

**A FORMAL ANALYSIS OF THE VERB COPY
CONSTRUCTION IN CHINESE**

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Abstract

This paper presents a formal analysis of the verb copy construction in Modern Chinese. Unlike the previous analyses, in which this construction is analyzed as a single-headed structure with the second VP as the head and the first VP as an adjunct, our analysis treats the verb copy construction as a coordinated VP, with each VP as a co-head. We further propose that the first VP subsumes the following VPs in this construction. We also show that this alternative approach can successfully capture and explain all of the three key properties that characterize this construction.

1 Introduction

This paper presents a formal analysis of the verb copy construction (VCC) in the framework of LFG (Kaplan and Bresnan 1982, Bresnan 2001, Dalrymple 2001), and this section provides an overview of the VCC and its key properties in Modern Chinese.

The verb copy construction in Modern Chinese refers to a construction in which the verb must be duplicated before its post-verbal adjunct (such as an adverbial phrase), in the presence of at least one other post-verbal constituent (such as an object). For example:

(1) a. 张三 学 中文 学 得 很 好。
ZhangSan xue zhongwen xue de hen hao
ZhangSan study Chinese study DE¹ very well
‘ZhangSan studies/studied Chinese very well’

b. *张三 学 中文 得 很 好。
ZhangSan xue zhongwen de hen hao
ZhangSan study Chinese DE very well

The contrast between (1a) and (1b) shows that the verb *xue* ‘study’ must be duplicated before its post-verbal adjunct *de hen hao* ‘very well’, in the presence of the object *zhongwen* ‘Chinese’.

(1a) and (2) below represent a typical type of VCC in Modern Chinese, with the word order Verb-Object-Verb-Post-Verbal Adjunct. The post-verbal adjunct can be an adverbial phrase (as illustrated in (1a)), but it can be another category as well. For example,

(2) 张三 学 中文 学 了 三 年。
ZhangSan xue zhongwen xue le hen hao
ZhangSan study Chinese study ASP three year
‘ZhangSan have studied Chinese for three years’

In (2), the post-verbal adjunct consists of a noun phrase *san nian* ‘three years’.

Previous studies (C. Li 1975, Huang 1982, Gouguet 2004, 2006, etc.) addressing this construction have focused exclusively on this particular type, in which the first verb is followed by an object, and the verb is duplicated only once. However, this is by no means the only type of the verb copy construction, as shown by (3).

¹ In this paper, DE is a marker for introducing post-verbal adjuncts in Modern Chinese; ASP stands for ‘aspect marker’; CL stands for ‘classifier’.

(3) a. 张三 玩 了 一 天 玩 得 很 累。
 ZhangSan wan le yi tian wan de hen lei
 ZhangSan play ASP one day play DE very tired
 ‘ZhangSan played for a day and was/is tired.’

b. 我 送 他 这 件 礼物 送 得 很 好。
 wo song ta zhe jian liwu song de hen hao
 I give him this CL gift give DE very well
 ‘I gave him this gift and it turned out to be a very good idea.’

c. 他 玩 游戏 玩 了 一 天 玩 得 很 累。
 ta wan youxi wan le yi tian wan de hen lei
 he play game play ASP one day play DE very tired
 ‘He played games for a day and was/is tired.’

d.* 我 送 他 送 这 件 礼物 送 得 很 好。
 wo song ta song zhe jian liwu song de hen hao
 I give him give this CL gift give DE very well

(3a-c) are all examples of the VCC. However, note that in (3a), both verbs are followed by a post-verbal adjunct instead of an object in the first VP. In (3b), the first verb is followed by two objects instead of just one, and in (3c), the verb is duplicated more than once.

Previous studies have also focused on the idea that the VCC in Chinese is motivated by a condition on VP that the verb can only have one complement (C. Li 1975, Y. Li 1985, Dai 1992). Examples such as (3b) apparently do not support this claim, and in fact, the verb cannot be duplicated before the second object, as shown in (3d).

Instead, the correct generalization is that the first VP in the VCC must contain ALL the overt internal arguments of the verb (if there is any internal argument at all), and the next VP(s) contain only single post-verbal adjuncts (Fang 2005). Therefore, the ditransitive verb *song* ‘give’ in (3b) cannot be duplicated before the second object, and both objects have to be contained in the first VP (see *(3d)). The internal argument *youxi* ‘game’ in (3c) has to be in the first VP as well (and not simply in any of the (other) VPs).

Similarly, because both the object *yi ben shu* ‘a book’ and the oblique *zai zhuo shang* ‘on the desk’ are internal arguments of the verb *fang* ‘put’ in (4), the verb cannot be duplicated before the oblique, as shown by the contrast between (4a) and (4b). However, it must be duplicated before the post-verbal adjunct if present, as shown in (4c).

(4)a. 张三 放 了 一 本 书 在 桌 上。
 ZhangSan fang le yi ben shu zai zhuo shang
 ZhangSan put ASP one CL book at desk top
 ‘ZhangSan put a book on the desk.’

b.* 张三 放 了 一 本 书 放 在 桌 上。
 ZhangSan fang le yi ben shu fang zai zhuo shang
 ZhangSan put ASP one CL book put at desk top

- c. 张三 放 了 一 本 书 在 桌 上 放 了 很 久。
 ZhangSan fang le yi ben shu zai zhuo shang fang le hen jiu
 ZhangSan put ASP one CL book at desk top put ASP very long
 ‘ZhangSan put a book on the desk, and he left it there for a long time.’

In contrast, other VPs in the VCC, which do not contain internal arguments, must contain only one post-verbal adjunct, and the verb must be duplicated before each post-verbal adjunct if there is more than one post-verbal adjunct, as shown in (3a) and (3c).

To summarize, the VCC in Modern Chinese can be schematized as follows.

(5) The Verb Copy Construction Schema

First VP:	Verb	Object(s)/Post-verbal Adjunct
	then	
Second VP:	Verb	Post-verbal Adjunct
	iterating to	
Nth VP:	Verb	Post-verbal Adjunct

It is also important to point out that this construction has the following three key properties (i-iii) below. The third property has not been mentioned yet, but is crucial in diagnosing the right analysis for the VCC.

- (i) The VP involving object(s), if it occurs, must occur before any other VP(s) involving a post-verbal adjunct in the VCC. In other words, the order in the VCC exhibits a type of asymmetry, namely, object(s) must precede post-verbal adjunct(s), as shown by the contrast between (6a) and (6b).

- (6) a. 张三 弹 钢琴 弹 得 很 好。
 ZhangSan tan gangqin tan de hen hao
 ZhangSan play piano play DE very well
 ‘ZhangSan plays piano very well.’

- b. *张三 弹 得 很 好 弹 钢琴。
 ZhangSan tan de hen hao tan gangqin
 ZhangSan play DE very well play piano

- (ii) VCC can be extended to multiple verb copying cases, as shown in (3c), repeated below as (7).

- (7) 他 玩 游戏 玩 了 一 天 玩 得 很 累。
 ta wan youxi wan le yi tian wan de hen lei
 he play game play ASP one day play DE very tired
 ‘He played games for a day and was/is tired.’

- (iii) Object extraction from the first VP is allowed in the VCC, but only if the first VP contains another object, as illustrated by the contrast between (8a) and (8b).

(8)a. 这 件 礼物 我 送 他 <gap> 送 得 很 好 。
 zhe jian liwu wo song ta <gap> song de hen hao
 this CL gift I give him <gap> give DE very good
 ‘I gave him this gift and (it turned out to be) very good.’

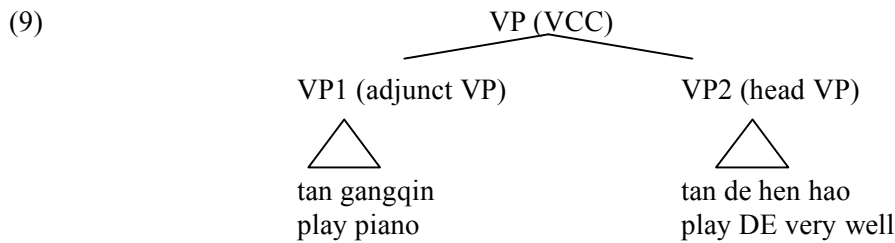
b. * 钢琴 张三 弹 <gap> 弹 得 很 好 。
 gangqin ZhangSan tan <gap> tan de hen hao
 piano ZhangSan play <gap> play DE very well

These three properties are key aspects of the VCC in Modern Chinese, and it is the goal of this paper to provide a formal analysis of this construction that can capture and explain all of these properties. Previous analyses of this construction are reviewed in section 2, and we then present our alternative analysis in section 3.

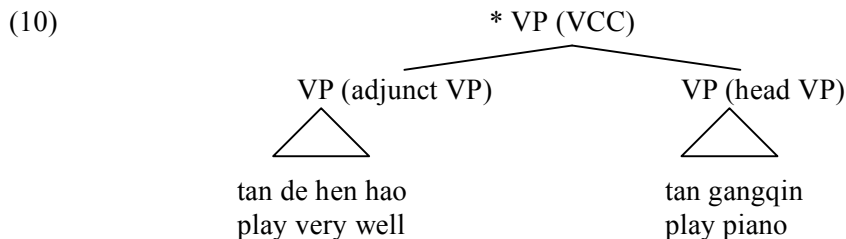
2 Previous Analyses

In previous approaches (Huang 1982, Gouguet 2004, 2006), the VCC is analyzed as a single-headed structure; the second VP is the head and the first VP is an adjunct, either base-generated or created as a movement copy. However, these approaches cannot capture and explain all of the three key properties of the VCC presented above.

Huang (1982) proposes that the VCC in Modern Chinese is a single-headed construction, and the second VP is the main predicate. He also proposes that the first VP is the adjunct of the second VP in a VCC, as shown in (9).



Huang’s analysis does not capture the three key properties of the VCC. First of all, it does not explain the word order asymmetry, namely, the object(s), if it occurs, must occur before the post-verbal adjunct(s). It is unclear how Huang’s analysis would prevent the VP *tan gangqin* ‘play piano’ from being generated as the head VP and the VP *tan de hen hao* ‘play very well’ from becoming the adjunct, as shown in (10).



In fact, a syntactic representation like (10) would more closely match the semantics of the VCC, given that semantically, the VP with a post-verbal adjunct serves as the modifier of the VP with an object, and normally, the modifier of a VP would map into the adjunct position.

It is also unclear how Huang's analysis can accommodate cases such as (7), in which the verb is duplicated more than once. In his study, only cases in which the verb is duplicated once are considered.

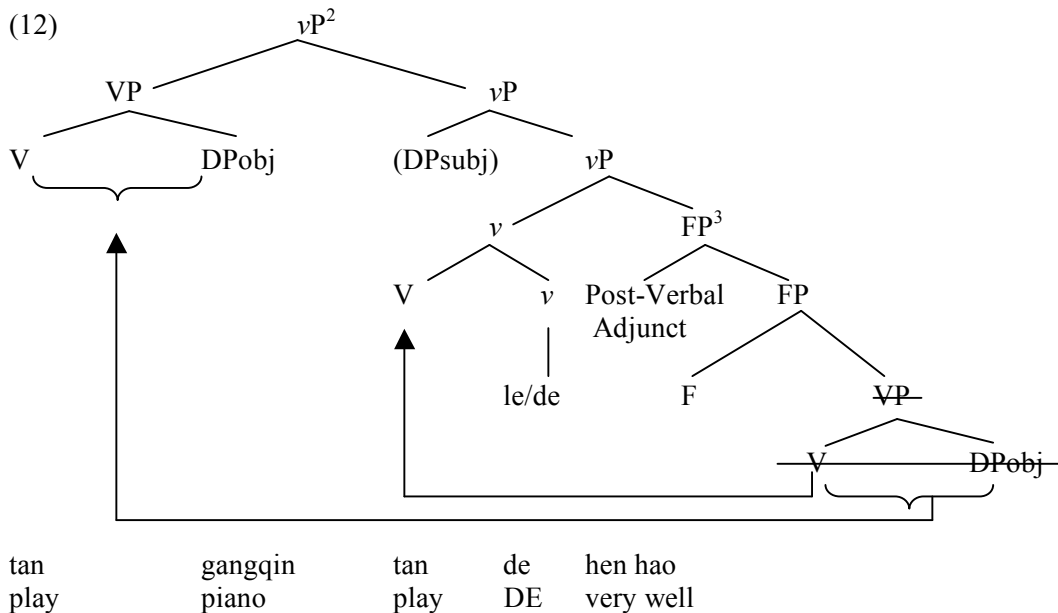
Huang's analysis is further challenged by the object extraction facts illustrated in (8) (repeated below as (11)).

(11)a. 这 件 礼 物 我 送 他 <gap> 送 得 很 好。
zhe jian liwu wo song ta <gap> song de hen hao
this CL gift I give him <gap> give DE very good
'I gave him this gift and (it turned out to be) very good.'

b. * 钢琴 张三 弹 <gap> 弹 得 很 好。
gangqin ZhangSan tan <gap> tan de hen hao
piano ZhangSan play <gap> play DE very well

(11a) contradicts the Adjunct Island Constraint (part of the CED, Huang 1982) which prohibits the extraction of an element from an adjunct. Furthermore, any movement approach that allows (11a) would have to allow (11b), which would obviously be an undesirable result. In fact, the contrast between (11a) and (11b) shows that any phrase structure constraint on VP in Modern Chinese makes reference only to overt structure (c-structure in LFG). As far as we can see, every movement-based analysis must incorrectly generate (11b): we know that movement out of the first VP is possible, somehow, due to (11a), and therefore we would also expect the base structure of (11b) to be generated by the grammar (it is grammatical if *gangqin* 'piano' remains in situ), with movement then giving the surface form in (11b).

Gouquet (2004, 2006) also treats the VCC as a single-headed construction. He proposes that the VCC in Modern Chinese is derived from VP movement and head movement, as illustrated below.



According to Gouguet, (12) represents the structure and the derivational process of a VCC such as *tan gangqin tan de hen hao* ‘play piano play very well’. The V moves first as a head, adjoining to *v*, and then the whole VP, including the V and the object, moves to the sister position (the adjunct position) of the *vP*. After these two movements, the original VP is deleted (unpronounced) and the new VCC is derived.

If the VCC is derived through the movement process described above, it is obvious that the object must precede the second verb and the post-verbal adjunct. Therefore, Gouguet’s analysis does predict the asymmetry between the object and the post-verbal adjunct in the VCC. However, Gouguet’s analysis ignores an important fact of the VCC, which is that a VCC in Modern Chinese does not necessarily involve a VP with an object. For example:

- (13) 他 玩 了 一 天 玩 得 很 累。
 ta wan le yi tian wan de hen lei
 he play ASP one day play DE very tired
 ‘He played for a day and was/is tired.’

In this type of VCC, both the first and the second verb take a post-verbal adjunct. Because in Gouguet’s analysis all post-verbal adjuncts appear in the SPEC (specifier) position of FP as shown in (12), it is unclear how this type of VCC can be derived through the movement mechanism described. Furthermore, the motivation for the VP movement remains unclear, as acknowledged by Gouguet himself.

² According to the Little *v* Hypothesis (Kratzer 1996), external arguments such as agent subjects are not assigned directly by a verb but rather by a silent “light verb” acting as a secondary predicate. This silent “light verb” is notated as a little *v* in syntactic theories adopting this hypothesis.

³ In Gouguet (2004, 2006), post-verbal adjuncts merge into the SPEC (specifier) position of FP, which is a higher projection containing VP.

In addition, Gouguet’s approach does not capture and explain the other two key properties of the VCC: multiple verb copying cases such as (7) and object extraction facts illustrated in (11)⁴ pose the same challenges to Gouguet as they do to Huang (1982).

Our paper provides an alternative analysis in the framework of LFG for the VCC in Modern Chinese, which can capture and explain all of the relevant properties. Our analysis is discussed in the next section.

3 Our Approach

Based on historical evidence, facts of aspect attachment, adjunct distribution and negation scope in the VCC, we propose that the VCC should be analyzed as a double/multiple-headed coordinated VP, with each VP as a co-head. These four pieces of evidence are presented in 3.1.

3.1 Evidence Supporting VCC as a Coordinated VP

3.1.1 Historical Evidence

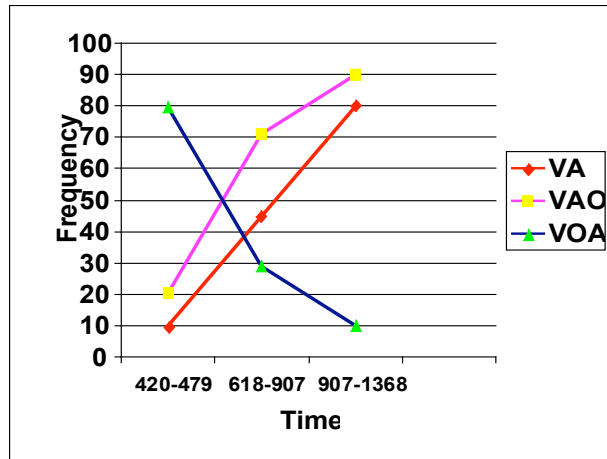
In the history of Chinese, the VCC (the ‘V(erb) O(bject) V(erb) (post-verbal) A(djunct)’ pattern) did not emerge until the Early-Modern Chinese period (1001-1900). Instead, it was the ‘V(erb) O(bject) (post-verbal) A(djunct)’ pattern that was commonly used until the 5th century. For example,

- (14) 讀 書 百 遍 (而義自見)。(VOA)
du shu bai bian
read book one hundred time
‘Read a book a hundred times.’
(《三國志》 *San Guo Zhi* (265-316))

However, this VOA pattern started to decline after the 5th century, and by the time the VOVA pattern emerged, the VOA had almost completely disappeared.

Fang (2006) proposes that the decline of the VOA pattern and the rise of the VOVA pattern (VCC) are triggered by the development of VA compound verbs (such as 打死 *da-si* ‘beat to death’). According to Fang, this hypothesis is supported by the fact that the development of VA compound verbs coincides with the decline of the VOA and the rise of the VAO in Chinese history, as demonstrated by the graph below.

⁴ According to Gouguet’s analysis, the first VP is the adjunct and the second VP is the head VP in the VCC. This is because the second verb is derived through head movement whereas the first verb is derived through VP movement to an adjunct position.



Increased use of the VA compound verbs introduces a pattern pressure on A in the sense that the favored position for A is the position directly associated with the V, and this leads to the rise of VAO pattern. However, the VAO pattern is not the perfect replacement for the declining VOA pattern for the following two reasons: first, the VA in the VAO must be a compound verb, however, not all of the A in the VOA pattern can form a compound verb with the V; second, the A in the VAO is not the information focus whereas the A in the VOA is. The development of the VA compound verbs seems to introduce a syntactic and pragmatic conflict on the VOA pattern: syntactically the A is supposed to directly associated with the V, however, pragmatically the A is supposed to remain in final position, because it is the information focus, and the default position for information focus is final position.

Fang proposes that the reason of the VCC (VOVA pattern)'s emergence is precisely because the VOVA pattern can reconcile the syntactic and pragmatic conflicts developed on the VOA pattern due to the increased use of VA compound verbs. In the VOVA pattern, the A is directly associated with the V, and meanwhile, it remains in final position, the default position for information focus.

Fang also proposes that that the VCC in Modern Chinese emerged from two independently well-formed VPs in a context such as (15).

(15) (NP_i) VO, t_i V得de A

In (15), the two VPs serve as the main predicate of two different clauses, in which the subject of the second clause is pro-dropped and co-indexed with the subject of the first clause, as exemplified in (16).

(16) (當日武松歡喜) 飲 酒, 吃⁵ 得 大 醉
 yin jiu, chi de da zui
 drink wine drink DE very drunk

‘(Wu, Song) drunk wine until he was very drunk.’ (《水滸傳》 *Shui Hu Zhuan* 13th -14th century)

Over time, the comma (the pause) separating these two VPs disappeared for reasons such as fast speaking speed, and the two clauses were reanalyzed as one. This reanalysis process produced a new pattern as shown in (17) below, in which the original two predicative VPs are

⁵ 吃 *chi* ‘drink’ and 飲 *yin* ‘drink’ are synonyms in (16).

reanalyzed as elements of one predicate: a VCC. (18) is such an example in the same book in which (16) is found.

(17) VOV得 *de* A

(18) (這胖和尚不時來我店中，) 吃 酒 吃 得 大 醉，
 chi jiu chi de da zui
 drink wine drink DE very drunk
 ‘(This fat monk) drank wine until he was very drunk.’ (《水滸傳》 *Shui Hu Zhuan* 13th -14th century)

Post-verbal adjuncts introduced by *de* ‘DE’ are the earliest type of post-verbal adjunct appearing in the VCC. Over time, other types of post-verbal adjuncts also started to occur in the VCC, as shown in (19). By the time of the late Qing Dynasty (1644-1911), the VCC had already been fully developed.

(19) 請 人 請 到 四 五 次
 qing ren qing dao si wu ci
 invite people invite ASP four five time
 ‘(...) invited people four or five times.’ (《卢太学诗酒傲公侯》 *Lu taixue shi jiu ao gonghou* 14th -17th century)

This historical process clearly shows that the two VPs forming the VCC are equal elements of the VCC and thus supports our analysis of the VCC as a coordinated VP in Modern Chinese.

In addition to the historical evidence, facts regarding the aspect attachment, adjunct distribution and negation scope in the VCC also support analyzing it as a coordinated VP. These facts are discussed in the following sub-sections.

3.1.2 Aspect Attachment

The fact that the perfective aspect marker *le* can appear in either the first VP or the second VP or both in a VCC also suggests that each VP is a head, because the perfective *le* is only attached to heads in Modern Chinese. For example:

- (20) a. 张三 弹 钢琴 弹 了 很 久。
 ZhangSan tan gangqin tan le hen jiu
 ZhangSan play piano play ASP very long
 ‘ZhangSan played piano for a very long time.’
- b. 张三 弹 了 一 天 弹 得 很 累。
 ZhangSan tan le yi tian tan de hen lei
 ZhangSan play ASP one day play DE very tired
 ‘ZhangSan played for a day and was/is tired.’
- c. 张三 弹 了 一 天 弹 了 一 百 遍。
 ZhangSan tan le yi tian tan le yi bai bian
 ZhangSan play ASP one day play ASP one hundred time
 ‘ZhangSan played for a day and played one hundred times.’

It is true that the aspect marker *le* tends not to occur in the VP involving object(s) (as shown in (21)), which would be the first VP in the VCC if it occurs, and Huang (1982) view this fact as

evidence that the first VP in the VCC is an adjunct rather than a head VP. However, as shown by (20b) and (20c), it is not true that the aspect marker cannot occur in the first VP in the VCC. We believe that the real reason why the aspect marker tends not to appear in the VP involving object(s) is because the VP involving object(s) must serve as a topic in the VCC (Cui 2003), and aspect markers do not normally appear in the topic.

- (21) *张三 弹 了 钢琴 弹 很 久。
 ZhangSan tan le gangqin tan hen jiu
 ZhangSan play ASP piano play very long

3.1.3 Adjunct Distribution

Normally, an adjunct of a VP can only be distributed to the head of that VP, but not to another adjunct of that VP. For example:

- (21) ZhangSan studied Chinese very well in Beijing.

In (21), the adjunct ‘in Beijing’ is distributed to the head VP ‘studied Chinese’, but not to the adjunct ‘very well’.

However, the adjunct of a VCC in Modern Chinese must be distributed to all the VPs. For example:

- (22) 张三 在 北京 学 汉语 学 得 很 好。
 ZhangSan zai Beijing xue hanyu xue de hen hao
 ZhangSan in Beijing study Chinese study DE very well
 ‘ZhangSan studied Chinese very well in Beijing.’

(22) entails both ‘ZhangSan studied Chinese in Beijing’ and ‘ZhangSan studied very well in Beijing’, which suggests that the adjunct *zai Beijing* ‘in Beijing’ is distributed to both VPs. Thus both VPs are heads rather than one being an adjunct of the whole VCC: *xue hanyu xue de hen hao* ‘study Chinese study very well’.

3.1.4 Negation

A negator such as *mei* ‘not’ cannot appear before the first VP in the VCC; however, it can appear before the second VP, as shown by the contrast between (23a) and (23b).

- (23) a. *他 没 学 汉语 学 好。 (*neg+VOVA)
 ta mei xue hanyu xue hao
 he not study Chinese study well
- b. 他 学 汉语 没 学 好。 (VO+neg+VA)
 ta xue hanyu mei xue hao
 he study Chinese not study well
 ‘He studied Chinese, but did not study well.’

Analyzing the VCC as a coordinated VP provides an explanation for this contrast, for the following reason. When it appears before the coordination, *mei* ‘not’ scopes over the entire construction, for example:

(24) 张三 没 批评 责备 李四。
 ZhangSan mei piping zebei lisi
 ZhangSan not criticize blame LiSi
 ‘ZhangSan did not criticize and blame LiSi.’

As shown in (24), the negator *mei* ‘not’ is distributed to both *piping* ‘criticize’ and *zebei* ‘blame’, and (24) entails both ‘ZhangSan did not criticize LiSi’ and ‘ZhangSan did not blame LiSi’.

Returning now to (23a), if it involves a coordinated VP, the negator *mei* ‘not’ will distribute to both *xue hanyu* ‘study Chinese’ and *xue hao* ‘study well’ in (23a); the ill-formedness is exactly due to this negator distribution. The first part, *ta mei xue hanyu* ‘he not study Chinese’ entails that ‘he did not study at all’. However, *ta mei xue hao* ‘he not study well’ entails that ‘he studied (but did not study well)’, and these two entailments conflict. Therefore, (23a) is ill-formed due to an entailment conflict introduced by the negator distribution, which is in turn because the VCC is a coordinated VP construction.

By contrast, the negator is placed after the first VP and so only scopes over the second VP in (23b). Then both VPs in (23b) entail that ‘he studied Chinese’, and there is no entailment conflict.

3.2 VCC as a Special Type of Coordinated VP

Based on the evidence presented in section 3.1, we propose that the VCC is analyzed as a double/multiple-headed coordinated VP, with each VP as a co-head, as shown in (25).

(25) VP(VCC) → VP VP +.
 ↓ ∈ ↑ ↓ ∈ ↑

We further propose that the first VP stands in a subsumption relation (Zaenen and Kaplan 2002, 2003) to every other VP. Making the first VP subsume other VPs makes the first VP more general than every other VP in the VCC, which captures an observation in previous studies (Cui 2003, etc.) that the first VP serves pragmatically as the secondary topic, and the other VPs involving post-verbal adjuncts serve as the comment to the first VP. For example,

(26) 张三 学 汉语 学 得 很 好。
 ZhangSan xue hanyu xue de hen hao
 ZhangSan study Chinese study DE very well
 ‘ZhangSan studied Chinese very well.’

In (26), *xue hanyu* ‘study Chinese’ serves as the secondary topic and *xue de hen hao* ‘studied very well’ serves as the comment to the first VP and provides more specific information about the topic: the result of ‘study Chinese’. In this sense, the first VP is more general and subsumes every other VP in the VCC.

Technically, this subsumption relation can be achieved by making the first VP the head of the entire VCC⁶, as shown in (27).

(27) VP(VCC) → VP VP +.
 ↓ ∈ ↑ ↓ ∈ ↑
 ↓ = ↑

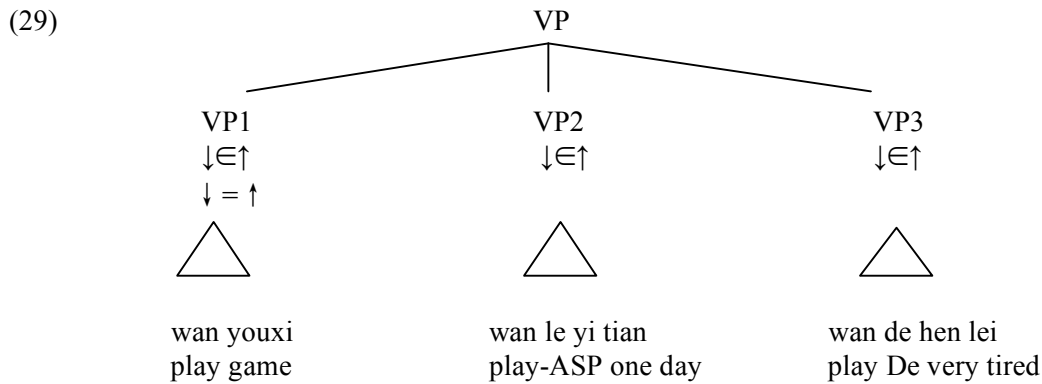
(27) captures and explains all of the three key properties of the VCC discussed in section 1.

⁶ Thanks to Ron Kaplan for this solution.

First of all, the VCC cases in which the verb is copied more than once (such as (28)) follow in a straightforward way.

- (28) 他 玩 游戏 玩 了 一 天 玩 得 很 累。
 ta wan youxi wan le yi tian wan de hen lei
 he play game play ASP one day play DE very tired
 ‘He played games for a day and was/is tired.’

Following (27), (28) is simply a coordinated VP with three conjuncts, as illustrated in (29).

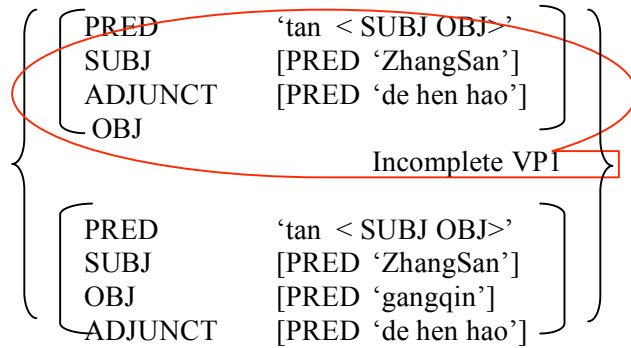


Second, our approach predicts the constituent order asymmetry in the VCC. Specifically, the VP involving object(s) must occur before any VP involving a post-verbal adjunct, as shown by (6), repeated below as (30).

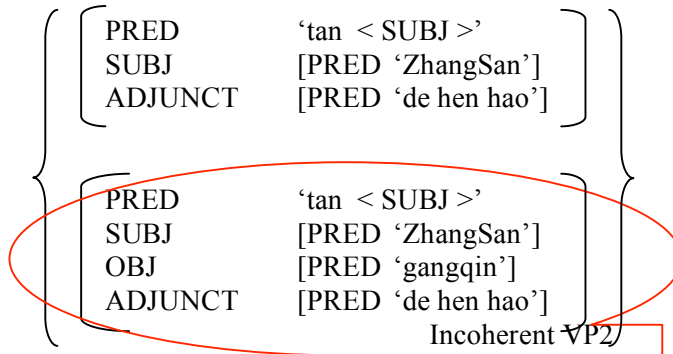
- (30) a. 张三 弹 钢琴 弹 得 很 好。
 ZhangSan tan gangqin tan de hen hao
 ZhangSan play piano play DE very well
 ‘ZhangSan plays piano very well.’
- b. *张三 弹 得 很 好 弹 钢琴。
 ZhangSan tan de hen hao tan gangqin
 ZhangSan play DE very well play piano

(27) requires that all of the verbs in the VCC must share the subcategorization frame of the first VP. Therefore, (30b) is ruled out either by the Completeness Condition of LFG (Kaplan and Bresnan 1982), as the first VP is locally incomplete, see (31); or by the Coherence Condition of LFG (Kaplan and Bresnan 1982), as the object in the second VP is ungoverned, see (32).

(31): blocked by (27)

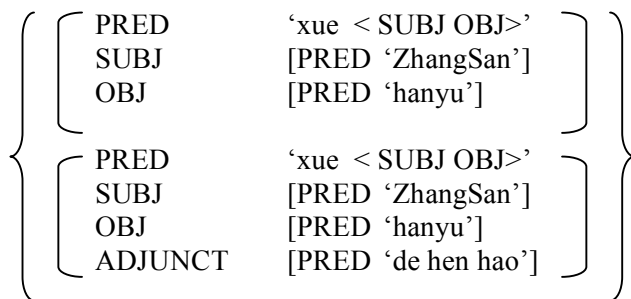


(32): blocked by (27)



In contrast, even though the second verb *tan* ‘play’ in (30a) does not have a local object, its VP is complete, as the VP’s information is subsumed by that of the first VP, which is complete, as shown in (33).

(33): f-structure of (30a)



Finally, the object extraction facts in the VCC (as shown in (8), repeated below as (34)) are explained by the C-structure constraints on Chinese VPs.

(34)a. 这 件 礼物 我 送 他 <gap> 送 得 很 好。
zhe jian liwu wo song ta <gap> song de hen hao
this CL gift I give him <gap> give DE very good
‘I gave him this gift and (it turned out to be) very good.’

b. * 钢琴 张三 弹 <gap> 弹 得 很 好。
 gangqin ZhangSan tan <gap> tan de hen hao
 piano ZhangSan play <gap> play DE very well

Each Chinese VP is internally as simple as possible (an Economy constraint; see Peck and Sells (2006)). Yet each VP must consist of V and a sister X where X can be internal argument(s) or one post-verbal adjunct (Fang 2005, 2006); a Chinese VP has a minimal condition that it contains some sister to V. Therefore, when the object *gangqin* ‘piano’ in (34c) appears in fronted position, and with no duplication of the verb, the VP *tan de hen hao* ‘plays very well’ satisfies the c-structure constraints on VP, and no VCC needs to be triggered. The f-structure is well formed – it is a single f-structure with an object and an adjunct. Note that this analysis crucially relies on the assumption that the “gap” in these examples has no status in c-structure: the long-distance dependency is only represented at f-structure (TOPIC=OBJ). In contrast, when the verb *tan* ‘play’ is duplicated as shown in (34b), the first VP consists of a bare verb, which violates the c-structure constraint on Chinese VPs mentioned above.

Sometimes, even with a topicalized object, the VCC is necessary: when the object *zhe jian liwu* ‘this gift’ in (34a) is fronted, the VCC must be triggered because otherwise **song ta de hen hao* violates the C-structure VP rules: it is too complex.

4 Conclusions

To summarize, we have presented an analysis for the VCC in Modern Chinese. Unlike the previous analyses, in which the VCC is analyzed as a single-headed structure with one VP as the head and the other VP as an adjunct, our analysis treats the VCC as a coordinated VP, with each VP as a co-head. We further propose that the first VP subsumes the following VPs in the VCC and technically, this can be achieved by making the first VP the head of the entire VCC.

We have shown that this proposed approach can successfully capture and explain all of the three key properties that characterize the VCC: it predicts that VO must precede VA in the VCC; it explains multiple verb copying cases in a straightforward way; and it correctly predicts the object extraction facts involving the VCC. It makes these predictions only because of the factorization of information into f-structure and c-structure: the constraints on VP are partly functional (the first VP must be locally complete and coherent) and partly purely structural: a VP consists of a V and at least one sister, but the VP must be as simple as possible (i.e., constrained by f-structure well-formedness).

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