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漢語動補結構中的致使義：從論元體現而論
Causativity in Chinese Resultative Compounds:
On the Account of Argument Realization

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Causativity in Chinese Resultative Compounds:

On the Account of Argument Realization

The seal of National Chengchi University is a large, faint watermark in the background. It is circular with a five-petaled flower in the center. The Chinese characters '國立政治大學' are arranged around the top inner edge of the circle, and 'National Chengchi University' is written along the bottom inner edge. In the center of the flower, the Chinese characters '政大' are visible.

BY

Hsin-Lun Huang

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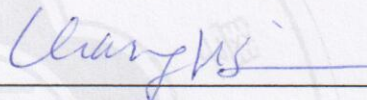
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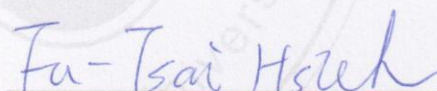
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指導教授：何萬順 教授

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漢語的動補結構長久以來一直是漢語語言學中一個複雜難解的議題，動補結構中的論元在句法上應如何體現及其相對應的語意應如何解讀更是許多語言學家致力解決的問題。衍生語法學派 (Derivational Grammar) 的學者 (Cheng and Huang, 1994; Cheng et al, 1997; Huang, 2006, 2007; Li, 1995) 及詞彙功能語法學派 (Lexical Functional Grammar) 的學者 (Her, 2004, 2007, 2009; Shibagaki, 2009) 均曾試圖提出對於漢語動補結構最正確有效的分析，本論文旨在證明衍生語法學派之理論在動補結構分析上的錯誤及不足，並點出詞彙功能語法學派之理論在預測動補結構的論元體現 (argument realization) 及語意解讀 (semantic interpretation) 上有較全面的分析。

然而，某些動補結構，如「這一大桌子菜胖死我了」，含有不同於其他動補

結構的致使義 (Causativity)，進而產生特殊的論元體現模式，此情形卻未被涵蓋在詞彙功能語法學派的理論分析中，本論文也依循詞彙功能語法的理論框架，試圖提出足以預測此種特定動補結構論元體現的句法規則，以彌補詞彙功能語法理論在分析此動補結構的論元體現上之遺漏，使其整體分析更臻完善。

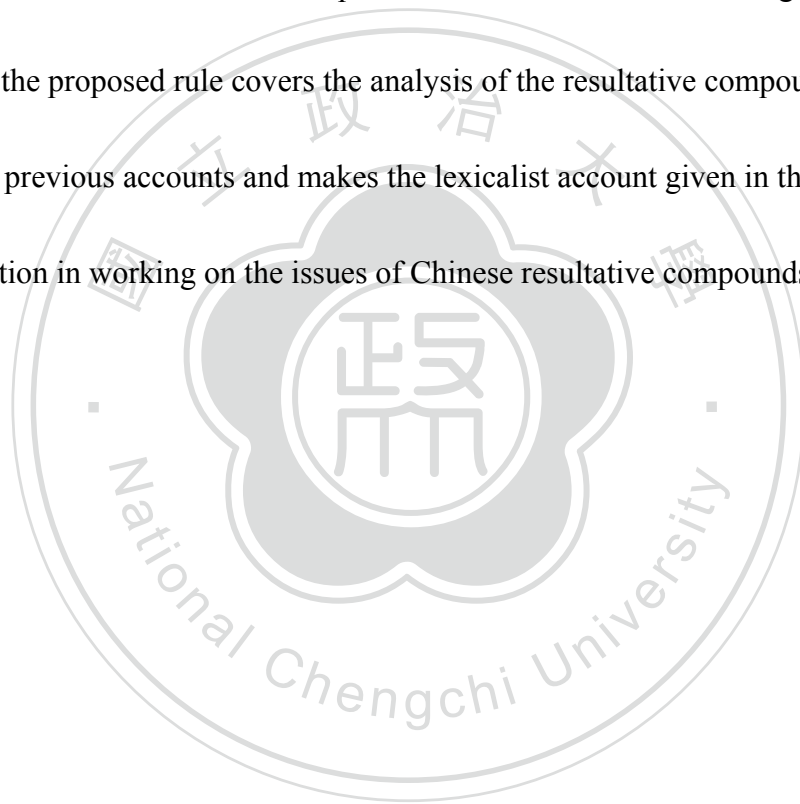


Abstract

Resultative compounds in Mandarin Chinese have long been a complicated issue in Chinese linguistics. Many researchers have put great effort in trying to solve the problem of how arguments of Chinese resultative compounds should be syntactically realized and how corresponding interpretations should be achieved. Researchers of Derivational Grammar (Cheng and Huang, 1994; Cheng et al, 1997; Huang, 2006, 2007; Li, 1995) and those of Lexical Functional Grammar (Her, 2004, 2007, 2009; Shibagaki, 2009) have all attempted to propose analyses that are accurate in predicting the argument realization and compound predication of Chinese resultative compounds. This thesis aims to prove the insufficiency in the prediction power of derivational accounts and endeavors to show that the account of Lexical Functional Grammar is superior in the analysis of resultative compounds in terms of argument realization and compound interpretation.

However, some resultative compounds, such as that in *zhe yi da zhuozi cai pang-si wo le* ('This whole table of dishes is making me fat. '), have certain causativity that makes them different from others in terms of argument realization. Resultative

compounds like these are not included in the analysis of lexicalist accounts. Based on the theoretical framework of Lexical Functional Grammar, this thesis also makes an attempt to propose a syntactic rule that predicts the correct argument realization pattern of the kind of resultative compounds mentioned above. It is the goal of this thesis that the proposed rule covers the analysis of the resultative compounds that is missing in previous accounts and makes the lexicalist account given in this thesis a better solution in working on the issues of Chinese resultative compounds.



Chapter 1 Introduction

The complexity of resultative compounds in Mandarin Chinese has been a widely investigated issue in the course of linguistic research. Argument realization of Chinese resultative compounds has been approached by researchers either on the derivational account (Cheng and Huang, 1994; Cheng et al, 1997; Huang, 2006, 2007; Li, 1995) or the lexicalist account (Her, 2004, 2007, 2009; Shibagaki, 2009). How the arguments are linked to their grammatical functions and how causativity in resultative compounds is achieved remain irresolute in the debates of researchers.

On the derivational account, resultative compounds with various argument structures are categorized according to the syntactic nature of the predicates of the compounds (whether the predicates are unergative, transitive, unaccusative or causative). The syntactic nature of the predicates gives rise to different argument realizations and different interpretations of the compounds. In Li's (1995) analysis, an example of the multiple interpretations is recorded:

(1) Zhangsan	zhui-lei-le	Lisi	(transitive)
John	chase-tired-ASP ¹	Lee	

¹ ASP stands for aspect marker. For future reference, CL= classifier. CAU= causative verb. DE= relative marker.

- a. 'John chased Lee to the extent of making him (Lee) tired.'
- b. *'Lee chased John and he (John) got tired.'
- c. 'John chased Lee and (John) got tired.'
- d. 'Lee chased John and was made tired (by John).'

Her (2004, 2007) further pursues this interpretation complexity by resorting to Lexical Functional Grammar (LFG) and claims that the different grammatical realizations of the arguments are due to the lexical mapping competition between the composite roles in the resultative compounds. Interpretation (1d) in his analyses is proved to be most marked and hardly accessible to most Chinese speakers. This thesis aims to account for the causative reading of this interpretation in a direction similar to but slightly different from that taken by Her (2004, 2007).

This thesis starts by retrospectively analyzing the derivational analyses of Chinese resultative compounds. The categorizations of the compound predicates are demonstrated for a clearer view on how syntactic nature of the predicates is related to their argument realizations. The predication of the verb components of the compounds is also given to show the achievement of the compounds' interpretations. It is proposed that several syntactic constraints are in place to regulate the argument realization; moreover, causativity, evident in some of the resultative compounds, is proved to be acquired by means of derivational operations that involve a light verb with a causative meaning.

A lexicalist approach follows the derivational approach in the next chapter for an alternative view on how Chinese resultative compounds can be analyzed. The lexicalist approach taken is Lexical Functional Grammar (LFG). Argument realization and causativity achievement in resultative compounds are also accounted for in this approach. The thesis aims to argue that the LFG approach possesses more advantages in the resolution of Chinese resultative compounds. Adopting the formalism of LFG, this thesis describes in Chapter 3 the theoretical framework of explaining how causativity is manifested in resultative compounds. Chapter 4 demonstrates the analysis of causativity and its related argument structure of the compounds. A morpholexical rule of how causativity arises and its relation to Chinese resultative compounds is given in this chapter. Chapter 5 contains the operations of argument realization in resultative compounds and further supports the legitimacy of the analysis in the present study. Moreover, an investigation of the identity of the V2s in resultative compounds is also conducted for the confirmation of the legitimacy. Finally, Chapter 6 concludes the thesis.

c. Zhangsan qi-si-le. (ergative)

Zhangsan anger-dead-ASP

'Zhangsan got extremely angry.'

'(Lit.) Zhangsan was angered to death.'

d. zhe-jian shi zhen qi-si Zhangsan le. (causative)

this-CL matter really anger-dead Zhangsan ASP

'This matter really angered Zhangsan.'

'(Lit.) This matter really angered Zhangsan to death.'

As can be observed above, Cheng and Huang (1994) argue that the unergative V1, *qi*, in the resultative compound in (2a) can indeed demonstrate a transitive use with the difference that the resultative state of the compound denoted by V2, *lei*, is predicated on the subject in (2a) but on the object in (2b). This is referred to as the unergative-transitive alternation. On the other hand, the ergative V1, *qi*, in (2c) demonstrates an ergative-causative alternation where, in addition to the internal argument that is already assigned by *qi*, an external argument not assigned by any of the predicates in the compound can be inserted.

2.1.1 Categorizations of Chinese Resultative Compounds

The categorization of Chinese resultative compounds in (2) is based on the first

verb of the compound. The internal structure of resultative compounds has been widely analyzed as consisting of two verbs, where the first verb indicates an action or a state while the second verb indicates the result or change of state. In Cheng and Huang (1994), resultative compounds are indeed grouped into different classes in terms of two dimensions, aspectuality and transitivity. Therefore, a detailed description of the categorization above can be made on the account of the transitive and aspectual nature of the first predicate of the compound.

With first predicates (henceforth, V1) that are intransitive, a more fine-tuned classification sets in under the assumption of the Unaccusative Hypothesis proposed by Perlmutter (1978). The Unaccusative Hypothesis assumes that one-placed predicates should be classified as unaccusatives and unergatives with the difference that unaccusatives have their arguments derived from an underlying deep-structure with a grammatical object but no subject while the unergatives have their arguments derived from an underlying deep-structure with a grammatical subject but no object.

As a result, under the assumption of the Unaccusative Hypothesis and Cheng and Huang's (1994) sorting criteria (i.e. aspectuality and transitivity), the categorization of Chinese resultative compounds as that in (2) is formed². However, some parallel relationships seem to exist between the categories of the compounds if a

² In (2c), the predicate is termed ergative by Cheng and Huang (1994). However, in Huang's other works, he alternatively terms the predicates unaccusative. If under the syntactic definition of unaccusative and ergative, they practically mean the same thing.

closer inspection of their syntactic behavior is made:

(3) a. Zhangsan ku-lei-le. (unergative)

Zhangsan cry-tired-ASP

‘Zhangsan cried himself tired.’

b. Zhangsan ku-lei-le Lisi. (transitive)

Zhangsan cry-tired-ASP Lisi

‘Zhangsan cried and made Lisi tired.’

It is clear to see that the predicates of the compounds in (3a) and (3b) are the same.

Syntactically speaking, if unergative predicates are deemed to have only grammatical subjects but no objects in D-structure, the object position is left open for them to carry an object as their internal argument and thus demonstrate transitivity. This is how the unergative-transitive alternation in Cheng and Huang (1994) comes into place.

Likewise, since the unaccusative predicates in the compounds are deemed to have only grammatical objects but no subjects in D-structure, there exists a possibility for them to carry a subject as their external argument. But this time, things are different with respect to their unergative counterparts. The external argument comes with the effect of causativity for it plays the role Causer and causes the event depicted by the unaccusative predicates:

- (4) a. Zhangsan lei-si-le. (unaccusative)
 Zhangsan tired-dead-ASP
 ‘Zhangsan is really tired.’
- b. zhe-ge gongzuo lei-si Zhangsan le. (causative)
 this-CL job tired-dead Zhangsan ASP
 ‘This job made Lisi really tired.’

This is what is termed unaccusative-causative alternation in Cheng and Huang (1994).

It is worth noticing that despite both being transitive, sentences (3b) and (4b) show one difference that the subject in (4b) actually causes the event of *Zhangsan* being tired while the subject in (3b) does not cause the event of *Lisi* crying.

2.1.2 Syntactic Constraints on Compound Interpretations

With the syntactic structures of Chinese resultative compounds sorted out, it is now time to see how the interpretations of the compounds are achieved in terms of their syntactic structures. Supported by the evidence from English, a constraint is proposed by Simpson (1983) to explain how resultative constructions are to be interpreted based on which predicate should be predicated on which argument:

- (5) a. John hammered the metal flat.
 b. *John hammered the metal tired. (under the resultative reading)

Due to the ungrammaticality of (5b), Simpson proposes the Direct Object Restriction (DOR), which states that the Result of resultative constructions should be predicated on the direct object of the sentence:

(6) The Direct Object Restriction (Simpson, 1983):

In a resultative construction, the result is predicated on an object, not the subject.

At first glance, the DOR seems right for resultative constructions. But what happens if Chinese resultative compounds are put into consideration? The interpretation of *Zhangsan* riding two horses and making the horses tired in (2b) is rendered by the DOR. However, any native speaker of Chinese can tell that there are indeed more interpretations to it besides that glossed in (2b). For one, (2b) can mean *Zhangsan* rode two horses and got tired, where the Result of the resultative compound is predicated on the subject.

Another problem to the DOR is that the DOR implies that an object is required in resultative constructions since the result of the constructions has to be predicated on the object. English resultative constructions would be rendered ungrammatical without an object. Compare examples (7) and (8):

(7) a. *John laughed silly.

b. *Mary ran tired.

(8) a. John laughed himself silly.

b. Mary ran herself tired.

In order to avoid being filtered out by the DOR, the ‘fake’ reflexives have to be inserted for the predication of the result. Things are completely different in Chinese resultative constructions. The unergative and unaccusative nature of the predicates shows that intransitive use of resultative constructions, where the subject-predication of the result is the only option, is absolutely grammatical.

To solve the problems posed by the DOR, Rappaport Hovav and Levin (2001) propose two explanations. In situations where an object is missing, the resultative constructions are claimed to have a simplex underlying event structure, i.e. the sub-events denoted by the predicates of the constructions are temporally and spatially coextensive and are treated as a simple event:

(9) A man gabbed and groped her..., but she kicked free and fled.

In (9), since the moment of her kicking is the moment of her being free, the resultative construction is taken to be a simple event that functions intransitively.

The second explanation for the subject-predication of the Result in Chinese transitive resultative compounds are proposed by Rappaport Hovav and Levin (RHL) (2001) and dubbed by Cheng and Huang (1994) the Force Recipient Principle (FRP):

(10) The Force Recipient Principle (paraphrasing RHL 2001):

- a. In a resultative construction, the Result is predicated on the argument bearing the role of Force Recipient of the relevant action or event, if such a recipient exists.
- b. If no Force Recipient exists, the Result is predicated on the subject.

It seems to have successfully explained the transitivity and Result predication differences between English and Chinese. However, Cheng and Huang (1994) have discovered that the first explanation of English unergative predicates being analyzed as having a simplex event structure is insufficient to account for Chinese unergative resultative compounds for many of them are composed of predicates that do not denote temporally and spatially coextensive events. Take (2a), *Zhangsan qi-lei-le* (Zhangsan rode himself tired.), for example, it is generally conceived that the point of *Zhangsan* being tired only occurs some time after the point at which the action of riding starts. Cheng and Huang (1994) see it more like an analogy of the use of English unaccusative predicates:

(11) The river froze solid.

(unaccusative)

The point of the river being solid happens some time after the point the river starts to freeze. Therefore, Cheng and Huang (1994) hold the idea that Chinese unergative resultative compounds “may be alternatively analyzed as unaccusatives.”

As for the second explanation, the default of subject being the target of Result predication when Force Recipient is missing is called into question by Cheng and Huang (1994) since what makes the subject the target is left unclear. Cheng and Huang state that it is argument prominence that determines Result predication. In their account, the Result of resultative constructions should be predicated on the closest prominent argument. As a result, if the prominent argument, Force Recipient is not realized in the syntactic structure of the constructions, the subject becomes the most prominent on which the Result is predicated. Although it seems to have successfully explained the Result predication on Subject in example (11), the cases of Chinese resultative compounds, where the Result could be predicated on both Object and Subject and lead to semantic ambiguity, remain unsolvable under the explanation.

2.1.3 Derivational Operations on Chinese Resultative Compounds

Recall the idea Cheng and Huang hold that some Chinese unergative resultative compounds “may be alternatively analyzed as unaccusatives.” Under this claim, in

addition to the unergative-transitive alternation and the unaccusative-causative alternation, another compound alternation can be formed; that is, unergative-causative alternation because if the unergative predicates are analyzed unaccusatively, they can alternate with the causative structure like genuine unaccusatives:

- (12) a. Zhangsan chang-lei-le. (unergative)
 Zhangsan sing-tired-ASP
 'Zhangsan sang himself tired.'
- b. Zhangsan chang-lei-le na-shou ge. (transitive)
 Zhangsan sing-tired-ASP that-CL song
 'Zhangsan sang that song and made himself tired.'
- c. na-shou ge chang-lei-le Zhangsan. (causative)
 that-CL song sing-tired-ASP Zhangsan
 'Singing that song made Zhangsan tired.'

This pattern of causativization is also found in the way English encodes causativity in its predicates. Basically, causativity is conveyed by means of periphrastic causatives, where an apparent verb marking the transmission of force from the causer to the causee is explicit and the causee ends up with a change of state, as in (13):

- (13) John made the vase broken.

“Make” is the verb that indicates the transmission of force from John to the vase.

However, the transmission of force could be encoded in the predicates without apparent causative verbs. Such predicates are termed “lexical causatives” (Fodor, 1970; McCawley, 1978; Comrie, 1985; Jackendoff, 1990). In most cases, an alternation of argument realization exists in lexical causatives and is deemed the causative-inchoative³ alternation:

- (14) John broke the vase. (lexical causative)
 The vase broke. (inchoative)

In (14), ‘broke’ is a lexical causative in which causativity is encoded. Its difference with the inchoative ‘broke’ lies in that the subject of the inchoative ‘broke’ is the object of the lexical causative ‘broke’. The unaccusative-causative alternation and the unergative-causative alternation in Chinese resultative compounds are in fact inchoative-causative alternation in this respect.

Traditionally, the derivational analysis of Chinese lexical causatives is that they are syntactically derived from the combination of periphrastic causatives and inchoatives (Wang and He, 2002):

³ Without clearly indicating the force of causation, the inchoatives simply denote the change of state of the argument.

(15) a. na-ben shu shi [wo gandong-le.] (periphrastic causative)

that-CL book CAU me touched-ASP

‘That book touched me.’

b. na-ben shu V[CAUSE] [wo gandong-le]

c. na-ben shu gandong-le-V[CAUSE] [wo t] (lexical causative)



Lexical causatives are analyzed as having a similar D-structure to that of periphrastic causatives. However, the head position of the VP is occupied by a phonologically null causative verb instead of a substantial one. The predicate in the embedded clause is later moved to V for pronunciation factors and hence has the causative reading. In the same logic, the causative categories of Chinese resultative compounds are claimed to demonstrate the same derivation from their unergative and unaccusative counterparts:

(16) a. ta he-zui-le (unergative)

he drink-drunken-ASP

‘He drank and was drunk.’

b. na-ping jiu V[CAUSE] [ta he-zui-le]

that-bottle wine

‘That bottle of wine’

c. na-ping jiu he-zui-le-V[CAUSE] [ta t] (causative)



(17) a. ta xia-hun-le (unaccusative)

he shock-faint-ASP

‘He was shocked and fainted.’

b. zhanglang V[CAUSE] [ta xia-hun-le]

cockroach

‘cochroaches’

c. zhanglang xia-hun-le -V[CAUSE] [ta t] (causative)



Based on the categorization of compound predicates and the derivational analysis mentioned above, Huang (2006) further provides templates for all possible syntactic structures of Chinese resultative compounds as follows:

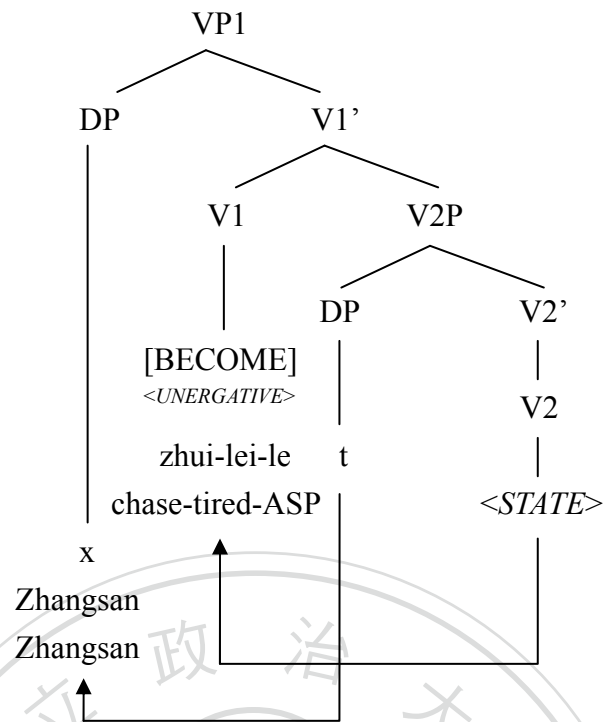
(18) Huang (2006):

A. Inchoative (1): [BECOME_{<UNERGATIVE>} [x <STATE>]]

Zhangsan zhui-lei-le.

Zhangsan chase-tired-ASP

‘Zhangsan got tired from chasing.’

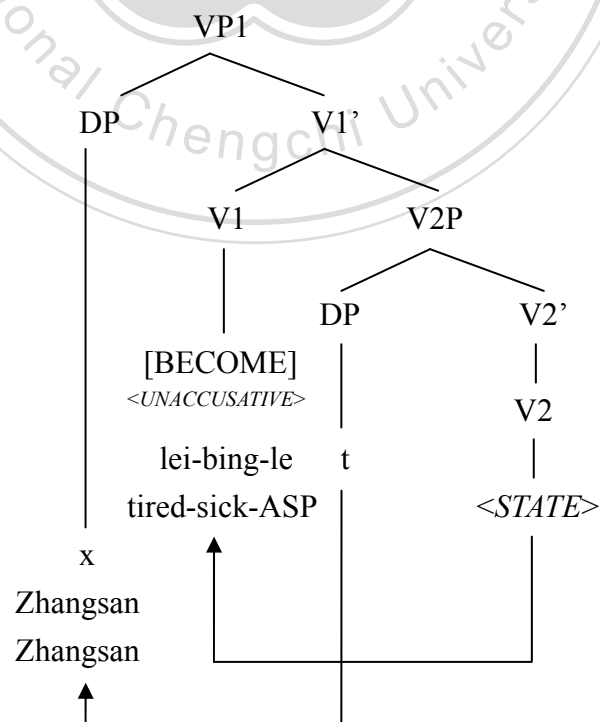


B. Inchoative (2): [BECOME<UNACCUSATIVE> [x<STATE>]]

Zhangsan lei-bing-le.

Zhangsan tired-sick-ASP

‘Zhangsan got sick from exhaustion.’

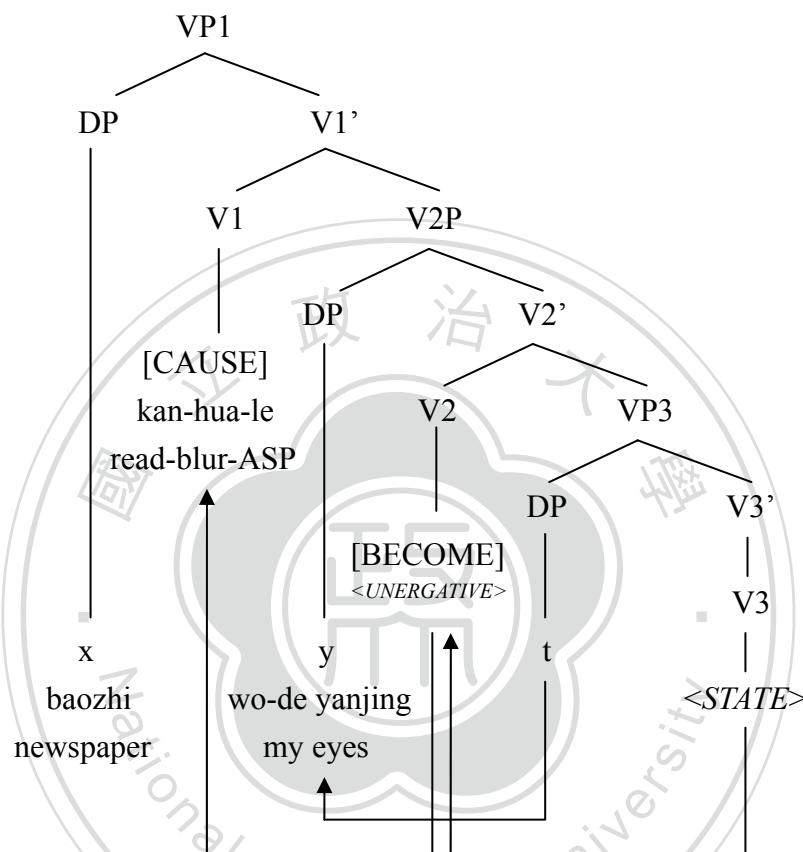


C. Pure causative (1): [x CAUSE [BECOME_{<UNERGATIVE>} [y <STATE>]]]

baozhi kan-hua-le wo-de yanjing.

newspaper read-blur my eyes

‘The newspaper made my eyes blurred from reading it.’

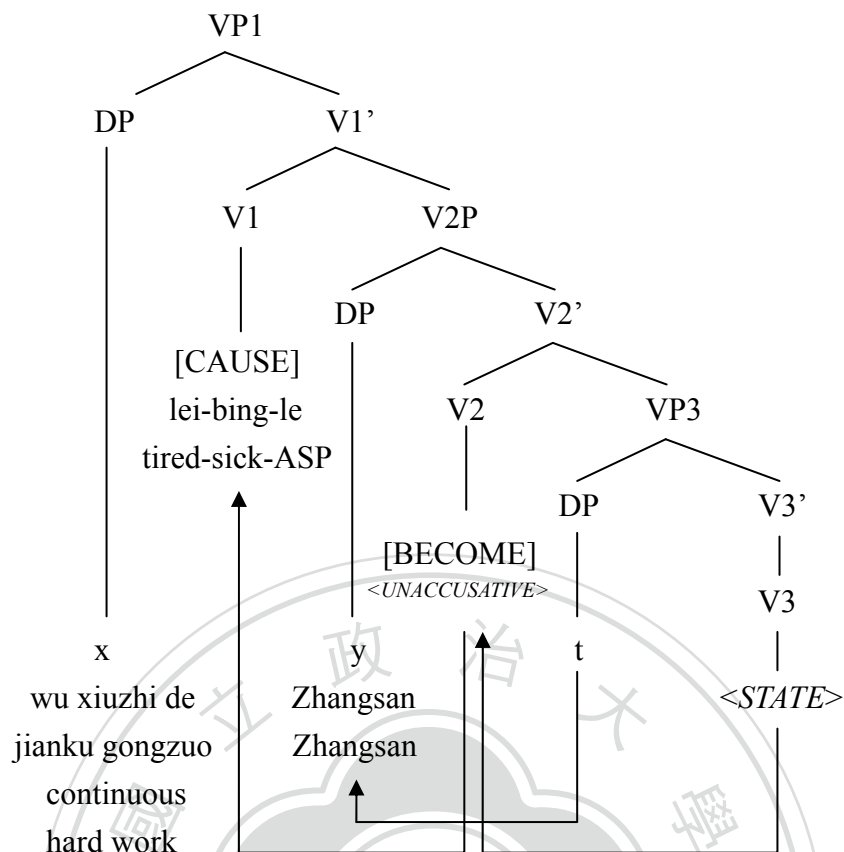


D. Pure causative (2): [x CAUSE [BECOME_{<UNACCUSATIVE>} [y <STATE>]]]

wu xiuzhi de jianku gongzuo lei-bing-le Zhangsan.

no rest DE hard work tire-sick-ASP Zhangsan

‘Continuous hard work got Zhangsan sick from over-exhaustion.’

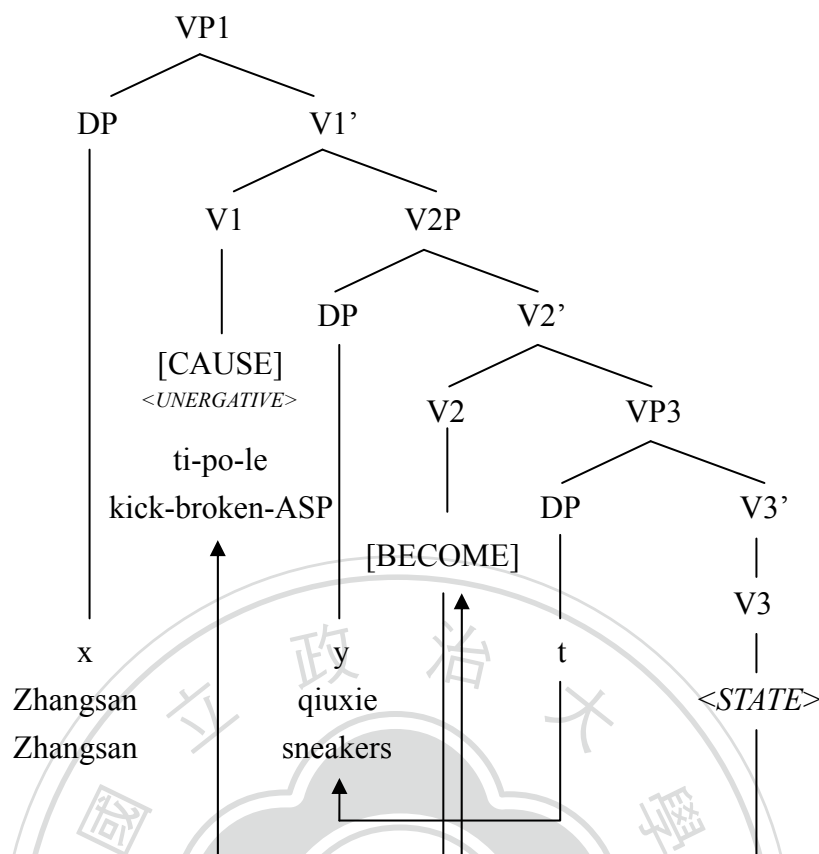


E. Causing with a manner: [x CAUSE<UNERGATIVE> [BECOME [y <STATE>]]]

Zhangsan ti-po-le qiuxie.

Zhangsan kick-broke-ASP sneakers

‘Zhangsan kicked the sneakers thread-bare.’



With the derivational templates and the syntactic constraints that regulate the predications of the verb components in resultative compounds, the argument realizations and interpretations of the compounds should be comprehensively accounted for. However, problems arise in this methodology of analysis. It undergenerates and the causativity of resultative compounds described in it does not conform to the interpretations of the compounds. These problems will be discussed in later chapters.

2.2 Lexicalist Account

The issues of causativity and argument realization of Chinese resultative

compounds have also been approached from a lexicalist point of view. But before moving to the issues of resultative compounds, how the lexicalist approach treats the relationship between argument structure and grammatical functions is to be made clear. Within the framework of Lexical Functional Grammar (LFG) raised by Bresnan (1990, 2001), the diverse constituent structures (c-structures) of different languages are not derived from a unified underlying structure, unlike the traditional view taken by Generative Grammar like Chomsky's (1981, 1995) Government and Binding (GB) or the Minimalist Program (MP). No syntactic derivations are involved in the structures of languages, be it a hierarchical language like English or a flat language like Warlpiri⁴ (Bresnan, 2001). The marking of constituency in flat languages is indeed a lexical process. Since no syntactic derivation is involved in languages, what constituents appear in what grammatical functions is treated as a lexical relational issue in LFG. For example, passivization is seen as a syntactic transformation caused by the search of Case in Generative Grammar (Burzio, 1986). However, in LFG, it is more of a lexical operation that involves the mappings of arguments to different grammatical functions.

Also a relational lexical operation, causativization could be analyzed similarly.

Through the process of causativization, the causativized predicate may have its

⁴ Warlpiri is an indigenous language in Australia. The language has a 'flat' constituent structure, where the constituents in the sentence can occur in any order as long as the auxiliary tense marker occurs in the second position.

arguments end up in different grammatical functions as opposed to its active counterpart. It is along this line of reasoning that Chinese resultative compounds are inspected by many researchers (Her, 2004, 2007, 2009; Li, 1995; Shibagaki, 2009). Not all of the Chinese resultative compounds are related to causativity; for those that do incorporate causativity in them, researchers have tried to capture the causative reading in the resultative compounds by various means. Li (1995), as one of the researchers, has proposed the concept of Causative Hierarchy to resolve the intricate interpretations of the resultative compounds in question.

The resultative compound of this kind first documented in Li's (1995) analysis was *zhui-lei* (chase-tired). Three possible interpretations could result from the sentence '*Zhangsan zhui-lei-le Lisi*':

- | | | | |
|------|----------|-----------------|------|
| (19) | Zhangsan | zhui-lei-le | Lisi |
| | John | chase-tired-ASP | Lee |
- a. 'John chased Lee to the extent of making him (Lee) tired.'
 - b. *'Lee chased John and he (John) got tired.'
 - c. 'John chased Lee and (John) got tired.'
 - d. 'Lee chased John and was made tired (by John).'

Interpretations (19a) and (19d) both have a causative meaning. Since none of the verbs in the resultative construction are causative themselves, Li (1995) claims that

the causative reading is achieved through the combination of the two verbs into a resultative compound. The causative reading is due to the assignment of the causative roles (C-roles) received from Rs in the V-R compounds to the grammatical functions, based on Causative Hierarchy; i.e., the more prominent Cause to the more prominent Subject and the less prominent Affectee to the less prominent Object. In his account, the more prominent Cause role could be assigned to the more prominent Subject even though the Cause as well as the theta role of the R is a less prominent role on Thematic Hierarchy (Bresnan and Kanerva, 1989, 1992) as opposed to the theta role of the V in the V-R compound:

(20) Thematic Hierarchy (Bresnan and Kanerva, 1989, 1992):

ag > ben > go/exp > inst > pt/th > loc

In the prediction of Thematic Hierarchy, a more prominent theta role should be linked to a more prominent grammatical function. Therefore, Agent is usually linked to Subject since Agent is the most prominent role and Subject the most prominent function. But Li's (1995) analysis of linking a less prominent theta role with the Cause role to a more prominent function indicates that Causative Hierarchy overrides Thematic Hierarchy. With an extra syntactic construct of Causative Hierarchy, Li

indeed poses a con to the elegance of his theory if the solution to the problem of interpreting causativity in resultative compounds could be sought entirely lexically without having to resort to any extra device. Since causativization in many languages is viewed to be a lexical relational operation like passivization (Aissen, 1979; Alsina, 1996; Bresnan, 1990; Falk, 2001), Her (2007) has further pursued this issue of resultative compounds with causative meanings by means of LFG, which treats lexical relational operations as the alternations of argument-function mapping.

In Her's (2007) analysis, the various argument-function mappings of the theta roles of Chinese resultative compounds, along with causative readings, result from the competition between the arguments for the two available syntactic positions. Using the aforementioned resultative compound, *zhui-lei*, in Li's (1995) analysis, Her (2007) demonstrates how the arguments of the verbs form a composite role and explicates how they manifest in the grammatical functions by introducing the syntactic concept of suppression. Having inspected the argument structure of resultative compounds, Her (2007) comes up with the argument compositions of the verbs as follows:

(21) Resultative Compounding (Her, 2007):

$$V_{\text{caus}} \langle x y \rangle + V_{\text{res}} \langle z \rangle \rightarrow$$

$$V_{\text{caus}} V_{\text{res}} \langle \alpha \beta \rangle, \text{ where } \langle \alpha \beta \rangle = \text{(i) } \langle x y-z \rangle$$

$$\text{(ii) } \langle x-z y \rangle$$

As can be seen in (21), the first verb component of resultative compounds, V_{caus} requires two arguments while the second verb component, V_{res} requires one. When they combine to form a resultative compound, their argument structures merge and two possibilities of the argument structures ensue. With the syntactic operation of suppression introduced for a strict one-to-one mapping requirement in LFG, Her (2007) successfully predicts all the possible interpretations a transitive resultative compound like that in (19) could contain⁵:

- (22) Zhangsan zhui-lei-le Lisi
 John chase-tired-ASP Lee
 $V_{\text{zhui}} \langle ag \ pt \rangle + V_{\text{lei}} \langle th \rangle \rightarrow$
 $V_{\text{zhui}} V_{\text{lei}} \langle \alpha \ \beta \rangle$, where $\langle \alpha \ \beta \rangle =$
 (i) $\langle ag \ pt \text{-} \cancel{th} \rangle$
 ‘John chased Lee to the extent of making him (Lee) tired.’
 (ii) $\langle ag \ \cancel{pt} \text{-} th \rangle$
 ‘John chased Lee to the extent of making him (Lee) tired.’
 (iii) $\langle ag \ \cancel{th} \ pt \rangle$
 ‘John chased Lee and (John) got tired.’

⁵ Mechanisms regulating how the argument-function mapping takes place in LFG will be given with more details in Chapter 3.

⁶ The concept of suppression is merely a syntactic device and functions in order to provide proper argument realization patterns of Chinese resultative compounds. Which argument is suppressed does not come through as a semantic difference in the interpretations of the compounds. Take (22i) and (22ii) for example, the interpretations are practically the same despite that different arguments are suppressed in the two argument structures. Although one of the arguments in the composite role is suppressed syntactically, its meaning is still understood with its syntactically unsuppressed companion. In other words, the objects in (22i) and (22ii) all represent the patient of *zhui* and the theme of *lei* no matter which argument is syntactically realized. Suppression of the role is indicated by crossing out the role.

(iv) <~~ag~~-th pt>

‘Lee chased John and was made tired (by John).’

2.3 Availability of the Accounts to Chinese Resultative Compounds

After reviewing both the derivational and lexicalist accounts of argument realization on Chinese resultative compounds, this chapter describes the problems with which the derivational account is faced and the relatively sufficient ability of the LFG account in the comprehensive prediction of compound argument realization.

2.3.1 Insufficiencies in the Derivational Account

Recall that in the derivational account, the argument realization of Chinese resultative compounds is analyzed by means of derivational operations that lead to various templates of syntactic structures of the compounds and syntactic constraints that regulate the interpretations of the compounds. This analysis encompasses almost all of the resultative compounds there is to be found in Chinese. However, if one takes a closer look at the interactions between the operations and constraints and the possible outcomes of the analysis, one would find that the derivational account does not produce satisfactory results in accounting for the argument realization of Chinese resultative compounds.

With the Chinese resultative compounds that exhibit intransitivity and

subject-predication and are different from the English resultative constructions, a syntactic constraint named the Force Recipient Principle proposed by Rappaport Hovav and Levin (2001) and later modified by Huang (2006) was given to prevent the compounds from being ruled out by the Direct Object Restriction (Simpson, 1983). This constraint successfully explains the substantiality of Chinese unergative and transitive resultative compounds with subject-predication of the Result:

- (23) Zhangsan kan-lei-le (unergative)
 Zhangsan read-tired-ASP
 ‘Zhangsan read himself tired.’
- (24) Zhangsan kan-lei-le baozhi. (subject-predication)
 Zhangsan read-tired-ASP newspaper
 ‘Zhangsan read the newspaper and got tired.’

In (23), no object exists. Therefore, the predication of the Result in the unergative compound falls on the prominent argument, i. e. the subject. On the other hand, although there is an object in the sentence, the “Force” of reading newspaper transmits not to the object being read but back to the reader; hence the subject-predication of the Result. However, a big part of the picture would be missing if we live simply on this constraint:

(25) Zhangsan zhui-lei-le Lisi. (transitive)

Zhangsan chase-tired-ASP Lisi

a. ‘Zhangsan chased Lisi and made him (Lisi) tired.’ (object-predication)

b. ‘Zhangsan chased Lisi and (Zhangsan) got tired.’ (subject-predication)

c. ‘Lisi chased Zhangsan and was made tired (by Zhangsan).’ (causative)

Since the effect of the chasing action functions on the object, *Lisi*, the interpretation of object-predication is successfully predicted. But other interpretations of this sentence would be missed out. Further, in the causative reading of (25), *Zhangsan* is the one being chased and the recipient of force during the act of chasing. If so, the constraint would wrongly predict that the Result should be predicated on *Zhangsan*, thus producing an ungrammatical interpretation of the sentence:

(26) Zhangsan zhui-lei-le Lisi.

Zhangsan chase-tired-ASP Lisi

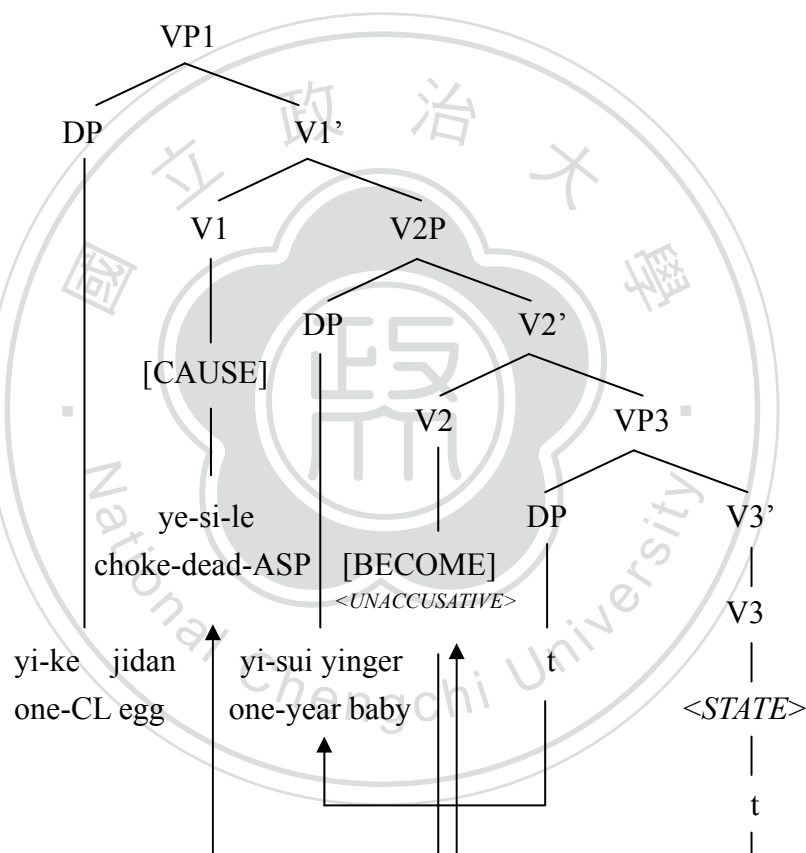
*‘Lisi chased Zhangsan and he (Zhangsan) got tired.’

Some problems can as well be seen from the test of adverb incorporation in the derivational operations. In the causative templates of the derivational accounts, resultative compounds have undergone movements from the innermost embedded verb head to the outermost null causative verb to acquire the resultative and causative

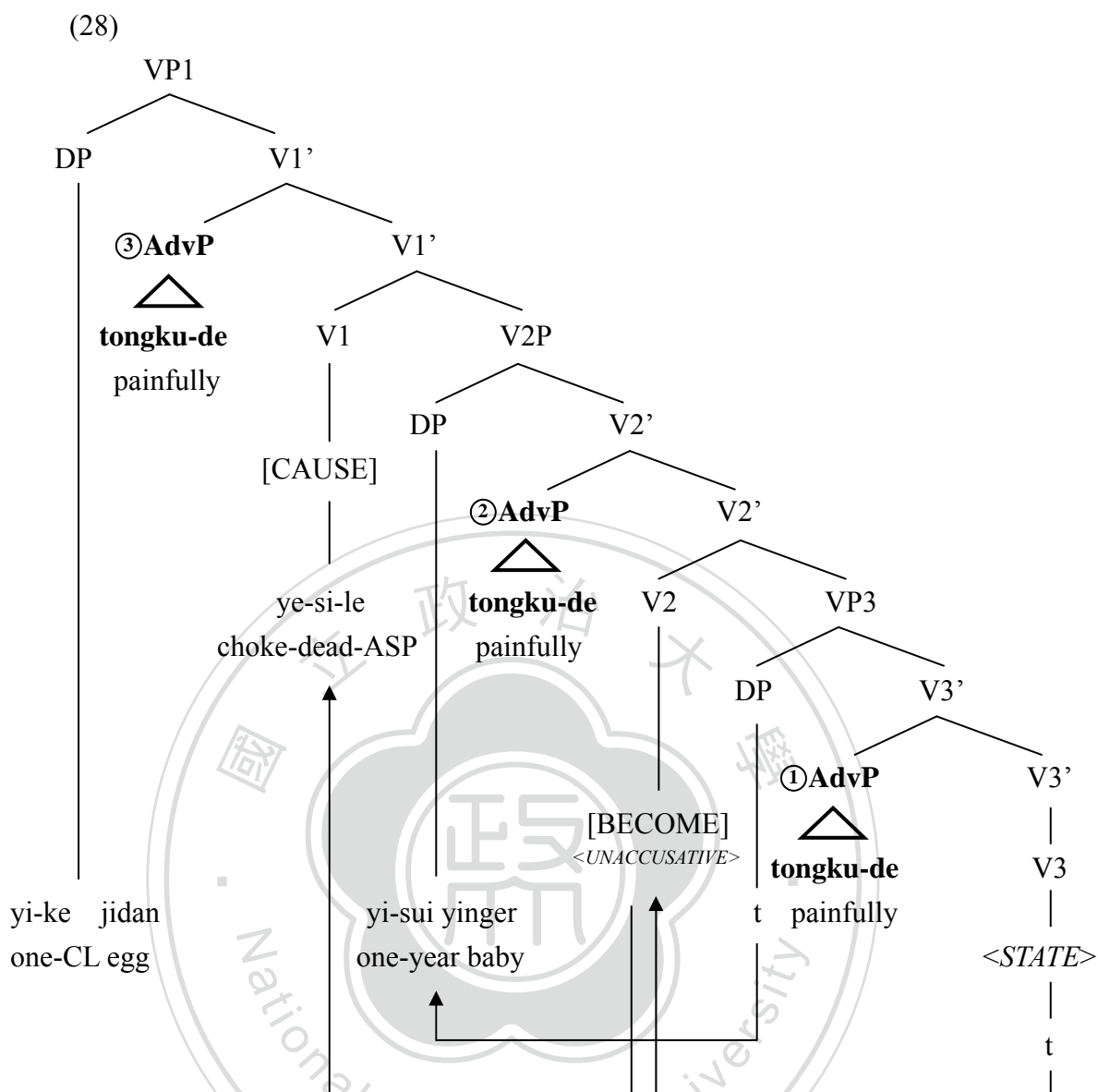
meanings, as in Template D:

- (27) yi- ke jidan ye-si-le yi-sui yinger
 one-CL egg choke-dead-ASP one-year baby
 ‘An egg choked a one-year-old baby to death.’

D. Pure causative (2): [x CAUSE [BECOME_{<UNACCUSATIVE>} [y <STATE>]]]



Since an adverb is an adjunct, it can be attached as the sister of a V'. In a structure like the above, there are three available positions for the attachment of an adverb:



On a closer inspection, one can see that the sentence with the adverb is acceptable

before the derivation but ungrammatical after. The following are comparisons

between the acceptable “before” sentences and the ungrammatical “after” sentences,

depending on the available positions for the adverb:

① a. before [BECOME] derivation:

yi- ke jidan shi yi-sui yinger ye-de tongku-de⁷ si-le
 one-CL egg CAU one-year baby choke-become painfully dead-ASP
 ‘An egg choked a one-year-old baby and caused him a painful death.’

b. after [BECOME] derivation:

*yi- ke jidan shi yi-sui yinger ye-si-le tongku-de
 one-CL egg CAU one-year baby choke-dead-ASP painfully
 ‘An egg choked a one-year-old baby and caused him a painful death.’

② a. before [CAUSE] derivation:

yi- ke jidan shi yi-sui yinger tongku-de ye-si-le
 one-CL egg CAU one-year baby painfully choke-dead-ASP
 ‘An egg choked a one-year-old baby and caused him a painful death.’

b. after [CAUSE] derivation:

*yi- ke jidan ye-si-le yi-sui yinger tongku-de
 one-CL egg choke-dead-ASP one-year baby painfully
 ‘An egg choked a one-year-old baby and caused him a painful death.’

It is clear that after the derivations, the adverb ends up being in the wrong position with respect to the verb. This fact provides evidence for a re-evaluation of the substantiality of the derivational accounts.

Furthermore, Problems also arise in the aforementioned templates used for classifying the syntactic structures and derivational operations of Chinese resultative

⁷ *De* in *ye-de* indicates the becoming of the result depicted by *si* while *de* in *tongku-de* is an adverb marker. Adverbs with *de* appear before verbs in Mandarin Chinese.

compounds. Take the sentence in (25) for example, if according to the templates,

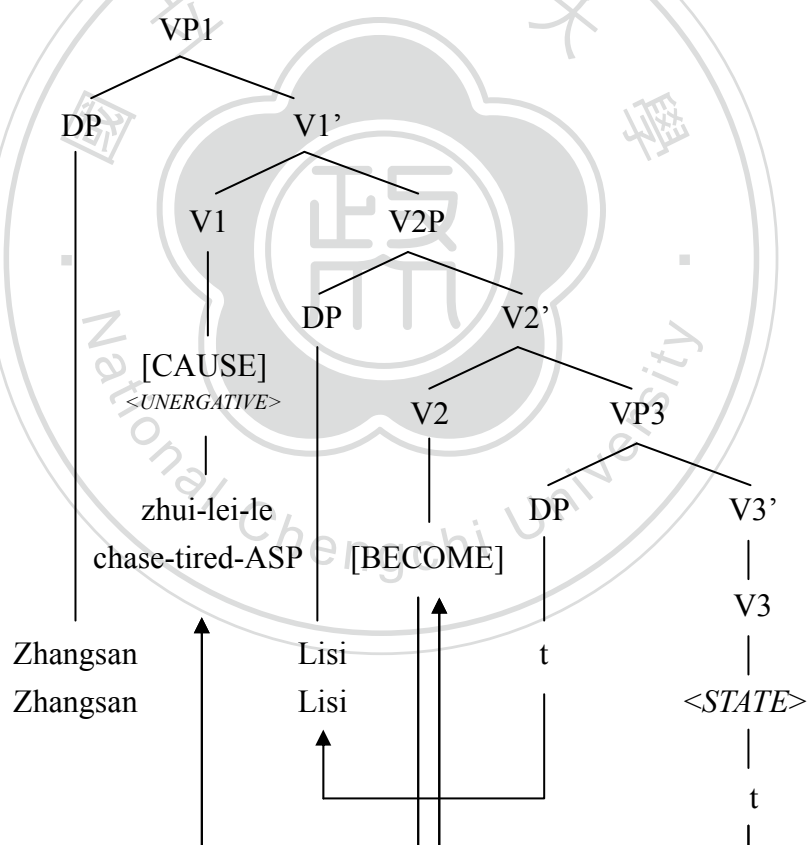
interpretation A should fit into the Causing-with-a-manner template, Template E:

(29) Zhangsan zhui-lei-le Lisi. (transitive)

Zhangsan chase-tired-ASP Lisi

‘Zhangsan chased Lisi and made him (Lisi) tired.’ (object-predication)

E. Causing with a manner: [x CAUSE-*<UNERGATIVE>* [BECOME [y *<STATE>*]]]



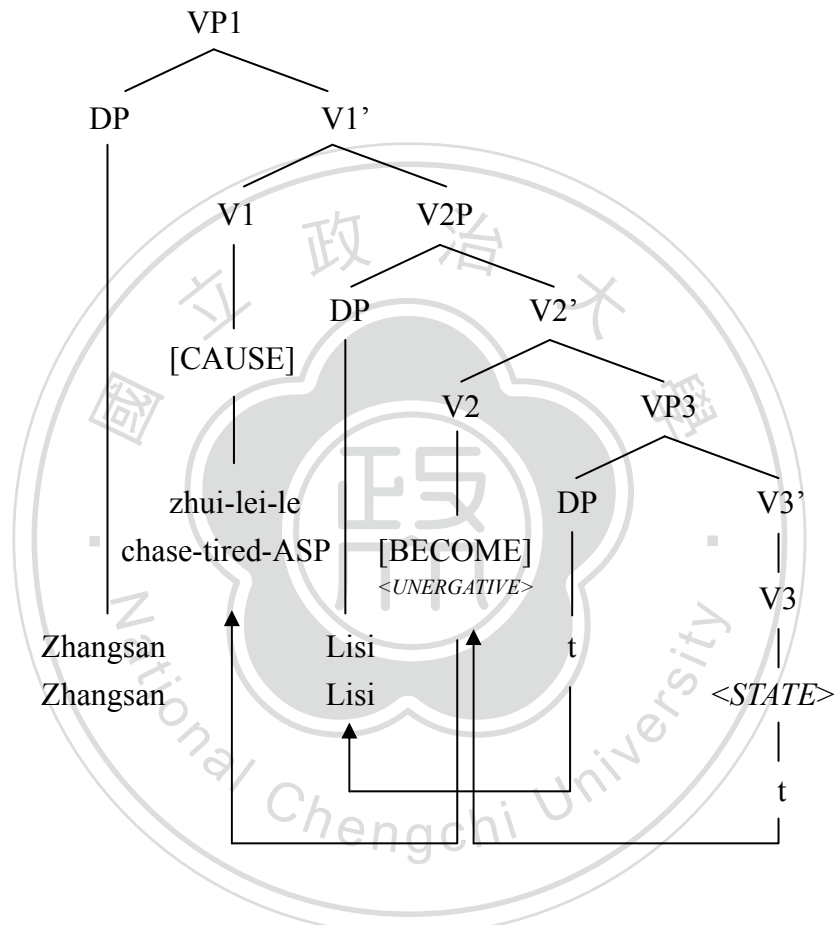
However, other interpretations of this sentence fit into other templates:

(30) Zhangsan zhui-lei-le Lisi. (transitive)

Zhangsan chase-tired-ASP Lisi

‘Lisi chased Zhangsan and was made tired (by Zhangsan).’ (causative)

C. Pure causative (1): [x CAUSE [BECOME_{<UNERGATIVE>} [y <STATE>]]]



‘Zhangsan chased Lisi and (Zhangsan) got tired.’ (subject-predication)

Template: Not applicable

The causative reading of *Zhangsan zhui-lei-le Lisi* fits into Template C under Huang’s (2006) categorization, where the internal argument of *zhui*, *Zhangsan*, is thought to be generated in the subject position of the sentence without any movement. And the

transitive reading does not fit into any of the templates because it does not convey causativity. In brief, a resultative compound with multiple interpretations structurally fit into different templates. This being so, the point of generalization in argument realization of Chinese resultative compounds seems to be lost and the identity (to what category a resultative compound belongs) of the compounds blurred because the transitive use of a single compound renders the result of the compound being in many different categories. Moreover, the causativity encoded in the templates shows two different kinds of nature, depending on the syntactic nature of V1. Not covering this point also whittles down the credibility of the derivational analysis. The identification of causativity in Chinese resultative compounds is significant to the meaning and argument realization of the compounds. More details will be given in Chapter 4.

2.3.2 Predictability of the Lexical Functional Grammar Account

Compared to the derivational account, Lexical Functional Grammar (LFG) actually works better in explicating the argument realization of Chinese resultative compounds. As long as the argument structures of V1 and V2 in the compounds are identified, all possible syntactic realizations of the arguments and their related interpretations will arise. Take Her's (2007) analysis of the sentence *Zhangsan zhui-lei-le Lisi* for example (Example (22) repeated here as example (31) :

(31) Zhangsan zhui-lei-le Lisi

John chase-tired-ASP Lee

$V_{zhui} <ag\ pt> + V_{lei} <th> \rightarrow$

$V_{zhui} V_{lei} <\alpha\ \beta>$, where $<\alpha\ \beta> =$

(i) $<ag\ pt\ \cancel{th}>$

‘John chased Lee to the extent of making him (Lee) tired.’

(ii) $<ag\ \cancel{pt}\ th>$

‘John chased Lee to the extent of making him (Lee) tired.’

(iii) $<ag\ \cancel{th}\ pt>$

‘John chased Lee and (John) got tired.’

(iv) $<\cancel{ag}\ th\ pt>$

‘Lee chased John and was made tired (by John).’

Zhui-lei here is in transitive use. With *zhui* and *lei*'s argument structures identified, the argument realization and interpretations of *zhui-lei* can be acquired exhaustively.

Under the same rule of the Resultative Compounding (Her, 2007), intransitive verbs, such as unergative and unaccusative verbs, are able to undergo the same process and subsume grammatical argument realizations and interpretations:

(32) ta ku-xia-le.

(unergative)

he cry-blind-ASP

$V_{ku} <ag> + V_{xia} <th> \rightarrow$

$V_{ku} V_{xia} <\alpha>$, where $<\alpha> =$

(i) $\langle ag -th \rangle$

‘He cried and went blind as a result.’

(ii) $\langle ag -th \rangle$

‘He cried and went blind as a result.’

(33) ta xia-hun-le.

(unaccusative)

he shock-faint-ASP

$V_{xia} \langle th \rangle + V_{hun} \langle th \rangle \rightarrow$

$V_{xia} V_{hun} \langle \alpha \rangle$, where $\langle \alpha \rangle =$

(i) $\langle th -th \rangle$

‘He got shocked and fainted.’

(ii) $\langle th -th \rangle$

‘He got shocked and fainted.’

As one can observe, transitivity of the resultative compounds determines the syntactic realizations of the arguments and the nature of the predicates gives rise to the multiple readings the sentence could have. The connection between arguments and grammatical functions involves a mechanism called the Lexical Mapping Theory (LMT) with several constraints that define the workings of LMT. Due to the simplicity and the comprehensiveness of the LFG analysis, this thesis follows the formalism of LFG in order to deal with Chinese resultative compounds. The details of LMT and its related constraints will be in full description in the next chapter as a

theoretical basis for this thesis.

Despite the prediction power exemplified in the examples above, there is still one missing link in the analysis of resultative compounds in LFG. A type of resultative compound is recorded in the works of the derivational linguists but not in the map of LFG: the causative category of resultative compounds. The causative category involves two alternations with compounds of other categories, as stated in the derivational accounts:

(34) Unergative-Causative Alternation:

- a. Zhangsan chang-ya-le. (unergative)
 Zhangsan sing-coarse-ASP
 ‘Zhangsan sang and made his voice coarse.’
- b. zhe-shou ge chang-ya-le Zhangsan. (causative)
 this-CL song sing-coarse-ASP Zhangsan
 ‘Singing this song made Zhangsan’s voice coarse.’

(35) Unaccusative-Causative Alternation:

- a. Zhangsan lei-huai-le. (unaccusative)
 Zhangsan tired-bad-ASP
 ‘Zhangsan was exhausted.’
- b. zhe-ge gongzuo lei-huai-le Zhangsan. (causative)
 this-CL job tired-bad-ASP Zhangsan
 ‘This job made Zhangsan really exhausted.’

The causative category of the unergative-causative alternation actually conforms to the fourth reading documented in Her's (2007) analysis of resultative compounds as in (31). Since the subject in this category is the internal argument of the unergative predicate, *chang*, the possibility of its realization in the subject position is viable in the analysis of LFG. However, the causative category of the unaccusative-causative alternation tells a different story in attributing its argument realization to the argument structures of its predicates. The subject of the sentence is the argument of neither predicates of the resultative compound. Since LFG needs to operate on the argument structures of the compounds to reveal possible interpretations, this causative structure and reading will never appear in the predictions of LFG.

Moreover, although the derivational account manages to notice the existence of this causative category, it does not endeavor to differentiate the causativity in the unergative-causative and unaccusative-causative alternations. This causativity difference is the key to solving the prediction problem in LFG and explaining the identity of the subject argument. Pertaining to this issue, this thesis aims to propose a rule as the missing piece to the puzzle of resultative compounds in LFG.

Chapter 3 Theoretical Background

Having weighed the pros and cons of both derivational and lexicalist theories about argument realization in Chinese resultative compounds, this thesis adopts the lexicalist approach to see what role causativity plays in argument realization. Instead of being recognized as the result of some derivational operations, different argument realizations of a compound are seen as the argument-function remapping in LFG.

3.1 Lexical Mapping Theory (LMT)

In LFG, when a predicate is extracted from the mental lexicon and put into a sentence, a syntactic device of mapping the lexical forms of the predicate to their appropriate grammatical functions takes place. This device is termed the Lexical Mapping Theory (LMT) (Bresnan, 1990: 646).

By assigning the features of grammatical functions to the arguments, LMT is able to map the arguments onto their proper grammatical functions:

(36) Lexical Mapping Theory (LMT):

A. θ -structure to a-structure mapping

Patients and Themes map to [-r]

“secondary” Patients and Themes map to [+o] as a marked option

Non-Theme/Patient arguments map to [-o]

B. a-structure to f-structure mapping

SUBJ Mapping 1: A [-o] argument which is Θ^{\wedge} maps to SUBJ.

SUBJ Mapping 2: [-r] may map to SUBJ.

NonSUBJ Mapping: Add positive values of features where possible.

The mapping process of LMT concerns three independent levels of structures: the lexical forms of the predicates (θ -structure), the intermediate level of argument structure (a-structure), and the grammatical function realizations of the arguments (f-structure). In order to follow a strict one-to-one mapping relationship as required by Theta Criterion and to fulfill the requirement of having a subject in a sentence in certain languages, two well-formedness conditions, Function-Argument Biuniqueness Condition and the Subject Condition, have been proposed to achieve the goal:

C. Function-Argument Biuniqueness Condition:

Each a-structure role corresponds to a unique f-structure function, and each f-structure function corresponds to a unique a-structure role.

D. The Subject Condition

Every verb must have a SUBJ.

It is with these mechanisms that the mappings of the lexical forms of verbs to the grammatical functions in the sentences can properly work. For example, if the verb, *place*, is to be used in a sentence, its argument realization would be as follows under the rules of LMT mentioned above (Falk, 2001):

(37) θ -structure: *place* < Agent, Patient/Theme, Location >

a-structure:	[-o]	[-r]	[-o]
f-structure:	SUBJ (-r, -o)	OBJ (-r, +o)	OBL _{θ} (+r, -o)

According to LMT, the Patient/Theme of *place* is assigned the feature [-r] while the other Non-Patient/Theme arguments are assigned the feature [-o]. The leftmost argument in the lexical form is the most prominent argument, θ^{\wedge} . Being θ^{\wedge} and having the feature [-o], the Agent is mapped to the grammatical SUBJ by SUBJ Mapping 1 in (36B). The rest of the arguments are added positive values of features where possible by NonSUBJ Mapping. The Patient/Theme and the Location end up with the features [-r, +o] and [+r, -o], respectively. [-r, +o] are the features of OBJ and [+r, -o] are the features OBL _{θ} in LFG. Hence, the Patient/Theme maps to the function OBJ and the Location maps to the function OBL _{θ} . After the mappings of the arguments are sorted out, the well-formedness conditions C and D set in to check

whether the syntactic realization is viable. Since each argument maps to each function in a strict one-to-one fashion and the position of SUBJ is filled, the mappings pass the check and surface as a grammatical sentence.

3.2 Intrinsic and Default Morphosyntactic Classification of Argument Roles (IC & DC)

Considering that the process of mapping from θ -structure to f-structure can be better generalized in LMT and that not all languages share the characteristic of an obligatory subject, Her (2009) restates (36A) above as two rules, the Intrinsic Morphosyntactic Classification of Argument roles (IC) and the Default Morphosyntactic Classification of Argument roles (DC):

(38) Intrinsic Morphosyntactic Classification of Argument Roles (IC):

$$\theta, \quad \theta = pt/th$$

[-r]

(39) Default Morphosyntactic Classification of Argument Roles (DC):

$$\theta, \quad \theta \neq \theta^{\wedge}$$

[+r]

These two rules simplify the mapping process in LMT. Instead of determining what arguments should be assigned minus features and what arguments should be assign

plus features, Her (2009) gives only a rule that specifies the feature assigned to Patient/Theme, i.e. [-r]. As for the rest of the arguments, a default rule sets in and everybody gets the feature [+r] except for Θ^{\wedge} . In Her's theory, Θ^{\wedge} is the most prominent argument having no features and can map to the most prominent grammatical function available. Patient/Theme, with the feature [-r], can only map to the functions with compatible features. Last, other arguments, with the feature [+r], map to functions with the same feature.

3.3 The Unified Mapping Principle (UMP)

However, the Intrinsic Morphosyntactic Classification of Argument roles (IC) and the Default Morphosyntactic Classification of Argument roles (DC) only tell half of the story. In LFG, the grammatical functions that are basic in a sentence are called the argument functions and possess the features as follows:

(40)		[-o]	[+o]
	[-r]	SUBJ	OBJ
	[+r]	OBL ₀	OBJ ₀

One argument has to possess two features to be able to map to a corresponding function. That is why the original LMT has the rule of assigning positive features to

arguments in order to complete feature specification. IC and DC only assign one feature to the arguments and thus leave the arguments multiple options to choose from. Patient/Theme, after IC, has the functions SUBJ and OBJ to map to since they all share the feature [-r]. And other arguments, after DC, have the functions OBL_{θ} and OBJ_{θ} to map to since they all share the feature [+r]. This goes against the strict one-to-one mapping requirement in LMT. As a result, Her (2009) comes up with another constraint that solves the problem and further meets other well-formedness conditions in LMT. This constraint is termed the Unified Mapping Principle (UMP):

(41) The Unified Mapping Principle (UMP):

Map each argument role, from the most prominent to the least, onto the highest compatible function available.

(*A function is *available* iff it is not linked to a role.)

The UMP strictly states that each argument should map to the most prominent function available. This cuts down the options for Patient/Theme and other arguments to only one that is most prominent on the list according to the Markedness Hierarchy of Argument Functions:

(42) Markedness Hierarchy of Argument Functions:

$$\text{SUBJ}_{(-r-o)} > \text{OBJ}_{(-r+o)}/\text{OBL}_{\theta(+r-o)} > \text{OBJ}_{\theta(+r+o)}$$

The problem of one-to-one mapping requirement is solved. Moreover, since SUBJ is the most prominent function and will always be the first on the list of argument-function mapping, the well-formedness condition in (36D) is no longer needed. The UMP actually incorporates the two well-formedness conditions and simplifies the mapping mechanisms of LMT.

3.4 Causative Assignment in Resultative Compounding

With the mechanisms so far, the argument realization of predicates in Chinese resultative compounds can now be properly processed. Mappings of the resultative compound, *zhui-lei*, are constructed as thus in Her (2009):

(43) Zhangsan zhui-lei-le Lisi

John chase-tired-ASP Lee

i. ‘John chased Lee to the extent of making him (Lee) tired.’ (causative)

$\langle x \quad y-z \rangle \quad (x=ag, y=pt/th)$ (non-causative)

IC [-r]

DC

CF S/O... S/O

UMP S O

	$\langle x[\text{caus}] \quad y-z[\text{af}]^8 \rangle \quad (x=\text{ag}, z=\text{pt}/\text{th}) \text{ (causative)}$	
IC	[-r]	
DC		

CF	S/O...	S/O
UMP	S	O

- ii. 'John chased Lee and (John) got tired.' (non-causative)

	$\langle x-\bar{z} \quad y \rangle \quad (x=\text{ag}, y=\text{pt}/\text{th}) \text{ (non-causative)}$	
IC	[-r]	
DC		

CF	S/O...	S/O
UMP	S	O

- iii. 'Lee chased John and was made tired (by John).' (causative)

	$\langle \bar{x}-z[\text{af}] \quad y[\text{caus}] \rangle \quad (z=\text{pt}/\text{th}, y=\text{pt}/\text{th}) \text{ (causative)}$	
IC	[-r]	[-r]
DC		

CF	S/O	S/O
UMP	O	S

Note that the various interpretations of the resultative compound are reached by the different function mappings of the arguments, but the causative readings in the interpretations are still unaccounted for. Furthermore, one problem remains in that how the two arguments with the same feature in the final interpretation are assigned their grammatical functions is still a mystery.

⁸ [Caus] is short for the concept of Causer, and [af], Affectee.

Her (2007) tries to solve this problem along with the causative readings by submitting to his proposed rule of Causativity Assignment in Resultative

Compounding:

(44) Causativity Assignment in Resultative Compounding:

An unsuppressed role from V_{res} receives [af] iff an unsuppressed role from V_{cause} exists to receive [caus].

This rule accounts for the causative readings in the resultative compound by distributing Causer and Affectee to the corresponding arguments. Moreover, it leads to the final interpretation in (43) by adding a semantic feature of Causer to one of the two arguments that receive the same [-r] feature. By resorting to Dowty's (1991) idea of proto-agent and proto-patient, Her (2007) shows that the argument that receives the feature [caus] is more prominent than the one that receives [af] and should therefore map to SUBJ, which is a more prominent grammatical function.

The complex issue of the mappings of resultative compounds with the relevant causativity seems to be well-answered. However, remember the causative alternation of unaccusative resultative compounds, where the subject is not an argument if under the analysis of LMT that the argument-function mappings all come from the arguments of the predicate. Yet, the subject still receives the causative reading that has

to be given by the V_{res} in the compound. To make things worse, the V_{res} of the compound does not function as a real intransitive verb that assigns its theta role to the entities in the sentence, nor does it assign causativity. The V_{res} is more like an expression of extent in the compound:

- (45) yi zhuozi de cai pang-si wo le
 one table DE dish fat-die me ASP
 ‘A table full of dishes is making me fat.’

Yi zhuozi de cai (a table full of dishes) is not an argument of any of the predicates in the resultative compound, *pang-si*, nor does *si* function as a real verb that denotes the action of dying. Her’s (2007) account seems insufficient to explain resultative compounds like this. How, then, can the resultative compounds of this kind be analyzed and their relevant causativity accounted for? This thesis is dedicated to answering this question by examining causativity in Mandarin Chinese and solving the problem of causativity and lexical mappings of Chinese resultative compounds. But before that, this special kind of resultative compounds needs to be examined to see if the compounds indeed carry a seemingly extra argument outside of their argument structures. A kind of construction would look like the causative resultative compounds in question here but turn out to be something different under close

inspection, as pointed out by Wu (2010):

- (46) na-chang jihuang e-si-le henduo ren
 that-CL famine hungry-dead-ASP many people
 ‘Many people starved to death in that famine.’

In (46), *jihuang* (famine) is the argument of neither *e* (hungry) nor *si* (dead). Yet, it appears in the subject position. Wu (2010) claims that the sentence should be paraphrased as (47) and the subject argument is actually the thematic role of Locative:

- (47) henduo ren e-si yu na-chang jihunag
 many people hungry-dead in that-CL famine
 ‘Many people starved to death in that famine.’

Yu, in Mandarin, can serve to specify time and place. *Jihuang* in (46) functions as Locative and has undergone a syntactic process that has been noted in English as well as in Mandarin Chinese and termed the Locative Inversion (Her, 2009). In this case, what appears to be a causative resultative compound is indeed an example of Locative Inversion. However, the Locative Inversion account does not suffice to explain all possible instances of causative resultative compounds, where the subject argument cannot be seen as Locative or any argument required by the argument structures of the compound predicates:

- (48) a. zhe-jian yangzhuang mei-fan ta le.
 this-CL dress beautiful-flip her ASP
 ‘This dress makes her look extremely beautiful.’
- b. *ta mei-fan yu zhe-jian yangzhuang
 she beautiful-flip in this-CL dress
 ‘This dress makes her look extremely beautiful.’

Since the causative resultative compound in (48a) cannot be paraphrased as (48b) and semantically speaking, the subject argument, *zhe-jian yangzhuang*, cannot be interpreted as a location where the incident depicted by the compound happens, there is no way causative resultative compounds like this are to be viewed as Locative-Inversion sentences in disguise. Therefore, it is for sure that this special kind of Mandarin causative resultative compounds exists and proper measure of analysis should be taken to account for its presence.

Chapter 4 Causativity in Chinese Resultative Compounds

4.1 Internal vs. External Causativity

The causative alternations recorded in Chinese resultative compounds actually conform to the Chinese periphrastic causative constructions aforementioned. That is the reason why some derivational linguists have tried to develop a derivational account based on the periphrastic causative construction:

- (49) a. ze-ge gongzuo shi [Zhangsan lei-bing-le.]
this-CL job CAU Zhangsan tired-sick-ASP
'This job made Zhangsan exhausted to the of being sick.'
- b. ze-ge gongzuo V[CAUSE] [Zhangsan lei-bing-le.]
this-CL job Zhangsan tired-sick-ASP
'This job made Zhangsan exhausted to the point of being sick.'
-

The V[CAUSE] in (49b) is a null causative verb with which the resultative compound in the embedded clause is merged for the compound to carry causativity and hence make this a causative alternation as opposed to its unaccusative counterpart. This line of analysis later generates the templates in Huang (2006). Unaccusative compounds, as well as unergative compounds, can undergo this derivation and become

“causativized”. However, something is missing here. And it is the claim of this thesis that this missing piece provides a solution to solving the insufficiency of Her’s (2007) account of resultative compounds previously mentioned.

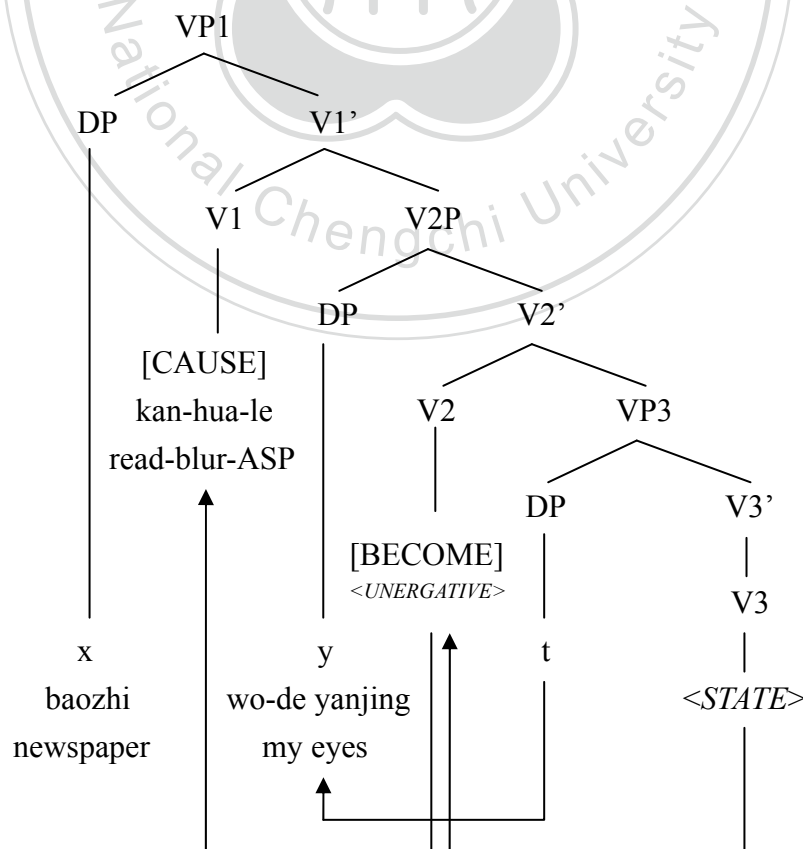
In the derivational accounts, the causativity derivation in (49) is applied to generate templates for unaccusatives and unergatives that exhibit causative alternations (Templates C and D repeated here as example (50)):

(50) C. Pure causative (1): [x CAUSE [BECOME<UNERGATIVE> [y <STATE>]]]

baozhi kan-hua le wo-de yanjing.

newspaper read-blur my eyes

‘The newspaper made my eyes blurred from reading it.’

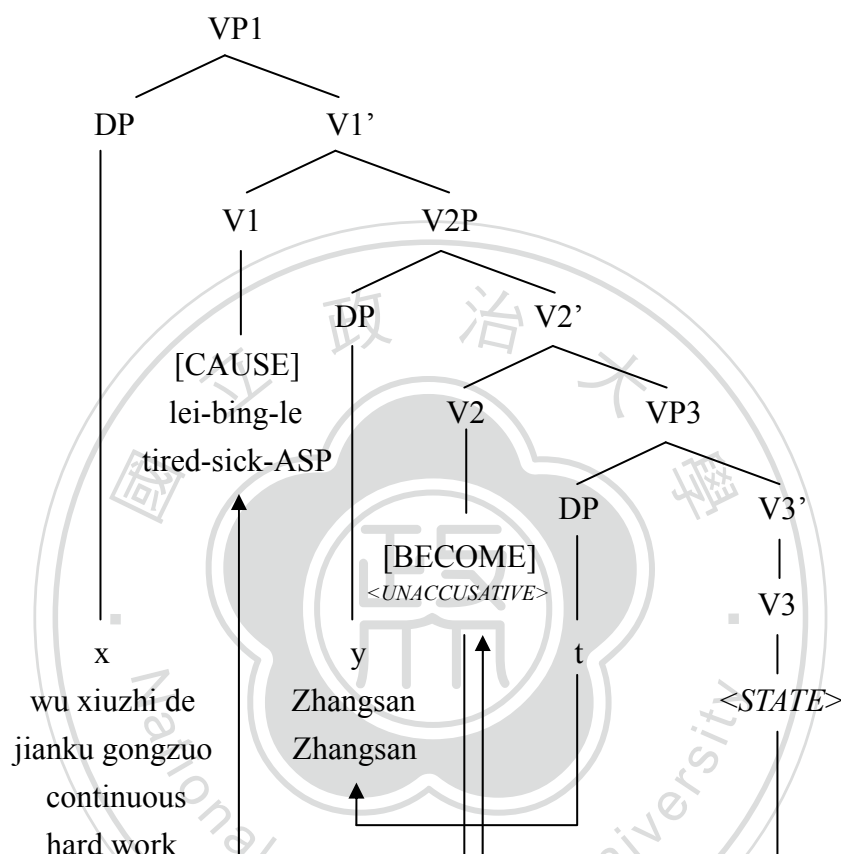


D. Pure causative (2): [x CAUSE [BECOME<UNACCUSATIVE> [y <STATE>]]]

wu xiuzhi de jianku gongzuo lei-bing-le Zhangsan.

no rest DE hard work tire-sick-ASP Zhangsan

‘Continuous hard work got Zhangsan sick from over-exhaustion.’



The only difference between the two templates is that the causativity is conveyed in two different kinds of verbs. However, there should be two different kinds of causativity correspondingly. Take the sentence in Template C for example. *Baozhi* (newspaper) is the cause of the result, *yanjing hua* (eyes getting blurred), because *baozhi* is the internal argument of the predicate, *kan* (read) and the eyes getting blurred is caused by the act of reading newspaper. However, *baozhi* does not convey

the meaning of being the cause of the reading action. The causative relation in unergative resultative compounds only exists between the internal argument of V1 action and the argument of V2 Result. The sentence in Template D, on the other hand, has a causative reading that *wu xiuzhi de jianku gongzuo* (continuous hard work) is the cause of *Zhangsan* being tired and further the cause of *Zhangsan* getting sick. It forms a causal chain throughout the argument:

(51) a. zhe-bei jiu he-zui-le Zhangsan.

causativity

This-CL wine drink-drunken-ASP Zhangsan

‘This glass of wine made Zhangsan drunk.’

b. zhe-ge bing bing-dao-le Zhangsan.

causativity

this-CL illness sick-down-ASP Zhangsan

‘This illness made Zhangsan so sick that he could not get out of his bed.’

By paraphrasing the unergative causative sentence and the unaccusative causative sentence with the periphrastic causative sentence from which they are derived in the derivational point of view, the difference of causativity can be better proven when an argument inside of the argument structures of the compound predicates cannot

indicate the cause from outside the argument structures:

(52) a. *zhe-bei jiu he-zui-le Zhangsan.* (unergative)

this-CL wine drink-drunk-ASP Zhangsan

‘This glass of wine made Zhangsan drunk.’

➡ a (i) **zhe-bei jiu shi Zhangsan he le.*

this-CL wine CAU Zhangsan drink ASP

*‘This glass of wine made Zhangsan drink.’

and

a (ii) *zhe-bei jiu shi Zhangsan zui le.*

this-CL wine CAU Zhangsan drunk ASP

‘This glass of wine made Zhangsan drunk.’

As the examples show, *zhe-bei jiu* can only be the cause of *Zhangsan* being drunk but not the cause of *Zhangsan* drinking. As a result, the causativity that happens inside the relationship between the arguments of the component predicates of unergative resultative compounds is referred to as the “internal causativity” hereafter in this thesis due to its nature.

(52) b. *zhe-ge bing bing-dao-le Zhangsan.* (unaccusative)

this-CL illness sick-down-ASP Zhangsan

‘This illness made Zhangsan so sick that he could not get out of his bed.’

➡ b (i) zhe-ge bing shi Zhangsan bing le.

this-CL illness CAU Zhangsan sick ASP

‘This illness made Zhangsan sick.’

and

b (ii) zhe-ge bing shi Zhangsan dao le.

this-CL illness CAU Zhangsan down ASP

‘This illness made Zhangsan not able to get out of his bed.’

On the other hand, the (b) examples of (52) above indicate the other type of causitivity that comes from outside the relationship between the arguments in unaccusative resultative compounds. As in the examples, *zhe-ge bing* can be the cause of *Zhangsan* being sick and further the cause of *Zhangsan* not being able to get up. This type of causitivity is referred to as the “external causitivity”. Since these two processes of causation exist, there should be different argument structures of the causative resultative compounds, on which different argument realizations are dependent.

4.2 Morpholexical Fusion of Chinese Causative Verbs and Resultative

Compounds

Derivational linguists have captured the idea of the causativity coming from an argument outside of the argument structures of resultative compounds. However, not

differentiating internal and external causativity in unergative and unaccusative compounds and putting them all in one scheme blurs the analysis of argument realization of resultative compounds. In the analysis of LFG, the internal causativity of Chinese resultative compounds is accounted for. Her's (2007) Causativity Assignment in Resultative Compounding constraint describes how the internal causativity is to be interpreted in resultative compounds. The missing piece to Her's account is the external causativity. The main theme in Her's account is that when verbs are compounded to form resultative compounds, the argument structures of the verbs converge to give rise to the argument structures of the compounds. A composite role could be composed of any argument from each component verb. How the roles map to the grammatical functions determines what interpretations the compounds should have. Unfortunately, with the compounds that exhibit external causativity, the argument realization will not be correct since the subject, representing the source of causativity, does not come from any argument structures of the verb components.

Therefore, having examined the courses of analysis of both derivational and lexicalist parties, this thesis provides a solution that eliminates the insufficiency of the LFG account on Chinese causative resultative compounds by adopting the analytical logic of the complex predicate in Romance languages.

In LFG, many syntactic derivations that relate to the movement of arguments to

different syntactic positions are deemed as lexical relational processes (Bresnan, 1990). As a result, the process like passivization previously seen as the movement of argument from OBJ to SUBJ is in fact a remapping of arguments to different grammatical functions (Bresnan, 1990; Falk, 2001). Other kinds of processes that change the syntactic realizations of arguments of the predicate are also lexical relational in LFG, such as causativization (Bresnan, 1990; Falk, 2001). Aissen's (1979: 8) examples from Turkish are quoted by Falk (2001) as evidence for the fact that causativization, like passivization, is a process of argument-function remapping:

(53) a. Hasan öl- dü.

Hasan die-PST

'Hasan died.'

b. Mehmet Hasan-ı öl- dür- dü.

Mehmet Hasan- ACC die- CAUS- PST

'Mehmet caused Hasan to die.'

(54) a. Kasap et- i kes-ti.

butcher meat-ACC cut-PST

'The butcher cut the meat.'

b. Hasan kasab- a et- i kes- tir- di.

Hasan butcher- DAT meat- ACC cut- CAUS- PST

'Hasan had the butcher cut the meat.'

It is clearly seen that through the affixation of the causative morpheme, an extra argument is introduced and maps to the syntactic position of SUBJ while the mappings of other arguments are rearranged to different grammatical functions.

As mentioned by many researchers (Bresnan, 2001; Falk, 2001; Her, 2006, 2007, 2009), lexical rules are monotonic; i.e. they do not alter the syntactic information of the predicate but only add more morphological or semantic properties to it since it is the ground of syntactic processing that syntactic information cannot be changed. As Falk (2001) literally puts it:

But a lexical rule is not a syntactic rule. Lexical rules do not represent on-line processing, but rather regularities relating stored lexical items. When a lexical rule is applied productively, the result is stored as a new lexical item... (Falk, 2001)

Adopting this idea as the main direction of analyzing the issues of causative resultative compounds, this thesis has treated external causativity embedded in the compounds as the product of the fusion between Chinese causative verbs in periphrastic causative constructions and unaccusative resultative compounds.

The verb-compound fusion is more of a morpholexical rule than a morphosyntactic rule, which stores the output, the causative resultative compounds, as

a new lexical item in the lexicon. The distinction between morpholexical rules and morphosyntactic rules is clearly specified by Ackerman (1992: 56):

(55) Ackerman (1992: 56)-

Morpholexical (Operations), affect the lexical semantics of predicates by altering the semantic properties associated with predicates...

Morphosyntactic (Operations), assign features supplemental to those supplied by IC assignment: these operations can affect the final GF assignments to arguments but cannot affect the lexical semantics.

According to Ackerman (1992), the fusion here is a morpholexical rule for it changes the lexical semantics of the resultative compounds by incorporating causativity in them. How does the fusion take place to form causative resultative compounds? It is hypothesized in this thesis that the causative resultative compounds have an analogous formation as that of the complex predicates of causative constructions in Romance languages.

4.2.1 Romance Causatives and Chinese Causative Resultative Compounds

The causative constructions of Romance languages are said to involve the fusion of the argument structure of the causative verb and the argument structure of the action caused by the causative verb (Alsina, 1996; Falk, 2001). Take the following

causative constructions from French for example (Falk, 2001: 115):

- (56) a. On fera⁹ parler Jean de son dernier voyage.
 one CAUS.FUT talk John of his last journey
 ‘One will make John talk of his last journey.’
- b. Elle a fait visiter la ferme à ses parents.
 she has CAUS.PART visit the farm DAT her relatives
 ‘She made her relatives visit the farm.’
- c. Elle a fait visiter la ferme par ses parents.
 she has CAUS.PART visit the farm by her relatives
 ‘She made her relatives visit the farm.’

The predicates combining a causative verb and another predicate in (56) are termed the complex predicates for they result from the fusion of the argument structures of the causative verb and the other predicate; hence, leading to alternate argument-function mappings. The fusion process of the Romance complex predicates is believed to have provided a viable analysis for the case of Chinese causative resultative compounds. In LFG, it is recognized that a causative verb asks for three arguments: the entity causing the action (Agent), an entity acted on by the Agent (Patient), and the action caused (Falk, 2001). In the case of the complex predicates,

⁹ The uninflected form of the causative verb in French is *faire* (make). Here, the causative verb *faire* is inflected for future tense, *fera*, as in (56a) and for perfective aspect, *fait*, as in (56b) and (56c).

the caused action is viewed to occupy the structural complement position of the causative verb in c-structure, and the argument structure of the head verb in the caused action ultimately fuses with the argument structure of the causative verb, as represented in the example below:

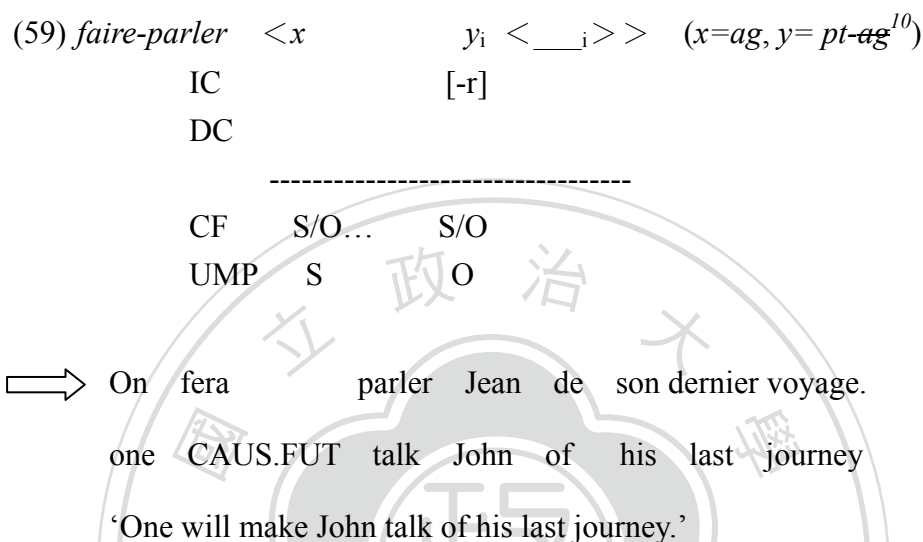
- (57) a. *faire* (make) $\langle x, y, \dots \rangle$ ($x=ag, y=pt$)
 b. *parler* (talk) $\langle x \rangle$ ($x=ag$)
 c. *visiter* (visit) $\langle x, y \rangle$ ($x=ag, y=pt/th$)

The notation ‘...’ in (57a) represents the fusion of the causative verb, *faire*, with the head verb in the caused action. In the formalism of LFG, the individual predicates should be unable to unify since they are independently meaningful. However, in the literature of Romance complex predicates, the different predicates are able to unify as long as one of them belongs to a ‘light’ verb (Alsina, 1996).

Therefore, the Patient argument of the causative verb, *faire*, binds the argument from the argument structure of the action caused and the bound argument of the caused action does not project into syntax:

- (58) *faire* $\langle x, y_i, \dots \rangle$ + *parler* $\langle z_i \rangle$
 ($x=ag, y=pt$) ($z=ag$)
 \implies *faire-parler* $\langle x, y_i, \langle _i \rangle \rangle$ ($x=ag, y=pt-ag$)

Since the unified argument structure of the causative verb and the caused action is now in place, its mapping to different grammatical functions can obtain by means of the argument-function mapping mechanisms aforementioned:



The argument-function remapping of the complex predicates has been accomplished in terms of an intransitive head verb of the caused action, like *parler*. The argument structure of *parler* has been fused into the argument structure of *faire* and the Agent of *parler* has been bound by the Patient of *faire*. Since the bound argument does not project into syntax, it is the binding argument, i.e. the Patient of *faire*, that maps to the grammatical function of Object, given the mapping mechanisms. On the other hand, with the transitive head verb of the caused action, two possibilities arise. The binding

¹⁰ The bound argument of the caused action does not project into syntax; hence, it is crossed out and does not compete in the process of argument-function remapping.

argument of the causative verb can bind either one of the arguments of the head verb:

$$(60) \text{ a. } \textit{faire} \langle x, y_i, \dots \rangle + \textit{visiter} \langle w_i, z \rangle$$

$$(x=ag, y=pt) \qquad (w=ag, z=th)$$

$$\implies \textit{faire-visiter} \langle x, y_i, \langle __i, z \rangle \rangle \quad (x=ag, y=pt-ag, z=th)$$

and

$$\text{ b. } \textit{faire} \langle x, y_i, \dots \rangle + \textit{visiter} \langle w, z_i \rangle$$

$$(x=ag, y=pt) \qquad (w=ag, z=th)$$

$$\implies \textit{faire-visiter} \langle x, y_i, \langle w, __i \rangle \rangle \quad (x=ag, y=pt-th, w=ag)$$

As a result, the different argument structures of the complex predicates lead to different argument-function mappings as in the examples (61a) and (61b):

$$(61) \text{ a. } \textit{faire-visiter} \langle x \quad y_i \langle __i \quad z \rangle \rangle \quad (x=ag, y=pt-ag, z=th)$$

IC	*	[-r]	[-r]
DC			

CF	S/O...	OBJ _θ	S/O
UMP	S	OBJ _θ ¹¹	O

\implies Elle a fait visiter la ferme à ses parents.

she has CAUS.PART visit the farm DAT her relatives

‘She made her relatives visit the farm.’

¹¹ The Romance languages are proposed to be asymmetrical in LFG (Butt, King, Niño, and Segond, 1990). In other words, the predicate with multiple arguments refuses to have its arguments acquire multiple [-r] features, which will result in multiple Objects in terms of argument-function mapping. Instead, the arguments will acquire different features and end up mapping to different grammatical functions. In Romance languages, the Patient of *faire* is a non-Theme Patient and should map to the function of Secondary Object (Falk, 2001). Hence, the Patient of *faire*, i.e. the Agent of *visiter*, ends up being OBJ_θ.

and b. *faire-visiter* $\langle x \quad y_i \quad \langle w, \text{---}_i \rangle \rangle$ ($x=ag, y=pt-th, w=ag$)

IC [-r]

DC [+r]

CF S/O... S/O OBL_θ/OBJ_θ

UMP S O OBL_θ

⇒ Elle a fait visiter la ferme par ses parents.

she has CAUS.PART visit the farm by her relatives

‘She made her relatives visit the farm.’

The various fusion possibilities between the causative verb and the transitive head verb of the caused action give rise to various argument realizations of the complex predicates. With the same logic, the argument structures of Chinese causative resultative compounds can be deemed to undergo a similar fusion process and ultimately have their arguments remap to different grammatical functions.

In order to see how the fusion process of Chinese causative resultative compounds works, it is necessary to first look at the argument structure and argument-function mapping process of the Chinese periphrastic causative verb, *shi*. *Shi* requires three arguments in forming periphrastic causative constructions, which are Agent, Patient and Proposition. The typical sentence structure of *shi* is like example (62), where Agent maps to SUBJ, Patient, OBJ, and Proposition, XCOMP:

(62) [zhe-jian shi shi Zhangsan_i [PRO_i ji-feng-le]]
 this-CL issue CAU Zhangsan anxious-crazy-ASP

‘This issue made Zhangsan anxious to the point of crazyness.’

shi <*x* *y* *z*> (*x=ag, y=pt, z=prop*)

IC [-r]

DC [+r]

 CF S/O... S/O XCOMP

UMP S O XCOMP¹²

If following the fusion process of complex predicates, the argument structure of the head verb of the caused event should be fused into the argument structure of the causative verb. In the case of (62), it is the argument structure of *ji-feng* (anxious-crazy) that should fuse with the argument structure of *shi*. However, the situation is slightly different here. The predicate of the caused event is an unaccusative resultative compound, which has undergone the process of Resultative Compounding proposed by Her (2007):

(63) $V_{ji} \langle x \rangle + V_{feng} \langle y \rangle \rightarrow$

$V_{ji} V_{feng} \langle \alpha \rangle$, where $\langle \alpha \rangle = \langle x-y \rangle$

¹² Proposition, in LMT, is lexically mapped onto the function COMP/XCOMP. The distinction between COMP and XCOMP is that COMP is a closed function, while XCOMP is an open function. A closed function in LFG is a function in which all the argument functions come from within (Falk, 2001). The proposition in (62) should map to the open function XCOMP since the argument function of SUBJ within the proposition comes from somewhere else; i.e. it comes from the argument function of OBJ in the matrix sentence.

The argument structure of the resultative compound has a composite role when fused into the argument structure of *shi*. Thus, the ultimate argument structure of the causative resultative compound should be like the following:

$$\begin{array}{l}
 (64) \textit{shi} \langle x, y_i, \dots \rangle + \textit{ji-feng} \langle z_i \rangle \\
 \qquad (x=ag, y=pt) \qquad \qquad (z=th-th) \\
 \Rightarrow \textit{ji-feng} \langle x, y_i, \langle _i \rangle \rangle (x=ag, y=pt-th-th) \\
 \qquad \qquad \qquad \text{(causative)}
 \end{array}$$

Also different from the Romance complex predicates, the light causative verb, *shi*, is more like a verbal affix than a verb, and it explains why *shi* is phonologically null when fused with the head verbs in Chinese resultative compounds. The analysis of *shi* being a verbal affix develops independently due to the fact that similar phenomena can be found elsewhere:

(65) a. Zhangsan fei-le.

Zhangsan profit-ASP

‘Zhangsan has profited.’

b. zhe-ge shi yi de gongcheng fei-le Zhangsan

this-CL ten billion DE project profit-ASP Zhangsan

‘Zhangsan has profited from this project worthy of ten billion dollars.’

(66) a. *juzi hong-le.*

orange red-ASP

‘The orange has turned red.’

b. *qiutian hong-le juzi.*

autumn red-ASP orange

‘Autumn has made the orange turn red.’

The examples above show that the conveyance of causativity can be realized without the causative verb being phonologically substantive. The verbs with causativity in the (b) examples are said to experience an affixation process of the causative verb and the causative verbal affix does not realize phonologically.

The phenomenon of phonologically null affixes also exists in English. In signaling causativity, the causative morpheme *-en* sometimes takes a null form, so is the situation of the morphemes of plurality *-s* and past tense *-ed*:

(67) a. Morpheme of causativity *-en*: *thick* → *thicken*

⇒ The landlord thickened the door to prevent burglary.

b. Morpheme of causativity Φ : *thin* → *thin*

⇒ Care thinned her cheeks.

(68) a. Morpheme of plurality *-s*: *dog* → *dogs*

b. Morpheme of plurality Φ : *sheep* → *sheep*

(69) a. Morpheme of past tense *-ed*: kill → killed

b. Morpheme of past tense Φ : hit → hit

The existence of these affixes stands as cross-linguistic evidence for the analysis of the phonologically null causative verbal affix in Chinese. And the occurrence of the Chinese causative verbal affix in places other than resultative compounds gives more credits to the substantiality of the fusion analysis analogous to the Romance complex predicates. Being verbal, the Chinese causative affix still assigns an argument structure with which the argument structure of the resultative compound fuses. Therefore, the argument-function mapping process of the causative resultative compound resembles that of the complex predicates:

(70) *ji-feng* $\langle x$ $y_i \langle _i \rangle \rangle$ ($x=ag, y=pt-th-th$)
 (causative)
 IC [-r]
 DC

 CF S/O... S/O
 UMP S O

⇒ zhe-jian shi ji-feng-le Zhangsan
 this-CL issue anxious-crazy-ASP-CAU Zhangsan

‘This issue made Zhangsan anxious to the point of craziness.’

The fusion of the causative verb and the resultative compound successfully solves the problem posed by external causativity in the causative unaccusative resultative compounds, where the external argument comes not from the argument structures of the resultative compounds but from the argument structure of the incorporated causative verb. As a result, on top of Her's (2007) rules of Resultative Compounding and Causativity Assignment in Resultative Compounding, a morpholexical rule of causativity assignment apart from resultative compounding is borne.

Following the formalism of Her's Resultative Compounding and Romance complex predicates, this rule is referred to as the Causative Resultative Compounding:

(71) Causative Resultative Compounding:

$$\begin{aligned}
 &VA^{13}_{\text{causative}} \langle x, y_i, \dots \rangle + V_{\text{unaccusative}} V_{\text{res}} \langle z_i \rangle \rightarrow \\
 &V_{\text{unaccusative-CAUS}} V_{\text{res}} \langle \alpha \beta \rangle, \text{ where } \langle \alpha \beta \rangle = \langle x, y_i, \langle _i \rangle \rangle \\
 & \hspace{15em} (x=ag, y=pt-th-th)
 \end{aligned}$$

The picture of Her's (2007) account for Chinese resultative compounds is now complete. With all the mechanisms at hand, the argument-function mappings of all Chinese resultative compounds can be exemplified and relevant interpretations achieved. Details of the mapping process will be presented in chapter 5.

¹³ VA stands for "verbal affix".

4.2.2 Verbs Allowed in the Causative Resultative Compounds

Now that this causativity rule about argument realization in Chinese resultative compounds has been constructed, the examination of its substantiality becomes important before it can be used in the LFG analysis.

Since the nature of unergative and unaccusative verbs has been defined by the Unaccusative Hypothesis (Perlmutter, 1978) and recognized by many researchers, one is able to tell what verbs in Chinese belong to the unaccusative category, which can be the test items for the rule of Causative Resultative Compounding. The argument of unaccusative verbs is the grammatical object and is Patient/Theme like. Based on this definition, existential verbs and event-depicting verbs whose subjects are more like Theme, Patient, or Experiencer are useful for testing the rule:

(72) Chinese unaccusative verbs:

- a. *lai*(come)/ *qu* (go)/ *shi* (be)/ *zou* (go)/ *chuxian* (appear)/
fasheng (happen)... (existential)
- b. *lei* (tired)/ *bao* (full)/ *pang* (fat)/ *xia* (shock)/ *bing* (sick)/
le (happy)... (event-like)

Unfortunately, not all these unaccusative verbs can enter the rule and end up being a grammatical causative resultative compound:

(73) a. *baofengyu fasheng-le hongshui.

storm happen-ASP flood

*‘The storm made the flood happen.’

Intended meaning: ‘The storm caused the flood.’

b. xiaoye pang-si-le Zhangsan.

midnight snack fat-dead-ASP Zhangsan

‘Midnight snacks made Zhangsan really fat.’

Example (73) shows that only event-like verbs are eligible candidates for becoming a causative resultative compound. These verbs usually depict a psychological or physical state over which their arguments do not have any control. A list of the verbs has been collected to demonstrate the commonality they share. All of them produce grammatical causative resultative compounds when accompanied by an appropriate V_{res} . However, it is worth noticing that a minority group of unergative verbs also make eligible candidates for the process of Causative Resultative Compounding:

(74)

Event-like Unaccusatives			
美	醜	胖	瘦
<i>mei</i>	<i>chou</i>	<i>pang</i>	<i>shou</i>
‘beautiful’	‘ugly’	‘fat’	‘thin’
冷	熱	凍	痛
<i>leng</i>	<i>re</i>	<i>dong</i>	<i>tong</i>
‘cold’	‘hot’	‘freeze’	‘in pain’

癢 <i>yang</i> 'itch'	爽 <i>shuang</i> 'thrilled'	饞 <i>chan</i> 'gluttonous'	飽 <i>bao</i> 'full'
睏 <i>kun</i> 'sleey'	羞 <i>xiu</i> 'shy'	累 <i>lei</i> 'tired'	撐 <i>cheng</i> 'very full'
悶 <i>men</i> 'depressed'	噎 <i>qiang</i> 'choke on water'	咳 <i>ke</i> 'cough'	噎 <i>ye</i> 'choke on food'
脹 <i>zhang</i> 'stuffed'	喘 <i>chuan</i> 'pant'	憋 <i>bie</i> 'withhold'	餓 <i>e</i> 'hungry'
吐 <i>tu</i> 'vomit'	拉 <i>la</i> 'having diarrhea'	抖 <i>dou</i> 'tremble'	渴 <i>ke</i> 'thirsty'
糗 <i>qiu</i> 'embarrassed'	急 <i>ji</i> 'anxious'	樂 <i>le</i> 'happy'	嘔 <i>ou</i> 'regretful'
丟臉 <i>diulian</i> 'ashamed'	尷尬 <i>ganga</i> 'awkward'	寂寞 <i>jimo</i> 'lonely'	空虛 <i>kongxu</i> 'feeling empty'

Unergative verbs such as *ke* (cough) and *chuan* (pant) are able to carry external causativity only when the actions denoted by them are caused by an external argument outside of their argument structures. In other words, they also share the commonality of their arguments not having any control over the actions:

$$(75) \text{VA}_{\text{causative}} \langle x, y_i, \dots \rangle + \text{V}_{\text{unergative}} \text{V}_{\text{res}} \langle z_i \rangle \rightarrow$$

$$\text{V}_{\text{unergative-CAUS}} \text{V}_{\text{res}} \langle \alpha \beta \rangle, \text{ where } \langle \alpha \beta \rangle = \langle x, y_i, \langle _ _ \rangle_i \rangle$$

$$(x=ag, y=pt-ag-th)$$

Causative Resultative Compounding also applies to the unergative verbs and results in causative unergative resultative compounds, as illustrated by example (76):

- (76) shi fenzhong pao san qian gongchi chuan-si Zhangsan le
 ten minute run three thousand meter pant-dead-CAU Zhangsan ASP
 ‘Running 3000 meters in ten minutes makes Zhangsan pant to death.’

⇒ *chuan-si* <*x* *y*_i <___i>> (*x=ag, y=pt-ag-th*)
 (causative)

IC [-r]

DC

CF S/O... S/O

UMP S O

Due to the commonality of no control, adding an adverbial indication of volition will make the sentence ungrammatical even though unergative verbs have underlying agents in D-structure and should be compatible with volitional adverbs:

- (77) *shi fenzhung pao san qian gongchi guyi chuan-si
 ten minute run three thousand meter intentionally pant-dead-CAU
 Zhangsan le
 Zhangsan ASP
 ‘*Running 3000 meters in ten minutes makes Zhangsan intentionally pant to death.’

To further support the legitimacy of Causative Resultative Compounding, a

corresponding list of linguistic data in relation to the verbs above is found on the world-wide on-line search engine, Google. It demonstrates how this kind of causative resultative compounds stands as a productive expression in Mandarin Chinese:

(78)

On-line Linguistic Data

1. 這 件 洋裝 美翻 他了
zhe-jian yangzhuang mei-fan ta le
this-CL dress beautiful-flip her ASP
'This dress makes her look extremely beautiful.'
2. 臉 上 的 痘痘 醜死 我了
lian-shang de doudou chou-si wo le
face-up DE zit ugly-dead me ASP
'The zits on my face makes me really ugly.'
3. 巧 克 力 蛋 糕 加 藍 莓 奶 昔 真 是 胖 死 我 了
Qiaokeli dangao jia lanmei naixi zhenshi pang-si wo le
Chocolate cake plus blueberry milkshake really fat-dead me ASP
'Chocolate cake plus blueberry milkshake really makes me fat.'
4. 12 款 瘦 身 茶 , 喝 不 死 你 也 能 瘦 死 你
shier kuan shoushencha he-bu-si ni ye neng shou-si ni
twelve kind slim-body-tea drink-not-dead you too can slim-dead you
'Twelve kinds of diet tea, even if it does not make you tired of drinking them, it makes you slim from drinking them.'
5. 辦 公 室 只 有 九 度 真 是 冷 死 我 了
bangongshi zhiyou jiu du zhenshi leng-si wo le
office only nine degree really cold-dead me ASP
'The temperature of nine degrees in the office makes me really cold.'

6. 今天 的 太陽 公公 簡直 要 熱死 我了
 jintian de taiyang gonggong jianzhi yao re-si wo le
 today DE sun elder man almost will hot-dead me ASP
 ‘The sun today is so hot that it almost scorches me’
7. 一 個 人 吃 兩 大 桶 冰 淇 淋 凍 死 我 了
 yi-ge ren chi liang da tong bingqilin dong-si wo le
 one-CL man eat two big bucket ice cream freeze-dead me ASP
 ‘Eating two buckets of ice cream all by myself freezes me to death.’
8. 頭 痛 痛 死 我 了
 touting tong-dead wo le
 migraine hurt-dead me ASP
 ‘The migraine is killing me.’
9. 皮 膚 過 敏 癢 死 我 了
 pifu guomin yang-si wo le
 skin allergy itch-dead me ASP
 ‘The allergy makes my skin itch like crazy.’
10. 晚 上 吃 的 涮 羊 肉 爽 死 我 了
 wanshang chi de shuanyangrou shuang-si wo le
 night eat DE Mongolian hot pot ecstatic-dead me ASP
 ‘The Mongolian hot pot tonight made me extremely contented.’
11. 中 國 大 西 北 天 然 聚 寶 盆 饑 死 了 小 日 本
 chongguo da xibei tianran jubaopen chan-si-le xiaoriben
 China big northwest natural treasure trove gluttonous-dead-ASP Japanese
 ‘The natural treasure trove in northwestern China makes the Japanese really gluttonous.’
12. 晚 餐 飽 死 我 了
 wancan bao-si wo le
 dinner full-dead me ASP
 ‘The dinner makes me so full.’

13. 整晚 沒睡 困死 我了
 zhengwan mei shui kun-si wo le
 whole night no sleep sleepy-dead me ASP
 ‘Staying up all night makes me extremely sleepy.’
14. 連 伊拉克 的 民主 都 能 羞死 臺灣 人
 lian yilake de minzhu dou neng xiu-si taiwan ren
 even Iraq DE democracy all can shy-dead Taiwan people
 ‘Even the democracy in Iraq can embarrass Taiwanese people.’
15. 排毒： 勿 繼續 全身 積 毒 累死 自己
 paidu wu jixu quanshen ji du lei-si ziji
 detoxication not continue whole body accumulate toxin tired-dead self
 ‘Detoxication: don’t continue to accumulate toxin in your body and tire yourself out.’
16. 囫圇吞棗，大 鱷魚 撐死 小 蟒蛇
 huluntunzao da eyu cheng-si xiao mangshe
 gulp big crocodile very full-dead small python
 ‘Gulping down the big crocodile, the small python overate and died.’
17. 不寫 心情 日記 會 悶死 我
 bu xie xinqing riji hui men-si wo
 not write mood diary will depressed-dead me
 ‘Not keeping a diary to express my feelings will make me depressed to death.’
18. 誰 給 我 包 紙巾， 血 快 噎死 我了
 shei gei wo bao zhijin xie kuai qiang-si wo le
 someone give me bag tissue blood almost choke-dead me ASP
 ‘Someone give me a bag of tissue. The blood almost chokes me to death.’
19. 該死的 感冒 咳死 我了
 Gaisi de ganmao ke-si wo le
 Darn DE flu cough-dead me ASP
 ‘The darn flu is making me cough to death.’

20. 調查； 一顆雞蛋何以噎死一歲嬰兒？
 diaocha yi-ke jidan he yi ye-si yi-sui yinger
 investigation one-CL egg how can choke-dead one-year baby
 ‘Investigation: How can an egg choke a one-year-old baby to death?’
21. 兩碗肉絲飯差點脹死6歲男孩
 liang wan rousi fan chadian zhang-si liu-sui nanhai
 two bowl sliced meat rice almost stuffed-dead six-year boy
 ‘Two bowls of rice with sliced meat almost stuffed a six-year-old boy to death.’
22. 爬那400多層的樓梯真是喘死我了
 pa na si-bai duo ceng de louti zhenshi chuan-si wo le
 climb that four-hundred more step DE stair really pant-dead me ASP
 ‘Climbing those stairs that are more than four hundred steps makes me pant like crazy.’
23. 國外惡搞搞笑視頻憋死潛水員
 guowai egao gaoxiao shipin bie-si qianshuiyuan
 abroad spoof hilarious on-line video withhold-dead diver
 ‘The hilarious on-line videos of spoofs abroad make it really hard for the anonymous viewers to withhold their laughs.’
24. 一早沒吃早餐連水都沒喝餓死我了
 yizao mei chi zaocan lian shui duo mei he e-si wo le
 morning no eat breakfast even water all no drink hungry-dead me ASP
 ‘Having no breakfast not even water this morning makes me extremely hungry.’
25. 螢幕小情侶吐死我了
 yingmu xiao qinglu tu-si wo le
 screen little couple vomit-dead me ASP
 ‘The little couple on the screen makes me vomit to death.’
26. 晚餐生魚片不新鮮真是拉死我了
 wancan shengyupian bu xinjian zhenshi la-si wo le
 dinner sashimi not fresh really have diarrhea-dead me ASP
 ‘The sashimi in dinner is so stale that it makes me have severe diarrhea.’

27. 媽呀， 這個 切割機 抖死 我了
 maya zhe-ge qiegeji dou-si wo le
 mamamia this-CL cutting machine shake-dead me ASP
 ‘This cutting machine is making me shake like crazy.’
28. 說 這麼 多 話 渴死 我了
 shuo zheme duo hua ke-si wo le
 say this much speech thirsty-dead me ASP
 ‘Saying this much makes me really thirsty.’
29. 臭小子， 你 糗死 我了！
 chouxiaozi ni qiu-si wo le
 bastard you embarrassed-dead me ASP
 ‘Bastard, you made me so embarrassed!’
30. 你們 可 急死 我了
 nimen ke ji-si wo le
 You really anxious-dead me ASP
 ‘You guys really made me so anxious’
31. 我 吃了 你的 萬聖節 糖果： 這 兩 小孩 樂死 我了！
 wo chi-le ni de wanshengjie tangguo zhe liang xiaohai le-si wo le
 I ate-ASP your Halloween candy this two kid happy-dead me ASP
 ‘I ate your Halloween candy: These two kids make me so happy!’
32. 話說 那 負責 招聘 的 真是 嘔死 我了，
 huashuo na fuze zhaopin de zhenshi ou-si wo le
 say that responsible employment DE really resentful-dead me ASP
 ‘Well, that man responsible for recruits is really making me resentful’
- 看 人 都是 眼 朝 天， 一副 很 跩 的 樣子
 kan ren doushi yan chao tian yi-fu hen zhuai de yangzi
 watch people always eye towards sky one-CL very cocky DE look
 ‘He never watches people in the eye, like he is all that.’

33. 有 這 樣 的 叔 叔 真 是 丟 臉 死 我 了

you zheyang de shushu zhengshi diulian-si wo le

have this DE uncle really ashamed-dead me ASP

‘Having an uncle like this makes me ashamed.’

34. 在 水 電 十 四 局 過 節 認 錯 人

zai shuidian shisi ju guojie ren cuo ren

at hydro-power fourteen bureau spend holiday recognize wrong man

‘Spending the holiday at the fourteenth bureau of hydor-power and

Recognizing the wrong man

尷 尬 死 我 了

ganga-si wo le

awkward-dead me ASP

really makes it awkward for me.’

35. 一 星 期 沒 上 網 寂 寞 死 我 了

yi xingqi mei shang wang jimo-si wo le

one week no log on Internet lonely-dead me ASP

‘No logging on the Internet for one week makes me really lonely.’

36. 最 近 手 機 壞 掉 空 虛 死 我 了

zuijin shouji huaidiao kongxu-si wo le

lately cell phone broken feel empty-dead me ASP

‘My cell phone having been broken lately makes me feel really empty.’

This list is never by far exhausted. Unaccusative verbs that fit into the descriptions are

all able to be compounded and causativized to become causative resultative

compounds. It is found that newly coined words can undergo the same process as long

as they share the same characteristics. Examples of the newly coined words and how

the event-like words are analyzed in terms of argument-function mapping in the given

account will be thoroughly depicted in the next chapter.

4.3 Newly Coined Resultative Compounds

In the last chapter, verbs that are able to enter the construction of external causative resultative compounds have been recognized to be mainly unaccusative verbs and a slight portion of unergative verbs, whose Agents have no control over the actions depicted by them. It has been discovered that the rule regulating the realization process (Causative Resultative Compounding) sustains for some newly coined resultative compounds are also able to undergo the same rule and end up having the same argument realization. Two such compounds are used as examples to illustrate the point: *jiong-si* (embarrassed-dead), and *hai-fan* (high-flip).

Jiong (囧) is a word very commonly used on the Internet by Chinese-speaking people. It has a similar meaning to that of the word, *jiong* (窘), which means the state of being embarrassed in English in the closest sense. The meaning of *jiong* (囧) is reinforced by the shape of the word because it symbolizes the facial expression one has when embarrassed. The big “口” on the outside represents the face, the “八” represents the eyes, and the small “口” on the inside, the mouth. Being an unaccusative verb, *Jiong* undergoes Resultative Compounding with *si* and later undergoes Causative Resultative Compounding to become an external causative

resultative compound:

(79) *jiong-si* (embarrassed-dead)

a. Resultative Compounding: $V_{jiong} \langle x \rangle + V_{si} \langle y \rangle \rightarrow$

$V_{jiong} V_{si} \langle \alpha \rangle$, where $\langle \alpha \rangle = \langle x-y \rangle$ ($x=th, y=th$)

b. Causative Resultative Compounding:

$VA_{causative} \langle x, y_i, \dots \rangle + V_{jiong} V_{si} \langle z_i \rangle \rightarrow$

$V_{jiong-CAUS} V_{si} \langle \alpha \beta \rangle$, where $\langle \alpha \beta \rangle = \langle x, y_i, \langle _i \rangle \rangle$

($x=ag, y=pt-th-th$)

The argument realization process of *jiong-si* is as follows:

(80) *zai taishang huadao zhenshi jiong-si wo le* .

on stage slip really embarrassed-dead me ASP

‘Slipping on stage really makes me embarrassed to death.’

$\langle x \quad y_i \langle _i \rangle \rangle$ ($x=ag, y=pt-th-th$) (causative)

IC

[-I]

DC

CF S/O... S/O

UMP S O

Likewise, the other resultative compound, *hai-fan*, goes through the same process as *jiong-si* and reaches the same argument realization with external causativity.

Hai (嗨) is a word originated from the English word “high”, meaning being

emotionally elated as in “high spirits”. Many Chinese-speaking people use it in colloquial conversations. Its unaccusative nature makes it an eligible candidate for becoming an external causative resultative compound:

(81) *hai-fan* (embarrassed-dead)

a. Resultative Compounding: $V_{hai} \langle x \rangle + V_{fan} \langle y \rangle \rightarrow$

$V_{hai} V_{fan} \langle \alpha \rangle$, where $\langle \alpha \rangle = \langle x-y \rangle$ ($x=th, y=th$)

b. Causative Resultative Compounding:

$VA_{causative} \langle x, y_i, \dots \rangle + V_{hai} V_{fan} \langle z_i \rangle \rightarrow$

$V_{hai-CAUS} V_{fan} \langle \alpha \beta \rangle$, where $\langle \alpha \beta \rangle = \langle x, y_i, \langle _i \rangle \rangle$
 ($x=ag, y=pt-th-th$)

(82) zhe-chang yaogun yanchanghui hai-fan-le suoyouren

this-CL Rock'n'Roll concert high-flip-ASP everybody

‘This Rock’n’Roll concert made everybody so high.’

$\langle x \quad y_i \langle _i \rangle \rangle$ ($x=ag, y=pt-th-th$) (causative)

IC

[-I]

DC

CF S/O... S/O

UMP S O

To sum up, the findings of the newly coined resultative compounds provide solid ground for the necessity of Causative Resultative Compounding that explains the source of external causativity.

Chapter 5 Argument Realizations of Chinese Resultative Compounds

It has been demonstrated in previous chapters that the derivational accounts of Chinese resultative compounds has insufficiencies in achieving the multiple argument realizations and semantic interpretations of some resultative compounds while the LFG account (Her, 2007) provides a better solution in this respect. It has also been shown that despite the availability of the LFG account to Chinese resultative compounds, it leaves out the explanation for the causative resultative compounds. With the endeavor to fine-tune the LFG account, a rule of Causative Resultative Compounding has been proposed to capture what has been missing. Given the argument-function mapping mechanisms in LFG, the rules of Resultative Compounding and Causativity Assignment in Resultative Compounding proposed by Her (2007), and the rule of Causative Resultative Compounding provided in this thesis, the overall picture of how the arguments of Chinese resultative compounds are syntactically realized and how their multiple interpretations achieved is thus clear.

5.1 Argument-Function Remapping

The argument realization process of Chinese resultative compounds of all categories is shown in this chapter to see whether the account taken in this thesis

works well. For reference convenience, all the tools necessary for solving the issues

of resultative compounds are repeated below:

(83) a. Resultative Compounding:

$$V_{\text{caus}} \langle x y \rangle + V_{\text{res}} \langle z \rangle \rightarrow$$

$$V_{\text{caus}} V_{\text{res}} \langle \alpha \beta \rangle, \text{ where } \langle \alpha \beta \rangle = \text{(i) } \langle x y-z \rangle$$

$$\text{(ii) } \langle x-z y \rangle$$

b. Intrinsic Morphosyntactic Classification of Argument Roles (IC):

$$\theta, \quad \theta = pt/th$$

[-r]

c. Default Morphosyntactic Classification of Argument Roles (DC):

$$\theta, \quad \theta \neq \theta^{\wedge}$$

[+r]

d. The Unified Mapping Principle (UMP):

Map each argument role, from the most prominent to the least, onto the highest compatible function available.

(*A function is *available* iff it is not linked to a role.)

e. Causativity Assignment in Resultative Compounding:

An unsuppressed role from V_{res} receives [af] iff an unsuppressed role from V_{cause} exists to receive [caus].

f. Causative Resultative Compounding:

$$V_{\text{Acausative}} \langle x, y_i, \dots \rangle + V_{\text{unaccusative}} V_{\text{res}} \langle z_i \rangle \rightarrow$$

$$V_{\text{unaccusative-CAUS}} V_{\text{res}} \langle \alpha \beta \rangle, \text{ where } \langle \alpha \beta \rangle = \langle x, y_i, \langle _i \rangle \rangle$$

$$(x=ag, y=pt-th-th)$$

In the case of unergative resultative compounds, the argument realization process

looks like example (84):

(84) Zhangsan ku-xia-le

(unergative)

Zhangsan cry-blind-ASP

Resultative Compounding: $V_{ku} \langle x \rangle + V_{xia} \langle y \rangle \rightarrow$

$V_{ku} V_{xia} \langle \alpha \rangle$, where $\langle \alpha \rangle = \langle x-y \rangle$

(i) ‘Zhangsan cried and went blind as a result.’

$\langle x-y \rangle$ ($x=ag, y=th$) (non-causative)

IC

DC

CF

S/O...

UMP

S

(ii) ‘Zhangsan cried and went blind as a result.’

$\langle x-y \rangle$ ($x=ag, y=th$) (non-causative)

IC

[-r]

DC

CF

S/O

UMP

S

On the other hand, the argument realization process of unaccusative resultative

compounds looks like example (85):

(85) Zhangsan qi-zha-le

(unaccusative)

Zhangsan angry-explode-ASP

Resultative Compounding: $V_{qi} \langle x \rangle + V_{zha} \langle y \rangle \rightarrow$ $V_{qi} V_{zha} \langle \alpha \rangle$, where $\langle \alpha \rangle = \langle x-y \rangle$

(i) ‘Zhangsan was extremely angry to the point of exploding.’

 $\langle x-y \rangle$ ($x=th, y=th$) (non-causative)

IC [-r]

DC

CF S/O

UMP S

(ii) ‘Zhangsan was extremely angry to the point of exploding.’

 $\langle x-y \rangle$ ($x=th, y=th$) (non-causative)

IC [-r]

DC

CF S/O

UMP S

From the examples above, it is clearly seen that the LFG rules predict that the

arguments of unergative and unaccusative resultative compounds should be

syntactically realized in the subject position. And it is exactly how they are realized.

The LFG generalizations provide correct predictions so far. The situations are more

complicated in the argument realization of transitive resultative compounds. Various

realization possibilities result from how the composite role is formed and suppressed

in the compounds:

(86) Zhangsan ma-fan-le Lisi (transitive)

Zhangsan scold-annoyed-ASP Lisi

Resultative Compounding: $V_{ma} \langle x y \rangle + V_{fan} \langle z \rangle \rightarrow$

$V_{ma} V_{fan} \langle \alpha \beta \rangle$, where $\langle \alpha \beta \rangle =$ (i) $\langle x y-z \rangle$

(ii) $\langle x-z y \rangle$

i. 'Zhangsan scolded Lisi to the extent of making him (Lisi) annoyed.'

$\langle x \quad y-\bar{z} \rangle \quad (x=ag, y=pt/th) \text{ (non-causative)}$

IC [-r]

DC

CF S/O... S/O

UMP S O

$\langle x[caus] \quad y-z[af] \rangle \quad (x=ag, z=pt/th) \text{ (causative)}$

IC [-r]

DC

CF S/O... S/O

UMP S O

ii. 'Zhangsan scolded Lisi and (Zhangsan) got annoyed.'

$\langle x-\bar{z} \quad y \rangle \quad (x=ag, y=pt/th) \text{ (non-causative)}$

IC [-r]

DC

CF S/O... S/O

UMP S O

iii. 'Lisi scolded Zhangsan and was made annoyed (by Zhangsan).'

$\langle \bar{x}-z[af] \quad y[caus] \rangle \quad (z=pt/th, y=pt/th) \text{ (causative)}$

IC [-r] [-r]

DC

CF S/O S/O

UMP O S

All of the interpretations of the transitive resultative compounds could be achieved as long as the arguments are legitimate for the interpretations and are not prevented from the syntactic realization by semantic factors. The LFG account eliminates the insufficiency of the derivational generalizations such as the DOR and FRP, where only certain kinds of predications of the compounds are available and hence lead to limited interpretations.

Finally, the category of causative resultative compounds is to be investigated to see if the LFG account also gives correct predictions in terms of argument realization. Recall that in the previous chapter the Chinese causative resultative compounds have been divided into two subcategories that incorporate internal causativity and external causativity, respectively. The argument-function mapping processes are different for the subcategories and should be discussed separately. For the internal causative resultative compounds, the result of argument realization conforms to one of the realization patterns of the transitive resultative compounds since the subject is an argument of the compounds and the apparent inversion of Subject and Object comes from the suppression variations of the composite roles:

(87) zhe-chang yanjiang ting-lei-le Zhangsan (internal causative)
 this-CL speech listen-tired-ASP Zhangsan

Resultative Compounding: $V_{\text{ting}} \langle x y \rangle + V_{\text{lei}} \langle z \rangle \rightarrow$

$V_{\text{ting}} V_{\text{lei}} \langle \alpha \beta \rangle$, where $\langle \alpha \beta \rangle =$ (i) $\langle x y z \rangle$

(ii) $\langle x-z y \rangle$

- i. ‘*The speech listened to Zhangsan to the extent of making him
(Zhangsan) tired.’

$\langle x \quad y-z \rangle \quad (x=ag, y=pt/th) \text{ (non-causative)}$

IC [-r]

DC

CF S/O... S/O

UMP S O

$\langle x[\text{caus}] \quad y-z[\text{af}] \rangle \quad (x=ag, z=pt/th) \text{ (causative)}$

IC [-r]

DC

CF S/O... S/O

UMP S O

- ii. ‘* The speech listened to Zhangsan and (the speech) got tired.’

$\langle x-z \quad y \rangle \quad (x=ag, y=pt/th) \text{ (non-causative)}$

IC [-r]

DC

CF S/O... S/O

UMP S O

- iii. ‘Zhangsan listened to the speech and was made tired (by the speech).’

$\langle \cancel{x}-z[\text{af}] \quad y[\text{caus}] \rangle \quad (z=pt/th, y=pt/th) \text{ (causative)}$

IC [-r] [-r]

DC

CF S/O S/O

UMP O S

Following the argument-function mapping rules, multiple patterns of argument realizations could be made and multiple interpretations achieved. However, most of the interpretations are ruled out by semantic restrictions, which forbid the argument, *yanjiang*, realized as Subject, to be the Agent of the resultative compound. Therefore, the sentence with the internal causative resultative compound has only one meaning, one that has the Agent realized as Object and the Theme, Subject, as in (87iii).

Another rule not utilized in the previous realization processes has to be in effect now when it comes to the argument realization of external causative resultative compounds; that is, Causative Resultative Compounding. Based on the concept of Romance complex predicates, the extra argument representing the source of causativity in external causative resultative compounds is well accounted for and the process of realization looks as thus:

(88) zhe-kuai guodong ye-si-le Zhangsan (external causative)
 this-CL jello choke-dead-ASP-CAUS Zhangsan

a. Resultative Compounding: $V_{ye} \langle x \rangle + V_{si} \langle y \rangle \rightarrow$

$V_{ye} V_{si} \langle \alpha \rangle$, where $\langle \alpha \rangle = \langle x-y \rangle$ ($x=th, y=th$)

b. Causative Resultative Compounding:

$V_{A_{causative}} \langle x, y_i, \dots \rangle + V_{ye} V_{si} \langle z_i \rangle \rightarrow$

$V_{ye-CAUS} V_{si} \langle \alpha \beta \rangle$, where $\langle \alpha \beta \rangle = \langle x, y_i, \langle _i \rangle \rangle$

($x=ag, y=pt-th-th$)

c. ‘This chunk of jello choked Zhangsan to death.’

$\langle x$	$y_i \langle ___i \rangle$	\rangle	$(x=ag, y=pt-\cancel{th}-\cancel{th})$ (causative)
IC			[-r]
DC			

CF	S/O...		S/O
UMP	S		O

The mission set out in this thesis to explicate the complexities of Chinese resultative compounds in terms of argument realization has been accomplished. Almost all the realization patterns of the compounds can be correctly predicted by the LFG account with the supporting rules given in (83). Moreover, some newly coined resultative compounds also fit into the realization processes generated in the account, which makes the account even stronger in dealing with the issues of Chinese resultative compounds.

5.2 Result as “Extent”

It has been discovered that some of Chinese resultative compounds have their second verb components functioning not like an indicator of Result but like an expression of Extent. Some scholars have reached the conclusion that in some of the Chinese resultative compounds, the second intransitive verbs of the compounds are indeed extents (Chao, 1968; Chiu, 2001; Liu, 2003; Liu, 2006; Zhu, 1982). Liu (2006)

claims that, in cases of causative resultative compounds like *qi-si* (mad-dead, meaning very angry), *ji-si* (worried-dead, meaning very worried) ...etc, *si* does not indicate real death of the argument in question but a state of being miserable. The status of V_{res} being an extent could be much revealed when compared to a sentence with a real extent:

- (89) a. zhe shi qi le ta hen jiu.
 this issue mad ASP he very longtime
 ‘This issue has made him mad for a very long time.’
- b. zhe shi qi-si ta le.
 this issue mad-dead he ASP
 ‘This issue has made him mad to death.’

Hen jiu in (89a) is an extent that describes the time range for which the effect of the cause has lasted. As a parallel construction, *si* in (89b) also demonstrates the characteristic of extent that depicts the degree of madness. The putative Extent of causative resultative compounds in Chinese is comprehensive. Plenty of intransitive verbs can appear in this position such as *si* (die)/ *pa* (face down on the floor)/ *tan* (paralyze)/ *dao* (fall)/ *bao* (explode)/ *feng* (go crazy)/ *fan* (flip over)...etc.

As seemingly convincing as the claim may be, more thorough inspections are needed to verify the putative Extent identity of resultative compounds. Since it is

claimed that the Results of the compounds are used for depicting the degree of the state caused by V1, the inspections are conducted by manipulating the adverb of degree, *hen* (very), with the compounds. Among all the categories of verbs, only some of those that are unaccusative in nature are able to co-occur with *hen* due to the fact that they mostly describe a stative event instead of an action:

(90) a. zhe-ben shu shi Zhangsan hen gandong. (unaccusative)

this-CL book CAU Zhangsan very touched

‘Zhangsan was very touched after reading the book.’

b. Zhangsan hen gandong.

Zhangsan very touched

‘Zhangsan was very touched.’

The function of *hen* here is to indicate that there is a much stronger state of being touched. If *hen* is put in a sentence with another adverb that depicts a different level of degree, ungrammaticality ensues:

(91) a. *zhe-ben shu shi Zhangsan hen chao gandong. (unaccusative)

this-CL book CAU Zhangsan very extremely touched

‘*Zhangsan was very extremely touched after reading the book.’

- b. *Zhangsan hen chao gandong.
 Zhangsan very extremely touched
 ‘*Zhangsan was very extremely touched.’

In the research of most of the scholars who claim that the Result of resultative compounds is an expression of Extent, the Result mainly indicates extremity. Take *qi-si* (mad-dead) for example, it literally means that someone gets mad to the extreme that he could almost die. The situation is rather similar to (91) if the resultative compounds are placed in a sentence with the degree adverb, *hen*:

- (92) a. *zhe-ben shu hen gandong-si-le Zhangsan. (unaccusative)
 this-CL book very touched-dead-ASP Zhangsan
 ‘*Zhangsan was very extremely touched after reading the book.’
- b. *Zhangsan hen gandong-si-le.
 Zhangsan very touched-dead-ASP
 ‘*Zhangsan was very extremely touched.’

The unaccusative verb, *gandong*, is capable of becoming a resultative compound, *gandong-si*, and later being causativized as an external causative resultative compound. It seems sufficient that the Result in the compounds is Extent, as the scholars claim it to be, for the fact that it cannot co-exist with *hen*. However, the answer is not so

certain if the interactions between *hen* and other resultative compounds with “real Result” are taken into consideration.

When the Result of resultative compounds that has a literal meaning occurs with *hen*, the same ungrammaticality shown above also happens:

- (93) a. *zhe-jian shi hen qi-lei-le Zhangsan.
 this-CL issue very mad-tired-ASP Zhangsan
 ‘This issue made Zhangsan so mad that he got tired.’
 b. *Zhangsan hen qi-lei-le.
 Zhangsan mad-tired-ASP
 ‘Zhangsan was so mad that he got tired.’

It is part of the scholars’ claim that the “Extent” in the resultative compounds shows only degree but not its literal sense. However, the Result, *lei*, of *qi-lei* in (93) means that Zhangsan indeed got tired because of the anger he had. Since it is not an expression of Extent, it should have no problem to co-occur with the adverb of degree. But that is not what example (93) tells us. In fact, it is capable of co-occurring with *hen* if the resultative compound is decomposed to its component verbs:

- (94) a. Zhangsan hen qi.
 Zhangsan very mad
 ‘Zhangsan was very angry.’
- b. Zhangsan hen lei.
 Zhangsan very tired
 ‘Zhangsan was very tired.’

How does one explain the inability of V2s to co-occur with adverbs of degree when they denote literal meanings in the sentence and are totally capable of being modified by the adverbs alone? The account of Result being Extent seems to hit a dead end here. However, a solution will be given to explain the inability of resultative compounds to cooccur with adverbs of extent and hypothesize the identity of the second verb in the resultative compounds.

5.3 Dual Status of V2 in Chinese Resultative Compounds

Although in Liu’s (2006) theory the indicator of Result being Extent comes from that it does not denote its literal sense but rather acquires the Extent meaning in a metaphorical aspect, the Result still has its literal meaning implied in the sentence:

- (95) zhe-ge gozuo lei-tan-le Zhangsan
 this-CL job tired-paralyzed-ASP Zhangsan
 ‘This job made Zhangsan so tired that he was (almost) paralyzed.’

The sentence is actually semantically ambiguous. It could mean that Zhangsan was made so tired that he was literally paralyzed or he was to a point of almost being paralyzed. In a situation like this, one cannot say for sure whether the Result, *tan*, in *lei-tan* is Extent or not if the criterion for defining its identity is based on whether it depicts a real occurrence of Result. Of course the intended meaning of the sentence would be apparent when it is put in a context. However, the determining factor for telling what the V2 of a resultative compound is should be built on syntactic ground. If the Result does require an argument and its meaning is predicated on the argument, it should be a predicate instead of an expression of Extent that does not require any argument. How, then, can the exclusivity of the Result to the adverb of degree be explained? It is hypothesized in this thesis that some of the V2s in resultative compounds in fact possess a dual status in identity.

Since V2 normally means the result caused by V1, there is an ongoing process of the action denoted by V1 that accumulates to the point of reaching the result denoted by V2. This underlying relationship between V1 and V2 makes the foundation for the hypothesis of treating V2 as a predicate that is Result in terms of Syntax but Extent in terms of its function. This is the dual status of V2, as claimed in this thesis. It is Result because it assigns an argument on which it is predicated and is Extent, on the other hand, because it entails the extent of accumulation of V1 before

its occurrence. With V2 being functionally Extent, the exclusivity between V2 and the adverb of degree is explained regardless of whether V2 is intended to be used as Result or Extent. However, when it comes to the V2s that have only literal meanings but no function of Extent, as in the case of *qi-lei* (mad-tired) in (93) and (94), the exclusivity of the V2s to the adverb of degree lies in the fact that the resultative compounds are more like action verbs as a whole and cannot be modified by any adverbs of degree:

- (96) a. Zhangsan hen qi. (stative)
 Zhangsan very mad
 ‘Zhangsan was very mad’
- b. Zhangsan hen lei. (stative)
 Zhangsan very tired
 ‘Zhangsan was very tired.’
- c. *Zhangsan hen qi-lei-le. (action)
 Zhangsan very mad-tired-ASP
 ‘Zhangsan was so mad that he got tired.’

In conclusion, some of the V2s possess the dual status while others are strictly Result.

Now that all V2s are predicates that can represent Result, the argument realizations of resultative compounds will not be altered and the mapping theory

previously mentioned remains unharmed. It is so because if V2s were Extents, they would not be able to assign argument structures for they are not predicates. With no argument structures from the V2s to form composite roles with the argument structures from V1s, the rules of Resultative Compounding would be disfigured. Hence, the argument-function mappings of the resultative compounds with Extent V2s would be completely different and unsatisfactory results of argument realization would happen. Take (97) for example, multiple readings of the sentence will be achieved according to the compounding and argument-function mapping rules:

(97) mama ma-si baba le.
 mother scold-dead father ASP
 ‘This issue made Zhangsan extremely mad.’

a. Resultative Compounding: $V_{ma} \langle x y \rangle + V_{si} \langle z \rangle \rightarrow$

$V_{ma} V_{si} \langle \alpha \beta \rangle$, where $\langle \alpha \beta \rangle =$ (i) $\langle x y-z \rangle$

(ii) $\langle x-z y \rangle$ ($x=ag, y=pt/th, z=pt/th$)

i. ‘Mother scolded Father to the extent of almost making him dead.’

$\langle x \quad y-z \rangle$ ($x=ag, y=pt/th$) (non-causative)

IC [-r]

DC

 CF S/O... S/O

UMP S O

$$\langle x[\text{caus}] \quad \cancel{y}-z[\text{af}] \rangle \quad (x=\text{ag}, z=\text{pt/th}) \text{ (causative)}$$

IC [-r]

DC

CF S/O... S/O

UMP S O

ii. ‘Mother scolded Father and almost died.’

$$\langle x-\cancel{z} \quad y \rangle \quad (x=\text{ag}, y=\text{pt/th}) \text{ (non-causative)}$$

IC [-r]

DC

CF S/O... S/O

UMP S O

iii. ‘Father scolded Mother and was made dead (by Mother).’

$$\langle \cancel{x}-z[\text{af}] \quad y[\text{caus}] \rangle \quad (z=\text{pt/th}, y=\text{pt/th}) \text{ (causative)}$$

IC [-r] [-r]

DC

CF S/O S/O

UMP O S

According to the predictions of the LFG account, all these argument realizations of the sentence are eligible. One may find some of the readings hard to retrieve due to pragmatic factors because it is hard to imagine a situation where someone almost dies from the act of scolding, like (97ii). Even if the predicate *si* in the resultative compound does not indicate real death but only a state where one becomes very miserable, it still has the implication of almost being dead in it. And that makes it still a predicate with its literal meaning.

Therefore, if some V2s like *si* in (97) are treated as Extent as the scholars said they should, it will leave out some of the readings of the resultative compounds due to different argument structures caused by the V2s not being predicates:

(98) mama ma-si baba le.

mother scold-dead father ASP

‘This issue made Zhangsan extremely mad.’

a. Resultative Compounding: $V_{ma} \langle x y \rangle + Extent_{si} \rightarrow$

$V_{ma} Extent_{si} \langle a \beta \rangle$, where $\langle a \beta \rangle = \langle x y \rangle$

($x=ag, y=pt/th$)

i. ‘Mother scolded Father very harshly.’

$\langle x y \rangle$ ($x=ag, y=pt/th$) (non-causative)

IC

[-r]

DC

CF

S/O... S/O

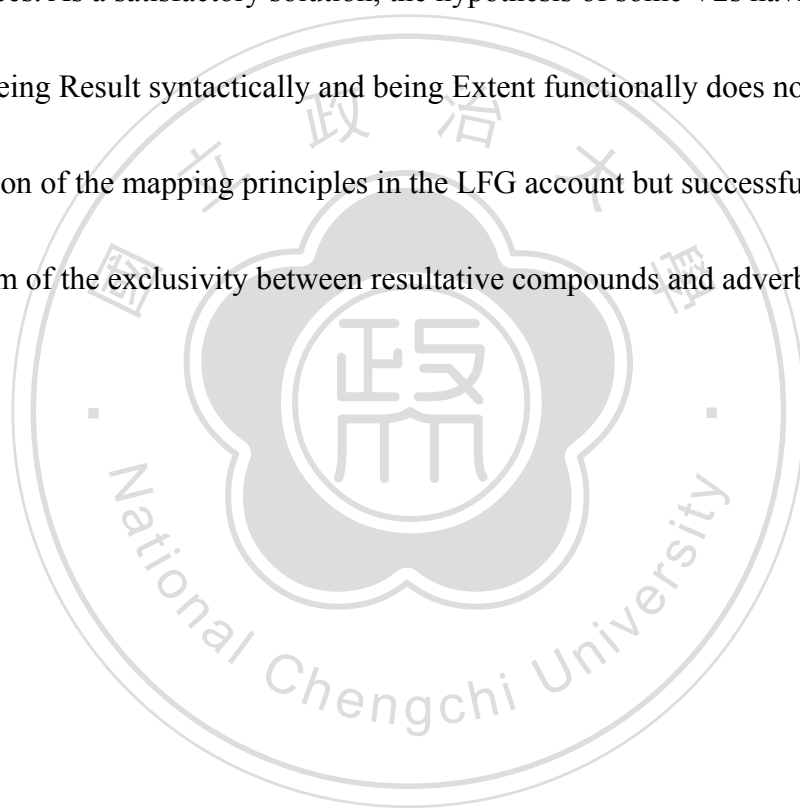
UMP

S O

Only one argument realization pattern of the sentence exists. V2s being Extent means no composite roles for the resultative compounds; hence, no multiple mapping outcomes based on composite role suppression. Moreover, the implication of states of the V2s will be missing for they are no longer seen as predicates but only indicators of Extent. And the sentence in (98) can only have one reading; that is, ‘Mother scolded

Father very harshly.” The miserable state as implied by *si* would not exist if *si* was Extent. However, it is hardly the case when people say sentences like this.

In brief, V2s have to be the predicates of Result in order to form composite roles in resultative compounds. And there is no denying that they are sometimes used as an expression of Extent to demonstrate the extremity of the situations described by the sentences. As a satisfactory solution, the hypothesis of some V2s having a dual status of being Result syntactically and being Extent functionally does not jeopardize the operation of the mapping principles in the LFG account but successfully solves the problem of the exclusivity between resultative compounds and adverbs of degree.



Chapter 6 Conclusion

It has been argued in the present study that resultative compounds in Mandarin Chinese can be a difficult issue when it comes to analyzing the interactions between the arguments from the verb components of the compounds. It is an even more intricate task to pin down the exact argument realizations of the compounds and their corresponding interpretations. Research on the derivational ground has been done in an attempt to solve the issues of argument realization and verb predication of resultative compounds. Unfortunately, it has been shown in this thesis that the accounts given by the derivational researchers have insufficiencies and erroneous outcomes in obtaining the argument realizations and sentence interpretations of Chinese resultative compounds. Moreover, some of the resultative compounds convey causativity which alters the argument realization pattern of the compounds. And the derivational account fails to recognize that there are indeed two types of causativity, internal causativity and external causativity, which are responsible for the alternations of the causative resultative compounds.

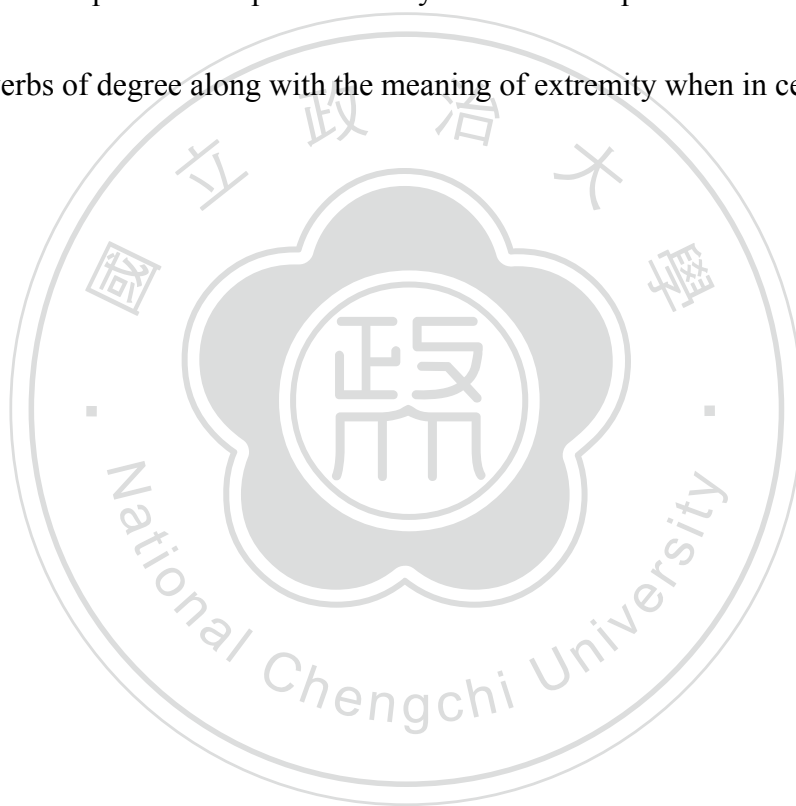
The focus is then shifted to the lexicalist account that also aims to break down the puzzles posed by Chinese resultative compounds. The account inspected is the theory of Her's (2007), which utilizes the Lexical Functional Grammar (LFG) as an

instrument to solve the problem of resultative compounds. It has been proven that the LFG account does a better job in reaching all possible interpretations of the compounds with its mechanisms of argument-function remapping that lead to multiple compound argument realizations. There is only one missing link in the LFG account proposed by Her (2007); i.e. the documentation of the resultative compounds that incorporate external causativity and end up having an extra argument from neither of the verb components of the compounds.

Great effort has been put in this thesis to try to account for how the resultative compounds with external causativity come into play. A rule of Causative Resultative Compounding, based on the concept of Romance complex predicates in LFG, has been provided to fill up the missing link. The result is rather satisfactory for now the LFG account is available to Chinese resultative compounds of all verb categories one could possibly encounter. A thorough demonstration of the argument-function remapping process is later given to check the substantiality of the compounding rules and the mapping mechanisms in the LFG account. Again, the satisfactory results of the demonstration confirm the strengths of the LFG account in dealing with Chinese resultative compounds.

Finally, some scholars claim that the V2s in some of the resultative compounds are to be seen as Extent because they function like the adverbs that describe degree.

The claim would jeopardize the theory in this thesis if it were true, because being Extent, the V2s would not have the ability to assign any argument and would ultimately deform the compounding rules for argument realization. Therefore, as a response to the claim, the V2s have been given a dual status of being Result syntactically and Extent functionally. This way, it eliminates the threat the claim of V2s being Extent poses to the present theory and further explicates the exclusivity of V2s to adverbs of degree along with the meaning of extremity when in certain contexts.



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