

# A Transformationalist Approach to the Rise of RVCs in Chinese\*

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## ABSTRACT

This work argues for a specific analysis for the rise of the resultative verbal compounds in Chinese, with a focus on the decline of coordination of verbal elements in the history of Chinese. Though the RVCs in Chinese have attracted much attention in the researchers of Chinese syntax, it is shown that earlier proposals may not have provided satisfactory explanations for the decline of free coordination of verbal elements in Ancient Chinese and its correlation with the rise of the RVCs. Mei's (2002) insightful hypothesis is adopted, according to which the phrase structure of Chinese has undergone a major change from dominantly coordinating to dominantly subordinating. A formal account is proposed, and it is argued that the free coordination of verbal elements in Ancient Chinese was in fact a case of (multiple) adjunctions of VP to the main predicate of the sentence. This account enjoys a number of advantages, as it provides a basis for capturing the right-headedness of verbal complexes in Ancient Chinese, and makes possible a unified structural analysis for the coordination structures and modification structures in Ancient Chinese. This work further suggests that the decline of free coordination of verbal elements in the history of Chinese resulted from the pressure for one predicate to host one and only one case of event quantification. This pressure suppressed VP adjunction as a legitimate means for structure building and eventually led to the RVCs of the present form.

**Key Words:** coordination, adjunction, event structure, historical syntax of Chinese

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\* Parts of the material reported in this work were presented at the 11th annual meeting of the International Association of Chinese Linguistics (Nagoya, Japan, 2002) and Kobe Area Circle of Linguistics (Kobe, Japan, 2003). I am grateful to the audiences for the comments

## 1. Introduction

This work focuses on the rise of the resultative verbal compounds (RVCs) in Chinese. The RVCs have been subject to intensive discussions both in the synchronic and diachronic aspects. Owing to such pioneering works as T. Mei (1991), much has been known about the emergence of the resultative constructions in the history of Chinese. The current understanding on the RVCs, however, has not really reached a satisfactory state, as some core questions still remain to be answered, in particular those related to the formal properties of the diachronic changes that brought about the RVCs in the history of Chinese. For instance, it has long been known that Ancient Chinese permitted coordination of agentive verbal elements, such as (1) below, which Modern Chinese (including Mandarin and other Chinese dialects) does not permit:<sup>1</sup>

(1) Xiangwang dong ji      po      zhi.  
Xiangwang east strike break it  
項王東擊破之  
'Xiangwang moved eastward, stroke and broke it.'  
(*Biography of Xiang Yu, Shiji* 《史記，項羽本記》)

In literature, such phenomena in Ancient Chinese and lack of them in Modern Chinese have not received real satisfactory accounts. Yet it appears that the decline of coordination of agentive verbal elements in the history of Chinese has a direct bearing on the rise of the RVCs, as Wang (1958) has suggested. Thus the failure in accounting for the productivity of the coordinated verbal complexes in Ancient Chinese, and the impermissibility of them in Modern Chinese, leaves a gap in the understanding of the rise of the RVCs in the history of Chinese.

In this work I concentrate on the questions of the coordinated verbal complexes and their correlation with the rise of the RVCs in Modern Chinese.

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that I received, in particular those from Joe Emonds, Jim Huang, Luther Liu, Taisuke Nishigauchi, Li Shen, Yukinori Takubo, and Dylan Tsai. Special thanks go to Kuang Mei, from whose work I got much inspiration for the research reported in this article and elsewhere. I am of course responsible for any potential errors that remain. This work is partially supported by National Science Council, NSC 92-2411-H-007-034.

1. In this work, the terms "Ancient Chinese," "Medieval Chinese," and "Modern Chinese" are not meant to be technical; they are simply labels for the periods of time in which the observed constructions were actively used. No essential points in this work hinge on the uses of these terms.

Firstly I will summarize the relevant phenomena and review some recent proposals. Then I suggest that a hypothesis that Mei (2002) proposes, namely, that Chinese has been undergoing a historical change in syntactic structure from *coordination* to *subordination*, provides an insightful ground to look at the questions. After that I sketch a set of syntactic analyses for the relevant phenomena, arguing that the historical change that Mei (2002) characterizes can be formally represented by means of the light verb syntax developed in Huang (1997) and Lin (2001). A central claim in this work is that the decline of coordination of agentive verbal elements in the history of Chinese, and the rise of the RVCs, resulted from the failure for VPs to left-adjoin to a predicate. Coordination of verbal elements in Ancient Chinese actually involved (multiple) adjunctions of VPs to the main VP in a predicate. Due to the pressure that different instances of event quantification be unified under one individual case of event quantification, the VP adjuncts were “absorbed” into the main body of the predicate. Restructuring of phrase structure then took place, giving rise to the RVCs of the form seen in Modern Chinese

## 2. Phenomena and earlier accounts

### 2.1 Delexicalization and coordination in Ancient Chinese

In Wang (1958) and T. Mei (1991) it is pointed out that, in Ancient Chinese, there were verbal complexes that look similar to RVCs in Modern Chinese, which nonetheless involved coordination of agentive/causative verbs. Below are some examples (Vt: transitive verb; Vi: intransitive verb; A: adjective):

(2)  $X1 \cdot X2$ , where  $X = Vt$ ,  $X2 = Vi$  or  $A$

a.  $Vt \cdot Vi$ :

i. **she-shang** Queke, liu xie zhi lu.  
shoot-wound Queke, flow blood to shoe  
射傷卻克，流血至履

‘... shot and made Queke wounded, and [Queke] bled to the shoes.’

(*Biography of Qi-taigong, Shiji* 《史記，齊太公世家》)

ii. Han-wang ji, **tui-zhui** Xiaohui Luyuan che-xia.

Han-wang anxious push-fall Xiaohui Luyuan chariot-down  
漢王急，**推墮**孝惠魯元車下

(*Biography of Xiang Yu, Shiji* 《史記，項羽本記》)

‘Han-wang became anxious, hence he pushed Xiaohui and made him fell down the chariot of Luyuan’s.’

b. *Vt*-A:

i. ji Zhongshu dui ce, **tui-ming** Kong-shi,  
as Zhongshu present policy push-illuminate Confucianism,  
yi-chu bai-jia.  
supress-degrade hundred-discipline  
及仲舒對策，**推明**孔氏，抑黜百家

(*Biography of Dong Zhongshu* 《漢書，董仲舒傳》)

'As Zhongshu presented his policy, [he] pushed for Confucianism, made it illuminated, and argued against all other scholarly disciplines.'

ii. Han-shi **jian-qing** tian-zu.  
Han-family reduce-light farming-tax  
漢氏減輕田租

'The court of Han reduced the tax for farming.'

(*Biography of Wang Mang* 《漢書，王莽傳》)

The scheme  $X_1 - X_2$ , where  $X_1 = Vt$ ,  $X_2 = Vi$  or  $A$ , is a common form for the RVCs in Modern Chinese, in which  $X_1$  denotes the causing action, and  $X_2$  the resultative state, of a causative event. However, as T. Mei (1991) points out, verbal complexes like *she-shang* 'shoot-wound' and *jian-qing* 'reduce-light' in the examples above cannot be RVCs, since the resultative construction in Chinese emerged in a relatively late stage of the historical development. What really happened was that  $X_2$  underwent causativization, one of the productive operations of *delexicalization* in Ancient Chinese.

The term delexicalization is meant to refer to the phenomena of causativization, denominalization, and deadjectivization in Ancient Chinese. These phenomena have received detailed explications in a number of works, such as Wang (1958), Tan (1981), and many others. Several major categories can be discerned, including causativization of verbs, adjectives, and nouns (known as *shi-dong shi* 使動式), intention-agentivization of adjectives and nouns (known as *yi-dong shi* 意動式), and other types of denominalization. Below are some examples:

(3) *Causativization of V, N, A*

a. gu yuan-ren bu fu, ze xiu wen-de yi **lai** zhi.  
therefore far-people not obedient then improve virtue for come them  
故遠人不服，則修文德以來之

'... therefore, if the people in other states are not obedient, [one] should improve morality so as to make them come.'

(*Jishi, Analect* 《論語，季氏》)

b. Ranyou ue: “Ji shu yi, you he yi jia yan?”  
 Ranyou say since moderate already more what with add Q  
 Zi ue: “**Fu** zhi.”  
 master say prosperous them  
 冉有曰：「既庶矣，又何以加焉？」  
 子曰：「富之。」  
 ‘Ranyou asked: “[The people] are already leading a moderate life. What more can be given to them?”  
 Confucius said: “Make them prosperous.”’  
*(Zhiliu, Analect 《論語，子路》)*

c. Qi Huangong he zhu-hou er **guo** yi-xing.  
 Qi Huangong ally feudal-ruler and nation different-name  
 齊桓公合諸侯而國異姓  
 ‘Qi Huangong allied the feudal rulers and made people of different names into independent states.’  
*(Histroy of Jin, Shiji 《史記，晉世家》)*

(4) Intention-agentivization of A and N

a. xin **bei** qing-xiang, zhi **xiao** wan-cheng,  
 heart humiliated official-minister, ambition small emperor  
 ji shou zhi zheng, hun-luan bu-zhi  
 once give him governance dark-chaotic not-ruled  
 ‘[Those people] despise the officials and ministers, and consider the emperor humiliated; but once they are granted the power to govern, they only make things chaotic and cannot maintain an order.’  
 心卑卿相，志小萬乘，既授之政，昏亂不治  
*(An essay on salt and iron 《鹽鐵論》)*

b. Gu ren bu du **qin** qi qin, bu du zi qi zi.  
 so people not only parent their parent not only chile their chile  
 故人不獨親其親，不獨子其子  
 ‘So the people do not only treat their parents the way they should, not only treat their children the way they should, [but also treat others’ parents and children the same way.]’  
*(Liyun, Liji 《禮記，禮運》)*

(5) *N used as instrumental verb, location verb, etc.*

- a. Zuoyou yu **ren** Xiangru.  
guard want sword Xiangru  
左右欲刃相如  
'The guards tried to kill Xiangru with swords.'  
(*Biographies of Lian Po, Lin Xiangru, Shiji* 《史記，廉頗藺相如列傳》)
- b. Caozi **shou** jian er cong zhi.  
Caozi hand sword and follow him  
曹子手劍而從之  
'Caozi held the sword in hand and followed him.'  
(*13th year, Zhuanggong, Zuozhuan* 《左傳，莊公十三年》)
- c. Qin shi sui **dong**.  
Qin troop therefore east  
秦師遂東  
'The troop of Qin therefore moved eastward.'  
(*32nd year, Xigong, Zuozhuan* 《左傳，僖公三十二年》)
- d. Jin **jun** Hanling, Qin **jun** Fan-nan.  
Jin troop Hanling Qin troop Fan-south  
晉軍函陵，秦軍氾南  
'Jin deployed the troop in Hanling, and Qin deployed the troop at the south of Fan river'  
(*30nd year, Xigong, Zuozhuan* 《左傳，僖公三十年》)

Wang (1958) explicitly points out that the second verbal element in expressions such as *she-shang* 'shoot-wound' and *jian-qing* 'reduce-light' in (2) are causativized, on a par with the causativized V, A, and N in (3a-c). Thus, even though these expressions look like RVCs of Modern Chinese, they were not RVCs. They had very different semantic and syntactic properties, yielded by the productive operations of delexicalization in Ancient Chinese.

However, it should be noticed that productive delexicalization is just one of the conditions that made expressions such as *she-shang* 'shoot-wound' and *jian-qing* 'reduce-light' possible in Ancient Chinese. An equally important condition for the formation of these expressions was the ability of the grammar of Ancient Chinese to form *coordinated* verbal complexes. In examples such as *she-shang* 'shoot-wound' and *jian-qing* 'reduce-light', the first and the second verbal elements are coordinated. There is evidence that coordination of verbal elements was an independent, productive syntactic operation in Ancient Chinese. In the following examples, two or even more verbal elements are coordinated together:

(6) *Coordination of two verbal elements*

a. Wei **qiu-sha**      Huaijun.

Wei imprison-kill Huaijun

魏囚殺懷君

‘Wei imprisoned and killed Huaijun.’

(*History of the Wei Kangshu family, Shiji* 《史記，魏康叔世家》)

b. Qi fu    er    yu    **shi-dai**      zhi, kuang    ta-ren    hu?

his father and want assassinate-replace him less-than other-people Q  
其父而欲弑代之，況他人乎？

‘[He] even tried to assassinate and replace his father, less than other people.’

(*History of the state of Jin, Shiji* 《史記，晉世家》)

(7) *Coordination of three verbal elements*

a. Qi Xianggong shi    Pengsheng **zui-la-sha**      Lu Huangong.

Qi Xianggong make Pengsheng drunk-pull-kill Lu Huangong  
齊襄公使彭生醉拉殺魯桓公

‘Qi Xianggong made Pengsheng drunk, had him pull and kill Lu Huangong.’

(*History of the state of Cheng, Shiji* 《史記，鄭世家》)

b. Xiangwang **dong-ji-po**      zhi, zou Pengyue.

Xiangwang east-strike-break it    flee Pengyue  
項王東擊破之，走彭越

‘Xiangwang moved eastward, stroke and broke [Pengyue’s troop], and then made Pengyue fled.’

(*Biography of Xiang Yu, Shiji* 《史記，項羽本記》)

c. Hu shen xin    zhi, gui    er    **xi-po-zou**      Dong Hu.

Hu much believe him return and assault-break-flee Dong Hu  
胡甚信之，歸而襲破走東胡

‘Hu believed in him so much, and, on the way back, [Hu] assaulted Dong Hu, destroyed its troop and made it flee.’

(*History of Xiongnu, Shiji* 《史記，匈奴列傳》)

It is important to notice that such free coordination of verbal elements has become extinct in Modern Chinese, a point that we will return to later. In summary, the formation of such expressions as *she-shang* ‘shoot-wound’ and *jian-qing* ‘reduce-light’ in Ancient Chinese involved two major factors, namely, delexicalization of the second verbal element and coordination of verbal elements. It is therefore a natural inference that the rise of RVCs in the history of Chinese

has a direct bearing on some changes in these two factors.

## 2.2 Earlier proposals

There have been quite a number of proposals that target the synchronic and diachronic properties of the RVCs in Chinese.<sup>2</sup> Restricted by the scope, it is virtually impossible to go through all the different theories and provide a thorough discussion on each of the analyses. In what follows I will just single out two proposals, T. Mei (1991) and Wu (2001), and focus on the question related to the origin of the RVCs.

Wang (1958) suggests that the rise of RVCs was a direct consequence of the extinction of delexicalization in the grammar of Chinese. T. Mei (1991) further elaborates on this hypothesis and proposes that the decline of *qing-zhuo bie yi* (lit. 'voiceless-voiced distinguishes meaning', 清濁別義) caused V2 in the verbal complex V1-V2 to become neutralized in transitivity properties. In Ancient Chinese, a verb could assume either transitive or intransitive use depending on the voicing quality of its onset consonant. If the onset consonant is voiced, the verb is intransitive; if the onset consonant is voiceless, the verb is transitive. Such morphological marking determined the transitivity properties of the verbs in Ancient Chinese (from the pre-Qing periods down to the Six Dynasties) and is known as *qing-zhuo bie yi*. In the case of *she-shang* 'shoot-wound' and *jian-qing* 'reduce-light', for instance, the second verbal elements, *shang* 'wound' and *qing* 'light', should have had voiceless onset consonants and assumed transitive/causative use. Yet the decline of *qing-zhuo bie yi* in the grammar of Chinese (starting at about Late Ancient Chinese) brought the contrast between the transitive and intransitive uses of the verbs into *neutralization*, and as a result the transitivity property of the verbal complex was dissociated from that of V2. According to T. Mei (1991), this is the origin of the RVCs in Modern Chinese, and, furthermore, such neutralization results in the ergative-like behaviors of the RVCs in Modern Chinese, as in the following examples (also see Huang 1987):

(8) a. Da mao ya-si xiao mao le.  
 big cat press-dead small car PRT  
 大貓壓死小貓了  
 'The big cat press the small cat to death.'

2. See, among many others, Ota (1958), Wang (1958), Li and Thompson (1976), T. Mei (1991), Gu (1992), Zou (1994), Li (1990), Cheng and Huang (1994), Cheng (1997), Wu (2001) for discussions on various aspects of the RVCs and the related causative/resultative constructions in Chinese.

b. Xiao mao ya-si        le.  
 small cat press-dead PRT  
 小貓壓死了  
 'The small cat [was] pressed to death.'

T. Mei (1991: 131) sums up his analysis with the following slogan: "*Out goes the voicing distinction, in comes the resultative construction*" (「清濁別義告退，而動補結構方滋」) (English translation adopted from Huang 1995).

T. Mei's (1991) analysis of the origin of the resultative construction in Chinese has shed much light upon the related questions. However, as an analysis meant to be explanatory, a key link is still missing. That is, T. Mei's (1991) proposal does not provide an explanation as to why free coordination of verbal elements becomes *impossible* in Modern Chinese. We have seen in the previous subsection that the formation of expressions such as *she-shang* 'shoot-wound' and *jian-qing* 'reduce-light' in Ancient Chinese involved two crucial factors, namely the delexicalization of V2 and the coordination of V1 and V2. T. Mei's (1991) proposal on the neutralization of V2 only covers one of the factors, that is, the extinction of delexicalization, and the other factor, i.e. the coordination of V1 and V2, remains unaccounted for. If the rise of the RVCs in Chinese was based only on the de-transitivization of V2, it would be predicted that free coordination of agentive verbal elements is still viable in Modern Chinese, which turns out to be an incorrect prediction. See the following examples:<sup>3</sup>

(9) a. Zhangsan da-si        Lisi.  
 Zhangsan beat-dead Lisi  
 張三打死李四  
 'Zhangsan beat Lisi to death'  
 b. \*Zhangsan da-sha        Lisi.  
 Zhangsan beat-kill Lisi  
 \*張三打殺李四  
 'Zhangsan beat Lisi and killed him'

3. There are some expressions in Modern Chinese that seem to be counterexamples to this statement, including *ge-sha* 'kill' (格殺), *mou-sha* 'murder' (謀殺), *zhan-sha* 'chop and kill' (斬殺), *cuo-sha* 'kill [an innocent person]' (錯殺), *an-sha* 'assassin' (暗殺), and so on. But some considerations prevent us from taking them as real counterexamples to the statement that coordination of agentive verbal elements is no longer productive. For one thing, these expressions are more or less idiomatic, and hence must be learned individually by the speakers of Chinese. For another, it is a question whether these expressions can be analyzed in terms of coordination. I will leave the relevant questions open.

(10) a. Da mao ya-si xiao mao.  
 big cat press-dead small cat  
 大貓壓死小貓  
 'The big cat pressed the small cat to death.'

b. \*Da mao ya-sha xiao mao.  
 big cat press-kill small cat  
 \*大貓壓殺小貓  
 'The big cat pressed the small cat and killed it.'

Thus, logically speaking, T. Mei (1991) has not provided a complete explanation for the rise of the RVCs in Chinese. What is explained is just the emergence of a "new possibility" (that is, the transitivity properties of the V1-V2 complex come to have no bearing on the transitivity properties of V2); the "old possibility," namely, those cases with coordination of verbal elements, receives no account (see Huang 1995).

Notice that the decline of *qing-zhuo bie yi* has no place in the explanation of the extinction of free coordination of agentive verbal elements. This is so because coordination of agentive verbal elements may not have involved delexicalized elements. Consider the following example, repeated from (7a):

(11) Qi Xianggong shi Pengsheng **zui-la-sha** Lu Huangong.  
 Qi Xianggong make Pengsheng drunk-pull-kill Lu Huangong  
 齊襄公使彭生醉拉殺魯桓公  
 'Qi Xianggong made Pengsheng drunk, had him pull and kill Lu Huangong.'  
*(History of the state of Cheng, Shiji 《史記，鄭世家》)*

In (11), none of the coordinated verbs, *zui* '[get] drunk', *la* 'pull', and *sha* 'kill' are delexicalized. What is more, these verbs still retain the same meanings and uses in Modern Chinese. Just like what we saw earlier, coordination of these verbs in Modern Chinese only yields an ungrammatical sentence. See the following example:

(12) a. \*Zhangsan zui-la-sha Lisi.  
 Zhangsan drunk-pull-kill Lisi  
 \*張三醉拉殺李四  
 '(Intended) Zhangsan got drunk, pulled Lisi and killed him.'

b. \*Zhangsan tao-zhuang-hai Lisi.  
 Zhangsan escape-hit-harm Lisi  
 \*張三逃撞害李四

‘(Intended) Zhangsan escaped, hit Lisi [with a car] and set him in \*\* trouble.’

The failure in taking into consideration the productivity of free coordination of verbal elements in Ancient Chinese and its extinction in Modern Chinese is also seen in a recent proposal on the origin of the RVCs in Chinese, that is, Wu (2001). Wu’s (2001) proposal can be summarized as follows. Wu (2001) observes that there was a tendency in Medieval Chinese that the sequence V-Obj-*liaoj* got transformed into V-*liaoj*-Obj, with *liaoj*, a predicate denoting completion of an action, moving forward to be adjacent to the verb. By analogy, the pivotal-resultative construction V1-Obj-V2 (known as *jian-yu shi* 兼語式 or *ge-kai shi* 隔開式; see section 3.3 for a brief discussion) got transformed into V1-V2-Obj, on a par with the case of *liaoj*. In the beginning, V2 was a predicate of Obj. However, the telicity function of V2 (that is, the function of providing a “telic bound” to the event denoted) had come to be more and more salient, and eventually V2 became a modifier of V1, predicated of the complex V1-Obj as a whole. At this stage, V2 was recast as an aspectual marker, compounded with V1 in the lexicon. Thus, Wu (2001) concludes, the historical change from V1-Obj-V2 to V1-V2-Obj was simply a case of linear reordering. No syntactic movement was involved.<sup>4</sup>

It is clear that Wu’s (2001) characterization of the origin of the RVCs in Chinese at best captures half of the story only. Those classical insights made by Wang (1958) and T. Mei (1991) on delexicalization, *qing-zhuo bie yi*, and so on, gain no positions in Wu’s (2001) proposal. The sequence V1-Obj-V2, according to T. Mei (1991), was an intermediate stage from Ancient Chinese toward the RVCs in Modern Chinese (also see Feng 2002). An important thing to notice is that, arguably, the sequence V1-Obj-V2 in Medieval Chinese had already come to be *subordinating* in structure. We will return to the relevant points later. Wu’s (2001) proposal skips the entire set of questions about the coordination of agentive verbal elements in Ancient Chinese, and therefore a major portion of the historical change that led to the rise of the RVCs in Chinese is left out from the analyses.

Such missing may not be simply a matter of triviality. Just like T. Mei’s (1991) proposal, Wu’s (2001) proposal only accounts for the emergence of a new possibility at best; the question why the old possibility ceased to exist receives no

4. Wu (2001) further argues that, in later developments, V2 underwent a series of reanalysis that first turned it into Asp<sup>0</sup>, and then into a pure aspectual suffix compounded to the main verb with features to be checked with Asp<sup>0</sup>. These proposals do not concern us here.

explanation. If there is a logical relationship between the emergence of the new possibility and the decline of the old possibility, Wu's (2001) (as well as T. Mei's (1991)) proposal would turn out to be fundamentally deficient.

One argument, for example, that can be constructed against Wu's (2001) analysis of the RVCs is the following. According to Wu (2001), in a RVC of the form V1-V2-Obj, V2 is merged with V1 in the lexicon and functions as an aspectual marker on a par with the post-verbal perfective aspect-*le* (originated from *lia* in Medieval Chinese). Wu (2001) specifically objects to the idea that such an RVC is derived in syntax via head incorporation, as proposed in works like Zou (1994). A crucial piece of evidence that Wu (2001) elicits is that V2 may not enter into a selectional relationship with Obj. See the following examples:

(13) a. Zhangsan qi-huai-le      motuoche.  
     Zhangsan ride-broken-PERF motorcycle  
     張三騎壞了摩托車  
     ‘Zhangsan rode the motorcycle to an extent that the motorcycle was broken.’

b.  $\Rightarrow$  (A) Zhangsan qi      motuoche.      &  
     Zhangsan ride motorcycle  
     張三騎摩托車  
     ‘Zhangsan rode the motorcycle.’

    (B) Motuoche      huai      le.  
     motorcycle broken small capital  
     摩托車壞了  
     ‘The motorcycle was broken [as a result].’

(14) a. Zhangsan mai-dao-le      piao.  
     Zhangsan buy-reach-Perf ticket  
     張三買到了票  
     ‘Zhangsan bought [and got] the ticket’

b.  $\Rightarrow$  (A) Zhangsan mai piao.      &  
     Zhangsan buy ticket  
     張三買票  
     ‘Zhangsan bought the ticket.’

    (B) \*Piao      dao      le.  
     ticket reach small capital  
     \*票到了  
     ‘\*The ticket reached [as a result]’

In some cases, the structure V1-V2-Obj can be understood as denoting the composite property “V1-Obj & Obj-V2,” as in (13a-b). In some others, however, such decomposition simply leads to ungrammatical sentences, as in (14a-b). ((14a-b) involve what Chao (1968) calls the “phase complement,” here the verbal element *dao* ‘(lit.) reach’, which denotes an abstract meaning of obtaining or acquisition. Wu (2001) considers the phase complements on a par with V2 in the regular kinds of RVCs.) Observing examples like (14a-b), Wu (2001) concludes that a unified syntactic treatment of the RVCs based on head incorporation is not viable, and that V2 must have been merged with V1 in the lexicon and serves an aspectual function, namely, providing a “telic bound.”

Wu’s (2001) analysis of the RVCs depends on the following presuppositions. (A) The grammar of Chinese has a mechanism that freely merges two verbs together, forming a complex V1-V2, where V2 provides a “telic bound” to the whole predicate. (B) V1 enters into some selectional relationship with the subject argument of the verbal complex, but V2 does not have to be in any selectional relationship with the object argument. Now, it appears that these two presuppositions would wrongly permit ungrammatical examples where two agentive verbal elements are coordinated, such as the following:

(15) a. Da mao ya-le xiao mao.  
           big cat press-PERF small cat  
           大貓壓了小貓  
           ‘The big cat pressed the small cat.’

b. Da mao sha-le xiao mao.  
           big cat press-PERF small cat  
           大貓殺了小貓  
           ‘The big cat killed the small cat.’

c. \*Da mao ya-sha-le xiao mao.  
       \*big cat press-kill-PERF small cat  
       \*大貓壓殺了小貓  
       \*‘The big cat pressed the small cat and killed it.’

According Wu’s (2001) presupposition (A), the grammar of Chinese should be able to merge the verbs *ya* ‘press’ and *sha* ‘kill’ together, forming a V1-V2 complex. According to presupposition (B), V2 does not have to enter into any selectional relationship with Obj, a condition too loose to exclude an agentive verb like *sha* ‘kill’ to be merged to *ya* ‘press’. If we consider the action *sha* ‘kill’ a caused result of the action *ya* ‘press’, the verbal complexes \**ya-sha* ‘press-kill’ would be no different from canonical RVCs such as *qi-huai* ‘ride-broken’ and

*mai-dao* ‘buy-reach’ in (13–14).<sup>5</sup> Nonetheless, *ya-sha* ‘press-kill’ and other verbal complexes involving coordination of agentive verbal elements are not RVCs; they are not even grammatical expressions in Modern Chinese. Thus it is clear that the failure in accounting for the decline of the “old possibility,” that is, free coordination of verbal elements, and its link with the emergence of the “new possibility,” namely, the RVCs, will not yield a satisfactory explanation for the rise of the RVCs in Chinese.

### 2.3 From coordination to subordination

If the rise of the RVCs and the extinction of coordination of agentive verbal elements are logically correlated, there must be some historical change in Chinese that related these two. A recent proposal, Mei (2002), well captures this correlation. Mei (2002) suggests that there has been a grammatical change in the history of Chinese that brought the phrase structure of Chinese from dominantly *coordinating* to dominantly *subordinating*. The evidence that Mei (2002) refers to include the productivity of coordination of agentive verbal elements, as we have repeatedly emphasized, and the overwhelming uses of the semantically neutral conjunction *er* ‘and’ in Ancient Chinese, as well as the existence of the gapping construction in Ancient Chinese. We have seen examples of free coordination of agentive verbal elements in Ancient Chinese. Now let us look at the semantically neutral conjunction *er* ‘and’ and the gapping construction in Ancient Chinese.

Mei (2002) notices that the conjunction *er* ‘and’ in Ancient Chinese resembles the conjunction *and* in English, both of which are semantically neutral and can occur in a variety of syntactic contexts. According to Mei (2002), such semantically neutral conjunction is a sign for the coordinating nature of phrase structure in a language. Below are some examples of *er* ‘and’:

#### (16) *Pure conjunction*

a. Xue er shi xi zhi, bu yi yue hu?  
 learn and frequently rehearse it not also happy Q  
 學而時習之，不亦說乎？

5. Such interpretation is all the more appealing if we consider the case of Japanese. In Japanese, compounds consisting of two agentive verbs are completely fine. Furthermore, V2 in the verbal complex V1-V2 in Japanese can be considered a result caused by V1, as Li (1993) proposes (also see Kageyama (1993), in particular his principle of Transitivity Harmony). Thus there does not seem to be principled reason to exclude *sha* ‘kill’ as a legitimate “telic bound” in the aspectual sense.

‘To learn and rehearse [knowledge] frequently—doesn’t it make one happy?’

(*Xue er, Analect 《論語，學而》*)

b. Fa Cheng, wei qi dong men, wu ri er huan.  
 Attach Cheng, surround its east gate five day and return  
 伐鄭，圍其東門，五日而還  
 ‘... attacked the state of Cheng, surrounded its east gate for five days and returned.’

(The 4th year, Yingong, *Zuozhuan 《左傳，隱公四年》*)

(17) *Modification structures*

a. Gu zhe shi yi er shui.  
 ancient people ten one and tax  
 古者十一而稅  
 ‘In the ancient time, one tenth of the income was drawn as tax.’  
 (*Currency and goods, Tongdian 《通典，食貨》*)

b. Tianxia min jie yin ling er wang zhi yi.  
 state people all protrude neck and desire it PRT  
 天下民皆引領而望之矣  
 ‘The people over the state all hope for it, protruding their necks [with great desire].’  
 (*Liang Huiwang, Mencius 《孟子，梁惠王》*)

(18) *Topic structures*

a. Guan-shi er zhi li, shu bu zhi li?  
 Guan-shi and know ritual who not know ritual  
 管氏而知禮，孰不之禮？  
 ‘[As to] Guan-shi, if he knows the ritual, who doesn’t?’  
 (*Bayi, Analect 《論語，八佾》*)

b. Shi zhu ji er bu yuan, yi wu shi zhu ren.  
 do upon self and not will, also not do upon people  
 ‘[For things] that you don’t want people to do to you, don’t do them to other people.’  
 施諸己而不願，亦勿施諸人  
 (*Zhongyong, Liji 《禮記，中庸》*)

(16a-b) are examples of pure conjunction. Mei (2002) points out that, in spite of the existence of such conjunctions as *erqie*, *cai*, *jiu*, etc., (each of which has the core meaning of ‘and’, but is loaded with some extra semantic connotation),

Modern Chinese does not have any word that is comparable to *er* 'and' in Ancient Chinese, which is semantically neutral. The fact that *er* 'and' was used in non-coordination structures, such as the modification structures and the topic structures in (17) and (18), indicate that the grammar of Ancient Chinese *treated non-coordination structures as coordination ones*. Mei (2002) argues that this is a piece of evidence for the coordinating nature of the phrase structure in Ancient Chinese.

Another piece of evidence for the coordinating nature of the phrase structure in Ancient Chinese is the fact that Ancient Chinese permitted gapping of verbs (also see Wu (2002)). Look at the following examples:

(19) a. Ba wei boshi,                   Kan [e] yiguan-ling.  
           Ba be official-scholar Kan     secretary-chief  
           霸爲博士，堪譯官令  
           ‘Ba was an official scholar, and Kan, the secretary in chief.’  
           (*Biographies of scholars, Hanshu* 《漢書，儒林傳》)

      b. shi           tianxia yue er gui   ji,   you [e] cao-jie   ye.  
           consider nation happy and support self like     grass-seed PRT  
           視天下悅而歸己，猶草芥牛也  
           ‘[The kind] looks at the people in such a way that he thinks that the nation should be happy in supporting him, like [looking at] grass and seeds.’  
           (*I, Lilou, Mencius* 《孟子，離婁上》)

There are two points that deserve attention here. First, most of the current analyses of gapping presuppose an underlying coordination structure (see, for instance, Lasnik 1995). Thus the existence of the gapping construction can be regarded as a sign for the coordinating nature of the phrase structure in a language. Second, in sharp contrast with Ancient Chinese, Modern Chinese does not permit gapping, as the following examples evidence (see Wu (2002) and references cited there):

(20) \*Zhangsan shi yi-wei laoshi, Lisi [e] yi-wei jiaoshou.  
           \*Zhangsan be one-CL teacher Lisi     one-CL professor  
           \*張三是一位老師，李四一位教授  
           \*‘Zhangsan is a teacher, and Lisi, a professor.’

In the absence of a conjunction comparable to *er* 'and' and the gapping construction in Modern Chinese, Mei (2002) concludes that Modern Chinese has been transformed into a language where the phrase structure is predominantly subor-

dinating. The RVCs came into being as a by-product of this grammatical change.

Intuitively, Mei's (2002) proposal captures a fundamental property of the RVCs. That is, in an RVC structure of the form V1-V2-Obj, where V1 denotes a causing action and V2 denotes the resultative state Obj ends up in, the predication relation between V2 and Obj seems to be semantically "subordinating" to the causing action V1. If Ancient Chinese was predominantly coordinating, the fact that RVCs did not exist in Ancient Chinese is nothing but a natural consequence, since the phrase structure did not support the subordination of the resultative state under the causing event in any direct way. Conversely, if Modern Chinese is predominantly subordinating, it is not only the case that the existence of RVCs comes to be a natural consequence; furthermore, free coordination of agentive verbal elements would lose its stand, since the phrase structure does not support it any more. Thus Mei's (2002) proposal provides a very good basis for the logical link between the rise of the RVCs and the decline of free coordination of agentive verbal elements in the history of Chinese. In what follows we will adopt Mei's (2002) insight and sketch a formal analysis that substantiates it.

### 3. The light verb syntax in Ancient Chinese

In this section I will construct an analysis for the rise of the RVCs based on Mei's (2002) proposal on the historical change of Chinese from coordination to subordination. I will first introduce the framework employed, that is, the system of light verb syntax developed in Huang (1997) and Lin (2001), and show how it is applied to delexicalization in Ancient Chinese. Then I will focus on questions related to the light verb structure of coordinated verbal complexes in Ancient Chinese and their syntactic representation. Specifically, I will propose that coordination of verbal elements in Ancient Chinese actually involved *adjunction of VPs*. I will suggest that the crucial distinction between Ancient Chinese and Modern Chinese with respect to the permissibility of coordination of agentive verbal elements is that, while Ancient Chinese could freely merge VP adjuncts to the main predicate of a sentence, Modern Chinese cannot, and this distinction resulted from the pressure that an individual predicate denote one and only one instance of event quantification.

#### 3.1 The syntax of delexicalization

According to the light verb syntax developed by Huang (1997) and Lin

(2001), the sentence structure of Mandarin Chinese is constructed via complementation of event predicates. The motivation for this approach, as Huang (1997) indicates, is that the event structure of the predicate in a Chinese sentence appears to be syntactically transparent. Consider, for example, the array of phenomena in Mandarin Chinese which Lin (2001) calls the *unselectiveness of subject and object*. Lin (2001) observes that an action verb in Chinese can freely take an agent, a locative, or a causer as surface subject; also, it can freely take a theme/patient, an instrument, or a location as surface object. The following sentences illustrate the relevant phenomena:

(21) *Unselectiveness of subject in Mandarin Chinese*

- a. Zhangsan kai yi-lian BMW.  
Zhangsan drive one-CL BMW  
張三開一輛 BMW  
'Zhangsan drives a BMW.'
- b. Kaosu-gonglu-shang kai-zhe yi-pai BMW.  
Express-way-on drive-DUR one-line BMW  
高速公路開著一排 BMW  
'There are a line of BMWs running on the expressway.'
- c. Zhe-liang BMW kai-de Zhangsan xia-chu bing lai.  
this-CL BMW drive-EXT Zhangsan frightened ill out  
這輛 BMW 開得張三嚇出病來  
'Driving this BMW frightened Zhangsan to an extent that he fell ill.'

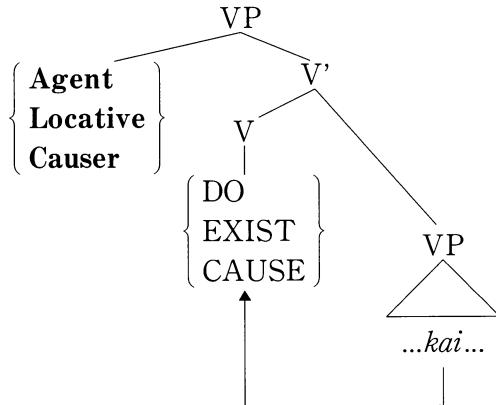
(22) *Unselectiveness of object in Mandarin Chinese*

- a. kai BMW  
drive BMW  
開 BMW  
'to drive a BMW'
- b. kai zuo shou  
drive left hand  
開左手  
'to drive [with] the left hand'

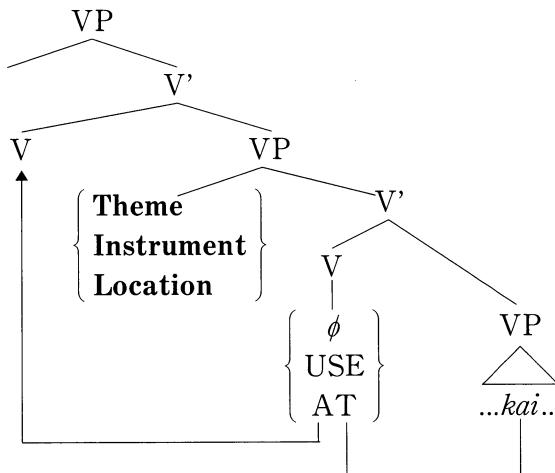
c. kai zuo bian  
 drive left side  
 開左邊  
 'to drive [along] the left-hand side'

These phenomena, Lin (2001) argues, can be accounted for if it is assumed that event predicates are building blocks of the phrase structure in Chinese and they license arguments with specific thematic roles. The analyses for (21-22) are given in (23a-b):

(23) a. *Unselectiveness of subject in Chinese*



b. *Unselectiveness of object in Chinese*



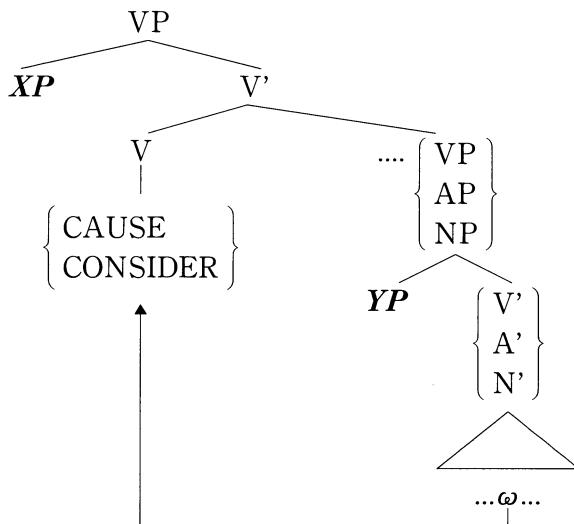
The central point in the analyses in (23a-b) is that those “non-canonical” subjects and objects are not really arguments of the main verb—as a matter of fact, Lin (2001) argues that action verbs in Mandarin Chinese do not select any

argument inherently. Event predicates are free to get merged to a phrase structure and thereby introduce arguments with specific thematic roles into the sentence. Verb incorporation then applies, yielding surface unselectiveness of subject and object arguments.

If the light verb analysis presented above captures the nature of the phrase structure in Mandarin Chinese, Mandarin Chinese can be said to be a *Davidsonian* language, since the phrase structure in Mandarin Chinese is built up via complementation of event predicates directly. For more details, see Huang (1997) and Lin (2001).

It turns out that this approach to the construction of phrase structure in Chinese is particularly beneficial for the analysis of delexicalization in Ancient Chinese, as Lin (2001) and Mei (2002) show. This is the case because the light verb syntax can readily cope with the productive causativization, denominalization, and deadjectivization in Ancient Chinese. (Also see Hale and Keyser (1991, 1993) for relevant discussion.) Below is a schematic analysis for the causativization of V, A, N and intention-agentivization of A and N in Ancient Chinese:

(24)



Let us assume that the causativization of V, A, and N in Ancient Chinese involves a CAUSE predicate, which takes a VP, an AP, or an NP as complement. The head of the complement, V, A, or N, incorporates to CAUSE, yielding the surface structures in (3a-c). Also, the intention-agentivization of A and N involves a predicate headed by the light verb CONSIDER, which selects an AP or

an NP as complement. Verb incorporation applies and yields the surface structures in (4a-b).

CAUSE is among the event predicates that are frequently seen in literature (see, for instance, McCawley 1968, Dowty 1979, Kiparsky 1997, among many others), but CONSIDER is by no means a canonical event predicate. However, it seems that Ancient Chinese was full of such non-canonical event predicates in its phrase structure, and as a consequence we have to regard them as lexical entries on a par with the regular verbs. This point can be made strikingly clear with other cases of denominalization in Ancient Chinese. Remember that, in Ancient Chinese, a noun could be used as an instrumental verb or a locational verb (see section 2.1). The examples are repeated below:

(25) a. Zuoyou yu **ren** Xiangru.  
           guard want sword Xiangru  
           左右欲刃相如  
           ‘The guards tried to kill Xiangru with swords.’  
           (*Biographies of Lian Po, Lin Xiangru, Shiji* 《史記，廉頗藺相如列傳》)

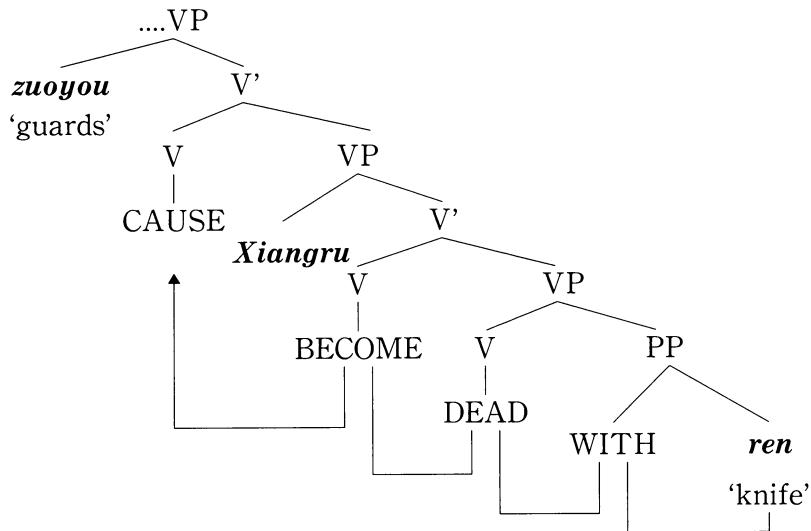
      b. Caozi **shou** jian er cong zhi.  
           Caozi hand sword and follow him  
           曹子手劍而從之  
           ‘Caozi held the sword in hand and followed him.’  
           (*13th year, Zhuanggong, Zuozhuan* 《左傳，莊公十三年》)

      c. Qin shi sui **dong**.  
           Qin troop therefore east  
           秦師遂東  
           ‘The troop of Qin therefore moved eastward.’  
           (*32nd year, Xigong, Zuozhuan* 《左傳，僖公三十二年》)

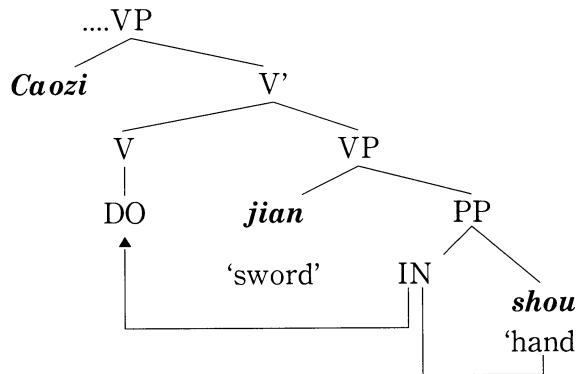
      d. Jin **jun** Hanling, Qin **jun** Fan-nan.  
           Jin troop Hanling Qin troop Fan-south  
           晉軍函陵，秦軍氾南  
           ‘Jin deployed the troop in Hanling, and Qin deployed the troop at the south of Fan river’  
           (*30th year, Xigong, Zuozhuan* 《左傳，僖公三十年》)

To account for these examples, it is essential to assume event predicates with very specific thematic functions. Below are the analyses for the four examples in (25a-d):

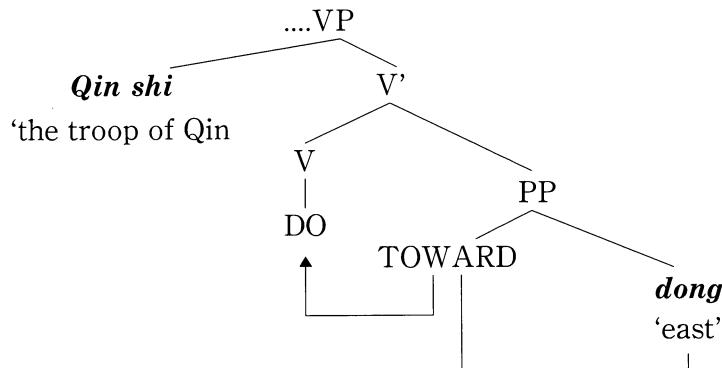
(26) a.



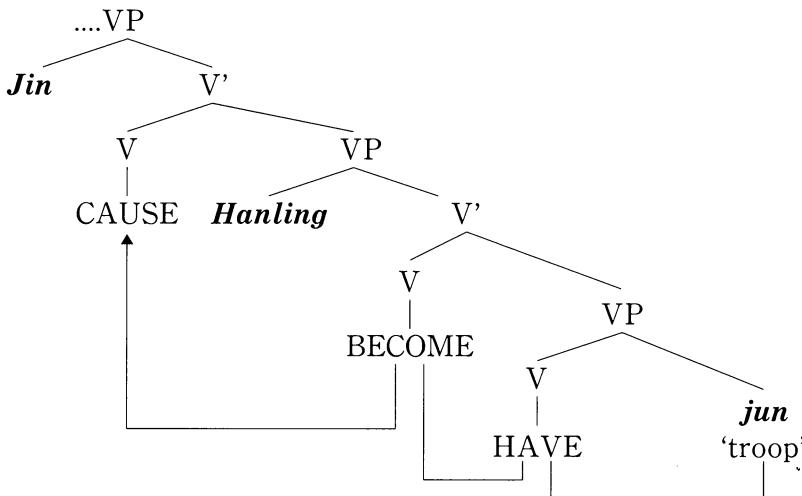
b.



c.



d.



Several points in (26a-d) deserve special attention. First of all, these light verb structures do not exist in Modern Chinese any more. Mei (2002) observes that Ancient Chinese utilized verb incorporation with much greater amplitude than Modern Chinese does, and (26a-d) appear to be examples that support this observation. Second, to represent the event structures in the syntactic structures appropriately, postulation of such “non-canonical” event predicates as DEAD, WITH, TOWARD is in order. (These event predicates are not necessarily light verbs; they could be “light prepositions.” For discussions on phonetically empty prepositions in English, see Kayne (1984) and Hale and Keyser (1997).) This may not be a problem for a serious syntactic analysis; all we have to do is assume that the grammar of Ancient Chinese contained certain mechanism that freely generated phonetically empty verbs/prepositions with substantial thematic functions. Individual speakers of Ancient Chinese acquired these “light words” either through learning existing instances or by coining new ones. No matter what the origin was of these non-canonical event predicates, they were generated by grammatical mechanism that is no longer active in Modern Chinese.

### 3.2 The syntax of coordinated verbal complexes in Ancient Chinese

In this subsection I propose that coordination of verbal elements in Ancient Chinese involved adjunction of VPs to the main predicate. But there is one point that must be clarified first, which will pave the way toward the claim that coordination in Ancient Chinese was actually a case of adjunction.

Before endeavoring on the syntax of coordinated verbal complexes in Ancient Chinese, we have to ask whether we are dealing with a question of syntax. It might very well be the case that the coordinated verbal complexes were actually compounds formed in the lexicon. Is there any indication that the coordinated verbal complexes in Ancient Chinese were products of syntactic operations?

There is indeed evidence that the coordinated verbal complexes in Ancient Chinese were formed in syntax. Let us repeat some relevant examples:

(27) a. she-shang Queke, liu xie zhi lu.  
           shoot-wound Queke, flow blood to shoe  
           射傷卻克，流血至履  
           ‘... shot and made Queke wounded, and [Queke] bled to the shoes.’  
           (*Biography of Qi-taigong, Shiji* 《史記，齊太公世家》)

      b. Wei qiu-sha Huaijun.  
           Wei imprison-kill Huaijun  
           魏囚殺懷君  
           ‘Wei imprisoned and killed Huaijun.’  
           (*History of the Wei Kangshu family, Shiji* 《史記，魏康叔世家》)

      c. Qi Xianggong shi Pengsheng zui-la-sha Lu Huangong.  
           Qi Xianggong make Pengsheng drunk-pull-kill Lu Huangong  
           齊襄公使彭生醉拉殺魯桓公  
           ‘Qi Xianggong made Pengsheng drunk, had him pull and kill Lu Huangong.’  
           (*History of the state of Cheng, Shiji* 《史記，鄭世家》)

I have pointed out in section 2.1 that, in verbal complexes like *she-shang* ‘shoot-wound’ in (27a), the second verbal element *shang* ‘wound’ was causativized. That is, the verbal complex *she-shang* ‘shoot-wound’ involves coordination of the verbs *she* ‘shoot’ and *shang* ‘[cause to] wound’. A meaning postulate can be obtained for *she-shang* ‘shoot-wound’ as follows:

(28)  $X$  *she-shang* ‘shoot-wound’  $Y \leftrightarrow [X \text{ shoots } Y] \wedge [X \text{ causes } Y \text{ to wound}]$

Now, according to the first conjunct at the right of the bi-conditional in (28),  $X$  receives the thematic role of agent from the verb *she* ‘shoot’. Meanwhile, according to the second conjunct at the right of the bi-conditional,  $X$  receives the thematic role of causer from the causativized verb *shang* ‘wound’. However, a verb can only assign one thematic role to an argument, and an argument can

only receive a thematic role from a verb, as required by  $\theta$ -Criterion (Chomsky (1981)). The fact that  $X$  receives the thematic roles of agent and causer at the same time in (27a) leads to the conclusion that the verbal complex *she-shang* ‘shoot-wound’ cannot be a unitary, individual  $V^0$  formed in the lexicon. Therefore the verbal complex *she-shang* ‘shoot-wound’ must be formed in syntax via conjunction.

(27b) may pose some doubt for such reasoning, since both of the verbs in this case, *qiu* 'imprison' and *sha* 'kill', assign the thematic role of causer (presuming that both verbs are accomplishments). One might therefore suspect about the possibility that *qiu-sha* 'imprison-kill' could be a compound formed in the lexicon. But the verbal complex *zui-la-sha* 'drunk-pull-kill' in (27c) indicates that such possibility is hard to sustain. For the case of *zui-la-sha* 'drunk-pull-kill', the following meaning postulate is obtained:

(29) *X zui-la-sha* ‘drunk-pull-kill’ *Y*  $\leftrightarrow$  [*X* gets drunk]  $\wedge$  [*X* pulls *Y*]  $\wedge$  [*X* kills *Y*]

In (29), *X* receives the thematic role of experiencer from *zui* ‘[get] drunk’, the role of agent from the verbs *la* ‘pull’, and the role of causer from *sha* ‘kill’, simultaneously. Since  $\theta$ -Criterion prohibits more than one thematic role to be assigned to one argument, the coordinated verbal complexes in Ancient Chinese could not be lexical compounds. They were formed in syntax.<sup>6</sup>

6. A reviewer refers to Feng (2002) and questions the hypothesis that V1 and V2 in the verbal complexes in Ancient Chinese are heads of separate VPs. According to Feng (2002), when the negation *bu* occurs before the verbal complex V1-V2 in Ancient Chinese, both V's are negated. Consider the following examples (cited from (4), Feng 2002:182):

(i) a. Han suoyi    bu ji-chu    Chu, yi    mei    zai gong suo.  
     Han therefore not strike-take Chu because dread at you place  
     漢所以不擊取楚，以昧在公所  
     ‘Han does not attack and take over Chu due exactly to the dread of you.’  
     (*Biography of Huaiyin Hou, Shiji* 《史記，淮陰侯列傳》)

b. gu    bu shao-jin    zhi  
     therefore no burn-complete it  
     故不燒盡之  
     ‘... as a result did not burn it over.’  
     (*Lost documents, Lunheng* 《佚文，論衡》)

The reviewer, citing Feng (2002), points out that the scope of the negation *bu* in (ia-b) covers both V1 and V2, in contrast with the genuine coordination structure with *er* 'and', where the negation *bu* can negate one of the conjuncts only ((5-6), Feng 2002:182):

(ii) a. bu zhan er sheng  
 not battle and win  
 'win without battle'  
 不戰而勝  
 (*Bugou, Shunji* 《不苟，荀子》)

b. xue er bu si zhe wang  
 study and not think then confused  
 學而不思則罔  
 'Study without thinking leads to confusion'  
 (*Xueer, Analect* 《學而，論語》)

Several factors bear on this question. First, Feng (2002) himself does not preclude the possibility that verbal complexes in Ancient Chinese are formed in syntax as phrasal structures, since there are examples such as *zhan bu sheng Chu* 'lit.) fight-not win Chu' (戰不勝楚) (*Shuihu Diqin Jian, Collection of the Chin Laws* 《睡虎地秦簡，秦律雜抄》) where the negation *bu* intervenes between V1 and V2. Second, it is not clear if there is any principle that prohibits a negation from extending its scope to cover both an adjunct and the projection to which the adjunct is adjoined. Look at the following example:

(iii) Zhangsan bu hui yinwei Lisi mei lai dai zai jia-li.  
 Zhangsan not will because Lisi haven't come stay at home-in  
 張三不會因為李四沒來待在家裡  
 'Zhangsan will not stay home just because Lisi hasn't come.'

In (iii), the scope of the negation *bu* covers both the adjunct 'because Lisi hasn't come' and the main predicate 'stay home'. It does not cover just the adjunct or just the main predicate. This is exactly what we see in the cases of the verbal complexes in Ancient Chinese, namely, both V1 and V2 are negated by *bu*, as Feng (2002) observes. Thus the question narrows down to why V1 in Ancient Chinese cannot be negated independently of V2, as Feng (2002) (and the reviewer) points out.

This question may be dealt with in the following way. Notice that the verbal complexes in Ancient Chinese usually involve high agentivity. If the analysis proposed in this work is correct, V1 in a verbal complex V1-V2 is in fact the head of an adjunct VP, which, by way of the working of some interpretive rules in the semantic component of the grammar, is interpreted as the manner/mode or even cause of a composite event that brings out a result in a dynamic fashion. The bringing out of a result, however, typically requires the presence of an action. This seems to be the way that human cognition encodes causative-resultative constructions in general. Thus, at least in Chinese, there are verbal compounds that specify a complex event in which a certain action brings out a result, but no compounds that specify that the absence of certain action brings out a result. (Li Shen (personal communication) points out a similar puzzle in the realm of aspects in general; that is, there are only aspects that characterize ways of existence of a certain action/state; there are no aspects in human languages that characterize ways of non-existence/appearance of a certain action/state.) If this observation makes any sense at all, it may be a legitimate ground for the conjecture that, as far as V1 in a verbal complex V1-V2 is interpreted as the manner/mode or cause through which V2 is carried out, its negation contravenes the general human cognition on the structures of cause-result or manner/mode-effect. This could be the reason that V1 in Ancient Chinese (and in all stages of Chinese in history perhaps) cannot be negated independently. Human cognition rejects it, not the grammar.

Thus the syntactic nature of the coordinated verbal complexes in Ancient Chinese is ascertained. The next question, also the central one, is: how was the coordination of verbal elements in Ancient Chinese represented in the syntactic structure?

The verbal complexes in (27a-b) will not pose serious problems, but the verbal complex in (27c) would, since it involves coordination of more than two verbal elements in a predicate. If the principle of binary branching is to be strictly observed (Kayne (1984, 1994)), the appropriate way to represent coordination of three verbal elements in a predicate in syntax can be a non-trivial problem.

To overcome this problem, I propose to analyze coordination of verbal elements in Ancient Chinese as *adjunction of VPs*. According to this proposal, (27a-c) will be analyzed in the following ways:<sup>7</sup>

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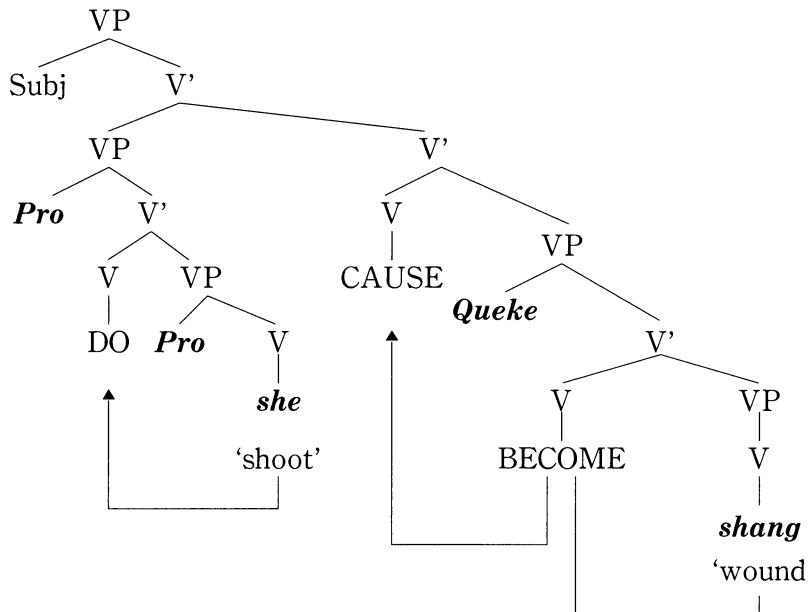
There seems to be support for this conjecture. First, since V1 is interpreted as the manner/mode or cause of V<sub>2</sub>, the negation of V1 amounts to implying a manner/mode or cause that could be anything other than the action denoted by V<sub>1</sub>—this would be a set too incoherent to count into natural semantics or human cognition. (Notice that the negation of V2 would not suffer the same problem, since it would be negation of the main predicate, presumably doing no harm to the interpretation of the structure.) Second, in Chinese, adjuncts that denote manners/modes of an action cannot be negated independently:

- (iv) a. *zhan-zhe chi*  
stand-DUR eat  
站著吃  
'eat while standing'
- b. *bu/meiyou zhang-zhe chi*  
not/haven't stand-DUR eat  
不／沒有站著吃  
'not/haven't eat while standing'

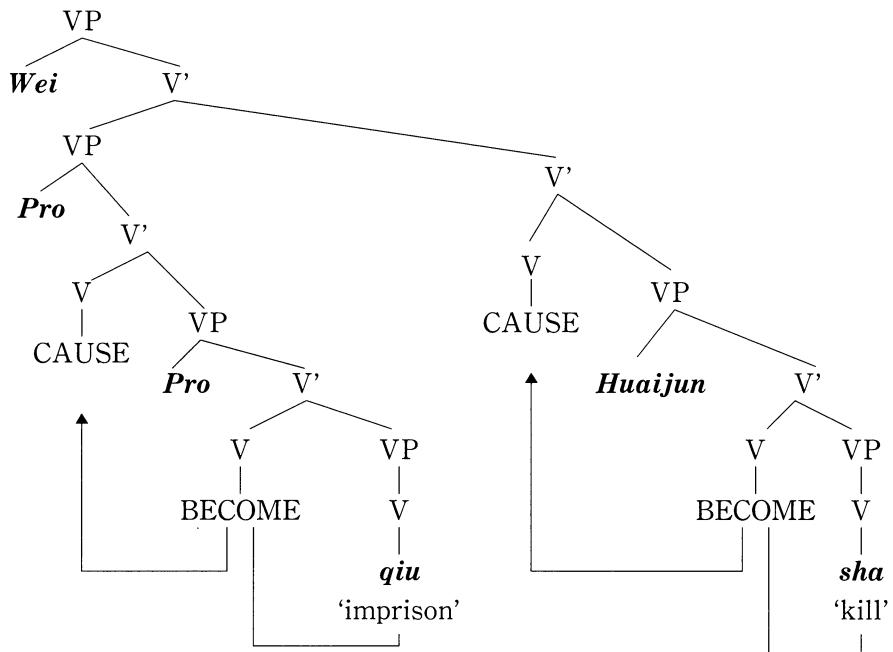
In (iva), the expression *zhang-zhe* 'standing' denotes the manner/mode of the agent in carrying out the action *chi* 'eat'. In (ivb), the negations *bu* 'not' and *meiyou* 'haven't' are inserted into the structure. It appears that (ivb) can only be understood in such a way that the scope of the negations covers the whole structure. In particular, it does not permit the reading according to which *bu/meiyou* negate *zhang-zhe* 'standing' only. This provides a piece of evidence for the semantic/cognitive explanation for the failure of V1 to be negated in Ancient Chinese. (For sentences of (iva) sort, also see note 13.) Of course, many related questions have to be clarified before such explanation could be considered firmly rooted. I will leave them to future study.

7. Notice that the argument positions in the adjunct VPs in (27-30) are filled with Pro's. Bianca Lim (personal communication) and Kazuhiro Fukushima (personal communication) pointed out that the construals of the Pro's in these structures do not conform to known theories of control. To some extent this is true, but it is also well known that a great portion of the control theory has to resort to pragmatic factors. Since the discussion on all related questions would take us far afield from the intended focus of this work, I will leave them for future research.

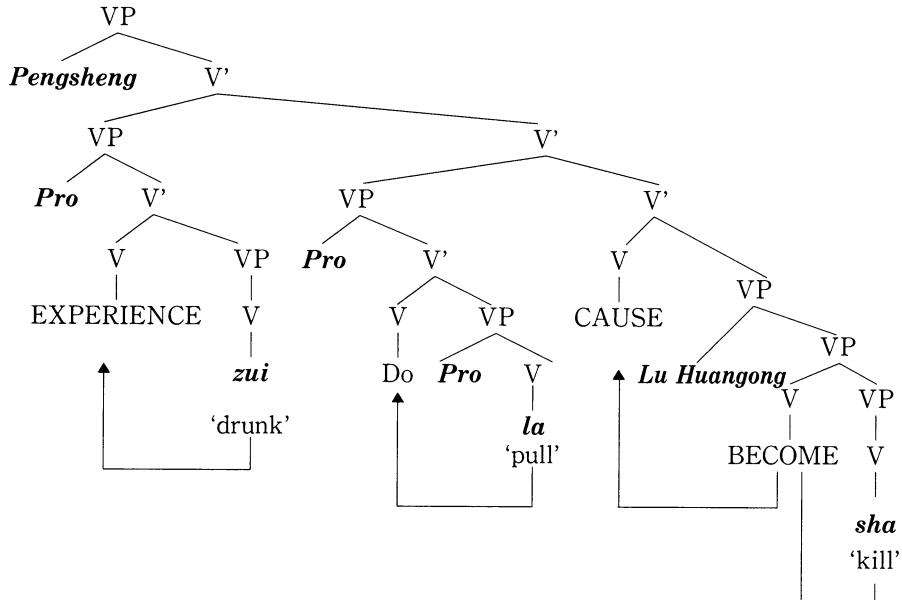
(30) a. *she-shang* 'shoot-wound'



b. *qiu-sha* 'imprison-kill'

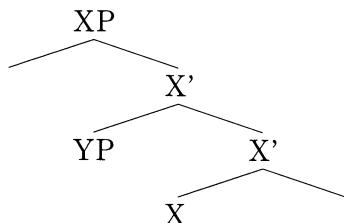


c. *zui-la-sha* 'drunk-pull-kill'



The motivation for this proposal is that, in terms of logical interpretation, conjunction overlaps with adjunction to a significant extent. In many cases, a modification structure such as (31a) can be represented as (31b), fairly much on a par with the coordination structure in (32a), which can be represented as (32b):<sup>8</sup>

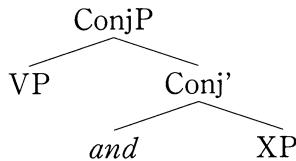
(31) a.



b.  $\lambda P [YP(P) \wedge X(P)]$

8. There are, of course, the famous examples in which an adjunct *cannot* be represented by logical conjunction in a straightforward way. For instance, *John is an old friend of mine* is not to be understood as *John is a friend of mine & John is old*. For relevant discussion, see Bolinger (1967) and Yamakido (2000). However, it seems that, as long as the adjunct YP in (31a) is a clausal constituent, the logical representation in (31b) generally holds. I leave the relevant questions open.

(32) a.

b.  $\lambda P [YP(P) \wedge \lambda P [XP(P)] = \lambda P [YP(P) \wedge XP(P)]$ 

As can be seen in (31–32), adjunction resembles conjunction in that both are represented by logical conjunction. There are differences, of course. For instance, in the case of conjunction, neither conjunct heads the conjunction phrase, but in the case of adjunction the category to which the adjunct is merged projects a maximal projection. These differences do not matter for our purposes.<sup>9</sup>

There are several advantages in regarding coordination in Ancient Chinese as adjunction of VPs. First, the right-headedness of the coordinated verbal complexes in Ancient Chinese is captured. In discussing the emergence of the resultative construction in the history of Chinese, T. Mei (1991) refers to an intriguing array of phenomena that Ota (1958) observes, that is, the contrast between the constructions *V-sha* ‘V-kill’ and *V-si* ‘V-dead’. Ota (1958) notices that, in Ancient Chinese, the construction *V-sha* ‘V-kill’ could only assume transitive uses, whereas *V-si* ‘V-dead’ could only assume intransitive uses. Below are some examples:

9. One might think of an alternative analysis for verbal complexes such as *zui-la-sha* ‘drunk-pull-kill’ which involves iteration of ConjP. Kayne (1994) proposes that conjunction structure in English can be analyzed in such a way that the first conjunct occupies the specifier of the projection ConjP, and the second conjunct, the complement of ConjP. That is, the structure *XP and YP* is to be analyzed as  $[_{\text{ConjP}} \text{XP} [_{\text{Conj'}} \text{and} [_{\text{YP}}]]]$ . Along the same line, one could analyze *zui-la-sha* ‘drunk-pull-kill’ as involving complementation of a ConjP to another ConjP, obtaining the structure in (i):

(i)  $[_{\text{ConjP}} \text{VP}_1 [_{\text{Conj'}} \emptyset [_{\text{ConjP}} \text{VP}_2 [_{\text{Conj'}} \emptyset [\text{VP}_3]]]]]$ 

The structure in (i), however, does not seem to yield the desired results, since, as we will turn to shortly, one of the characteristics of the coordinated verbal complexes in Ancient Chinese is that they are generally right-headed—that is, the right-most verbal element determines the transitivity of the whole verbal complex. If verbal complexes like *zui-la-sha* ‘drunk-pull-kill’ involves iteration of ConjP, then there would be no appropriate way to assign the status of head to the right-most verb.

(33) a. An beng, jin **ya-sha** wo zhe.  
 bank collaps all press-kill lie people  
 岸崩，盡壓殺臥者  
 'The bank collapsed, and pressed all the people who were lying there and killed them.'  
*(Histories of the queens' families, Shiji 《史記，外戚世家》)*

b. Bai-yu ren tan beng jin **ya-si**.  
 hundred-more person coal collaps all press-dead  
 百餘人炭崩盡壓死  
 'More than a hundred people were dead, being pressed in the collapsed coal mine.'  
*(Furtune and signs, Lunheng 《論衡，吉驗》)*

(34) a. Sui bai gu jin, bu-neng liang huo,  
 year bad rice exhausted cannot both survive  
**e-sha** qi zi, huo xung zhi zi.  
 hunger-kill his-own son save elder-brother GEN son  
 歲敗穀盡，不能兩活，餓殺其子，活兄之子  
 'The year was famine, and all the food was run out; it was not possible to keep both families survived. [Thus he] killed his own son by stopping food supply so as to make his elder brother's son live.'  
*(Equality of people, Lunheng 《論衡，齊世》)*

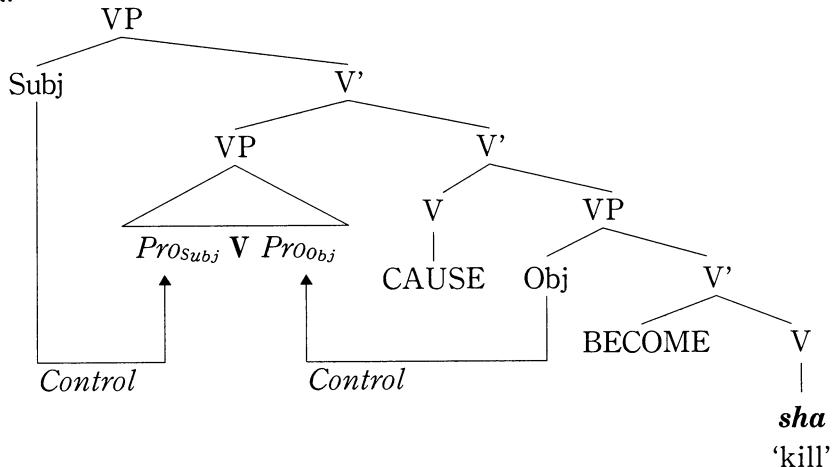
b. Zhu-fu yu chu bu-de, you bu-de shi...  
 Governor try escape not-able also not-able food  
 san yue-yu er **e-si** yu Shaqiu Gong.  
 three month-more and hungry-dead at Shaqiu Palace  
 主父欲出不得，又不得食，…三月餘而餓死于沙丘宮  
 'The governor tried to escape but did not succeed; furthermore, he was kept away from access to any food. . . After a little more than three months, he was dead for starvation.'  
*(History of the state of Zhao, Shiji 《史記，趙世家》)*

The contrast between *V-sha* 'V-kill' and *V-si* 'V-dead' plays an important role in T. Mei's (1991) proposal for the emergence of the resultative construction in Chinese. In (33-34), it is clear that the second verbal element, namely *sha* 'kill' and *si* 'dead', in the verbal complex determines the transitivity property of the predicate. *Sha* 'kill' is a transitive verb, hence *V-sha* must take an object; *si* 'dead' is an intransitive verb, hence *V-si* must not be followed by an object. T. Mei (1991) specifically suggests that the neutralization of constructions like *V-*

*sha* 'kill' and *V-si* 'dead' in transitivity properties paved the way for the emergence of the resultative construction in the history of Chinese.

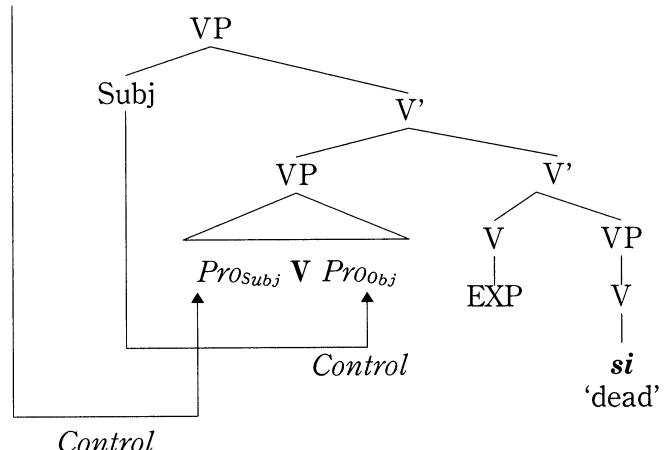
Here, however, we will focus on a different aspect of the phenomena. Huang (1995) insightfully points out that the contrast between *V-sha* and *V-si* in Ancient Chinese can be formally characterized if Ancient Chinese is regarded as a language where verbal complexes were *right-headed*; that is, the right-most element in a verbal complex heads the entire predicate. Such right-headedness, I propose, can be captured if we assume that the right-most verbal element in a verbal complex heads the main predicate, and all the preceding verbal elements are adjuncts. Thus the *V-sha* and *V-si* constructions can be represented in the following ways:

(35) a.



b.

*Intra- / extra-sentential controller*



In (35a-b), the verbs *sha* 'kill' and *si* 'dead' function as the core of the main body of the predicate, and thus they determine the transitivity of the whole predicate. The verb V in *V-sha* and *V-si* actually is embedded within a light verb structure adjoined to V' of the main predicate, with two Pro's controlled by the arguments in the main predicate (or in the context; see below). In this way, the right-headedness of the verbal complexes in Ancient Chinese is captured, as the right-most verbal element is the core of the predicate, and the preceding verbal elements are simply adjuncts, playing no role in the transitivity property of the main predicate.

There is a further advantage if the constructions of *V-sha* and *V-si* are characterized in the ways shown in (35a-b). *V-sha*, essentially, is no different from the cases where two agentive verbal elements are coordinated, such as *qiu-sha* 'imprison-kill' and *zui-la-sha* 'drunk-pull-kill' in (27b-c), so it does not require special treatment. What appears to need some elaboration is the construction of *V-si*, where V can be an action verb that thematically selects an agent or a causer distinct from the subject argument of the sentence.<sup>10</sup> Look at (33b) for instance. In this example the verbal complex is *ya-si* 'press-dead', an intransitive predicate that takes a patient as the external argument. The action verb *ya* 'press', therefore, should be an adjunct constituent, since it does not participate in the determination of the transitivity property of the predicate. Now, the advantage of the analyses given in (35a-b) is that, by identifying the V in both *V-sha* and *V-si* as an adjunct VP, a unified structural analysis can be obtained for the *V-sha* and *V-si* constructions. In both constructions V stands for a (clausal) light verb structure with Pro's in the positions of arguments. The only difference between the two constructions is that, in *V-sha*, the subject and object Pro's are controlled by the subject and object arguments in the same sentence, whereas in *V-si* the subject Pro is controlled by some intra-/extra-sentential controller in the sentence or in the context of discourse. For example, in the case of (33b), the agent of the action verb *ya* 'press' in *ya-si* 'press-dead' is the coal mine, which happens to occur in the same sentence embedded in an adverbial reason clause *tan beng* 'the coal mine collapsed'. In terms of the structure, *ya-si* 'press-dead' and *ya-sha* 'press-kill' are no different. It is the control properties of the Pro's in the adjunct VP that makes *V-sha* a coordination structure and *V-si* a

10. There are examples in which the V in *V-si* is not an action verb, such as *e-si* 'hungry-dead' in (34b). In this case the subject Pro of the verb *e* 'hungry' is controlled by the subject argument of the sentence. Examples of this kind do not pose problems for the analyses proposed in the text.

modification structure (traditionally known as *pien-zheng jiegou* 偏正結構). No extra structure has to be postulated for the *V-si* construction.<sup>11,12</sup>

### 3.3. From adjunction to complementation

If the proposal made in this work is correct, the crucial difference between

11. Mei (2002) also proposes that the coordination of verbal elements in Ancient Chinese involved control. However, Mei (2002) tends to adopt Kayne's (1994) theory of coordination and hence does not specifically include the right-headedness of verbal complexes in Ancient Chinese into consideration.

Incidentally, the analysis proposed here is applicable to other types of verbal complexes as well. Coordinated verbal complexes in Ancient Chinese were by and large right-headed, and the analysis of VP adjunction can capture this property in a nice way. The right-headedness of coordinated verbal complexes in Ancient Chinese can be explicated by the following contrast:

- (i) a. Xiangwang **dong-ji-po** zhi  
Xiangwang east-strike-break it  
項王東擊破之  
'Xiangwang moved eastward, stroke and broke it [= Pengyue's troop].'  
(*Biography of Xiang Yu, Shiji* 《史記，項羽本記》)
- b. \*Xiangwang **ji-po-dong** zhi  
Xiangwang strike-break-east it  
項王擊破東之  
'(Intended:) Xiangwang stroke and broke it [= Pengyue's troop], \*and then moved eastward.'

As shown in (ib), if the denominal verb *dong* '[move]' is relocated to the right end of the verbal complex, the sentence becomes ungrammatical (unless *dong* is reinterpreted as a causativized verb, meaning '[make someone move] eastward'). Thus the transitivity of the predicate in (ia) is determined by the right-most verb *po* '[cause someone/something to] break', and all the other verbal elements, namely *dong* '[move] eastward' and *ji* 'strike', are adjuncts.

12. Taisuke Nishigauchi (personal communication) suggests that there is a possibility to analyze coordinated verbal complexes in Ancient Chinese in terms of Right-Node Raising. A typical example for Right-Node Raising is given below:

- (i) John loves, but Mary hates, the man that I introduced to them yesterday.

But cases like *V-si* would pose problems for a treatment based on Right-Node Raising, since, as we have seen, *V* can be a transitive verb even though *si* 'dead' is an intransitive verb. It is known that in the case of Right-Node Raising both verbs must share the same internal argument, but *V-si* would fail to meet this requirement. The result would be something like the ungrammatical example in the following:

- (ii) \*John ate, but Mary slept, the burgers that I bought for them.

On the other hand, adopting the analysis presented in the text, no such problem would arise, and, as we pointed out, a unified analysis for the coordination structure and modification structure can be obtained.

Ancient Chinese and Modern Chinese turns out to be, while the former permitted (multiple) adjunctions of VPs, the latter does not. At this point, some questions must be answered. Why did Ancient Chinese permit adjunction of VPs, but Modern Chinese does not?<sup>13</sup> Furthermore, how did Ancient Chinese evolve into the way that Modern Chinese is? What was the driving force for the change? This subsection is devoted to the possible answers to these questions. A caveat: limited by the level of knowledge that we have attended to, what is going to be said below is largely based on speculative grounds. Nonetheless, if the proposal made in this work is plausible in any way, it would indicate that formal accounts for the historical changes in the grammar of Chinese are not only possible, but can also be feasible and rewarding, since, as far as they are successful, the traditional research of Chinese grammar can be brought closer to the fruitful regime of grammatical theory with an anticipation for mutual enhancement and

13. An anonymous reviewer points out that it may not be the case that Modern Chinese really does not permit VP adjunction. The reviewer suggests that the following examples may involve VP adjunction:

- (i) a. zhan-zhe shuo  
stand-DUR talk  
站著說  
'talk (while/in the manner of) standing'
- b. duan-zhe (wan) chi  
hold-DUR (bowl) eat  
端著 (碗) 吃  
'eat (while/in the manner of) holding (a bowl)'
- c. zuo-zhe kan  
sit-DUR watch  
坐著看  
'watch (while/in the manner of) sitting'

But these examples may not really be cases of VP adjunction. Notice that the durative aspectual marker—*zhe* seems essential for the grammaticality of these examples, as the deletion of *-zhe* in (ia-c) results in ungrammaticality. This leads to the conjecture that what is adjoined in (ia-c) is actually AspP, rather than VP. What is more, it is possible for the “main verb” (i.e. *shuo* ‘say’, *chi* ‘eat’, and *kan* ‘watch’ in (ia-c)) to take an independent aspectual marker, as in the following example:

- (ii) Zhangsan zhan-zhe kan-wan-le zheng-ben shu.  
Zhangsan stand-DUR read-finish-PERF whole-CL book  
張三站著看完了整本書  
'Zhangsan read the whole book standing.'

Thus it is likely that, in examples such as (i-ii), an AspP (or even a complete clause with a phonetically empty subject) gets adjoined to another AspP representing the manner or mode of the event. If this view is correct, (ia-c) will not be counterexamples to the proposal that Modern Chinese does not permit VP adjunction.

enrichment.

To begin with, it should be pointed out that the impossibility of (multiple) adjunctions of VPs in Modern Chinese should *not* result from left adjunction per se, since Modern Chinese permits left adjunction. Consider the following examples:

(36) a. Zhangsan [zuotian] [zai tushuguan] [da-sheng-di] nian Yingwen.  
 Zhangsan yesterday at library laudly read English  
 張三昨天在圖書館大聲地念英文  
 'Zhangsan read English laudly in the library yesterday.'  
 b. Laowang [chi-le wan-fan zhi-hou] he-le yi-bei pi-jiu.  
 Laowang eat-PERF dinner after drink-PERF one-glass beer  
 老王吃了晚飯之後喝了一杯啤酒  
 'Laowang drank a glass of beer after [he] ate the dinner.'

In (36a), the adverbial elements *zuotian* 'yesterday', *zai tushuguan* 'in the library', and *da-sheng-di* 'loudly' are left-adjoined to the phrase structure. (36b) shows that the left-adjoined adverbial can be a clausal structure, as the constituent *chi-le wan-fan* '[he] ate the dinner' is presumably a CP with a Pro subject. In view of (36a-b), it appears that left adjunction is not a problem to Modern Chinese. What distinguishes (36a-b), on the one hand, from (37), on the other, where a VP is adjoined to the phrase structure?

(37) a. \*Zhangsan ti-sha Lisi.  
 Zhangsan kick-kill Lisi  
 \*張三踢殺李四  
 'Zhangsan kicked Lisi and killed him.'  
 b. \*...[<sub>VP</sub> Zhangsan [<sub>v'</sub> [<sub>VP</sub> Pro ti Pro] [<sub>v'</sub> sha Lisi ]]]]

The crucial factor, I suggest, is that the VP adjoined to V' in Ancient Chinese is not merely a VP, but a *light verb structure* representing a full-fledged predicate. Thus the real situation is that, in a coordinated verbal complex in Ancient Chinese, one or more adverbial predicates were merged to the main predicate. Such mergers have the consequence that there occurs more than one instance of event quantification in a sentence. To be concrete, let's look at the following example:

(38) Pengsheng zui-la-sha      Lu Huangong.  
 Pengsheng drunk-pull-kill Lu Huangong  
 彭生醉拉殺魯桓公  
 'Pengsheng [got] drunk, and pulled and killed Lu Huangong.'  
*(History of the state of Cheng, Shiji 《史記，鄭世家》)*

In (38), three distinct events are stated, the first being Pengsheng's getting drunk, the second, Pengsheng's pulling Lu Huangong, and, third, Pengsheng's killing Lu Huangong. The predicate in (38) can be translated into the logical representation in (39):

(39)  $\lambda t \exists e_x [\exists e_y \exists e_z [\mathbf{Got-drunk}(\text{PS}, e_y, t) \wedge \mathbf{Pull}(\text{PS}, \text{LH}, e_z, t)] \wedge \mathbf{Kill}(\text{PS}, \text{LH}, e_x, t)]$   
 (e: event argument; t: tense/aspect)

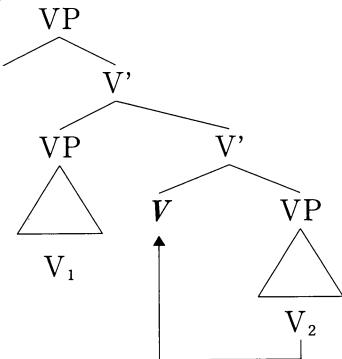
Notice in particular that all the three instances of event quantification are encompassed into an individual predicate, linked together via the predication of time/aspect. Suppose that this is not economical, in the sense that, since the participants of the three events are identical (namely, Pengsheng and Lu Huangong) and the three events are cognitively intermingled with one another, it is preferable that all the different instances of event quantification and participants of actions be identified. Thus the following hypothesis may have been working on the way from Ancient Chinese to Medieval Chinese:

(40) A predicate contains one and only one case of event quantification.

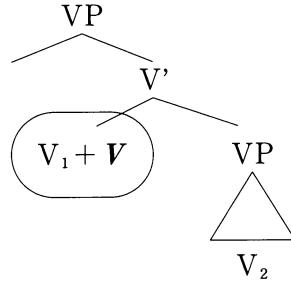
We may assume that (40) was the driving force for the decline of (multiple) adjunctions of VP in the history of Chinese.

Due to the effect of (40), the adjunct VP was "absorbed" into the main predicate. Restructuring of phrase structure took place. Technically, what happened could be the following. The phrase structure does not take adjunct light verb structure any more, and hence the verbs in the adjunct light verb structure now have to merge directly to the main predicate. The result is a complementation structure. Look at the following diagrams for illustration:

(41) a.



b.



Several steps are involved in the change from (41a) to (41b). First, the VP adjunct, with an independent instance of event quantification, became disfavored due to (40), hence it was pruned from the phrase structure. Second, the core of the adjunct VP, that is,  $V_1$ , has to get merged to the light verb  $V$  in the main predicate if it is ever preserved. The core of the main predicate,  $V_2$ , remains intact. Notice, however, that, at the stage of (41a),  $V_2$  incorporated to  $V$ , an instance of delexicalization. Yet at the stage of (41b)  $V_2$  cannot incorporate to  $V$  any more, since  $V$  is now occupied by  $V_1$ . Thus a correlation is established between the decline of delexicalization and the rise of the resultative construction in Chinese (Wang 1958).

Of course, not all verbs in the adjunct VPs can survive pruning and get a chance to be merged to the main predicate. The main predicate itself is a light verb structure consisting of event predicates. According to the syntax of event predicates developed in Lin (2001), the complementation relationships among different event predicates are determined by the selectional properties of individual event predicates, and such selectional properties yield the effect of what is known as the Thematic Hierarchy (Jackendoff 1972, Larson 1988, Grimshaw 1990, among others). The merger of  $V_1$  to a light verb in the main predicate must meet the relevant constraints. For example, if both  $V_1$  and  $V_2$  in (41a) are accomplishments, as in *qiu-sha* 'imprison-kill', the merger of  $V_1$  to  $V$  (which will be CAUSE) is doomed to fail, since  $V$  will be occupied by  $V_2$  via head movement, as  $V_2$  is an accomplishment and needs to check the relevant aspectual features with  $V$ . If there is more than one adjunct VP, as in *zui-la-sha* 'drunk-pull-kill', neither of the verbs *zui* 'drunk' and *la* 'pull' gets a chance to merge to the main predicate, since the head of the main predicate CAUSE will be occupied by *sha* 'kill'. The only legitimate cases where  $V_1$  can successfully get merged to  $V$  are those where  $V_2$  is a resultative verb or a stative verb, as in *she-shang* 'shoot-

wound' and *jian-qing* 'reduce-light'. This is the origin of the resultative construction in Chinese.<sup>14</sup>

14. T. Mei (1991) and Feng (2002), among other researchers, discuss the following kind of examples, which are instances of the pitotal-resultative construction:

- (i) a. yi hui zhuo ci-ge sha  
with beak peck female-pigeon kill  
喙啄雌鴿殺  
'pecked the female pigeon and kill [it]'  
(*Bai-yu jing* 《百喻經》)
- b. liang shou bao muowang chu  
two hand hold devil take  
兩手抱魔王取  
'hold the devil with the two hands and take [him]'  
(*Fuo benxing ji-jing* 《佛本行集經》)

These examples pose problems for the analysis sketched in the text, since V2 is an agentive verb and presumably should incorporate with the higher light verb. But this would preclude the merger of V1. Thus (ia-b) is predicted to be ungrammatical, contrary to the fact.

I believe that this question can be accounted for with the following considerations. Though I do not have accurate statistics in hand, it seems that examples like (1a-b) are much rarer than those where V1 is a resultative or stative verb. Thus a chance exists that (ia-b) are no more than idiosyncratic and isolated cases, and we simply admit that they are exceptional. This consideration is actually supported by T. Mei's (1991) observation about a special use of the V-*sha* 'V-kill' construction in the modern Wu dialects. According to T. Mei (1991), *sha* 'kill' in V-*sha* in the modern Wu dialects does not literally denote the meaning of killing; rather, it is much more like 'dead'. Thus V-*sha* in the Wu dialects corresponds to V-*si* 'V-dead' in Mandarin. T. Mei (1991) further points out that (ia) is excerpted from a document that dates back to the state of Qi in the period of the Six Dynasties, which was exactly the area where the modern Wu dialects are spoken. Thus it is very likely that examples of (ia-b) kind represent some sort of dialectal variation, which did not fit the main stream of the historical change of the resultative construction in Chinese.

One more point to be notice is that, both T. Mei (1991) and Feng (2002) relate examples of (ia) type to the "metaphorical" use of the verb *sha* frequently seen in the classical Chinese poetry, as below:

- (ii) Bai yang duo bei feng, xiao-xiao chou sha ren  
white poplar much sad breeze blowing distress kill person  
白楊多悲風，蕭蕭愁殺人  
'The poplar weeps so much in the sad breeze, whose blowing distress people deeply.'  
(*The 14th, The 19 classical poems* 《古詩十九首，第十四》)

Feng (2002) specifically points out that *sha* 'kill' in (ii) does not refer to the action of killing. (Feng attributes this phenomenon to the loss of the transitivity property of the verb *sha* due to the shift of headedness leftward in the V1-V2 construction in Ancient Chinese.) This somehow points to a special status of the verb *sha* 'kill', since not many (agentive) verbs can be used in this way. Thus, it seems possible to simply treat (ia) as an isolated and exceptional case in the discussion of the rise of the RVCs without causing much harm. Of course, it is a question whether (ib) can be regarded in the same way. We will leave the relevant questions to future study.

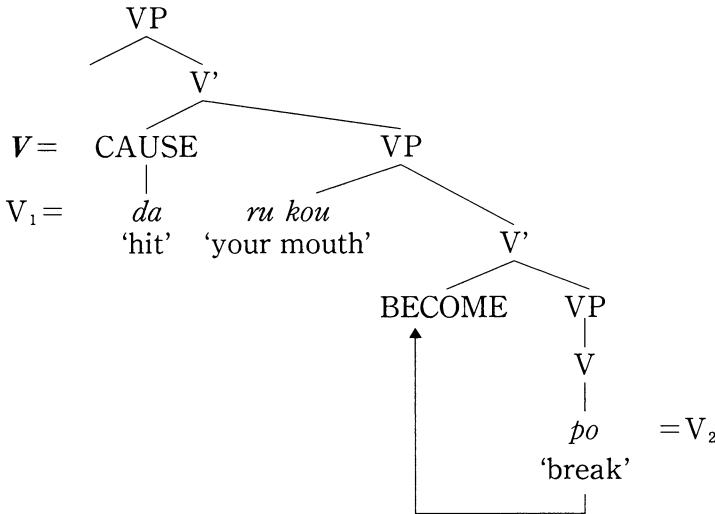
There is one more point to be mentioned. It has been observed that, before the RVCs became real productive, the so-called pivotal-resultative construction (兼語式 *jian-yu shi* or 隔開式 *ge-kai shi*) arose first (see, among others, T. Mei (1991), Huang (1995), and Wu (2001)). Below are some examples:

(42) a. Dang da ru kou po.  
     should hit your mouth break  
     should hit your mouth break  
     當打汝口破  
     ‘[I] should hit your mouth broken.’  
     (*Youming Lu* 《幽冥錄》)

b. Chun-feng fu duo-qing, chui wo luo-shang kai.  
     spring-breeze more passionate blow my silk-cloth open  
     春風復多情，吹我羅裳開  
     ‘The spring breeze, moreover, is passionate;  
     [it] blows my silk robe open.’  
     (*Spring, Four seasons at midnight* 《子夜四時歌，春歌》)

The emergence of the pivotal-resultative construction can actually be regarded as an indirect piece of evidence for the historical change sketched above. The fact that the pivotal-resultative construction emerged right after the coordination of verbal elements imposes a problem to many theories on the origin of the RVCs in Chinese. The point can be illustrated by the following question: why did the structure coordination structure  $V_1 \cdot V_2$  Obj evolve into the pivotal-resultative construction  $V_1$  Obj  $V_2$ , rather than directly into the form of the modern RVC, namely  $V_1 \cdot V_2$  Obj? Why is the shift necessary of  $V_2$  in position? This phenomenon will be puzzling to theories that simply depend on neutralization of the transitivity properties of  $V_2$ , such as T. Mei's (1991). In view of the analysis presented in this work, however, the rise of the pivotal-resultative construction was a direct consequence of the “absorption” of the adjunct VP into the main predicate. The pruning of the adjunct VP and merger of  $V_1$  to V in (41a-b) led to the pivotal-resultative construction, as the following diagram illustrates:

(43)



Though structures like (43) are no more legitimate in Modern Chinese, the unexpected emergence of the pivotal-resultative construction as an immediately succeeding stage to coordination of verbal elements in Ancient Chinese indicates that the analysis presented in this work exhibits at least certain explanatory power.

In Modern Chinese the pivotal-resultative construction is no more acceptable;  $V_2$  must further incorporate to  $V_1$ , yielding the RVCs of the modern form. At the present point we are not very sure about the mechanism that triggered such incorporation. I suggest that the incorporation might be motivated by the requirement for event identification of the different event predicates (Kratzer (1996)). In (43), though the event predicates CAUSE and BECOME occur in the same light verb structure, there is still no guarantee that the event arguments that CAUSE and BECOME are one and the same. That is, the light verb structure in (43) might denote the logical representation in (44), where there are two distinct cases of event quantification:

(44)  $\exists e_x [\text{CAUSE}(\text{Subj}, e_x) \wedge \exists e_y [\text{BECOME}(\text{your-mouth}, \text{broken}, e_y)]]$

This logical representation still does not conform to the requirement in (40), according to which a predicate denotes an event exclusively. Kratzer (1996) proposes that verb movement can be a means for event identification. Thus the verb *po* 'break' in (43) keeps moving up and incorporates to *da* 'hit', yielding the following logical representation:

(45)  $\exists e_x [\text{CAUSE}(\text{Subj}, e_x) \wedge [\text{BECOME}(\text{your-mouth}, \text{broken}, e_x)]]$

(45), then, conforms to the requirement of (40) perfectly. If the proposal sketched here is on the right track, verb incorporation may not have to be motivated by morphological requirements. Event identification can be a driving force for verb movement, especially in the case of compound formation.

#### 4. Concluding remarks

In this work I argued for a specific analysis for the rise of the RVCs in Chinese. It was shown that some of the earlier proposals may not have provided satisfactory explanations for the decline of free coordination of verbal elements in Ancient Chinese and its correlation with the rise of the RVCs. Mei's (2002) insightful hypothesis was adopted, according to which the phrase structure of Chinese has undergone a major change from dominantly coordinating to dominantly subordinating. A formal account was proposed, and it was suggested that the free coordination of verbal elements in Ancient Chinese was in fact a case of (multiple) adjunctions of VP to the main predicate of the sentence. It was pointed out that this formal account enjoys a number of advantages, as it provides a basis for capturing the right-headedness of verbal complexes in Ancient Chinese, and it makes possible a unified structural analysis for the coordination structures and modification structures in Ancient Chinese.

A number of questions were not touched in this work, though. For example, Liu (2001) points out that the causative/resultative constructions in Chinese may have resulted from more than one possible source, an issue that I did not take up in this work. Furthermore, the analysis advocated in this work, at its best, only approaches some aspects of the coordinating nature of the phrase structure in Ancient Chinese. Further exploration must be carried out, and empirical evidence elicited, before a true understanding is attained regarding the historical change from Ancient Chinese to Modern Chinese in phrase structure. All this will be left for future research.

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(Editor's note: The date of issuance of this volume is April 2004.)

## 論漢語動補複合動詞的起源及其結構因素

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### 摘要

本文討論漢語動補複合動詞在歷史中的起源，以及其結構因素。之前有許多文獻已對漢語動補複合動詞的種種面向提出了精闢的見解，然而甚少有學者針對漢語動補複合動詞的起源，及其與古代漢語中動詞成份自由並列現象之間的邏輯關係，進行實質的探討。本文採納 Mei (2002) 的觀點，認為漢語的詞組結構，由古至今經歷了一場以並列為主到以從屬為主的巨大變化；本文更將漢語動補複合動詞的歷史起源，以及古代漢語中動詞成份並列現象的消失，與此一變化聯繫在一起。首先，我們認為古代漢語的動詞成份自由並列，乃是一種（多個）動詞組加接在一個主要謂語上的現象。動詞成份自由並列之所以在漢語句法中消失，是因為漢語的詞組結構不斷承受壓力，促使一個謂語只表達一個事象結構。由於多個動詞組加接在一個主要謂語上會導致一個謂語表達多於一個事象結構，因此詞成份自由並列現象便逐漸消失。在此同時，從屬性的詞組結構也逐漸出現，生成出現代動補複合動詞所需的事象結構，最終導致動補複合動詞的出現。

**關鍵詞：**並列，加接，事象結構，漢語歷史語法