-oriented transitive type.

4.4.2 The Subject-oriented Transitive Type

It was mentioned earlier that, even with the presence of a syntactic object, a resultative predicate may be able to be predicated of the syntactic subject. This syntactic object can be either non-referential, in the examples from (65a) to (65c), or referential, in the example in (65d).

(65)   a. **Zhangsan** chi-**bao**-le fan.
        Zhangsan eat-full-LE food
        'Zhangsan got full.'
    b. **Zhangsan** he-**zui**-le   jiu.
        Zhangsan drink-drunk-LE alcoholic.drink
        'Zhangsan got drunk.'
    c. **Zhangsan** qi-**lei**-le   ma.
        Zhangsan ride-tired-LE   horse
        'Zhangsan got tired as a result of riding a horse.'
    d. **Zhangsan** wan-**ni**-le   na-ge youxi.
        Zhangsan play-fed.up-LE that-CL game
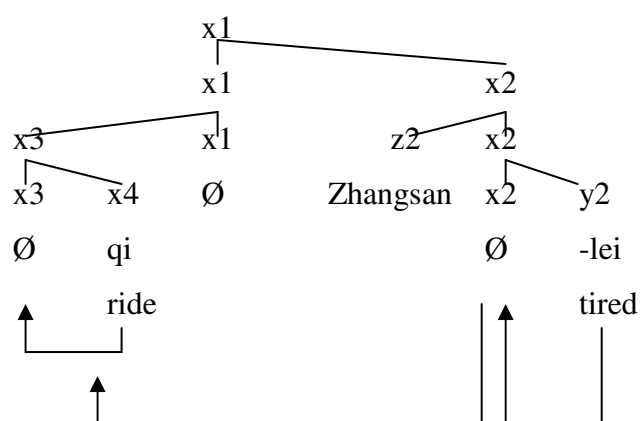   'Zhangsan got fed up as a result of playing that game.'

These examples might lead to the abandonment of the Direct Object Restriction because the obligatory predicative relation between the objects and the resultative predicates disappears in these examples[20].

Nevertheless, by adopting the approach that argues for the isomorphism between syntax and semantics, there are at least three ways to argue for the validity of the Direct Object Restriction for this type of Mandarin resultatives.

The fundamental idea is that in order for the Direct Object Restriction to be maintained, the arguments of which the resultative predicates are predicated must come from the specifier position of the non-eventive relational structure, while the resultative predicates occupy the complement position of this structure. They constitute the Figure-Ground relation. In other words, the subjects in the examples in (65) are not external arguments introduced by a functional projection, but rather elements from the specifier position of the non-eventive relational structure. If this is true, the question that should be answered is no longer why the resultative predicates can be predicated of the syntactic subjects with the presence of the syntactic objects but where the syntactic objects are derived from. If we take the structure in (66) to illustrate the example in (65c) without the syntactic object *ma* 'horse', we may see that all the possible positions for arguments, i.e., the complement position and the specifier position of all the heads of the structures, are occupied. The subject *Zhangsan* occupies the internal subject position and then raises to the syntactic subject position. What is left to explain is where the syntactic object comes from.

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[20] Readers are referred to Shibata et al. (2010), according to whom what I outline here as the subject-oriented transitive type of resultatives is not resultative at all. Therefore, the subject-oriented transitive resultatives cannot be counterexamples of the Direct Object Restriction. These authors consider examples like *chi-bao fan* 'eat-full food' and *he-zui jiu* 'drink-drunk alcoholic.drink' "idiomatic VPs, and as such, they are not complex predicates but behave as single predicates. In other words, these VPs do not involve secondary predication, and to that extent, the DOR is again irrelevant to them" (Shibata et al., 2010: 15). Besides, these authors argue that "the so-called 'referentiality' restriction on the subject-oriented V-V compounds is given a pragmatic explanation" (Shibata et al., 2010: 3).

(66)

```
                    x1
            x1                  x2
       x3       x1         z2       x2
    x3   x4    Ø      Zhangsan   x2   y2
    Ø    qi                      Ø   -lei
         ride                        tired
```

There are three possible answers to this question in the syntactic framework. For these three different analyses, the syntactic objects of the subject-oriented transitive type can be analyzed as arguments selected by root (according to Lin (2004)), right dislocated Topics (according to Wang (2010)), or hyponymous objects (according to Haugen (2009)). Except for the first analysis, the second and the third are compatible with the lexical-syntactic analysis proposed here.

Firstly, as we have seen in chapter one, a verb meaning in the theory of event templates of Rappaport Hovav and Levin (1998) consists of relating a constant to an event template. There are two ways in which an argument can be licensed: by template or constant. For example, the argument x in (67a) is licensed by the template [x ACT $_{<SWEEP>}$] and the underlined argument y in (67b) is licensed by the constant $<SWEEP>$. While the arguments licensed by templates must be realized as an argument in syntax obligatorily, this is not true for the arguments licensed by constants. Therefore, the argument licensed by the constant in (67b) is not required to appear obligatorily as in (67a).

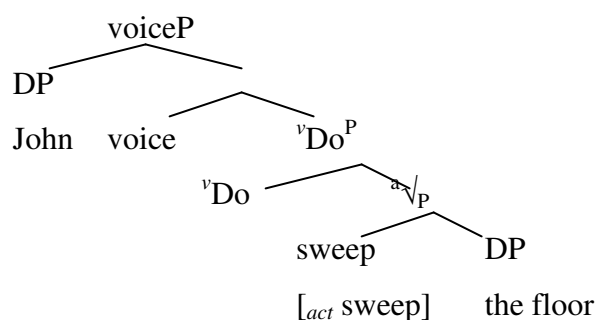(67) a. [x ACT $_{<MANNER>}$] → [x ACT $_{<SWEEP>}$]
      John swept.
      b. [x ACT $_{<MANNER>}$ y] → [x ACT $_{<SWEEP>}$ y]
      John swept the floor.

Fan (2008) adopts this approach to analyze the examples in (65) and claims that the objects in these examples are selected by semantics but not syntax. Even if this
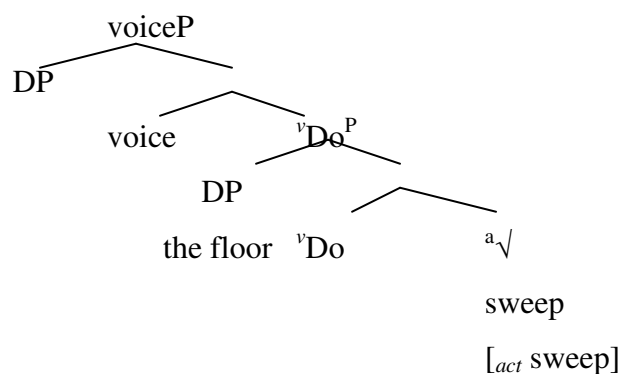
claim is correct, what it still does not explain is how the arguments selected by semantics can be instantiated in syntax.

As for how the arguments licensed by the templates and the constants can be syntactically instantiated, the answer may be found in Lin (2004). Lin (2004) adopts the distinction established in Rappaport Hovav and Levin (1998) between the arguments licensed by the templates and those licensed by the constants and applies it to the syntax of Mandarin verb phrases. Lin (2004) points out that the sentence *John swept the floor* is ambiguous and the ambiguity arises from the different syntactic configurations. For the first reading, this author paraphrases this example as "there is an activity of sweeping the floor, of which John is the agent". For this interpretation, *the floor* is not an affected argument, because it is an argument licensed by the constant. This author argues that the argument licensed by the constant is actually the argument selected by the root, parallel to Harley (2005), in the syntactic structure. The syntactic configuration would be that in (68a). Another reading is that the floor is interpreted as an affected argument and the sentence is to be interpreted as "there is an activity of sweeping that acts on and causes an effect on the floor, of which John is the agent". For this reading, the argument *the floor* is selected by the syntactic structure, instead of by the root, as shown in (68b).

(68) a.

```
              voiceP
           ┌─────┴─────┐
          DP          ┌──┴──┐
         John    voice      ᵛDoᴾ
                         ┌────┴────┐
                        ᵛDo       ᵃ√P
                              ┌─────┴─────┐
                            sweep        DP
                         [act sweep]   the floor
```

       b.

```
              voiceP
           ┌────┴────┐
          DP      ┌──┴──┐
              voice    ᵛDoᴾ
                   ┌────┴────┐
                  DP      ┌──┴──┐
              the floor  ᵛDo   ᵃ√
                               sweep
                             [act sweep]          (Lin, 2004: 36)
```
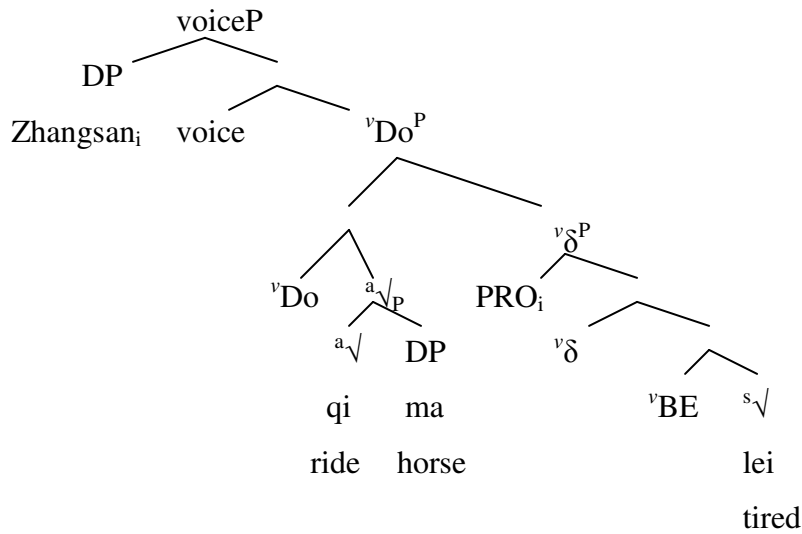
Applying this syntactic configuration to the subject-oriented transitive type of resultatives, Lin (2004) argues that the objects in these resultatives are selected by the roots which instantiate the matrix verb. The structure would be that in (69). In this structure, the subject is the argument that coindexed with PRO, the argument that undergoes the change of state. As for the object, it is selected by the root that is selected by the light verb *Do*.

(69)

$$
\begin{array}{l}
\text{voiceP} \\
\quad \text{DP} \\
\quad \text{Zhangsan}_i \quad \text{voice} \quad {}^v\text{Do}^P \\
\qquad\qquad {}^v\text{Do} \quad {}^a\sqrt{}_P \quad \text{PRO}_i \quad {}^v\delta^P \\
\qquad\qquad\qquad {}^a\sqrt{} \quad \text{DP} \quad {}^v\delta \quad {}^v\text{BE} \quad {}^s\sqrt{} \\
\qquad\qquad\qquad\quad \text{qi} \quad \text{ma} \qquad\qquad\qquad \text{lei} \\
\qquad\qquad\qquad\quad \text{ride} \quad \text{horse} \qquad\qquad \text{tired}
\end{array}
$$

(Lin, 2004: 115)

Not only is such an approach not compatible with my analysis, but there is also a problem with it. It is impossible to incorporate the insight in Lin (2004) into my analysis because a root is equal to a non-relational element and is not supposed to take either a complement or a specifier (see also Acedo Matellán, 2010). The other problem is also related to the concept of complement and specifier. Consider the structure in (68b). According to Lin (2004), the argument *the floor* is interpreted as a DP in the specifier of ${}^v Do$ and is interpreted as the affected argument of the activity. However, Lin (2004) argues that the relation between the verbalizing head ${}^v Do$ and verbal root ${}^a\sqrt{}$, represented by *sweep*, is not a head-complement relation but a head adjunction. If this is true, it is not clear how the argument *the floor* can be a specifier if there is no previous existence of a complement argument. Even in the approach in which a specifier argument is allowed for a head without a complement, as in Hale and Keyser (1993), this head needs to be parasitic in another structure as its complement and in turn this

parasitic structure would satisfy the requirement of this head of having only a specifier argument without a complement argument.
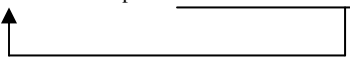
Since the possibility for the objects in the examples in (65) being selected by the roots or non-relational elements is ruled out under the lexical-syntactic approach adopted here, let us turn to the second possible analysis.

The **second** proposal, found in Wang (2010), for analyzing the objects in the subject-oriented transitive type of resultatives involves analyzing them as right dislocated Topics. This analysis may be summarized in the following way. It is illusory that post-verbal arguments are objects. Often considered "objects" in the subject-oriented transitive type of resultatives, they are not objects at all, but Topics. They are derived from the Topic position. When the rest of the sentence is moved to the left of this Topic position, the entities in this Topic position appear in a position which superficially coincides with the typical object position, namely, post-verbal position.

Let us make use of the example in (70a) for illustration. According to the topic analysis, it is derived from the example in (70b). The object argument in (70a) is base-generated from the Topic position in (70b). Immediately after the Topic, a pause between it and the rest of the sentence is not only allowed but preferred. This pause is represented by the comma. The Topic stays in the rightmost position after the whole TP are moved to the left of it. As can be observed in the derivation in (71), there is no rightward movement operation involved. According to Kayne (1994), no rightward movement operation is allowed and the movement can only take place leftward.

(70)   a. Zhagnsan zhui-lei-le   Lisi[21].

      Zhangsan chase-tired-LE   Lisi

      'Zhangsan chased Lisi and (as a result) Zhangsan got tired.'

    b. Lisi, Zhangsan zhui-lei-le.

      Lisi Zhangsan chase-tired-LE

      'As for Lisi, Zhangsan chased him and as a result Zhangsan got tired.'

[21] We must remember that this example permits the object-oriented interpretation, which means that *Lisi* got tired as a consequence of *Zhangsan*'s chasing him.

(71)   Initial stage: [Lisi$_{Topic}$ [$_{TP}$ Zhangsan zhui-lei-le]]   (=70b)

       Movement: [_____ [Lisi$_{Topic}$ [$_{TP}$ Zhangsan zhui-lei-le]]]

       Final stage: [[$_{TP}$ Zhangsan zhui-lei-le]$_i$ [Lisi$_{Topic}$ t$_i$]]   (=70a)

In this sense, the subject-oriented transitive resultatives are to be analyzed as the intransitive resultatives, discussed in section 4.3, when the apparent objects are actually Topics. That is, Topics aside, the example in (70a) is to be analyzed as the example in (72a). The corresponding structure is that in (72b), which specifies that *Zhangsan* is the theme, i.e., Figure, which suffers a change of state and gets tired, specified by Ground. As for the manner in which Figure is getting tired, it is specified by the conflated/modifying structure.

(72)   a. Zhangsan zhui-lei-le.

         Zhangsan chase-tired-LE

         'Zhangsan chased (someone/something) and (as a result) he got tired.'

      b.
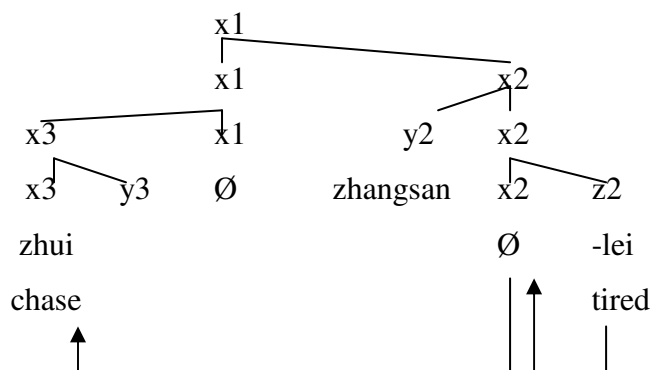
Again, under such analysis, the Direct Object Restriction is respected because the predicated subject is derived from an internal subject position.

       Furthermore, Wang (2010: 183) compares the use of Topics with that of VP adjuncts, in (73), and claims that "the VP adjunct can be considered to be parallel counterparts of the Topic". The example in (73a) involves a sentence-external Topic and that in (73b) involves a sentence-internal or TP-internal Topic. The example in (73c) is the so-called right-dislocated Topic[22]. The same meaning, by employing Topics, can

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[22] As we have seen previously, no rightward movement is allowed. The term "right dislocation" employed by Wang (2010) is only for descriptive convenience.

be expressed exactly in the same way by employing VP adjuncts. Even though the translations offered by Wang (2010) in the examples in (73) show the difference with respect to the non-referential and referential status, this distinction is not necessary. The objects can be either referential or non-referential.

(73) a. ma   Lisi   qi-lei-le.   (sentence-external Topic)

      horse   Lisi   ride-tired-LE

      'Lisi got tired by riding a horse.'

      b. Lisi ma   qi-lei-le.   (sentence-internal Topic)

      Lisi horse   ride-tired-LE

      'Lisi got tired by riding a horse.'

      c. Lisi qi-lei-le   ma.   (right-dislocated Topic)

      Lisi ride-tired-LE   horse

      'Lisi got tired by riding a horse.'

      d. (qi-ma)   Lisi qi-lei-le.

      ride-horse   Lisi ride-tired-LE

      'Lisi rode that horse (and as a result) he got tired.'

      e. Lisi (qi-ma)   qi-lei-le.

      Lisi ride-horse   ride-tired-LE

      'Lisi rode that horse (and as a result) he got tired.'

                                                          (Adopted from Wang, 2010)

There is another type of intransitive resultatives that can also be treated as involving Topics. The examples in (74) are some of this type. The subjects in these examples derive from the internal subject position and then raise to the Topic position. The phonologically empty head of the unaccusative structure is saturated via the conflation of an unergative structure, represented by the matrix verbs in these examples.

(74) a. shoupa   ku-shi-le.

      handkerchief   cry-wet-LE

      'The handkerchiefs got wet as a result of somebody crying.'

      b. yifu   xi-ganjing-le.

      Cloth   wash-clean-LE

      'The clothes got clean as a result of somebody washing them.'

This is an interesting and plausible proposal. However, if we take a closer look at the examples in (75), we may find out that certain objects are only allowed with the application of VP adjunct but not with that of right-dislocated Topic. For instance, the examples in (75a) and (75d) show that the right-dislocated Topics for *chi-bao* 'eat-full' and *he-zui* 'drink-drunk' must be *fan* 'food' and *jiu* 'alcoholic drink'. If they are replaced by other words with semantically more specific content, the application of the VP adjunct is obligatory in order for the sentences to be grammatical.

(75)   a. Zhangsan chi-bao-le   fan.
           Zhangsan eat-full-LE   food
           'Zhangsan got full.'
        b. *Zhangsan chi-bao-le bisabing.
            Zhangsan eat-full-LE pizza
            Intended: 'Zhangsan got full (as a result of) eating pizza.'
        c. Zhangsan (chi-bisabing)   chi-bao-le.
           Zhangsan eat-pizza   eat-full-LE
           'Zhangsan got full (as a result of) eating pizza.'
        d. Zhangsan he-zui-le   jiu.
           Zhangsan drink-drunk-LE alcoholic.drink
           'Zhangsan got drunk.'
        e. *Zhangsan he-zui-le   weishiji.
            Zhangsan drink-drunk-LE   whisky
            Intended: 'Zhangsan got drunk (as a result of) drinking whisky.'
        f. Zhangsan (he weishiji)   he-zui-le.
           Zhangsan drink whisky   drink-drunk-LE
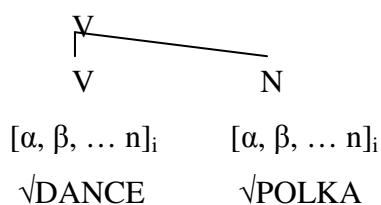   'Zhangsan got drunk (as a result of) drinking whisky.

Wang's (2010) proposal is not able to rule out the unacceptable examples, as (75b) and (75e). These counterexamples do not necessarily invalidate the right-dislocation analysis because the repeated example in (76) does involve the semantically full object and it is grammatical. Other factors might lead to the unacceptability of the examples in (75b) and (75e), which leads to a third proposal. This third proposal, along

with the second one, may constitute complementary resources for accounting for the apparent objects in the subject-oriented transitive type of resultatives.

(76)   **Zhangsan** wan-**ni**-le   na-ge youxi.
       Zhangsan play-fed.up.LE   that-CL game
       'Zhangsan got fed up as a result of playing that game.'

The **third** analysis is inspired by the analysis of hyponymous objects in Haugen (2009). As we have seen previously, according to Haugen (2009), a bundle of features can be spelled out with more than one root. As a result, a hyponymous object can be analyzed as one of the roots that spell out a bundle of features. For example, *to dance a polka* could be analyzed in the way illustrated in (77).
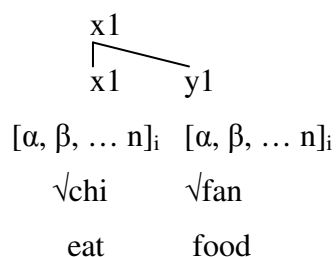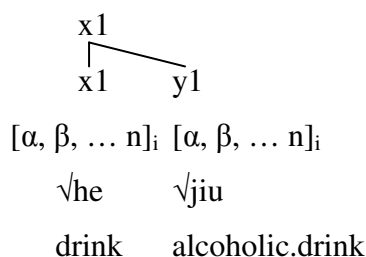
(77)

$$
\begin{array}{c}
V \\
\diagdown \\
V \qquad\qquad N \\
[\alpha, \beta, \dots n]_i \qquad [\alpha, \beta, \dots n]_i \\
\surd\text{DANCE} \qquad \surd\text{POLKA}
\end{array}
$$

The same analysis is applicable to *chi-fan* 'eat-food' and *he-jiu* 'drink-alcoholic.drink'. It should be noted that, although *fan* 'rice' literally means *rice*, it has the generic meaning of *food*. *Zhangsan zai chi-fan* 'Zhangsan is eating' does not necessarily mean that *Zhangsan is eating rice*, but can mean that *Zhangsan is eating*. That is to say, *fan* 'rice' can be a term that includes all kinds of food. The same occurs for *jiu* 'alcoholic.drink'; it is a generic term that includes all drinks that contain alcohol. Having hyponymous objects involved, *chi-fan* and *he-jiu* can be analyzed as illustrated in (78). The same analysis is the proper one for the unergative verbs in Mandarin which have the internal structure as V-O, for example, as *shui-jiao* 'sleep-dream: to sleep', *chang-ge* 'sing-song: to sing', *tiao-wu* 'jump-dance: to dance', etc.

(78)

a.

```
      x1
     /  \
   x1    y1
[α, β, … n]ᵢ  [α, β, … n]ᵢ
  √chi       √fan
   eat        food
```

b.

```
      x1
     /  \
   x1    y1
[α, β, … n]ᵢ  [α, β, … n]ᵢ
  √he        √jiu
  drink    alcoholic.drink
```

In order to express the generic meaning *to eat* and *to drink* in Mandarin, because of language-specific factors, the root √*chi* can only share the same bundle of features with the root √*fan*, while the root √*he* and the root √*jiu* share the same bundle of features. As for the concrete expression *chi bisabing*[23] 'eat pizza' and *he weishiji* 'drink whisky', some projection of the determinant nature is involved. This projection could be expressed as in (79). In this structure, the generic nature denoted in the structure in (78) disappears. The structure specifies the kind of food being eaten.

(79)

```
      x1
     /    \
   x1      DP
  √chi    /  \
   eat   D    N
           √bisabing
             pizza
```
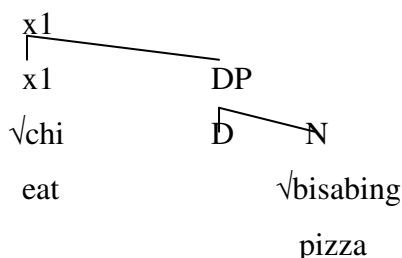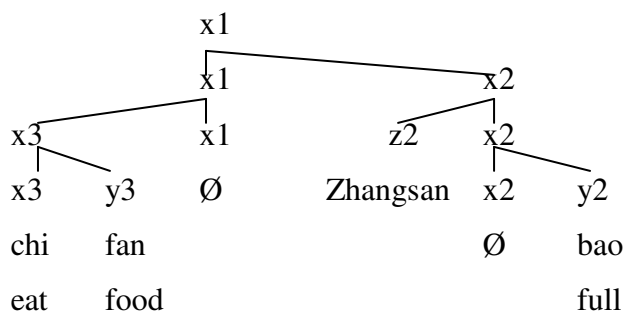
Because of this structural difference, only the structures that denote generic property, namely those in (78), may be served as conflated structures, since only these structures satisfy the exhaustive condition in Mateu (2002: 175), which says that "the conflation operation (the incorporation operation here) always exhausts ***all*** the lexical material of the subordinate argument structure: that is, no residue is left behind" (original emphasis). All the materials in the structures in (78) are affected by the incorporation operation while there is one residue, the D, in the structure in (79). Therefore, only the structures in (78) are possible candidates for the process of conflation. The examples in (75a) and (75d) should be analyzed in the way that the

---

[23] Readers are referred to Zubizarreta and Oh (2007: 24) for the analysis of *eat an apple* as an illustration of involving an unergative structure, i.e., a structure that contains a complement but no specifier.

subject arguments are the internal arguments predicated of by the resultative predicates and the "objects" are introduced by the conflated unergative structures. This is shown in the structure in (80).

(80)

```
                          x1
                          |
                          x1_____x2
                          |                  |
              x3_____x1          z2_____x2
              |           |           |       |
          x3     y3      Ø      Zhangsan  x2     y2

          chi    fan                     Ø      bao

          eat   food                            full
```

This analysis finds empirical support in the examples in (81). In these examples, a projection of D is present and leads to the loss of the generic reading of these objects. As expected, the conflation would fail, and this is proved by the ungrammaticality of the examples in (81).

(81)   a. *wo chi-bao-le   yi-wan fan.

       I   eat-full-LE   one-CL rice

       Intended: 'I got full (as a result of) eating one bowl of rice.'

    b. *wo he-zui-le   yi-ping jiu.

       I   drink-drunk-LE   one-CL alcoholic.drink

       Intended: 'I got drunk (as a result of) drinking one bottle of alcoholic drink.'

In sum, in this subsection we have seen that there are two possible accounts of the subject-oriented transitive type of resultatives. In the first one, the apparent objects are actually Topics. When the rest of the sentences move to the left of the Topics, they appear in the post-verbal position. This analysis is suitable for the examples in (82a) and (82b). Such an analysis encounters problems when it is to be applied to the examples in (82c) and (82d). In these examples, the apparent objects express the generic meaning so that they are not suitable for being used as Topics. They are analyzed as the hyponymous objects of the conflated unergative structures, in the spirit of Haugen (2009).

(82) a. **Zhangsan** qi-**lei**-le   na-pi ma.

Zhangsan ride-tired-LE   that-CL horse

'Zhangsan got tired as a result of riding that horse.'

b. **Zhangsan** wan-**ni**-le   na-ge youxi.

Zhangsan play-fed.up.LE   that-CL game

'Zhangsan got fed up as a result of playing that game.'

c. **Zhangsan** chi-**bao**-le fan/*bisabing.

Zhangsan eat-full-LE food/pizza

'Zhangsan got full.'

d. **Zhangsan** he-**zui**-le   jiu/*weishiji.

Zhangsan drink-drunk-LE alcoholic.drink/whisky

'Zhangsan got drunk.'

By analyzing the subject-oriented transitive type of resultatives in these two ways, even though the resultative predicates are predicated of the superficial subject arguments, the requirement of the Direct Object Restriction can still be satisfied because these superficial subject arguments are actually derived from the internal subject position.
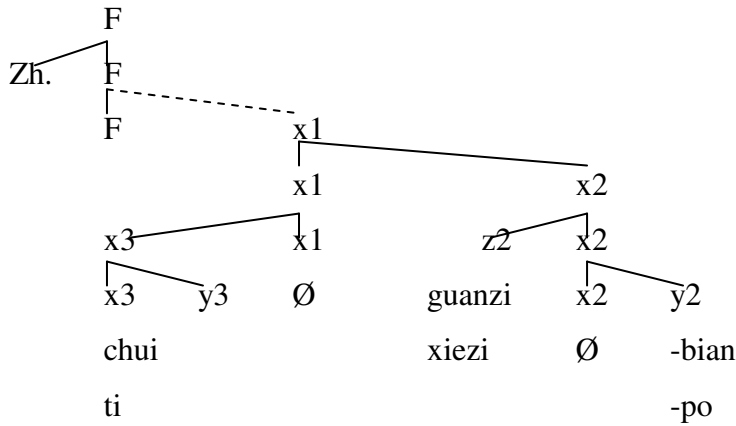
4.5 Causative Resultatives

In Mandarin transitive resultative construction, VP adjunct apart, two arguments are involved: one object and one subject. Before we proceed to the analysis of causative resultatives, it would be useful to take a closer look at these two arguments. Regarding the objects in resultatives, we have seen that they are not arguments of the matrix verbs but arguments of the constructions. That is, syntactically speaking, there is no difference between Control resultatives and Exceptional Case-Marking resultatives; the examples in (83) are treated in the same manner, illustrated by the structure in (83c).

(83) a. Zhangsan chui-bian-le   guanzi.

Zhangsan hammer-flat-LE can

'Zhangsan hammered the can flat.'

b. Zhangsan (ti-qiu)   ti-po-le   xiezi.

   Zhangsan (kick-ball)   kick-broken-LE   shoe

   'Zhangsan kicked the ball and (as a result) the shoes broke.'

c.

```
        F
       /\
 Zh.  F
      |\
      F  - - - - - - -
     /\              x1
    x3  x1           |\
   /\   |         x1     x2
  x3 y3 Ø        /\     /\
                x3 x1  z2  x2
                |\     |  /\
               x3 y3  Ø x2 y2
               |                |  |
              chui  guanzi  xiezi Ø -bian
               |                      |
              ti                     -po
```

x1

x1   x2

x3   x1   z2   x2

x3   y3   Ø   guanzi   x2   y2

chui   xiezi   Ø   -bian

ti   -po

This structure shows that the object arguments are the internal subjects of the causative structure headed by *x1*. As for the matrix verbs, they modify the whole causative structure via the process of conflation. This analysis of V1 as modifiers can also be found in Goldberg and Jackendoff (2004). In the example in (83b), it is obvious that the object is not an argument selected by the matrix verb because the entity kicked is the ball introduced by the VP adjunct. It is not so clear for the example in (83a) because apparently the object could be the argument selected by the matrix verb since the object can be interpreted as a hammered entity. This thematic relation between the object and the matrix verb can be attributed to pragmatic inference or semantic reasons, but not syntactic ones. Hoekstra (1988: 117) calls this phenomenon *shadow interpretation*. Kratzer (2005) also claims for the semantic interpretation of this apparent thematic relation. McIntyre (2004: 545) compares the examples *A little more hammering should get the metal flat* and *They hammered the metal flat* and claims that if an inference "based on world knowledge about the connection between hammering and metal becoming flat" is involved in the former, "there is no reason why this reasoning should not apply" to the latter. Wang (2010) argues that, even though the matrix verbs in the Control resultatives are transitive verbs, the objects are not thematic arguments of them.

Wang (2010), however, attributes this tight relation between the matrix verbs and the objects to syntactic reasons[24].

What about the other argument, the subject, of the resultative construction? As we have seen, the subjects are introduced by a functional projection. That is, they are not arguments selected by the matrix verbs and are actually external arguments. For example, Marantz (1984, 1997) proposes that external arguments are not arguments selected by verbs. This is demonstrated in that external arguments do not play an equal role as internal arguments in that internal arguments may contribute to special interpretations of the verb, which are not accessible to external arguments. Kratzer (1996) follows this insight and carries out research on how this is explicitly executed in the syntax, namely, how external arguments are syntactically introduced. This author concludes that external arguments are introduced by the functional head *Voice*. This assumption accepted, the subjects in transitive types of resultatives discussed until now may be claimed to be introduced by this functional head *Voice*.

As for the subjects in intransitive types of resultatives, they raise from the internal argument position, and the head *Voice* is not involved. This can be illustrated by the examples in (84a). This pair in (84) constitutes the typical unaccusative-causative alternation. The subject in the causative type, in (84b), is introduced by *Voice* and the subject in the unaccusative type, in (84a), is raised from the internal argument position.

(84)   a. kuzi   xi-ganjing-le.
           pant   wash-clean-LE
           'Somebody washed the pants and (as a result) they became clean.'
           'The pants were washed clean.'
       b. Zhangsan xi-ganjing-le   kuzi.
           Zhangsan wash-clean-LE   pant
           'Zhangsan washed the pants clean.'

In the transitive example in (84b), the subject is semantically an agent, i.e., the entity that carries out the event denoted by the resultative construction. However, there is another type of transitive resultatives, in (85), in which the subjects cannot be agents

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[24] For Wang (2010: 92), the tight affected relation between the matrix verbs and the objects results from the derivation in which the objects end up "in the edge position of the lower strong phase so as to be acceptable to the next phase of the derivation".

that carry out events. For example, the subject *zhe-ben shu* 'this book' in (85a) cannot be the argument that carries out the reading activity, nor can *zhe-pian lunwen* 'this thesis' in (85b) be the argument that carries out the writing activity.

(85) a. zhe-ben shu   kan-hua-le   wo-de yanjing.
      this-CL book   read-blur-LE   I-GEN eyes
      'This book got my eyes blurred as a result of my reading (so much).'

      b. zhe-pian lunwen   xie-lei-le   wo.
      this-CL thesis   write-tired-LE   I
      'This thesis got me tired as a result of my writing it.'

      c. zhe-tiao kuzi   xi-lei-le   Zhangsan
      this-CL pant   wash-tired-LE   Zhangsan
      'These pants got Zhangsan tired as a result of Zhangsan's washing them.'

      d. zhe-jian shi   qi-si-le   wo.
      this-CL issue   angry-dead-LE   I
      'This issue made me angry to death.'
      Literal: 'This issue got me dead as a result of my being angry.'

I denominate this type causative resultatives because the arguments that carry out the event are the objects, and the subjects are the arguments that "cause" or "trigger" the objects to do so. Take the example in (85c) for instance: the object *Zhangsan* is the argument that washed the pants and as a result got tired; *zhe-tiao kuzi* 'these pants' is the argument that triggered this event.

Two analyses are possible here. One is to treat the subjects in these examples as Topics and the rest of the sentences as intransitive resultatives. The possible problem is that the word order of the rest of the sentences is different from that of the intransitive resultatives discussed. Again, take the example in (85c) for instance; if the subject is in fact a Topic and the rest of the sentence is an intransitive resultative, why does the subject not occupy the pre-verbal position, as in the example in (86)?

(86)   zhe-tiao kuzi,   Zhangsan xi-lei-le.
      this-CL pant   Zhangsan wash-tired-LE
      'As for these pants, Zhangsan washed them tired.'

Even though Mandarin is a language in which the word order SVO is strictly respected in the syntactic configuration, it is not impossible for a subject to appear in the post-verbal position when the predicates are of the unaccusative type. The examples in (85) can be compared with those in (87). In the examples in (87), the pre-verbal elements can also be treated as Topics; when the pre-verbal position is saturated, the subjects in the unaccusative sentences can naturally appear in the post-verbal position.

(87)   a. zheli dao-le   wo de san-jian fangzi.

        here fall-LE   I GEN three-CL house

        'Three houses of mine collapsed here.'

    b. zai zhe-chang dizhen   si-le   san-ge ren.

        In this-CL earthquake   die-LE three-CL people

        'Three persons died in this earthquake.'

    c. jintian   lai-le   Lisi he ta de pengyou.

        today   come-LE   Lisi and he GEN friend

        'Lisi and his friends came today.'

If the subjects in the examples in (85) are analyzed as Topics, the rest of the sentences are treated as intransitive resultatives with the unaccusative structure; the internal subjects stay in the internal position of the unaccusative predicates without raising to the syntactic subject position as the subject *Zhangsan* does in the example in (86). In other words, the examples in (85) and the example in (86) are analyzed in the same manner, despite the different word order. Both have the structure in (88), except that the internal arguments in the examples in (85) do not raise, unlike the internal argument in the example in (86).

(88)
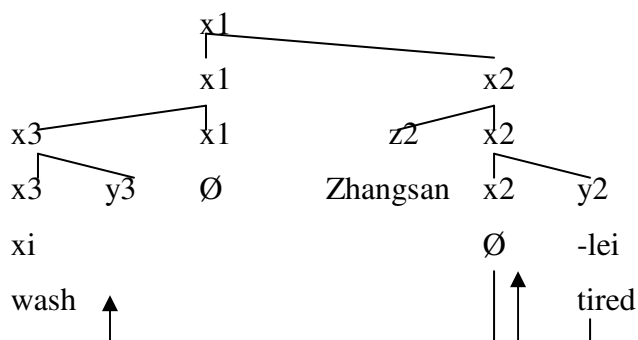
The second possible analysis has to do with the internal property of the functional head that introduces the external argument. Unlike the Topic analysis, according to which the structure involved is an unaccusative one, for the second analysis, the structure involved is a transitive one. That is, a functional projection that introduces the external arguments is involved in this second analysis.

If both object-oriented transitive resultatives and causative resultatives have the functional projection that introduces an external argument, why do these two types have different interpretations? Both the semantic interpretations and the syntactic features of the functional heads may contribute to this interpretive difference.

The two roles that are associated with the causatives are agent and causer. Two analyses are proposed in Alexiadou (2010) and Alexiadou et al. (2006), according to which there is only one functional head involved: Voice. The different agent/causer interpretations result from different features or different thematic relations. For example, in Alexiadou et al. (2006), agents are introduced by an agentive Voice (VOICE [+AG]), while causers are licensed by a non-agentive Voice (VOICE [-AG]). In Alexiadou (2010), Voice denotes a relation between a DP and an event. There are two different relations, which are R(Caus) and R(Agent). The DP names the causing event, according to the former, and a property of the DP names the coming about of the event, according to the latter.

In contrast to the unique functional head approach in Alexiadou (2010) and Alexiadou et al. (2006), Pylkkänen (2002) proposes that two functional heads are related to the licensing of external arguments and causative events. These are Voice and CAUSE. While Voice introduces an external argument, CAUSE introduces only a causing event[25]. These two heads can either be bundled together and form a single head, as in English, or can occur separately, as in Japanese and Finnish. The difference of the bundled Voice-CAUSE type and the independent Voice/CAUSE type is reflected in the existence of causatives without external arguments and the existence of causativized unergatives. In languages in which these two heads are separated, a causative may involve only CAUSE head that introduces a causing event without Voice head, i.e.,

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[25] See also Folli and Harley's (2008) analysis, according to which a causer is introduced by a little *v* that takes a Small Clause complement.

without an external argument involved, as the example in Japanese in (89a)[26] shows. As for the causativized unergatives in Japanese, these are possible since a causer and an external argument can be introduced by CAUSE and Voice separately, which can be seen in (89b). For languages that have Voice and CAUSE bundled together, English for example, neither of these two types of constructions is possible.

(89)   a. *Adversity Causative + BY-phrase Naming a Causing Event*

        Taroo-ga   sensoo-ni-yotte   musuko-o   sin-ase-ta.

        Taroo-NOM   war-BY   son-ACC   die-CAUSE-PAST

        'Taro's son was caused to die on him by the war.'

                                                                   (Pylkkänen, 2002: 82)

        b. *Causativized Unergative*

        John-ga   kodomo-o   nak-asi-ta.

        John-NOM child-ACC   cry-CAUSE-PAST

        'John made the child cry'

        c.
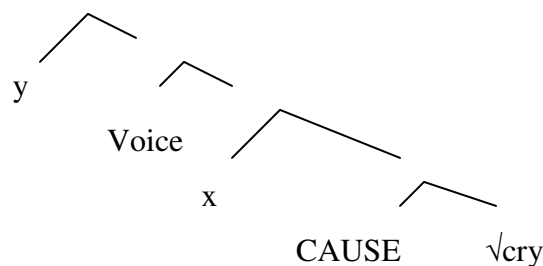
                                            (Pylkkänen, 2002: 109, 110)

As for the unique-head proposal and the different-head proposal, the latter will be adopted for the alternative explanation to the causative resultatives in Mandarin because it copes better with the cases of causativized unergatives and causatives which do not have any external argument[27]. The ensuing question is to which of the two types in Pylkkänen Mandarin belongs. Given that Mandarin, like English, allows neither causativized unergatives, as the example in (90) shows, nor causatives without an external argument, it is reasonable to propose that the features Voice and CAUSE are bundled together. That is, the external argument and the causative relation are bundled

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[26] See Pylkkänen (2002) for the arguments as how the subject in this example is a derived subject, instead of an external argument.

[27] More discussion on Agent and Causer can be found in Wechsler (2005c).

together and are introduced by the same functional head. That said, with respect to Voice bundling, Mandarin belongs to the same classificatory type as English in that, in both languages, the CAUSE feature and Voice are presented in the same morphological head.

(90)   *Zhangsan ku Lisi.
          Zhangsan cry Lisi
          Intended: 'Zhangsan made Lisi cry.'

The thematic relation of internal and external arguments with the matrix verbs in the Mandarin resultative construction is established. What is shown so far is that neither internal arguments nor external arguments in the Mandarin resultative construction are the arguments of the matrix verbs, but the arguments of the whole resultative construction. Both are arguments of the resultative construction, and the matrix verbs play the role of construction modifier. This assumption allows us an explanation of the apparent different interpretations of the subjects in different types of resultatives. Since the subject of a resultative is not an argument of V1, it is not a participant of the event denoted by the matrix verb. As for the cases in which subjects participate in the event denoted by the matrix verbs, they are interpreted in that way according to the semantic interpretation, following Kratzer (2005).

Now, having shown the different proposals on the features Voice and CAUSE, let us turn to the causative type of resultatives in the example repeated in (91).

(91)   zhe-ben shu   kan-hua-le   wo-de yanjing.
          this-CL book   read-blur-LE   I-GEN eyes
          'This book got my eyes blurred as a result of my reading (so much).'

In this type of resultatives, the resultative predicates are predicated of the objects, exactly the same as the object-oriented transitive type. What distinguishes them is the interpretation of the external arguments. In the typical object-oriented transitive type, the external arguments are semantic agents in that they carry out the event towards the ending state. In the causative type of resultatives, the external arguments do not participate in the event volitionally. For example, *zhe-ben shu* 'this book' in the

example in (91) cannot carry out the reading event nor can it blur my eyes, since what blurs my eyes is my reading activity. In other words, unlike the typical object-oriented transitive type in which we may make a can flat by hammering it, a book cannot make our eyes blur by reading it.

That said, and bearing in mind the distinction that we have seen between causer and agent, we should not confuse semantic interpretation with argument structure configuration. In Mandarin, the functional head that introduced an external argument is a functional head that has both Voice and CAUSE features bundled together. Therefore, there is no problem for an external argument to be interpreted as in the example in (91). That is, causative resultatives and object-oriented transitive resultatives share the same argument structure, in (92), despite their interpretational difference.

(92)
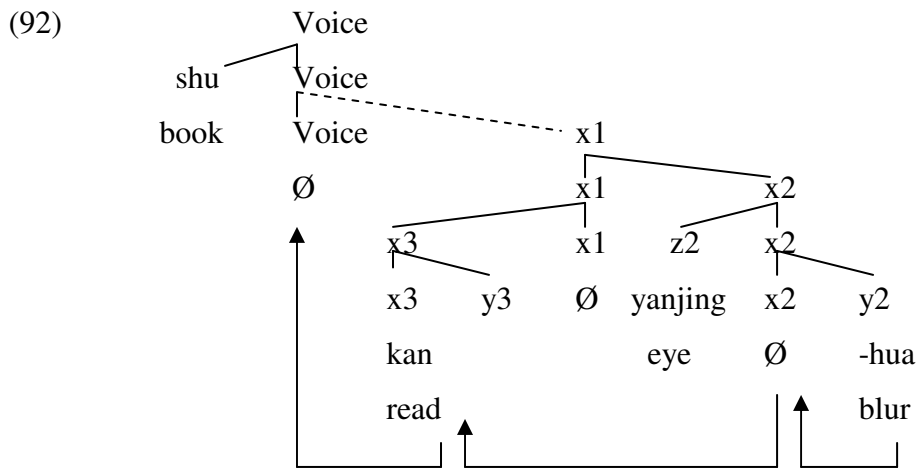
The main structure may be read as follows: this book contributes to my eyes being blurred, (even though it does not have to act upon them). As for the modifier *kan* 'to read', it specifies the manner in which the eye-blurring occurs. If my eyes are blurred, I must have been the one who carried out the reading activity. In this structure, the subject is introduced by Voice with the feature CAUSE; hence, it can be interpreted simply as a causer and needs not be the argument that carries out the reading event.

In this subsection, two analyses have been proposed for causative resultatives. The first is to analyze the subjects as Topics. According to this analysis, causative resultatives are treated in the same manner as intransitive resultatives. The objects of which resultative predicates are predicated are derived from the internal argument position and they remain in the internal position of the verbal phrases. The second is to

analyze causative resultatives structurally parallel to the object-oriented transitive type of resultatives. The objects are true internal arguments and the subjects are external arguments introduced by the functional projection headed by Voice. The internal properties of this functional head have been discussed and, following Pylkkänen (2002), I argue that the functional head Voice in Mandarin has the features Voice and CAUSE bundled together. As for the interpretative distinction, it derives from pragmatic factors or world knowledge. To compare these two types using the examples in (93), in both types the subjects can be viewed as the entities or events that lead to the change of state of the objects. For example, in (93a), it is *Zhangsan* that contributes to the change of state of *na-ge guanzi* 'that can', and it is *zhe-ben shu* 'this book' that is the origin of the blurred state of my eyes. In other words, these two types may have differences with respect to semantic interpretations. However, this interpretational difference does not prevent them from having the same structural account. After all, they do share the same basic/core interpretation, according to which the subjects are the source that leads to the change of state of the objects[28].

(93) a. Zhangsan chui-bian-le   na-ge guanzi.   (object-oriented type)
          Zhangsan hammer-flat-LE that-CL can
          'Zhangsan hammered that can flat.'

      b. zhe-ben shu   kan-hua-le   wo-de yanjing.   (causative type)
          this-CL book   read-blur-LE   I-GEN eye
          'This book got my eyes blurred as a result of my reading (so much).'

In the next two sections, my analysis will be compared with several proposals from lexical-semantic perspectives, in section 4.6, and proposals from syntactic perspectives, in section 4.7.

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[28] Readers are referred to Sybesma and Shen (2006), in which the examples in (i) and (ii) are analyzed in a unitary way by the structure in (iii).

(i)   LD chang   lei   le   AQ.
          LD sang   tired   PRT   AQ
          'LD sang and made AQ be tired.'
(ii)   zhe pian   wenzhang   xie   suan   le   wo de shou
          this   paper   write   ache   PRT   my hands
          'The writing of this paper made my hands ache.'
(iii)   [$_{vP}$ LD [$_{VP}$ sing [$_{SC}$ AQ tired]]]

4.6 Advantages over Lexical/Lexical-semantic Accounts

Lexical-semantic accounts can be found in Li (1990, 1998, 2005) and Li (2008a, 2008b, 2009). The former argues that the argument structure of a resultative originates from the argument structure of its components, restricted by the interaction of the Case Theory and three principles of the Government and Binding Theory: the theta-grid, the theta-identification, and the head-feature percolation, and the latter adopts the Event Structure Model based on the works of Levin (1999) and Rappaport Hovav and Levin (1998) as the framework.

Even though these two proposals are different regarding their detailed mechanisms, they share the same process: the association of the syntactic arguments with the components of the thematic structure specified in the lexicon. I will first review these two analyses briefly: Li's (1990, 1998, 2005) lexical proposal and Li's (2008a, 2008b, 2009) lexical-semantic account.

Li (1990, 1998, 2005) starts with the hypothesis that verbs have their thematic structure specified in their lexical entry and the thematic roles of this structure are organized in a hierarchical manner, as in (94a), according to which Theme is projected to the syntax before Goal, and Agent is the last to be projected. Since the hierarchy is what counts at the moment of projection, the name of these thematic roles is neither important nor necessary. Therefore, the specific contents of these roles can be substituted by symbols or numbers. Arabic numbers are adopted by Li (1990, 1998, 2005) and the thematic structure in (94a) is replaced by that in (94b). Here, the numbers 1, 2, and 3 correspond to Agent, Goal, and Theme, respectively. The smaller the number, the more prominent it is. The more prominent an argument, the later it is projected.

(94)   a. give <Agent, <Goal, <Theme>>>
        b. give <1, 2, 3>

As for the resultatives of the compound form, their thematic structures are specified lexically as a consequence of the combination of the argument structures of their two components, V1 and V2. The resultative compounds, as is known, may have

at most two arguments, while each of their components may also have two arguments. According to Li (1993: 484), "without using extra Case-assigning mechanism, Chinese has only two Case-marked positions: the subject position and the object position". In other words, to form a resultative compound, there are more arguments (of the two components) that compete for the two argument positions permitted for the resultative compounds. How many arguments a resultative compound may have and which arguments of the individual component can occupy these positions are determined by the Case Theory and the principal of theta-identification. The example in (95a) can be analyzed as having the thematic structure in (95b) via the combination of the two thematic structures in (95c) and (95d). The dash represents the identification of two theta roles. The less prominent argument of *xia* 'to play', *qi* 'chess', is identified with the less prominent argument of *shu* 'to lose', *qi* 'chess'. As a result, this argument *qi* 'chess' is projected to the object position of the resultative compound *xia-shu* 'play-lose'. The identical process of identification results in the projection of the syntactic subject of the compound.

(95) a. Baoyu   xia-shu-le   qi.
         Baoyu   play-lose-LE   chess
         'Baoyu played chess and (as a result) he lost it.'
      b. xia-shu <1-1', 2-2'>
      c. xia <1, 2>
      d. shu <1', 2'>

Certain kinds of identification of the roles are avoided by the head-feature percolation, according to which the prominence of the thematic structure of the head must be maintained in the thematic structure of the compound. According to this author, V1 is the head because Mandarin is typologically a head-initial language. By this restriction, the example in (96) cannot be interpreted as in (96c) and (96d) because the prominence of the head is not maintained.

(96)   Baoyu qi-lei-le   ma.

Baoyu ride-tired-LE horse

a. Baoyu was tired of horse-riding.   <1-1', 2>

b. Baoyu rode the horse tired.   <1, 2-1'>

c. *The horse rode Baoyu and (as a result) Baoyu got tired.   <2, 1-1'>

d. *The horse rode Baoyu and (as a result) the horse got tired.   <2-1', 1>

This analysis presents three potential problems. The first is that it cannot explain causative resultatives. To take causative interpretation of the example in (97), from Li (1998: 296), for illustration, the prominence of the head is not maintained because the compound would have the thematic structure <2, 1-1'>, which is unacceptable as seen in the interpretation in (96c). In order to account for this example, this author attributes it to the inverted readings of the arguments. In the words of Li (1998: 296), "[t]he two NP arguments of Vcause (V1) can have inverted readings only if the NP in the subject position also has the Cause reading and the one in the object position also has the Causee reading". However, this explanation is not satisfactory if its motivation cannot be justified.

(97)   Taotao zhui-lei-le   Youyou.

Taotao chase-tired-LE   Youyou

'Taotao got Youyou tired (as a result) of Youyou's chasing him.'

The second problem is that there are cases in which the arguments of the compounds are not those introduced by the individual components V1 and V2, as shown by the examples in (98), provided by Cheng and Huang (1995: 189-190). The subjects of these resultative compounds cannot be the arguments of the components of these compounds.

(98)   a. zhe-jian   shi   qi-si   Zhangsan le.

this-cl   matter anger-dead   Zhangsan asp

'This matter really angered Zhangsan.'

'(Lit.) This matter really angered Zhangsan to death.'

b. (meng-li de)   nei-jian   shi   ku-xing-le   ta.

dream-in de   that-cl   matter cry-awake-asphe

'The episode (in the dream) make him cry (himself) awake.'

The third problem is pointed out by Wu (2000). The motivation for Li (1990, 1998) to argue against the formation of the resultative compounds in syntax is that there is no selective relation between V1 and V2. However, as pointed out by Wu (2000), adopting Hoekstra (1992) and Sybesma (1999), V1 might select a Small Clause (like) structure in which V2, from the aspectual perspective, would offer an ending point for the event denoted by V1.

These three problems disappear under my analysis. Firstly, since the arguments of the resultative construction in my analysis are arguments of neither the matrix verbs nor the resultative predicates, these arguments need not be related to the thematic structure of these two components. In other words, the arguments of a resultative are not introduced by its components but by the construction or the functional projection. Secondly, the lack of selective relation between the matrix verbs and the resultative predicates does not suppose a problem for my analysis because the relation between them is established by the modification of the matrix verbs to the construction that contains the resultative predicates. Lastly, the stipulation of the inverted reading of the arguments is not necessary to explain the causative resultatives.

Now, I will turn to the lexical-semantic account of Li (2008a, 2008b, 2009). Based on the facts that the aspect marker must follow both V1 and V2 and that the resultative predicates cannot be modified by the degree modifier *hen*, Li (2008a, 2008b, 2009) argues that the resultative construction of the compound form should be analyzed as lexically derived.

As for the possible counterexamples to the claim of lexical derivation indicated by the examples in (99), in which there is an intervened functional projection between V1 and V2, Li (2008a) claims that these examples cannot count as evidence against his proposal that the resultative compounds are formed at word level because the potential modal marker *de* and its negative form *bu* should be treated as infixes. Since they are infixes, the units *ca-de-gangjing* 'can be wiped clean' and *ca-bu-gangjing* 'cannot be wiped clean' are also compound words.

(99) a. na-zhang   zhuozi ca-de-gangjing.
          that-CL   table   wipe-DE-clean
          'That table can be wiped clean.'

b. na-zhang   zhuozi ca-bu-gangjing.

   that-CL   table   wipe-NEG-clean

   'That table cannot be wiped clean.'

These two arguments against the syntactic formation of resultative constructions are not necessarily well-founded. As for the first one, the impossibility for the aspectual marker *le* to appear after V1 is not enough to rule out syntactic approaches because V1 and V2 might be able to be formed as a union in syntax before the union is raised to the aspectual head, phonologically realized as *le*. With respect to the second, namely the infix analysis of the intervening elements, it is also not tenable. As Wang (2010) points out, first of all, if the potential modal marker *de* and its negative form *bu* are really infixes, there seem to be no more instances of infixes in Mandarin than these two. Moreover, there are examples from Wang (2010: 38) in which V2 are modified by preceding elements. Thus, the attempt of Li (2008a, 2008b, 2009) to argue against the syntactic accounts seems not to be successful.

As in Jackendoff (1987, 1990) and Li (1995), two thematic tiers are proposed in Li (2008a, 2008b, 2009): the individual thematic tier and the composite thematic tier. The individual thematic tier deals with the thematic relations expressed by the matrix verbs and the resultative predicates, while the composite thematic tier is about the causer-causee relation of the resultative compounds. The complex thematic relations associated with the resultative construction arise from the interaction of the relations of these two tiers. For this author, all resultatives are causatives and thus involve the composite thematic tier. Linking rules are established to associate the arguments of the composite thematic tier with the arguments in syntax. These follow two types: general linking rules and construction-specific rules. The general linking rules are applied as 'elsewhere condition', since construction-specific rules have priority at the moment of application. The general linking rules are those in (100).

(100) *Linking Rules for Complex Causative Event in Active Sentences*

a. The Causer argument is realized in subject position and the Causee argument in object position, when both arguments are overtly expressed by different linguistic expressions.

b. When the Causer argument and the Causee argument are realized by one and the same linguistic expression, it appears in subject position.

c. When only the Causee argument is expressed, it is realized in subject position.

These linking rules are based on the causer-causee relation, i.e., the thematic relations of the composite thematic tier. That is to say, the event structure templates only concern the composite thematic relational tier. In other words, before the linking rules are applied, the question is which thematic arguments of the matrix verbs and the resultative predicates, namely, of the individual thematic tier, are to be identified with the causer and causee, of the composite thematic tier. As a result, at the moment of mapping the constants of the event structure templates to the syntax, the first step is to identify the thematic relation of the individual thematic tier with that of the composite thematic tier[29]. The second step, then, will be the projection of the causer and causee as syntactic subject and syntactic object, following the linking rules.

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[29] In most Mandarin resultatives, V2 is normally intransitive, while V1 can be either transitive or intransitive. As a consequence, the possibilities of the identification of the arguments of V1 and V2 with the causer and the causee are limited to those in (i) and in (ii). For instance, while the causer is identified with the external argument of transitive V1, as in (ia), the causee can be identified with the internal argument of transitive V1, as in (iib). That is to say, the combination of (ia) and (iib) is a possible combination.

(i) Causer =
      a. External argument of transitive V1
      b. Internal argument of transitive V1
      c. Single argument of intransitive V1
      d. Participant distinct from any argument of V1
(ii) Causee = single argument of intransitive V2 =
      a. External argument of transitive V1
      b. Internal argument of transitive V1
      c. Single argument of intransitive V1
      d. Participant distinct from any argument of V1

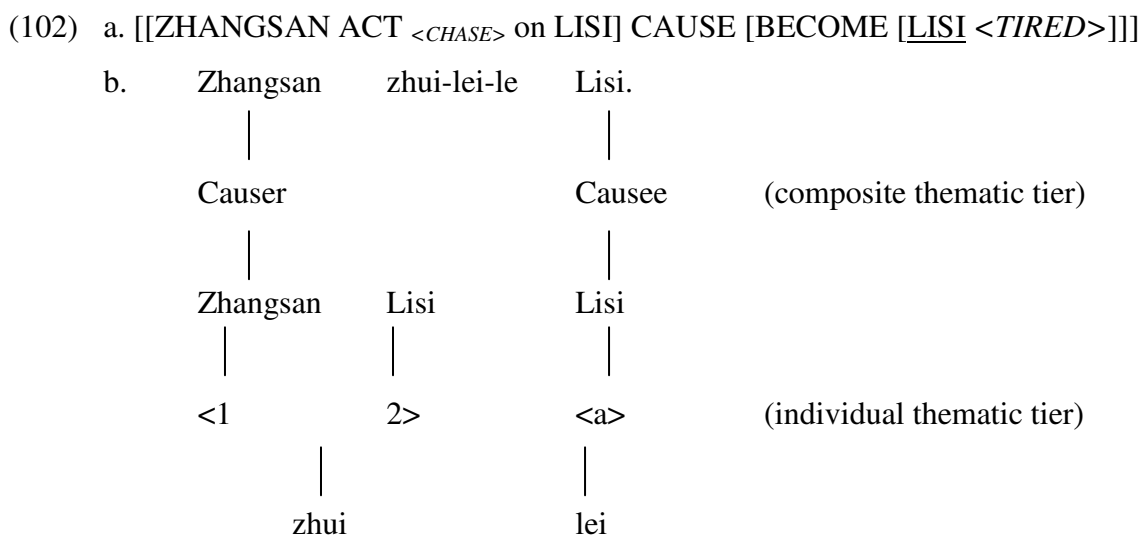   (Li, 2008a: 65)

In theory, sixteen logical combinations would arise as a result of the realization of the causer and the identification with the causee. However, not all combinations are possible. The impossible combinations may arise because of the contradictory valence requirement of the matrix verbs and the resultative predicates or because of the pragmatic or semantic requirement. For example, the combination of (ib) and (iic) would not be well-formed, because the requirement of the matrix verb to be both transitive and intransitive is clearly not possible.

Now, let us see how these mechanisms in Li (2008a, 2008b, 2009) may give an account of the resultative construction in Mandarin, by making use of the example in (101) for illustration. It will be seen that the different interpretations of this same example result from the different event structure templates, the different interaction between the two thematic tiers, and the different mapping to syntax.
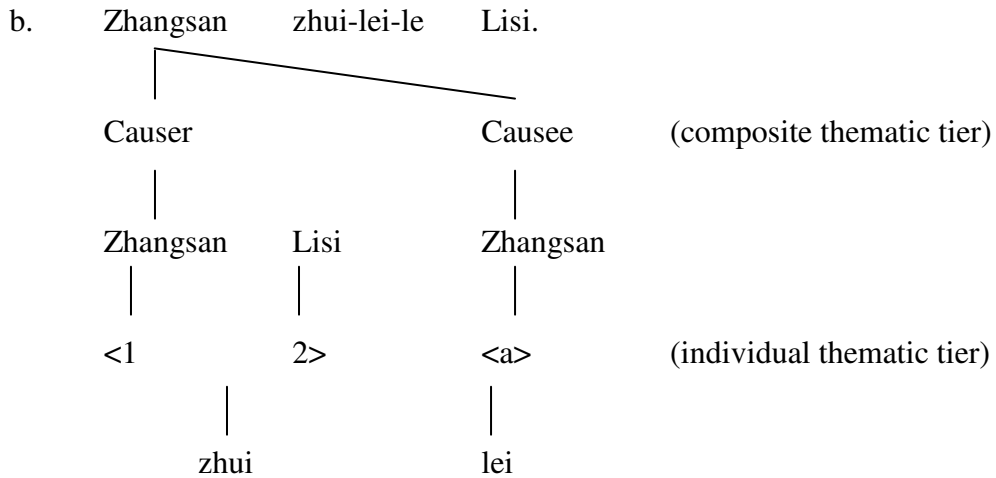
(101)   Zhangsan zhui-lei-le   Lisi

Zhangsan chase-tired-LE   Lisi

a. 'Zhangsan chased Lisi and (as a result) Lisi got tired.'   (object-oriented)

b. 'Zhangsan chased Lisi and (as a result) Zhangsan got tired.' (subject-oriented)

c. 'Zhangsan got Lisi tired as a result of Lisi's chasing him.'   (causative)

Firstly, for the object-oriented interpretation in (101a), the causer is the external argument of the matrix verb and the causee is the only argument of the resultative predicate, which is identified with the internal argument of the matrix verb. The event structure template is shown in (102a) and the interaction between the individual thematic tier and the composite thematic tier and the mapping to the syntax is presented in (102b).

(102)   a. [[ZHANGSAN ACT $_{<CHASE>}$ on LISI] CAUSE [BECOME [LISI $<TIRED>$]]]

b.   Zhangsan   zhui-lei-le   Lisi.

| |

Causer   Causee   (composite thematic tier)

| |

Zhangsan   Lisi   Lisi

| | |

<1   2>   <a>   (individual thematic tier)

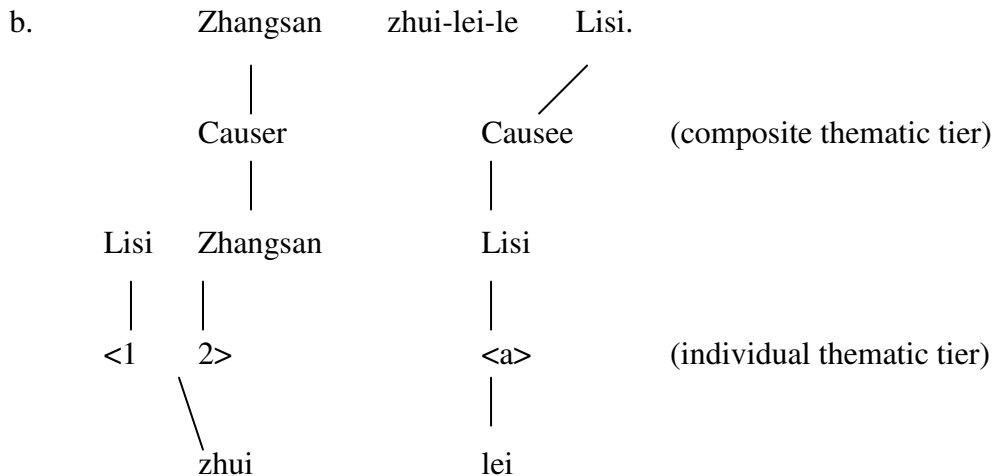| |

zhui   lei

Secondly, as for the subject-oriented reading, it results from the different way of mapping from the composite thematic tier to syntax. This is shown in (103). According to the linking rule in (100b), the causer and the causee are realized by the same entity, which should appear in the subject position.

(103) a. [[ZHANGSAN ACT $_{<CHASE>}$ on LISI] CAUSE [BECOME [Z. *<TIRED>*]]]

b.   Zhangsan   zhui-lei-le   Lisi.

Causer   Causee   (composite thematic tier)

Zhangsan   Lisi   Zhangsan

<1   2>   <a>   (individual thematic tier)

zhui   lei

Thirdly, in the causative type, it is the internal argument of the matrix verb that is realized as the causer, and it is mapped to the syntactic subject position. As for the causee, it is identified with the external argument of the matrix verb and is realized as the syntactic object. The interpretation of the two thematic tiers and the mapping to the syntax are shown in (104).

(104) a. [[ZHANGSAN] CAUSE [BECOME [LISI *<TIRED>*]]]

b.   Zhangsan   zhui-lei-le   Lisi.

Causer   Causee   (composite thematic tier)

Lisi   Zhangsan   Lisi

<1   2>   <a>   (individual thematic tier)

zhui   lei

Li's (2008a, 2008b, 2009) lexical-semantic account is not exempt from problems. The first problem, which other lexical-semantic approaches may also have to face, is the lack of well principled constraints on the primitives. For instance, why are there only a few primitives such as ACT, CAUSE or BECOME and not seven or ten more primitives? What principles constrain these primitives? Moreover, for Li (2008a, 2008b, 2009), all

examples of the resultative construction in Mandarin are of the causative type, and this is based on the fact that all the event structures that involve the primitive CAUSE are causatives. If this is true, what is needed to be proven is that the event structure templates related to the resultative construction in Mandarin all actually involve the primitive CAUSE. This would be a difficult, not to say impossible, task, since the lack of well principled constraints, as we mentioned earlier, means that the primitives cannot be justifiable or refutable. Taking the intransitive/transitive pair in (105) as an example, according to Li (2008a), they would have the same event structure template in (106). The question is how to prove that this is really the case?

(105)   a. ta   pao-lei-le.

          he   run-tired-LE

          'He ran and (as a result) he got tired.'

          'He ran himself tired.'

       b. ta   pao-lei-le   ta-ziji.

          he   run-tired-LE   he-self

          'He ran himself tired.'

(106)   [[HE ACT $_{<RUN>}$] CAUSE [BECOME [HE <*TIRED*>]]]

Some linguists, Gu (1992: 35) for example, hold the view that examples of the type in (105a) do not involve causativity, and Li (2008a: 8) argues against this by using paraphrase, according to which both examples in (105) can be something like *his running caused himself to become tired*. That is, it seems that paraphrases may decide whether a sentence involves causativity or not. This might be intuitive for some speakers. However, neither intuition nor paraphrases are appropriate to test for causativity, since different speakers might have different interpretations or different paraphrases for examples like those in (105). The example in (105a) may also be interpreted as *he got tired as a consequence of running*, according to which cause denotation then disappears. At the same time, the example in (105b) may be paraphrased as *he caused himself tired by running*; thereby maintaining causativity. That is to say, by attributing causativity to intuition and paraphrases, it might be achieved by some but not all speakers. Fortunately, both the theoretical and empirical problems related to Mandarin disappear under my analysis, in which the primitives are well restricted and no paraphrases are needed for the judgment of causativity.

In this section, my analysis is compared to Li's (1990, 1998, 2005) lexical analysis and Li's (2008a, 2008b, 2009) lexical-semantic approach. The problems of these analyses have been presented and do not invalidate the lexical-syntactic analysis proposed previously in this chapter.

4.7 Advantages over Syntactic Accounts

In this section, two syntactic accounts will be reviewed and compared with my lexical-syntactic analysis. These are Zhang (2001) and Wang (2010).

Zhang (2001) proposes different analyses for the Exceptional Case-Marking resultatives and Control resultatives. According to this author, the objects in the Control resultatives are objects of the matrix verbs, while the objects in the Exceptional Case-Marking resultatives are subjects of the resultative predicates. Thus, these two types of examples in (107), from Zhang (2001: 202), would have different structures as shown in (108).

(107)   a. Akiu   da si le   laohu.

   Akiu   beat die PRF   tiger

   'Akiu beat the tiger so that it died.'

   b. Akiu   ku shi le   shoujuan.

   Akiu   cry wet PRF   handkerchief

   'Akiu cried and as a result the handkerchief was wet.'

(108)   a. [$_{SAsp}$ Akiu [$_{Asp'}$ **da**-si-le … [$_{S\nu}$ t$_{Akiu}$ [$_{\nu'}$ [$_{SV}$ laohu [$_{V'}$ **t$_{da-si}$** [$_{S\nu}$ PRO [$_{\nu'}$ t$_{si}$ [$_{SV}$ t$_{si}$]]]]]]]]]]

   b. [$_{SAsp}$ Akiu [$_{Asp'}$ **ku**-shi-le … [$_{S\nu}$ t$_{Akiu}$ [$_{\nu'}$ [$_{SV}$ shoujuan [$_{V'}$ **t$_{ku-shi}$** [$_{S\nu}$ t$_{shoujuan}$ [$_{\nu'}$ t$_{shi}$ [$_{SV}$ t$_{shi}$]]]]]]]]]]

As can be seen in these structures, both involve the functional head *v* which introduces the resultative predicates. This functional head is phonologically satisfied by the movement of the resultative predicates which end by fusing with the matrix verbs.

To explain the examples with multiple interpretations, such as that in (109) from Zhang (2001: 217), this author adopts the Minimal Distance Principle in Rosenbaum (1970) and the notion of equidistance in Chomsky (1995: 298) to give an account of them. The structure is that in (110).

(109) Baoyu   zhui lei le   Daiyu.

       Baoyu   chase tired PRF   Daiyu

       a. 'Baoyu chased Daiyu and as a result Daiyu got tired.'

       b. 'Baoyu chased Daiyu and as a result Baoyu got tired.'

(110) [$_{SAsp}$ Baoyu [$_{Asp'}$ zhui-lei-le … [$_{Sv}$ t$_{Baoyu}$ [$_{v'}$ [$_{SV}$ Daiyu [$_{V'}$ t$_{zhui-lei}$ [$_{Sv}$ PRO [$_{v'}$ t$_{lei}$ [$_{SV}$ t$_{lei}$]]]]]]]]]

According to the Minimal Distance Principle, the controller[30] of a PRO must be the closest one that c-commends it. In the structure in (110), the closest argument that c-commends the PRO is *Daiyu*, and the control relation between *Daiyu* and the PRO in the structure in (110) leads to the interpretation in (109a). In order to account for the interpretation in (109b), the notion of equidistance of Chomsky (1995) is needed. According to the notion of equidistance, both Spec$_2$ and Spec$_1$ in the structure in (111), from Zhang (2001: 218), are "in the minimal domain of the chain Y-t and therefore equidistant from α, which is either ZP or a nominal within ZP."

(111)
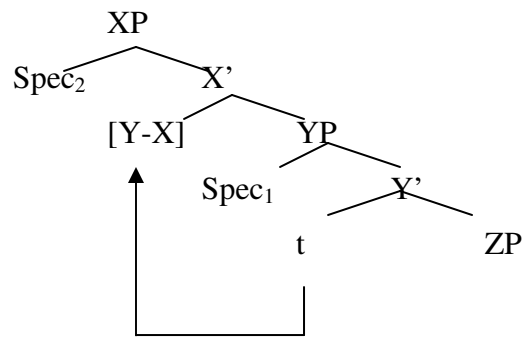
Zhang (2001) applies the notion of equidistance to the Control theory. Thus, in the structure in (110), as a consequence of the movement of *lei* 'tired', *Baoyu* and *Daiyu* are equidistant from the PRO, and the interpretation in (109b) can also be obtained.

What Zhang (2001) should answer is why all types of verbs do not form the resultative construction. That is, what constrains the verbs that can be inserted into the structures in (108) from forming resultatives? Otherwise, this analysis would over-generate. In my analysis, verbs that may form the resultative construction are

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[30] For other proposal of Control in Mandarin, readers are referred to Huang (1992).

structurally restricted. That is, only verbs with the unergative structure may be the matrix verbs that conflate with unaccusative structures that contain the resultative predicates. Therefore, my analysis has more advantages over that of Zhang (2001).

Wang (2010) adopts, on the one hand, the framework of the generative grammar, concretely, the Minimalist Program proposed in Chomsky (1995), and, on the other, the Phase theory, to analyze both the resultative compounds and the phrasal resultatives in Mandarin and in Taiwanese. According to this author, both the resultative compounds and the phrasal resultatives involve similar syntactic structure and similar syntactic derivation. In this structure, strong phases[31] are involved and only the edge of these strong phases is accessible to the subsequent derivation.

Wang (2010) classifies the resultative construction in three types. These types are those in (112).

(112) a. Type I: transitive V1 + prototypical unaccusative V2

da si 'hit die', *ti po* 'kick break', *zhuang kai* 'bump open'

b. Type II: (in)transitive V1 + non-typical unaccusative V2

qi lei 'ride tire', *zhui lei* 'chase tire', *wan shi* 'play wet'

(in)transitive V1 + unergative V2

ma ku 'scold cry', *dou xiao* 'tease laugh'

c. Type III: non-typical unaccusative V1 + unaccusative V2

lei si 'tire die', *zui dao* 'drunken fall', *qi si* 'anger die'

unergative V1 + unaccusative V2

xiao si 'laugh die', *ku si* 'cry die'

These three types of resultatives share the same properties, which include the following: first, they are formed in syntax; second, V1 selects a CP that has a full finite V2 clause embedded; third, the head C is not pronounced. Type I is illustrated by the example and structure in (113), from Wang (2010: 54).

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[31] In Wang (2010: 11), strong phases are "defined as CP and (transitive/unergative) vP".

(113) a. wo   da   si   na-zhi zhanglang   le.
      I   hit   die   that-CL cockroach   ASP
      'I hit the cockroach (and as a result) it was dead.'

b.
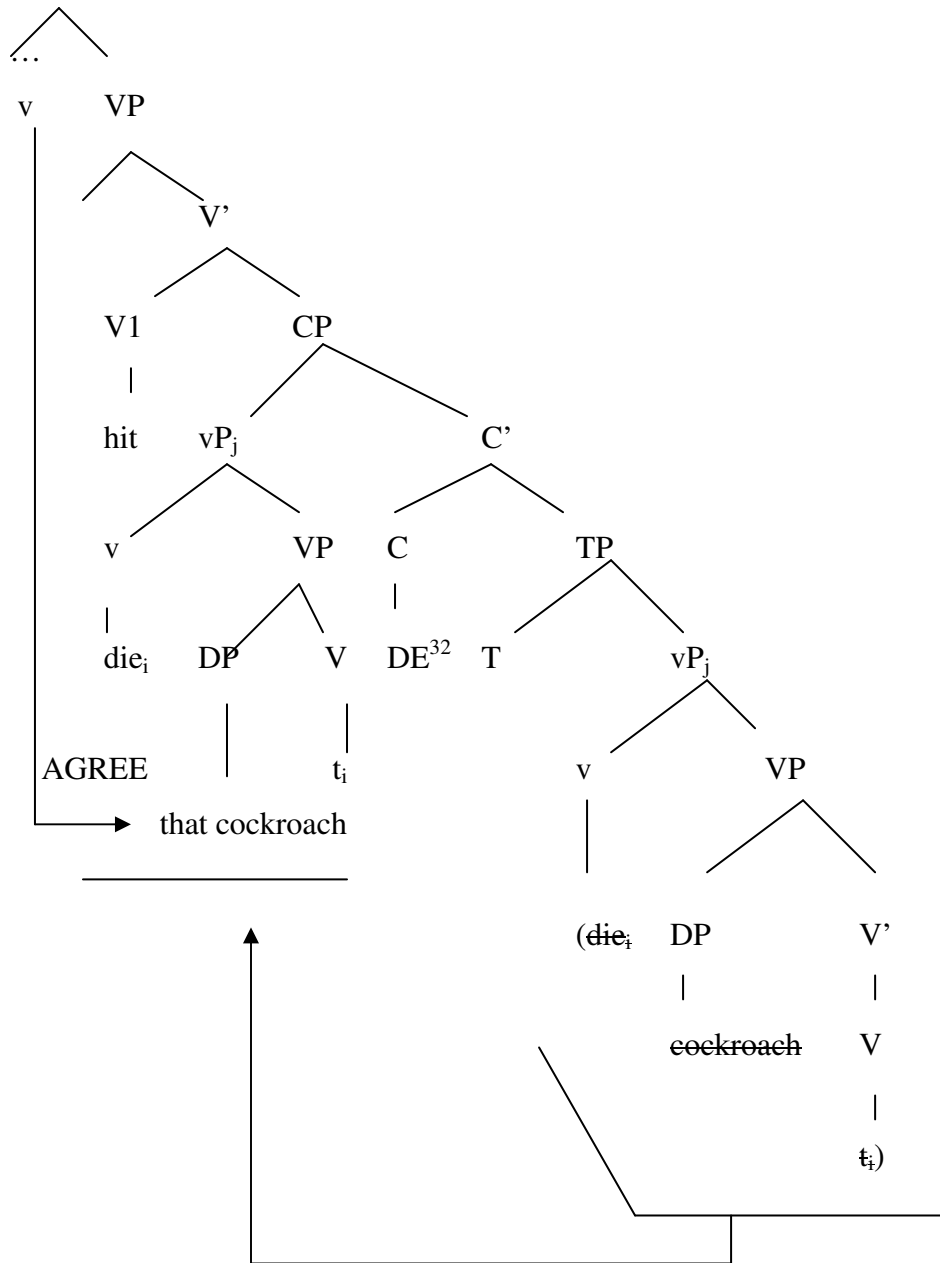
In this structure, it can be observed that this author adopts theories according to which even an unaccusative structure involves a little *v* projection. The C head is parallel to the English complementizer *for*. When it is phonologically saturated by DE, the embedded

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[32] It is unpronounced for the resultative compounds.

(infinitive) SpecTP position is available to host a lexical DP, and phrasal resultatives could be formed. The embedded DP in phrasal resultatives can be raised to the SpecTP position to check its Case. As for the resultative compounds, their internal arguments cannot get Case assigned in the same way because the SpecTP position is not available to host a lexical DP, according to this author. Therefore, the embedded DP must be licensed in another way. The need for the internal arguments to have Case assigned can be achieved by displacing the vP to the SpecCP position. Under the Agree relation, the internal arguments, ending at the edge of a strong phase and being visible for Agree from the next phase, can receive Case from the matrix V1. The filled specifier position of the head C further prevents it from being pronounced. Type II and type III also involve the same structure, so I will not explore them here.

This account faces several problems as follows: first, Wang (2010) argues that for type I resultatives, a Case-marked SpecTP position is not available. As a consequence, the internal argument of V2 cannot get Case assigned and this triggers the raising of vP. However, when T is merged with vP, the internal argument should be free to raise to the specifier position of T since, at that moment, it is not known whether the merged C will be pronounced or unpronounced. Moreover, even though the functional head C is not pronounced, it is still there. It is doubtful whether there will be any syntactic differences because of the phonological presentation of this head. That is, the availability of the SpecTP position should not be dependent on the phonological presentation of the functional head C. If this is correct, the need of the phrasal movement of vP to the specifier position of C, which makes the resultative compounds possible, is not justified.

The second problem is related to the unergative nature of V1. Traditionally, an unergative structure may have only one argument, which is an external one. If V1 does have an unergative structure, what should be explained is how an unergative verb can take a CP as its complement.

Thirdly, an important issue of Wang's (2010) account is that the functional head C is involved in both the phrasal resultatives and the resultative compounds[33], the difference being that for the former it is pronounced but not for the latter. It is known that the resultative compounds, compared with the phrasal resultatives, are more restricted. Wang (2010) argues that the embedded clause in a phrasal resultative is a full

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[33] See subsection 4.4.1 for arguments against the unitary analysis of the resultative compounds and phrasal resultatives involving a functional projection.

clause, while it is reduced in a resultative compound. Nevertheless, even though C is not pronounced, it is not clear why the clause should be a reduced one.

The last is about the classification of verbs as prototypical unaccusative verbs and non-typical unaccusative verbs. It seems that such a distinction results from the criteria based on the unergative-transitive alternation and the ergative-causative alternation. This leads to the difficulty or the problem as how to tell prototypical unaccusative verbs from non-typical verbs. Wang (2010) does not specify the difference between prototypical unaccusative verbs and non-typical unaccusative verbs; the different classification of the three types of resultatives contributed by this distinction is merely for descriptive convenience.

Again, these problems would disappear under my lexical-syntactic analysis because no functional projection is involved between the matrix verbs and the resultative predicates, and the matrix verbs do not select any structures that contain the resultative predicates but only serve as modifiers of such structures.

4.8 Conclusions

In this chapter, a lexical-syntactic analysis of the resultative construction in Mandarin is proposed. The analysis can be summarized with the following examples in (114) and (115), representing the five types classified. The two intransitive types include those in (114). The three types of transitive resultatives may be exemplified by the single example in (115). It may have one of the following three readings: object-oriented, subject-oriented, and causative.

(114) a. Zhangsan   pao-lei-le.
            Zhangsan   run-tired-LE
            'Zhangsan ran himself tired.'
        b. na-tiao gou   dong-si-le.
            that-CL dog   frozen-dead-LE
            'That dog was frozen to death.'

(115) Zhangsan   zhui-lei-le   Lisi.

      Zhangsan   chase-tired-LE   Lisi

      a. 'Zhangsan chased Lisi and (as a result) Lisi got tired.'   (object-oriented)

      b. 'Zhangsan chased Lisi and (as a result) Zhangsan got tired.' (subject-oriented)

      c. 'Zhangsan got Lisi tired as a result of Lisi's chasing him.'   (causative)

The basic ideas of the lexical-syntactic analysis proposed here include the following: firstly, the main predicative structure involved may be either unaccusative or causative, but not unergative; secondly, the matrix verbs result from the process of conflation; thirdly, the process of conflation involves merging an unergative structure with the head of the main predicative structure; fourthly, the predicated arguments are all derived from an internal argument position, i.e., the specifier position of the non-eventive relational structure selected by the head of the eventive relational structure.

The intransitive examples, in (114), are apparently problematic in the sense that the Direct Object Restriction is violated, since the resultatives are predicated of the subjects. However, I claim that the Direct Object Restriction is not violated because the predicated subjects in these examples derive from the internal argument position. These two types of intransitives differ in that the example in (114a) has the conflation of a modifying unergative structure, while the matrix verb of the example in (114b) is the instantiation, together with the resultative predicate, of the unaccusative structure.

As for the different interpretations of the transitive example in (115), they arise from different syntactic configurations. For the object-oriented reading in (115a), the object derives from an internal argument position which is predicated of by the resultative predicate, while the subject is introduced by the functional projection Voice. The resultative predicate can be predicated of the syntactic subject even with the presence of the syntactic object, for the interpretation (115b), when the object is actually a "right dislocated" Topic when this is not generic. It originates from the Topic position and, when the rest of the sentence moves to the left side of it, it appears in the object-like position, i.e., the post-verbal position. That is, the rest of the sentence is to be analyzed as an intransitive resultative, and the predicated subject raises from the internal argument position. When the object is generic, I claim that it is analyzed as the hyponymous objects of the conflated unergative structure. That is, it generates from the complement position of the conflated unergative structure, resulting from the process of incorporation by which two coindexed sites are spelled out with two different roots.

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Therefore, although the resultative predicate appears to be predicated of the syntactic subject, with the appearance of the syntactic object, the Direct Object Restriction is respected. For the causative interpretation in (115c), it can be syntactically constructed in the same way as the structure from which the object-oriented reading is obtained. The different interpretation results from the different interpretation of the features Voice and CAUSE bundled together. Adopting Pylkkänen (2002), I argue that Mandarin is a language in which the functional head that introduces the external argument has the features Voice and CAUSE bundled together. It is the different interpretation of these features that contributes to the different reading between the object-oriented and the causative.

In section 4.6 and in section 4.7, my lexical-syntactic account is compared to the lexical/lexical-semantic of Li (1990, 1998, 2005) and Li (2008a, 2008b, 2009), and syntactic accounts of Zhang (2001) and Wang (2010). The lexical-syntactic account proposed here is preferable because it avoids some problems that arise in these accounts.

Chapter 5: Conclusions

In this dissertation, I have attempted to offer an account of the argument structure in Mandarin by dealing with motion events, the aspectual particle *le*, and the resultative construction, and have suggested that these cases can be explained from the perspective of the lexicon-syntax interface. In this final chapter, I will summarize my proposed analysis in this dissertation.

I argue for the homomorphism between syntax and structural semantics. An important fact for the study of argument structure is that of "event composition" (from Beavers, in press). In my account of the argument structure in Mandarin, I also adopt the approach of the decomposition of predicates. A predicate can be decomposed in a configurational manner and the structural semantics is read off this syntactic configuration. Sentence ambiguity may arise as long as different syntactic structures are involved.

In chapter one, the lexical-syntactic framework is presented and the primitive building blocks and basic predicate structures are proposed, based on the head-complement and specifier-head relations. The two basic predicates are the unergative and the unaccusative. While the former requires an external argument introduced by a functional projection, the latter does not. When an external argument is introduced for the latter, a causative structure will be obtained. These three structures are shown in (1).

(1)   a. *Unergative Structure*
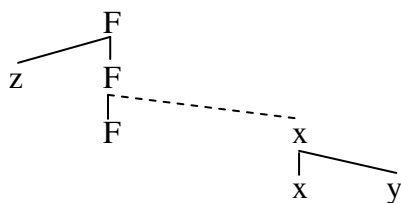
       b. *Unaccusative Structure*

c. *Causative Structure*

```
        F
       / |
     z3  F------------
         |            \
         F            x1
                     /  \
                   x1    x2
                        /  \
                      z2    x2
                           /  \
                         x2    y2
```
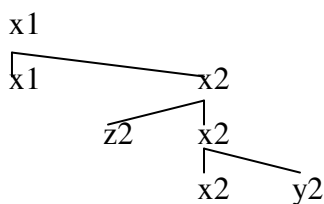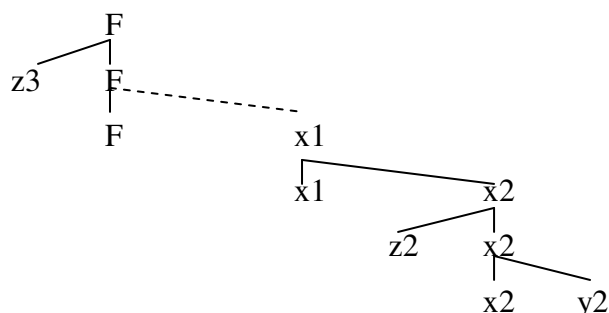
The phonological presentation of the main verbs of these structures may result from two mechanisms: incorporation or conflation. In this dissertation, the process of incorporation is carried out by Copy, by copying the semantic contents of a complement and then inserting it into its head and these coindexed bundles of semantic features can be spelled out with different roots; the process of conflation occurs through Merge, by merging an unergative structure into a phonologically empty head. This analysis can capture the essential distinction between the structural and idiosyncratic meaning in the following way. The basic predicative structures represent the structural meaning; as for the idiosyncratic meaning, it is encoded by the non-relational elements that are inserted into these structures.

In this chapter, the lexical-syntactic approach adopted in this dissertation is compared with some projectionist and neo-constructionist approaches. Lexical-syntactic approaches have something in common with projectionist approaches in that a lexical head has its complement or specifier argument assigned in the lexicon; lexical-syntactic approaches also share the same spirit with neo-constructionist approaches in that the structural semantic interpretations of the arguments are directly read off the syntactic structures. Lexical-syntactic approaches are adopted as the framework of this dissertation because they can be more economical in the sense that certain independent levels of representation and mapping/linking mechanisms are not necessary and can be better restricted in the sense that they do not have to be attributed to stipulation in order for the primitive elements for the independent levels of representation and mapping/linking mechanisms to be determined. Besides, the lexical-syntactic approach adopted here explains the cross-linguistic presence and absence of the resultative construction and the relation between the resultative construction, motion events, and the aspect structure in Mandarin in a concise and unitary way.

Chapter two starts with Talmy's (1975, 1985, 1991, 2000) typological works from the cognitive viewpoint on motion events and I try to incorporate this author's insights into the lexical-syntactic approach adopted in this dissertation. The main semantic components such as Motion, Path, Manner, Figure, and Ground, etc., can be argued to result from the pure interpretations associated with certain positions in the syntactic structures proposed in chapter one. For example, Figure and Ground are non-relational elements that occupy the specifier and the complement positions of the structures of non-eventive relation; Manner modifies the motion event through the process of conflation. The syntactic structure in (2b) captures the essential idea of Talmy's (2000) work, in (2a), on motion events.

(2)   a. *Conceptual Structure of the Framing Event in Talmy (2000: 221)*

```
 ⎡ Figural      Activating    Association   Ground  ⎤
 ⎣ entity       process       function      entity  ⎦ framing event
                   │              └──────┬──────┘
              ⎰ Transition ⎱          Core scheme
              ⎱ fixity     ⎰
```

   b.

```
          x1
          │
          x1                              x2
     activating process        z2         x2
          Motion             Figure       x2          y2
                                   association function   Ground
                                           Path
                                        ‿‿‿‿‿‿‿‿‿‿‿‿‿‿
                                          core schema
                        ‿‿‿‿‿‿‿‿‿‿‿‿‿‿‿‿‿‿‿‿‿‿‿‿‿‿‿‿
                                 framing event
```
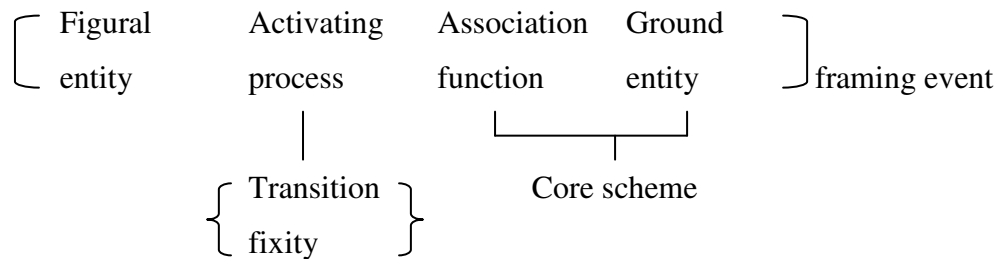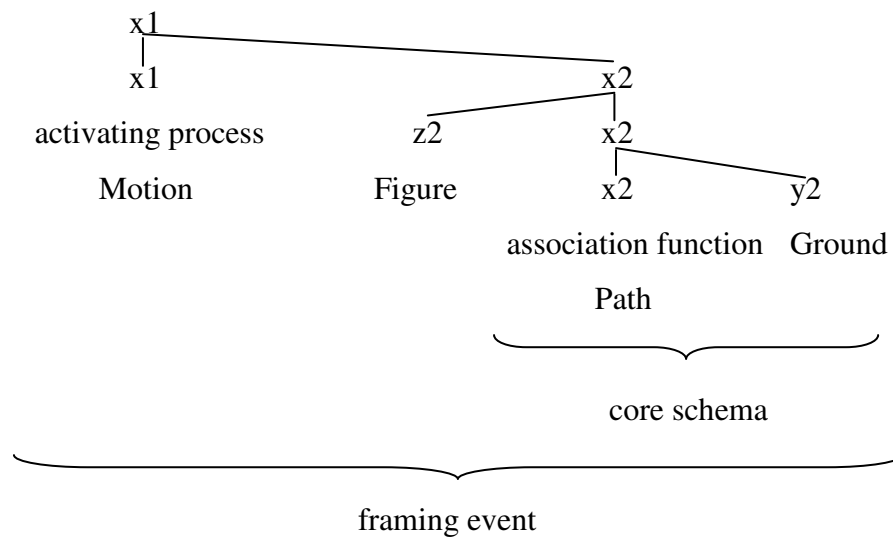
An important contribution of Talmy's study to the typology of motion events is that, according to the elements that encode Motion, languages can be classified as either verb-framed or satellite-framed. In terms of this dissertation, the satellite-framed pattern is the one that involves the process of conflation and the verb-framed pattern is the one that does not. The question arises regarding the classification of Mandarin and I argue

in this dissertation that analyzing Mandarin as a satellite-framed language is not problematic. This conclusion results from both synchronic and diachronic studies. Diachronic data show strong support for the claim that Mandarin has undergone a typological shift from the verb-framed to the satellite-framed pattern. Both patterns can be captured by the proposed lexical syntactic structures. While for the verb-framed pattern the incorporation of Path takes place and blocks the process of conflation of Manner, for the satellite-framed pattern Manner can be freely conflated because no previous incorporation occurs.

Chapter three deals with the aspectual particle *le*. In addition to its function as an inchoative marker, this particle may play the role of both the situation and viewpoint aspect, based on the two-tier concept of aspect in Smith (1997). That is to say, the particle *le* can be interpreted either as a resultative predicate, an inchoative marker, or perfective viewpoint aspect. The different interpretations of this particle result from the different positions from which they derive. The structure in (3) illustrates these positions.

(3)
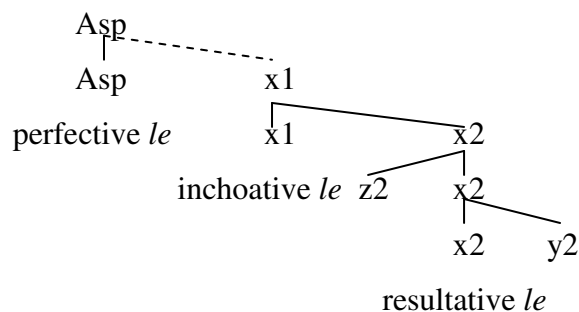
Firstly, it is parallel to resultative predicates when it is derived from the structure of non-eventive relation and expresses the terminal coincidence relation. It is precisely through this function that it is related to argument realization. The presence of this resultative *le* guarantees the telicity of an event, which cannot be refuted. Its suffixal nature makes its attachment to the main verb obligatory. Secondly, this particle denotes perfectiveness when it is the instantiation of a functional projection. Because of the identical morphological form for these two different functions, it is not always easy to tell which one the particle has. The most distinctive difference is that while the resultative *le* is compatible with modal verbs, the perfective *le* is not. For example, from the contrast between the possible example *Zhangsan xiang mai-le ta de che* 'Zhangsan

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wants to sell his car' and the ungrammatical one *Zhangsan xiang gai-le yijian fangzi* 'Zhangsan wants to build a house', it is clear that the particle *le* in the former is resultative, while it is a perfective aspectual marker in the latter.

In chapter four, I give an account of the resultative construction in Mandarin and show that the Direct Object Restriction can be valid, at least for Mandarin. The complication of the resultative construction in Mandarin has to do with the presence of the following types: the intransitive type with a main unergative verb but without the need of a fake reflexive, the intransitive type with a main unaccusative verb, and the transitive type in which the resultative is predicated of the subject, despite the presence of the object. In all these types the resultative complements are predicated of arguments that are not objects. In order to maintain the Direct Object Restriction, the only solution is to prove that the arguments of which the resultative complements are predicated in these types are actually derived from the underlying internal subject position. This is precisely what I pursue in chapter four and it is achieved according to the lexical-syntactic analysis.

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