Article

Pedagogical and Theoretical Issues around the Resultative Verb Compound Construction in Mandarin Chinese

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Abstract

In this study, I discuss pedagogical and theoretical issues of the resultative verb compound (RVC) construction, such as *chi-wan* 'eat-finish' and *pao-lei* 'run-tired' in Mandarin Chinese. I first revisit the linguistic properties of RVC compounds by reviewing previous studies and conducting a textbook analysis. Then, I demonstrate that there are at least three different types based on their properties. Type 1 compounds are the basic compound in which the second element of the compound always expresses the result state of the object or the subject. The second element of Type 2 compounds is a pure telic morpheme used to signal the completion of an event, and this type of compound has a different syntactic structure. Type 3 compounds are similar to some of the English phrasal resultatives in that the two elements of the compound, as a whole, implicitly express the result state. Finally, I discuss several pedagogical issues regarding V-V compound instruction. I suggest that they should not be grouped into a single category, as they demonstrate great variation. Therefore, the current study not only provides an alternative linguistic analysis of Chinese RVCs but also suggests several pedagogical strategies that facilitate L2 learners' acquisition of this grammatical construction.

1 Introduction

The construction of resultative verb compound (RVC) in Mandarin Chinese has attracted a great deal of attention and has been extensively studied in literature (Li & Thompson, 1981; Huang, 1982, 2006; Tai, 1984; Tang, 1997; Sybesma, 1999; Zhang, 2001, 2017; Huang et al., 2009; Mateu, 2012). (1) provides four sentences containing this type of construction.

> (1) a. Lisi da-po-le   na   ge chuanghu.
>   Lisi hit-break-Prf that CL window
>   "Lisi broke that window."

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b.   Lisi kan-wan-le   na ben shu.

      Lisi read-finish-Prf that CL book

      "Lisi finished reading that book."

c.   Lisi pao-lei-le.

      Lisi run-tired-Prf

      "Lisi got tired as a result of running."

d.   Lisi zou-jin   jiaoshi le.

      Lisi walk-enter classroom LE

      "Lisi has walked into the classroom."

As illustrated in (1a) and (1b), which contain a referential object, the object must appear directly after the compound.[3] In (1a), the RC denotes the result state of the object. However, the RC in (1b), containing an object, simply indicates the completion of the event denoted by the verb without stating the result state of the object. As shown in (1c), when a sentence has an RVC that does not have an object, the RC may signal the result state of the subject, which presents a different pattern from the English resultative construction, in which the result-denoting element is predicated of the object rather than of the subject[4]. Finally, as illustrated in (1d), the verb of the compound implies a displacement, and the RC signals the direction in which the subject moves as a result of the displacement (Li & Thompson, 1981).

Nevertheless, the construction's syntactic structure remains controversial. In some studies, such as Tang (1997), it is argued that the result-denoting element (i.e., the second element of the compound) functions as a complement of a functional phrase (FP) that is projected between the two elements of the compound. This FP is responsible for the telic reading. In other studies, such as Huang (2006) and Mateu (2012), it is argued that the first element in an RVC, which is in fact a manner modifier, is used to modify a null light verb that takes the result-denoting element as its complement. Given that the compounds display many variations, the first goal of the paper is to revisit the construction and provide a different linguistic analysis. In particular, I will show that these compounds can be categorized into three different groups. Type 1 compounds are the basic compound, in which the RC always expresses the result state of either the subject or the object of the sentence. Type 2 compounds, such as *kan-wan* 'read-finish' (= finish reading), do not contain a clearly stated result state, and RC in these compounds simply signals completion of the event denoted by the V1. Finally, Type 3 compounds are those compounds that signal a direction towards which the subject or object is moving. I will illustrate that this type of RVC has several properties that are similar to English phrasal verbs. Moreover, the inconsistences of the V-V compounds demonstrated above have posed a challenge to Chinese as a Foreign/Second Language (CFL/CSL) instructors and learners. For example, although the V-V compounds display several different properties and can be categorized into at least three different groups, they are uniformly named V-V resultative compounds in most textbooks. As a result, different teaching strategies are needed when these compounds are introduced in a CFL/CSL classroom. The second goal of this paper is to conduct a textbook analysis; based on the results, I will also provide several pedagogical suggestions about this construction.

The paper is organized as follows. In Section 2, I review some previous studies on RVCs and conduct a textbook analysis on RVCs as well. In this section, I will further introduce my three proposed RVC types. In Section 3, a brief introduction to the theoretical background and a comparison of the three types of V-V compounds are presented. Following, in Section 4, I provide pedagogical solutions to the challenges that CFL/CSL learners may encounter when learning the construction. Finally, conclusions are drawn in Section 5.

2 Different Types of RVCs

2.1 On RVC taxonomy

Li and Thompson (1981) divided RVCs into four basic groups: (a) cause RVCs, (b) achievement RVCs, (c) directional RVCs, and (d) phase RVCs. (2) provides some examples from their study:

(2) a.   Wo ba chabei da-po le.   (Cause RVC)

I   BA cup   hit-broken LE

"I broke the teacup."

b.   Wo ba nei ge   zi   xie qingchu le. (Achievement RVC)

I   BA that CL character   write clear LE

"I wrote that character clearly."

c.   Ta dai-shang-le   ta   de maozi.   (Directional RVC)

3sg wear-ascent-Prf 3sg GEN hat

"S/He put on his/her hat."

d.   Ta de   qian yong-wan le.   (Phase RVC)

3sg GEN mony use-finish LE

"His/Her money is all used up."

As can be seen, the RC in (2a) indicates the result state of the object, which is caused by the subject's action. In (2b), the RC further states the result state of the object; however, the compound also signals an additional goal-oriented meaning. Next, the V1 in (2c) implies a displacement, and the RC signals the direction in which the subject moves as a result of the displacement (Li & Thompson 1981). Finally, in (2d), the phase complement *wan* 'finish' simply indicates completion of the event denoted by the V1.

Li and Thompson's (1981) taxonomy are straight-forward, and the majority of the RVCs are included in their discussion. However, the first two types are similar in that the RCs in these sentences are used to specify the result state of either the subject or the object. Additionally, even in a sentence such as (2b), which is goal-oriented, a causative meaning is still attainable; thus, I will group their first two types (cause and achievement RVCs) together.

In his recent study, Chu (2014) indicated that the RVCs presented in the textbook *Integrated Chinese* (IC) can be generally categorized into three types. Table 1 below gives a summary of the three types of RVCs that are discussed in Chu's (2014) study.

Table 1

Chu's (2014) Taxonomy of RVCs in Integrated Chinese

Type A	The semantic orientation of RC refers to the subject
	(3) a. Zhangsan ting-dong-le (laoshi de hua).
	Zhangsan listen-understand-Prf (teacher GEN speech)
	'Zhangsan understood what the teacher said (by listening).'
Type B	The semantic orientation of RC refers to V1 to describe and comment on V1
	b. Zhangsan zuo-wan-le gongke.
	Zhangsan do-finish-Prf homework
	'Zhangsan finished the homework.'
Type C	The semantic orientation of RC refers to the object
	c. Zhangsan xie-cuo-le zi.
	Zhangsan write-wrong-Prf character
	'Zhangsan wrote the character wrong.'

As Table 1 shows, the RCs in Chu's (2014) Type A and C RVCs in fact have the same function: they specify what the result state is about. The only difference between these two types is to what the result state is used to refer. In Type A, the RC is used to refer to the result state of the subject, while in Type C, it is used to refer to the object. We could simply group them into one type as long as the semantic orientation of the resultative complement is used to refer to the subject, the object (if any). Second, unlike Li and Thompson (1981), the directional RVCs are not included in Chu's (2014) discussion. However, as I will show in Section 2.2, the textbook does in fact include instruction for this type of RVC in two lessons. Also, I will show that directional RVCs are similar to English particle verbs in many ways, and a separated type is needed for pedagogical reasons.

2.2 An analysis on the RVCs in Integrated Chinese

In this subsection, I give a brief summary of the RVCs that are introduced in the *Integrated Chinese* (3rd Edition, books 1 and 2) textbook. The textbook is one of the most widely used CFL/CSL textbooks in the U.S., and the two examined books contain 20 lessons that are generally completed in two to three semesters. Table 2 below gives a summary and examples of the four types of RVCs included in the textbook.

Table 2

RVCs in Integrated Chinese Book 1 and Book 2

Lesson 6	Directional RVCs (simple)
	(4) a. Ni shenme shihou hui-lai?
	You what time return-come
	'When are you coming back?'
Lesson 16	Directional RVCs (complex)
	b. Ta zou-xia lou lai.
	s/he walk-down stair come
	'S/he walked downstairs.'
Lesson 12	Cause RVCs
	c. Ni zhao-cuo qian le.
	you find-wrong money LE
	'You gave me the incorrect change.'
Lesson 12	Achievement RVCs
	d. Na ge ren wo meiyou kan qingchu.
	that CL person I not look clear
	'I didn't see clearly who that person was.'
Lesson 12	Phase RVCs
	e. Xiao-baicai mai-wan le.
	little bok choy sell-finish LE
	'Baby bok choy is sold out.'

As Table 2 illustrates, the RVC construction is first introduced in Book 1, Lesson 6, which presents Li and Thompsons' (1981) directional RVCs; the same RVC type with a more complex form is introduced again in Lesson 16. The other three major types are all presented in Lesson 12, including: (1) phase RVCs (e.g., *mai-wan* 'sold out'), (2) cause RVCs (e.g., *xie-dui* 'write (something) correctly), and (3) achievement RVCs (e.g., *kan-qingchu* 'see clearly').

The RVCs are named in these lessons as follows: directional complements (I) in Lesson 6; resultative complements (I), as well as the word *hao* 'good' functioning as an RVC, in Lesson 12; resultative complements (II) in Lesson 13; and directional complements (II) in Lesson 16. However, given that RVCs have different properties, the taxonomy used in the textbook seems over-simplified. For example, RVCs that contain the phase complement *wan* 'finish' do not generally have a result state. For instance, *wan* 'finish' in the phrase *chi-wan dangao* 'eat-finish cake = finished eating the cake' (Lesson 14) simply signals the completion of the eating event, and it says nothing about the result state. This is different from other RVCs, such as achievement and cause RVCs. A clarification in the textbook is needed. In addition, the majority of RVCs are introduced in one single lesson (i.e., Lesson 12); the issue of whether or not students will acquire various types of RVCs in one single lesson needs future research.

2.3 Three types of RVCs

I now introduce the three types of RVCs that I will use in this study. In contrast to Li and Thompson (1981), I put achievement and cause RVCs in one group given that many of the achievement RVCs also possess a causative reading. Also, the main function of the RC in these two types of RVCs is to provide a result state. The second group of RVCs is the phase RVCs. The main function of the RC in this type of RVC is to signal the completion of the event denoted by the V1 of the compound. Finally, the third group of RVCs includes the directional RVCs. I will illustrate that these three types of compounds do not in fact share the same properties, both syntactically and semantically, although they have the same word order. However, when comparing these different types of RVCs, I will also adopt some English data given that the resultative construction has been extensively discussed in literature, in particular, the English resultative construction. Also, the focus in the present study is on CFL/SCL learners whose native language is English. Discussion on the English resultative construction would facilitate these learners' acquisition of this construction.

2.3.1 Type 1 RVCs

Type 1 RVCs represents the very basic type of the construction in Mandarin Chinese and demonstrates several syntactic and semantic properties. As we can observe from (5), the RC in this type of RVC denotes the result state of either the object or the subject. For example, the handkerchief, as the object, became wet as a result of the crying event in (5a), and the subject, Lisi, became tired as a result of the walking event in (5b).

> (5) a.   Lisi ku-shi-le   shoupa.
>
>   Lisi cry-wet-Prf handkerchief
>
>   "The handkerchief became wet as a result of Lisi's crying."
>
>   b.   Lisi zou-lei-le.
>
>   Lisi walk-tired-Prf
>
>   "Lisi became tired as a result of walking."

Due to the fact that the RC of Type 1 RVCs can be either an adjectival or a verbal predicate, we can observe several other characteristics. For instance, in addition to the compound resultative construction, Mandarin Chinese has another type of resultative construction, namely the V-*de* phrase resultative (e.g., Tang, 1997; Sybesma, 1999; Huang, 2006). (6) gives two examples of this type of construction:

> (6) a.   Lisi ku-de shoupa   dou shi-le.
>
>   Lisi cry-de handkerchief all   wet-Prf
>
>   "The handkerchief became all wet as a result of Lisi's crying."

  b. Lisi zou-de dou lei-le.

   Lisi walk-de all tired-Prf

   "Lisi became tired as a result of walking."

As can be seen, in a V-*de* construction, the result-denoting element, such as *shi* 'wet' in (6a) and *lei* 'tired' in (6b), is separated by the morpheme *de*. Similar to (5a) and (5b), the result-denoting element is predicated of either the object or the subject. Many Type 1 compounds have a V-*de* phrase alternative as illustrated in (6), more specifically when the RC is an adjective predicate. According to Sybesma (1999), in addition to expressing the result state, a V-*de* construction in Mandarin Chinese can also be used to express the degree to which the main event extends. However, different from a typical RVC, the element after *de* must be a clause or sentence. For example, in (6a) the element after *de—shoupa dou shi-le* 'the handkerchief is all wet', is in fact a sentence.

  The RC of Type 1 V-V compounds can function as the main predicate of a sentence, as shown in (7a), and can sometimes be modified by the adverb *hen* 'very,' as presented in (7b), given that it can be an adjective.

  (7) a. Na tiao shoupa hen shi.

    that CL handkerchief very wet

    "That handkerchief is (very) wet."

   b. Lisi hen lei.

    Lisi very tired

    "Lisi is (very) tired."

Last, the result state of a Type 1 V-V compound can be modified by a durative phrase such as *wu fenzhong* '(for) 5 minutes.' Liao (2004, 2015), for example, argued that there are three different types of durative phrases in Chinese, two of which are used to modify durations related to the resultative construction. The first type is called the "result-related" durative phrase. This type of durative phrase measures the temporal duration of the result state that is directly caused by an event. (8) demonstrates sentences containing this type of durative phrase.

  (8) Zhangsan tiao-dao shui li wu fenzhong. (Liao, 2015)

   Zhangsan jump-arrive water inside 5 minute

   "Zhangsan jumped into the water (and stayed there) for 5 minutes."

The "result-related" durative phrase *wu fenzhong* or '(for) 5 minutes' in (8) measures the duration of the result state. That is, Zhangsan was in the water for at least 5 minutes. Liao (2004, 2015) argued that this type of durative phrase is only admissible for the lexical content, which generates a result state.

  Finally, there is another construction in Chinese that is related to the RVCs: the protentail complements. (9a-b) are two examples.

  (9) a. Lisi kan-de dong zhe pian wenzhang.

    Lisi read-de understand this CL article

    "Lisi is able to understand this article (by reading)."

   b. Lisi kan-de qingchu zhe ge zi.

    Lisi see-de clear this CL word

    "Lisi is able to see this word clearly."

As can be seen, the morpheme *de* 'to obtain' in both examplems is inserted between the two elements of the RVC. According to Li and Thompson (1981), the assertion of *de* has the effect of providing the RVC with a potential reading. For example, in (9a), the subject has the potential to reach the goal of being able to understand the article. In general, Type 1 RVCs can have a potentail reading as illustrated in (9a-b).

2.3.2 Type 2 RVCs

The sentences in (10) below show two typical examples of the second type of RVCs:

(10) a. Lisi xie-wan-le   tade zuoye.
          Lisi write-finish-Prf his homework
          "Lisi finished writing his homework."

     b. Zhangsan chi-wan-le   na wan mian.
          Zhangsan eat-finish-Prf that CL noodles
          "Zhangsan finished eating that bowl of noodles."

It can be seen in (10a–b) that the morpheme *wan* 'finish' behaves syntactically like other result-denoting elements, which appears directly after the V1 of the compound. However, this morpheme shows some semantic variation. First, it does not denote the result state of either the object or the subject of the sentence. According to Li and Thompson (1981), a morpheme such as *wan* 'finish' belongs to a special type of resultative complement—a phase resultative complement. It appears after a verb denoting activity and has the same distribution as a regular V-V compound resultative. Semantically, a morpheme such as *wan* 'finish' is used to express telic information and indicate "something more like the type of action described by the first verb or the degree to which it is carried out than the result" (Li & Thompson, 1981, p. 65). For example, in a phrase such as *chang-wan-le na shou ge* 'sing-finish-Prf that song = finished singing that song,' the morpheme wan simply indicates that the singing action is completed without stating the result state of the object or the subject. This is different from a Type 1 V-V compound, in which the second element is used to describe the state of the direct object or the subject as a result of the action denoted by the V1.

   Moreover, the RC of Type 2 RVCs does not generally function as the main predicate in Modern Chinese, as (11) shows.

(11) *Lisi wan-le   na feng xin le.
         Lisi finish-Prf that CL letter LE
         Intended reading: "Lisi has finished that letter."

Another variation shown in Type 2 compounds is that they do not have a *de*-resultative alternative, as demonstrated in (12a-b) below. However, similar to Type 1 RVCs, Type 2 is also compatible with the potential complements as (12c) shows.

(12) a. *Lisi xie-de   na feng xin dou wan le
             Lisi write-de that CL letter all finish-Prf

     b. *Lisi pao-de dou wan-le
             Lisi run-de all finish-Prf

     c. Lisi chi-de wan   na wan mian.
             Lisi eat-de finish that CL noodles
             "Lisi is able to finish that bowl of noodles."

Finally, recall that a "result related" durative phrase, such as 5 *fenzhong* '(for) 5 minutes' in (8), can be used to measure the duration of a result state. However, the same durative phrase cannot be used to modify a sentence that contains a V-*wan* compound, as illustrated (13a). To resolve the sentence, one needs to add other elements like sentence-final *le*, as shown in (13b):

(13) a. *Lisi xie-wan   zuoye   wu fenzhong.
             Lisi write-finish homework 5 minute

     b. Lisi xie-wan   zuoye   wu fenzhong le.

Lisi write-finish homework 5   minute   LE

"It has been 10 minutes since Lisi finished the homework."

2.3.3 Type 3 RVCs

Type 3 RVCs include Li and Thompson's (1981) directional RVCs. (14) gives two exemplars containing a Type 3 RVC.

(14) a. Lisi   ji-luo-le   na   jia wurenfeiji.

Lisi shoot-down-Prf that CL drone

"Lisi shot down the drone."

   b. Lisi pao-lai le.

Lisi run-come LE

"Lisi has run (towards us)."

In this type of RVC, the V1 implies a displacement, and the RC signals the direction in which the subject or object moves as the result of the displacement. For example, in (14a), the result state of the shooting action is that the drone fell (down) and most likely fell on the ground (or on top of something). The RC in this sentence indicates the direction where the object (i.e., the drone) is headed. The result state is expressed by the entire compound as a whole but not the second element. In (14b), it is the subject that moves due to the displacement implied by V1.

This type of RVC is similar to many English [verb + particle] constructions. Drawing some comparisons between these two types of constructions, I use the first part of this subsection to briefly discuss English verb-particle construction. However, the discussion is by no means an exhaustive list but simply gives a brief introduction. I follow the standard view on the phrasal verb as a discontinuous lexical item consisting of a transitive or intransitive verb and an adverbial particle. My discussion will not only include such combinations of a verb and adverbial particle that allow two different word order positions of the constituent, but also those that permit only one word-order position. Observe the examples in (15) below:

(15) a. John shot down the drone.

   b. John shot the drone down.

   c. John pushed the cart to the park.

   d. John walked into the park.

As can be seen in the examples above, the verb and the particle form a constituent, and two different word orders are possible in both (15a) and (15b). In contrast, in (15c), the verb and the particle (i.e., the preposition to) do not form a constituent, and, therefore, the word order of push to the cart is ungrammatical. Similarly, the verb and the particle in (15d) do not form a constituent. According to Gorlach (2004), resultative meaning has been identified as a part of the semantics of English phrasal verbs. Gorlach stated that the combined meaning of process and result is a meaning of the phrasal verb as a whole.

I now discuss more characteristics of Type 3 RVCs. First, whether or not the RC of a Type 3 RVC can always function as a predicate is questionable. As shown in (16), only the combination of the verb *luo* 'fall' and a directional complement such as *xia* 'down' can fully function as the main predicate of a sentence.

(16) a. ??Na jia wurenfeiji luo-le.

     that CL drone   fall-Prf

      "That drone fell."

   b. Na jia wurenfeiji luo-xia-le.

that CL drone   fall-down-Prf

"That drone fell down."

As expected, the second element of the compound in (17) cannot be modified by the degree adverb *hen* 'very' if we analyze *luo* 'fall' as a verb because the second element of a V-V compound in Mandarin Chinese can either be a verb or an adjective (Li & Thompson, 1981).

(17) *Na jia wurenfeiji hen luo.

    that CL drone   very fall

Additionally, Type 3 V-V compounds do not have a de-resultative alternative. (18a) shows that the word *luo* 'fall' does not appear in a de-resultative. It does not make any difference even if we add the directional complement *xia* 'down,' as illustrated in (18b). Also, Type 3 RVCs seem to be compatible with the potential complements as (18c-d) illustrate although (18d) does not sound as good as (18c).

(18) a. *Lisi ji-de na jia wurenfeiji dou luo-le.

        Lisi shoot-de that CL drone all fall-Prf

    b. *Lisi ji-de na jia wurenfeiji dou luo-xia-le.

        Lisi shoot-de that CL drone all fall-down-Prf

    c. Lisi zou-de jin-lai.

        Lisi walk-de enter-come

        "Lisi is able to talk in."

    d. ?Lisi ji-de   luo na jia wurenfeiji

        Lisi shoot-de down that CL drone

        "Lisi was able to shoot down that drone."

Finally, different from Type 1 compounds, Type 3 compounds cannot be generally modified by a durative phrase, as shown in (19) below.

(19) *Lisi ji-luo na jia wuren feiji   wu fenzhong.

    Lisi shoot-down that CL drone 5 minute

2.4 Summary

I have presented several linguistic properties shown by these three types of V-V compounds in Sections 2-1–2-3, and Table 3 below provides a summary of these properties.

Table 3

Linguistic Properties of the Three Types of V-V Compounds

	V-V Compounds		
Properties	Type 1	Type 2	Type 3
The compound expresses a telic reading	√	√	√
The result state is stated by the compound	√	X	√/?
The second element can function as the main predicate	√	X	√/?
The compound has a de-resultative alternative	√	X	X
The second element can be modified by the adverb hen 'very'	√	X	X
The result state can be measured by a durative phrase	√	X	X
The compound is compatible with the potential complement	√	√	√/?

The differences shown in Table 3 suggest the need for a different linguistic analysis and innovative teaching strategies in a CFL/CSL classroom. Hence, I will first discuss several theoretical issues about these three types of V-V compounds in Section 3 and pedagogical suggestions regarding these compounds in Section 4.

3 Comparisons of the Linguistic Properties of Different Types of RVCs

3.1 Theoretical background

In the first part of this subsection, I include a brief introduction to the theoretical background that the current study adopts, in particular, the syntax of the resultative construction. However, given that there are numerous studies on this topic and because of the scope of the present study, I focus on studies that have adopted approaches arguing that the RC functions as the complement of the V1 (e.g., Tang, 1997 and Zhang, 2017). I also adopt approaches that have claimed that there is a functional phrase (i.e., the Inner Aspect Phrase, projected in the lexical domain. This functional phrase has been argued to occur where telicity is computed and to be projected between vP and VP (e.g., van Hout, 2000; Slabakova, 2001; Ritter & Rosen, 2005; Travis, 2005, 2010).

To explain the variations showed by a Type 2 RVC, I follow studies such as Sybesma (2017) and Lu et al. (2019) and assume that the word *wan* 'complete', when functioning solely as a telic morpheme in an RVC (e.g., *dasao-wan keting* 'finish-cleaning the living room'), it is projected in a functional phrase that is different from Types 1 and 3 resultative complements. As a result, the difference is due to a syntactic reason. In contrast, Types 1 and 3 RVCs have similar syntactic structures. The RCs of both types function as the complement of V1 and the telic reading comes from a null telic morpheme. For example, Tang (1997) claimed that the V1 in a V-V resultative is unbound and is not compatible with the result state. Thus, there is a null telic morpheme whose main function is to close off the open range of the matrix verb and denote the endpoint in temporal extension. According to Tang (1997), this telic morpheme is situated in a functional phrase that is projected between the VP and the result-denoting phrase, and for morphological reasons, the resultative complement raises and is right-adjoined to the null telic morpheme to check the strong aspectual feature. Zhang (2017) provided a similar account to the structure of the resultative construction in Chinese. Following Ramchand (2003), it is assumed that in a V-V resultative compound, the V1 selects a resultative phrase (RP) as its complement, the head of which is the element that handles the telic reading.

3.2 A comparison of Type 1 and Type 3 compounds

In this subsection, I compare Type 1 and Type 3 compounds and explain why Type 3 compounds do not have certain properties that the Type 1 compounds possess. First, as presented in Section 2.2, Type 3 compounds do not have *de*-resultative alternatives, exemplified in (20).

(20) *Zhangsan ji-de   na   jia feiji   dou luo-le. (V-de construction)
        Zhangsan shoot-de that CL plane all   fall-Prf

It can be seen that the result-denoting complement *luo* 'fall' does not have a V-*de* phrase resultative alternative, which is due to the lexical properties of the RC of the compound. Recall that according to Sybesma (1999), a V-*de* construction in Mandarin Chinese is used to express the degree to which the main event extends. However, with a close examination of the word *luo* 'fall' in (20), we can observe that there is not any degree of "falling." If a drone fell down, it fell down.

One word that can be used to test the degree of a predicate is the adverb *hen* 'very.' As shown in (21), the words that appear in a *de*-resultative construction can also be modified by the adverb *hen* 'very.' The

fact that the word *luo* 'fall' does not appear in a V-*de* phrase construction due to its lexical properties explains why the second element of Type 3 V-V compounds cannot be modified by the adverb as presented in Table 3.

(21) a. hen lei   b. hen shi   c. hen luo
         very tired   very wet   very fall

Recall that a "result related" durative phrase cannot be used to measure the duration of the result state of a Type 3 compound unless other elements, such as sentence-final *le*, are added to the sentence, as illustrated in (22a-b).

(22) a. *Lisi ji-luo   na jia wuren feiji wu fenzhong.
         Lisi shoot-down that CL drone   5 minute

     b. Lisi ji-luo na jia wuren feiji   wu fenzhong le.
         Lisi shoot-down that CL drone 5   minute   LE
         "It has been 5 min since Lisi shot down the drone."

To explain the contrast, I examined the semantic properties of a durative phrase, which may shed light on the discussion. First, the nature of a durative phrase is that it is used to measure a specific temporal duration of an event or state. In other words, the event/state being measured must last for a certain period of time and can always be measured because it contains a durative feature (Smith, 1997). As a result, a durative phrase can be used to measure the length of any two points where the state (e.g., the result state) stays true on the time axis. The diagram in (23) below gives a visual demonstration.

(23)

     ---A-----[----]---[----]---[----]----B--- (State)
              a   b   c   d   e   f
              [   ]

The capitalized letters A and B in the diagram indicate the total length of a certain state that stays true on the time axis. A durative phrase can be used to measure the length between any two points between A and B. For example, all the lengths between a and b, c and d, or d and f can be measured. The ungrammaticality of (22a) suggests that the sentence does not contain a salient result state that can be measured by the durative phrase, as there is only one specific point (i.e., the time at which the drone was shot down). Nevertheless, why is (22b) acceptable with the same compound as (22a)? To explain the grammaticality, I follow Liao (2015) and assume that the default reference time of the sentence, signaled by sentence-final *le*, is the speech time. Therefore, the two reference points being measured by the durative phrase include the time at which the drone was shot and fell on the ground and the speech time.

One may wonder why there is not a salient state in Type 3 compounds that can be modified by a durative phrase given that this type of compound has been identified as a V-V resultative construction. I suggest that this type of compound is similar to English phrasal resultatives (cf. Huang, 2015), which include both a verb and a particle. Let us compare these two types of resultative constructions presented in (24) below.

(24) a. John painted the house green last night. (typical resultative)

     b. The tree fell over last night. (phrasal resultative)

As can be seen, (24a) is a typical English resultative construction in which the result state is expressed by a lexical item (e.g., "green") morphosyntactically appearing immediately after the direct object. In (24b), a phrasal resultative construction does not contain a lexical item explicitly expressing the result state. Nevertheless, there is a result state of the falling event: the tree is no longer standing.

According to Gorlach (2004), the result state is a product of the combination of both the verb and the particle. In the same vein, I claim that Type 3 V-V compounds in Chinese are similar to English phrasal

resultatives in that, morphosyntactically, the compound contains a verb and a particle, and the result state is implicitly expressed. Moreover, semantically, as the falling event was instant, there is only a point of time (instead of a period) that the durative phrase can measure. Therefore, this type of compound is not compatible with a durative phrase unless another salient temporal point is provided in the context.

3.3 Linguistic properties of Type 2 compounds

I have demonstrated in Section 2 that the second element of Type 2 V-V compounds, such as the morpheme *wan* 'finish', should not be analyzed as a resultative complement. The summary given in Table 1 demonstrates the variations that this type of compound contains. In this section, I discuss the syntactic distribution of the compound and argue that the second element of the compound is a pure telic morpheme that is base-generated in the head of the inner aspect phrase (InAspP) between vP and VP.

According to Travis (2010), there are three places in which a telicity marker may be encoded within the vP domain: (a) the head of vP, (b) the head of the InAspP between vP and VP, and (c) the result-denoting complement XP. As I have suggested, the morpheme wan should not by analyzed as a resultative complement; therefore, we can exclude the possibility that wan is syntactically projected within the XP. This leaves two more options based on Travis' arguments. The first one is that wan is in the head of vP. Several previous studies have argued that the head of a dynamic vP (i.e., a vP that contains the light verbs "cause" or "do") may be encoded with telicity markers. For example, Butt and Ramchand (2005) suggested that, in Hindi–Urdu, light verbs may introduce telicity. However, there are reasons for us to believe that v is not the right place for *wan*. See (25) for an example containing a BA construction.

(25) Lisi ba   na pan mian   chi-wan-le.

     Lis BA that CL noodle eat finish-Prf

     "Lisi ate (and finished) the plate of noodles."

Sybesma (1999) argued that the morpheme BA is an overt realization of the light verb "cause" and is base-generated in the head of vP. He further claimed that when v is overtly realized as BA, the main verb, such as *chi* 'to eat' in (25), does not move to v. This indicates that *wan* is not in v, as it is attached to the main verb and appears after the light verb BA. Therefore, I propose that the morpheme *wan* is base-generated in a functional phrase: InAspP. This functional phrase has been argued to occur where telicity is computed and to be projected between vP and VP (e.g., van Hout, 2000; Slabakova, 2001; Ritter & Rosen, 2005; Travis, 2005, 2010). In other words, it is projected in a different place in the syntax from the RC in Types 1 and 3 RVCs. This also explains why Type 2 RVCs do not generally signal a result state.

4 Pedagogical Issues and Suggestions

In this section, I discuss pedagogical issues and provide pedagogical suggestions for teaching these three different types of V-V compounds in a CFL/CSL classroom.

4.1 Teaching Type 1 V-V Compounds

Two issues should be addressed while Type 1 V-V compounds are introduced to CFL/CSL learners, particularly in a classroom where English is used as the medium of instruction. For example, see (26), which contains an English resultative construction.

(26) a. John painted the house red.

     b. John laughed himself silly.

First, (26a) shows that the result-denoting element appears directly after the direct object. This pattern is different from the Chinese V-V resultative compounds where the same element appears before the object. On the other hand, (26b) shows that in an extra linguistic element, the reflexive pronoun such as "himself" must be added for the result-denoting element to be predicated of the subject in English. Again, this pattern is different from a Chinese one in which a reflexive pronoun may not be added.

Given that Mandarin Chinese and English belong to two different language families, it is not unexpected that they show some variations. As long as the differences are addressed in the classroom, language learners should be able to quickly realize the variations. Additionally, a constant practice of the V-V pattern will enhance learners' acquisition of the pattern. Table 4 below is one of the exercises that instructors may use in the classroom.

Table 4

Type 1 V-V Compound Pattern Exercise

V1 (Manner)	RC (Result State)	Meaning
跑 *pao* 'run'	累 lei 'tired'	one became tired as a result of running.
叫 *jiao* 'yield'		one became tired as a result of yielding.
走 *zou* 'walk'		one became tired as a result of walking.
写 *xie* 'write'		one became tired as a result of writing.
看 *kan* 'read; watch'		one became tired as a result of reading.
? 吃 *chi* 'eat'		one became tired as a result of eating.

As illustrated, Table 4 breaks down a Type 1 V-V compound into two parts. I follow studies such as Huang (2006) and Mateu (2012) and suggest that the first element of the compound is not the main verb, but rather a manner modifier. The exercise showcases this analysis as there are different types of V1s (i.e., different types of manners). The result states of these compounds remain the same, namely "being tired." The only difference is that the state of tiredness is due to different manners.

However, as shown in Table 4, the example of *chi* 'eat' indicates that pragmatics also play a role in the interpretation of a Type 1 compound. The verb *chi* 'eat' and verbs such as *xie* 'write' and *kan* 'read, watch' belong to the same verb group according to Vendler's (1967) classification. Nevertheless, *chi* 'eat' and the adjective *lei* 'tired' do not generally form a compound, as it is pragmatically odd for someone to become tired because of eating. The phenomenon suggests that pragmatics also play a role in the usage of a V-V resultative compound, and it should be addressed in the classroom as well.

4.2 Teaching Type 2 V-V compounds

As discussed, the second element of Type 2 V-V compounds, such as the morpheme *wan* 'finish,' is a pure telic morpheme. Thus, I have suggested that this type of compound should not be categorized as a resultative construction. The second element of the compound simply signals completion of the event denoted by the first element of the V-V compounds. As suggested by Li and Thompson (1981), each telic morpheme contains some idiosyncratic properties. A summary of the usage of this type of telic morpheme can be distributed to students in class when these morphemes are introduced.

Table 5 provides four examples of Chinese telic morphemes and their idiosyncratic properties as well as examples of V-V compounds that contain these telic morphemes. As can be seen, although these morphemes have different idiosyncratic meanings, they all signal completion of an event that is expressed by the main verb of the sentence. A similar table including the idiosyncratic properties can be distributed to students when teachers provide instruction on this type of construction.

Table 5

Examples of Telic Morphemes and their Idiosyncratic Properties

Morphemes	Idiosyncratic Properties	Examples
完 wan	Finish, complete	吃完 chi-wan "finish eating"
着 zhao	be on target	猜着 cai-zhao "guess (something) right"
好 hao	completion of a task	写好 xie-hao "complete the task of writing"
到 dao	Arrive, successfully	看到 kan-dao "succeed in seeing"

4.3 Teaching Type 3 V-V compounds

I have suggested in Section 3 that Type 3 V-V compounds are similar to English phrasal resultatives. (27) provides an additional piece of evidence supporting the argument.

     (27) a. John shot the drone, but it did not fall.

         b. John shot down the drone, #but it did not fall.

As seen above, (27a) shows that the verb "shot" does not entail the result state of the direct object. Once the preposition "down" is added and the phrasal verb "shot down" is formed, the result state is expressed. This explains that the second clause in (27b) is infelicitous. However, in contrast to a typical English resultative construction, (27b) does not contain a resultative construction. The verbal compound (i.e., "shoot down") itself may entail the result state without the help of a salient result-denoting element. Since Type 3 V-V compounds and English phrasal verbs share some properties, I suggest that a comparison between these two should be made when instructing this structure, which may enhance CLF/ CSL learners' acquisition of this type of V-V compounds.

5 Concluding Remarks

In this paper, I have presented three different types of V-V compounds in Mandarin Chinese that have all been identified as resultative constructions. Although these compounds have the same word order on the surface, I showed that they have different syntactic and semantic properties. Type 1 V-V compounds are very typical resultative compounds, in which the second element of the compound always denotes the result state of either the object or the subject depending on the linguistic environment in which the compound appears. The syntactic position of the object (if any) in Chinese is different from that of the object in English. This variation must be addressed and constantly practiced in the classroom. I have also shown that the second element of Type 2 V-V compounds is a pure telic morpheme that signals the completion of the event denoted by the first element of the compound. I have also argued that a Type 3 V-V compound is similar to English phrasal verbs, in which the result state is indirectly expressed, and have suggested that the difference should be addressed in the classroom when this grammatical pattern is taught. Finally, I have discussed pedagogical issues and provided corresponding pedagogical suggestions for teaching these three types of RVCs, which may enhance CFL/CSL learners' acquisition of the grammar.

Notes

1. In this paper, I use the V1 to represent the first element of the compound and the resultative complement (the RC) the second one. Differently from English, in which the RCs generally can be only adjectives, the RCs in Chinese can be either a verb (e.g., the verb *zou* 'walk' in *xia-zou* 'scare-walk' = scare away) or an adjective (e.g., the adjective *lei* 'tired' in *zou-lei* 'walk-tired'). In other words, the RCs can be a predicate in Chinese. I would like to thank an anonymous reviewer for pointing out this variation.

2. Abbreviations: Prf = perfective aspect; CL = classifier; *de* = the morpheme de; LE = sentence final *le*; DE= genitive case marker.

3. However, in a BA sentence, the direct object must appear immediately after BA and before the resultative compound due to some independent reason. The example in (i) gives an illustration:

    (i) Zhangsan ba huaping da-po le

    　　Zhangsan BA vase   hit break LE

    　　"Zhangsan broke the vase."

4. A "dummy reflexive" pronoun must be used in an English resultative where the result state is used to describe the subject's state, as (i) demonstrates:

    (i) a. *John laughed silly.

    　　b. John laughed himself silly.

    This property is named the direct object requirement (DOR), as discussed in studies such as Simpson (1983).

5. Given that the RC in Type 1 RVCs can be an adjective, the *de*-alternative can be used to express degree as well.

6. Although this type of construction is not the main focus of the present study, it's worth more discussion on CFL/CSL acquisition of the construction. I would like to thank an anonymous reviewer for pointing this out.

7. Previous studies, such as Tai (1984) and Smith (1997), have indicated that creation verbs such as xie 'write' allow an incomplete reading with the perfective aspect in Chinese. A sentence such as (i) below provides an example.

    (i) Lisi xie-le   na feng xin, keshi zhi xie-le   yi ban.

    　　Lisi write-Prf that CL letter, but only write-Prf one half

    　　#"Lisi wrote that letter but only wrote half of it."

8. In addition to *wan* 'finish', Li and Thompson (1981) also listed several other morphemes that belong to this type of RVCs, such as *guang* 'empty', etc.

9. The morpheme wan can sometimes function as a one-place predicate with an unaccusative usage, as (i) illustrates below:

    (i) Bisai/dianying/yishi   wan   le.

    　　match/movie/ceremony complete LE

    　　"The match/movie/ceremony has completed."

10. To make the sentence acceptable, one can add sentence-final le to the end of the sentence, as shown in (i) below.

    (i) Lisi ji-luo-le   na jia wurenfeiji wu fenzhong le.

    　　Lisi shoot-down-Prf that CL   drone   5 minute   LE

    　　"It has been 5 minutes since Lisi shot down the drone."

11. Different analyses for the syntactic position of BA have been proposed. Huang et al. (2009), for instance, argued that BA is in the higher vP. In this study, however, I follow Sybesma's (1999) analysis.

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汉语结果补语教学与理论面面观

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摘要
本研究旨在探讨汉语结果补语之理论及其教学应用。首先，根据结果补语属性，本研究将其分成三类。第一类为最基本类型，其补语之主要用途为形容主语或宾语之状态。第二类补语之主要用途在于表达主谓语表示事件之完成。最后，第三类结果补语之用途与一些英语动词短语功用类似，可用来表示论元之移动。此外，透过文献探讨及教科书分析，本研究也提供有关汉语结果补语之教学建议。

关键词
汉语结果补语，对外汉语教学，汉语教学理论及应用

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