

**Complex Stative Construction: Resultative or Descriptive\***  
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1. Introduction

Studies of resultative verb compounds (RVCs) in Mandarin Chinese have received its due attention recently (see Huang 1984, Chang 1989, 1991, Li 1990, Smith 1990, Tang 1992 etc. and references therein). Studies (Tang 1992b, Chang ms) have shown that RVCs are of two types in terms of its semantics: those that imply resultative reading (such as *chi-bao* 'to be full from eating') and those of causative reading (such as *da-po* 'to break by hitting'). In this paper, we will discuss a construction parallel to resultative verbs in syntax, namely, complex stative construction according to Li & Thompson (1981). Complex stative construction, also called resultative complement clauses in Tang (1992), has the following structure:

(1) NP V *de* [<sub>S</sub> (NP) VP]

The examples of (1) are illustrated below:

(2) Ahua ku de yanjing dou zheng-bu-kai.  
Ahua cry DE eyes all open-NEG-open  
'Ahua cried so much that her eyes could not open.'

(3) Faguoren chi hao chi de ji jin fengkuang.  
French eat oystereat DE almostclose crazy  
'French are crazy about eating oysters.'

(4) Zhe ren ying de xiang muban yiyang.  
this person hard DE like board same  
'This person is stiff as a wooden board.'

(5) Weigui de chezhu yao fu gui de xiaren de fajin.  
violate DE car owner needpay costly DE scary DE fine  
'Car owners who violate the rules need to pay a scarily high fine.'

(6) Wo yijing lei de bu xiang shuohua le.  
I already tired DE not want speak LE  
'I am already so tired that I don't want to talk.'

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\* The romanization used in this paper is Pin-Yin. Abbreviations used in the paper are as follows:

COMP: comparative marker

DE: genitive, possessive marker

LE: Aspect

NEG: negation marker

(7) Daitu chi qiang bizhu Liu shi xia de qita  
 suspect take gun force Name when scare DE other

yuangong chang-hua-shi-cuo.  
 staff scared and did not know what to do

'When the suspect forced Liu at the gun point, other staff members were so scared and they did not know what to do.'

Sentences (2) and (3) are considered as having resultative (and causative) reading, while sentences (4) and (5) descriptive reading. Sentences (6) and (7), again, have resultative reading. Tang (1992a:38-42) has discussed the difference between resultative and descriptive complements in terms of their syntax and semantic functions. He pointed out that the main verb of the descriptive complement is limited to actional dynamic verb but the main verb for the resultative complement can be a stative verb or an adjective (ibid. 38) as well as actional dynamic verb. In this paper, we will discuss factors that distinguish resultative/causative and descriptive complements. These factors include types of (main) verbs<sup>1</sup> and their argument structures, syntactic structure of the main verbs and its complements, grammatical functions, and event or entity structure. In the following, we will take up each topic in turn: section 2 discusses the types of main verbs and their argument structures; section 3 distinguishes the syntactic structures of the complement and its relation to the main verb; section 4 discusses the grammatical functions and its relation to event or entity structure. Section 5 sketches the historical development of the (resultative) complement construction and lays out a theoretical framework to encompass the issues raised in the paper. A brief account of the computation linguistics is also implied. Section 6 concludes the paper.'

## 2. Main verbs of the complements and its argument structures

The main verbs in the sentences (2)-(7) above form three categories: action verbs (such as *ku* 'cry' and *chi* 'eat'), adjectives involving the attribution of mental properties (Stowell 1991) (such as *lei* 'be tired'), and adjectives that simply describe (such as *ying* 'hard'). Action verbs can be either a verb with two arguments as *chi* 'eat' or one argument as *ku* 'cry'. Each verb or adjective has an argument structure, composed of thematic roles. The verb *chi* 'eat' has an argument structure of [agent, theme], and the verb *ku* 'cry' has [agent] structure. The verb *chi* 'eat' normally takes a nominal object which would then receive a theme theta role from the verb. If it does not take a nominal object, it can take a complement phrase headed by *de*. Sentence (3) shows that *hao* 'oyster' gets a theme role from the

<sup>1</sup>. We take the position of Huang (1988) in considering that the first verb is the primary predicate.

verb *chi* 'eat' and that *ji jin fengkuang* 'to the point of being crazy' is a complement. Given a revised theta theory (Li 1990) in which a complement clause can receive a theta role, the complement *ji jin fengkuang* 'almost crazy' is assigned a theme role. In the same vein, the complement *ji jin fengkuang* needs to discharge its theta role, and the verb *fengkuang* 'to be crazy' takes a human argument (experiencer, *Faguoren* 'French') and a clause theme argument (*chi hao* 'to eat/eating oysters'). Examine the following:

- (8) Faguoren      chi   hao   hen   fengkuang.  
 French          eat   oystervery   crazy  
 'It is crazy of Frenchmen to eat oysters.'

The complement *ji jin fengkuang* attributes to the French as well as the event of eating oysters. The verb *ku* 'cry' in sentence (2) takes an agent and a clause theme argument *yanjing dou zheng-bu-kai* 'eyes can't be opened.' Sentences (2) and (3) show that each verb takes a clause theme argument as well as a human argument.

Verbs in sentences (4)-(7) are verbs<sup>2</sup> with one argument. The complements after the verbs in sentences (4) and (5) do not refer to an event. Rather, it is a 'descriptive' complement, descriptive in the sense that it denotes a state of affair rather than a dynamic event. The complements in those sentences are different from those in sentences (2) and (3) in the following manner:

a) The descriptive complement but not the 'resultative' complement can be preposed to the main verb to modify it. Compare the following:

- (9) Zhe          ren                  xiang   muban                  yiyang                  (de)   ying.  
 this   person                  like   board                  same                  DE   hard  
 'This person is as stiff as a board.'

- (10) ?Ta      ji                  jin      fengkuang      de      chi      hao.  
          he   almost                  close   crazy                  DE   eat   oyster

The complement *xiang muban yiyang* can be placed before the adjective *ying* 'hard' as modifier, but the complement *ji jin fengkuang* cannot be used descriptively before the verb phrase.

Compare sentence (10) to (11):

<sup>2</sup> We take the position that adjectives are included in the verbal category.

- (11) Ta        ji                    jin    fengkuang    de    chi.  
       he        almost            close crazy        DE    eat  
       'He eats as crazy.'

The sentence (10) is marginal, showing that the complement *ji jin fengkuang* 'almost crazy' cannot modify the verb phrase *chi hao* 'eating oysters' but can modify the mere verb *chi* 'eat'.

b) The descriptive complement can be an adjectival phrase, which forms a complex predicate with the main verb. The complex predicate jointly assigns a theme role to the subject. The resultative complement normally would assign a human argument as well as an event argument, as illustrated earlier in sentence (8).

c) The descriptive complement does not take an event as its complement. Rather, it attributes an enduring property to an individual. For example, *xiang muban yiyang* 'like a board' describes the property of the individual *ta* 'he', but not an action. The enduring property of the individual does not vary from one moment to the next. When it occurs in the second position in a compound verb, it tends to transfer its argument structure to the whole compound. The following sentences illustrate the point.

- (12) \*Ta        mai-gui                    le    fangzi.  
       he        buy-expensive        LE    house

- (13) Fangzi mai-gui                    le.  
       house buy-expensive        LE  
       'The house was bought expensive.'

The last type of verbs involves verbs with one argument as well. The difference between this type and the previous one is that this type takes an event complement and that the complement can be a verb phrase (as in sentences (6), (14)) or a subject-predicate clause (as in sentence (7), (15)) (See Tang 1992a). The following are some of the examples:

- (14) Wo        mang de        yun-tou-zhuan-xiang.  
       I        busy DE        dizzy  
       'I was so busy that I was dizzy.'

- (15) Leng    de        ren                    zhi                    da-duosuo.  
       cold DE        people                continuously tremble  
       'It was so cold that people kept trembling.'

The complements of *yun tou zhuan xiang* 'dizzy' and *ren zhi da duosuo* 'people kept trembling' are the resulting events of being busy and being

cold. The verbs such as *mang* 'be busy' takes a human argument, and the complement of the verb is an event, denoting the result of the state of the subject.

Summarizing this section, we conclude that main verbs of a complex stative construction are of three types: actional verbs with an agent argument, adjectives with the attribution of mental property, and adjectives that denote the status of affairs. Actional verbs and adjectives of mental property can take an event as its complement, while static adjectives take an adjectival phrase as its complement. The former has the resultative reading, and the latter descriptive. In the next section, we will discuss the second factor that would affect the interpretation of the complements.

### 3. Syntactic structure: subordinate and coordinate

We have discussed the status of the main verb in a complex stative construction. In this section, we will discuss the relation the complement phrase has to the main verb. We claim that the complement phrase and the main verb form a coordinate structure if it has descriptive reading and subordinate if it is resultative reading. First, let us examine the following two sentences:

(16) Women de nengyuan liyong bi Riben di de tai duo.  
we DE energy usage COMP Japan low DE too much  
'Our use of the energy is much lower than Japan's.'

(17) Ta e de fahun le.  
he hungry DE dizzy LE  
'He was so hungry that he became dizzy.'

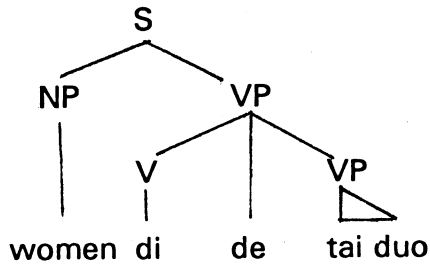
The structures of sentences (16) and (17) are illustrated respectively in the following:

(18) Women de nengyuan liyong bi Riben [di de tai duo].

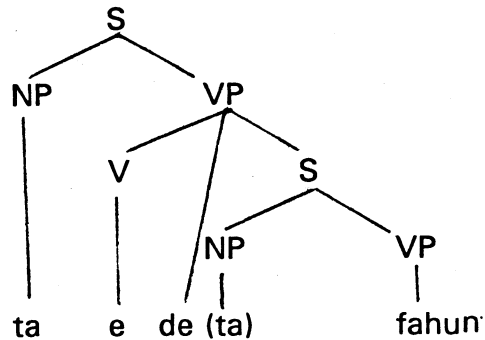
(19) Ta e de [e fahunle]

The tree structures for the two examples are shown below. The complex stative construction *di de tai duo* 'a lot lower' forms an inseparable constituent and *fahui* 'to be dizzy' has a covert subject controlled by the entity in the main clause.

(18')



(19')



We have discussed previously that resultative complements differ from descriptive complements in the choice of verbs and the realization of grammatical functions. The resultative and causative complement clause forms a subordinate structure to the previous verb and the descriptive complement forms a coordinate structure with the previous verb. Examine the following:

(20) Zhe yi lei de lizi duo de bu-  
 this one type DE examples numerous DE can't  
 sheng-mei-ju.  
 be enumerated

'This type of examples is so numerous that they cannot be enumerated.'

(21) Jiche shiqie shijian duo de rang jingyuan  
 motorcycle lost thing numerous DE let police  
 shou-mang-jiao-luan.  
 very busy

'The motorcycle losing incidents are so numerous that police are very busy.'

The complement clause in sentence (20) does not allow an overt noun phrase, but that in sentence (21) does. Given the analysis of the event structure in section 2, resultative complement forms a subordinate structure

with the main verb and descriptive forms a coordinate structure with the main verb. The former is an obligatory complement and the latter the optional adjunct.

In summary, the complex stative constructions have two structures: coordinate and subordinate. The descriptive complement has a coordinate structure and the resultative complement subordinate structure.

#### 4. Grammatical functions

Grammatical function is another factor that helps to decide whether a complement is descriptive or resultative. Even more, it would help to distinguish causative from resultative. Earlier we have discussed that descriptive complement and its main verb form a coordinate structure and that no overt subject can appear in the complement clause, as illustrated in the sentence (22) below.

(22) (descriptive)

Huan	mada weideshi	shi	chezi	pao	de	geng
change	motor for the purpose	cause	car	run	DE	more

kuai.

fast

'Changing motor is for the car to run faster.'

(23) *Huan	mada weideshi	shi	pao	de	chezi
change	motor for the purpose	cause	run	DE	car

geng kuai.

more fast

The subject of a resultative complement can be overtly marked or it can be controlled by the verb in the primary predicate. The distinction between causative and resultative reading depends on whether the subjects in the main clause and complement clause are the same. If the subjects are the same (in a controlled relation), then the complement has a resultative reading, if the subjects are not the same, then the reading is causative. Examples are shown in the sentences (24), (25).

(24) (resultative)

Xiaoli; xiukui	de	e;	man	lian	tong	hong.
Xiaoli shame	DE		full	face	overall	red

'Xiaoli was so ashamed that his/her whole face became red.'

- (25) e<sub>i</sub>      Xiukui      de      Xiaoli; man    lian    tong      hong.  
               shame      DE      Xiaoli full    face    overall      red  
 'Xiaolin was so ashamed that s/he became red in the whole face.'

Compare the following sentence (26) to sentence (24):

- (26) (causative)  
 e<sub>i</sub>      ba      huichang;      buzhi      de      e<sub>j</sub>      daiyou  
           BA      meeting site    decorate      DE                    having  
  
           shandi      secai.  
           mountain      color

'The meeting site was decorated in such a way that it has aboriginal color.'

- (27) Buzhi      de      huichang      daiyou      shandi      secai.  
       decorate      DE      meeting site    having      mountain      color  
 'Decorated in such a way that the meeting site has aboriginal color.'

The subjects in the main verb and in the complement clause are different. The complement in sentence (26) is causative.

Summarizing what we have discussed so far, the verb and the complement form either a subordinate or a coordinate structure. If it is a subordinate structure, the complement clause can have an identical or a different subject from the main verb. If subjects are identical, the complement has resultative interpretation; if subjects are different, the complement has causative interpretation. If it is a coordinate structure, the main verb and the complement form a complex predicate, which assigns one and only one subject to it, and the complement is a descriptive complement.

## 5. Historical development and Theoretical implication

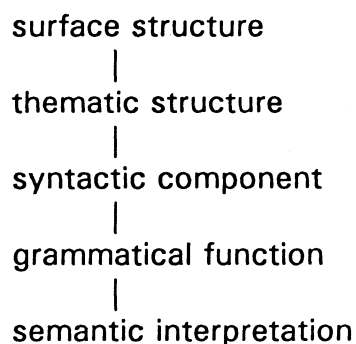
We have discussed factors that jointly interpret the semantics of complements. We can see that not one factor would be enough to determine the semantics of the complement. The semantics is determined jointly from different modules in the grammar. The interpretation of complex construction (and compounds) has to resort to grammatical function, syntactic structure, and thematic structures of verbs. The main verb points to the possible complements and does not determine the semantics of the complement. The syntactic structure may be able to



decide the semantics, but main verbs and its argument structure should be ready for process before the structure is determined. At last, the grammatical functions in the main verb and the complement clause further distinguish the semantics. In this section we will briefly discuss the historical development of resultative complements and lay out a theoretical framework for verbal complements.

The development of resultative complements started with the search for a semantic diversity, the need to describe the result of an action (Wang 1957). Originally, the main verb was an action verb and the resultative complement was an adjective. Later on with the emergency of similar patterns, such as potential forms, the picture of resultative complement or resultative compounds became complicated. The main verb is not limited to the action verb, neither is the complement limited to an adjective. Consequently, the semantics is expanded and variation appears. In order to encompass the historical development and synchronic language variation, Hsieh (1989) extends the Lexical Diffusion Theory (Wang 1969), originally formulated to account for the irregular sound change, to syntactic analysis. The interaction theory laid out in Hsieh 1989 pointed out that grammatical forces in each component of the grammar can be competing and interacting with each other. In our present analysis, forces in different modules, such as grammatical function (identical or different subjects), syntactic structure (subordinate or coordinate) and the types of verbs (action, adjective of mental property, and adjectives of enduring property), are interacting to determine the meaning of the complement, Tai (1989) also explored to explain the variation in language in terms of structural and functional approach. Her (1991) discussed the interaction of syntactic changes of V-O compounds.

The implication of the interaction theory and the phenomena in complex stative construction to the computation linguistics is that different modules should be built up and the interacting forces delineated. A tentative proposal for analyzing complex stative construction should look like the following:



A surface structure will be decomposed into different modules, and the forces in each module will be competing or interacting with each other, yielding the following:

	theme (action: +)	grammatical function (same subject: +)	structure (subordinate: +)	event
resultative	+	+	+	+
causative	+/-	-	+	+
descriptive	-	n/a	-	-

## 6. Conclusion

In conclusion we have shown that the semantic interpretation of the complex stative construction is determined jointly by the grammatical functions, syntactic structures, and thematic structures of the main verb. The result of the research corresponds to the study in resultative compounds, in which syntax, semantics, cognitive, and thematic structures have to be taken into account. The interaction theory provides a descriptive model to try to understand the complex stative construction. The current trend of syntactic analysis combining the formal and functional approach has proven to be valid and necessary for understanding complex structures.

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