RESULT IN MANDARIN VERB COMPOUNDS*

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1 Introduction

Resultative verb compounds (RVCs) in Mandarin (1) have been well-studied in terms of their argument realization properties, especially in relation to the notion of causativity (Li 1990, 1995, Gu 1992, Cheng and Huang 1996, Her 2007, Shibagaki 2010).

(1) xiăoháir yă-biăn-le ní-tuán
child press-flat-PERF mud-ball
The child pressed the mudball flat.¹

Somewhat less studied is the event structural composition of Mandarin RVCs. In this vein, one question raised by (1) is how the change of state (COS) meaning of the RVC arises in such sentences. In (1), the first member of the compound (V1) yă ‘press’ is an activity verb and the second member (V2) biăn ‘flat’ appears to be an adjective or stative verb. There is no apparent source for the change of state meaning of the entire compound. This question is analogous to how the accomplishment reading of English resultatives such as (2) comes about:

(2) Pat hammered the metal flat.

Examples such as (2) have been proposed to involve a shift of the activity verb hammer to an accomplishment event structure, where the adjective flat specifies the result state of the accomplishment event (Rappaport Hovav and Levin 1998, Rothstein 2004:80).

This paper argues the COS meaning in (1) is contributed by the second member of the compound, henceforth V2. Support for this proposal is provided from motion verb compounds expressing spatial results such as (3).

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¹Abbreviations: ASSOC = associative marker, CL = classifier, NEG = negation, PERF = perfective, PL = plural, PROG = progressive, Q-PRT = question particle, SF-PRT = sentence-final particle, SG = singular
Such compounds consist of a manner of motion verb and a “coverb”, a morpheme with both preposition- and verb-like properties (Li and Thompson 1981:360). The coverb may encode a result e.g. dào ‘arrive/to’ (3a) or express stative location, e.g. zài ‘be at’ (3b).

I show first, that (non-spatial) RVCs are structurally analogous to Manner Verb+Directional Coverb compounds (henceforth V-dào compounds) such as that in (3a). I then show that in contrast to both V-dào and RVCs, the resultative interpretation of Manner Verb+Locational Coverb (henceforth V-zài compounds) (3b) is not lexically encoded but rather arises pragmatically. Since RVCs are parallel to V-dào, where change is encoded in V2, and both differ from V-zài, where V2 does not encode change, we may conclude that RVCs encode change in V2.

In section 2, I show that V2 in RVCs are indeed COS verbs, then in section 3, I demonstrate the parallel in aspectual properties between RVCs and V-dào compounds. Section 4 shows that zài ‘be at’ always describes stative location, and the resultative interpretation of V-zài arises pragmatically. Section 5 provides converging evidence from the POTENTIAL CONSTRUCTION for the COS status of V2 in RVCs. Section 6 concludes the paper.

2 V2 as a COS verb

This section argues for the plausibility that V2 in RVCs encodes COS, showing that in isolation (outside of RVCs), property concept words may be either stative or COS, but COS verbs with no stative counterpart also exist, and these may occur as V2 in RVCs.

2.1 Property concept state predicates show COS meanings

In simple predication contexts, the same form, e.g. bái ‘white’ in (4) may express either state (4a) or change of state meanings. The COS interpretation arises most notably in the presence of perfective marking (4b), but also in its absence, as Sybesma (1997) demonstrates with the examples in (5).

(4) a. Sānmáotóufá hén bái
   Sanmao hair very white
Sanmao’s hair is (very) white. (State)

   b. Sānmáotóufábáile
   Sanmao hair white PERF
Sanmao’s hair turned white. (COS)

(5) tā néng gāo / tā huì pàng / tā yào hǎo
   3SG can tall / 3SG will fat / 3SG will good
He can become tall. / He may become fat. / He will get better.

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This suggests Mandarin property-concept adjectives (or stative verbs)\(^3\) such as *bái* ‘white’ systematically alternate to a verb expressing change to the same state. I assume a semantics with ordinary (type \(e\)) individuals (variables \(x,y\)), events (variables \(e,e'\)), and locations (variables \(x_l,y_l\)) (see (29)). Employing the BECOME operator from Dowty (1979) to indicate COS, the semantic representations of *bái* ‘white’ are as follows:

\[
\begin{align*}
(6) \quad a. & \quad \text{bái}_{\text{Adj}} \text{ ‘white’}: \lambda x \lambda e \text{white}(x)(e) \\
 & \quad b. \quad \text{bái}_{\text{V}} \text{ ‘white’}: \lambda x \lambda e \text{BECOME:white}(x)(e)
\end{align*}
\]

### 2.2 COS verbs with no stative counterparts occur as \(V2\)

In contrast to words such as *bái* ‘white’ that alternate between state and COS interpretations, there is a class of intransitive verbs which encode only COS and have no stative counterpart (Tham 2010). These encode changes into states that arise as “the result of some action” (Dixon 1982:50), e.g. *zuì* ‘intoxicated’, *liè* ‘crack(ed)’. These verbs cannot occur with degree modifiers such as *hěn* ‘very’ (7b, 8b) but only with the post-verbal modifier *-de hěn lihai* ‘to a serious extent’ (7c, 8c).

\[
\begin{align*}
(7) \quad a. & \quad \text{tā zuì le} \\
 & \quad \text{3SG intoxicated PERF} \\
 & \quad (S)he is drunk. \\
 & \quad b. \quad *\text{tā hěn zuì} \\
 & \quad \text{3SG very intoxicated} \\
 & \quad \text{Intended: (S)he is very drunk.} \\
 & \quad c. \quad \text{tā zuì-de hěn lihai} \\
 & \quad \text{3SG intoxicated-DE very serious} \\
 & \quad (S)he is badly drunk. \\
(8) \quad a. & \quad \text{jìngzi liè le} \\
 & \quad \text{mirror crack PERF} \\
 & \quad \text{The mirror (is) cracked.} \\
 & \quad b. \quad *\text{jìngzi hěn liè} \\
 & \quad \text{mirror very cracked} \\
 & \quad \text{Intended: The mirror is very cracked.} \\
 & \quad c. \quad \text{jìngzi liè-de hěn lihai} \\
 & \quad \text{mirror cracked-DE very serious} \\
 & \quad \text{The mirror is badly cracked.}
\end{align*}
\]

Adjectives such as *bái* ‘white’ may occur in both kinds of degree modification contexts, but crucially, modification with *-de hěn lihai* ‘to a serious extent’ only allows a result state interpretation: (9b) only has the bizarre interpretation given in the translation.

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\(^3\)There is controversy over whether a class of adjectives should be assumed for Mandarin McCawley (1992). I assume the existence of such a class here, as do others in recent work (see e.g. Liu 2010, Grano 2010) but the issue is orthogonal to the current discussion.
(9)  a.  Sännáo yì shēng-xià-lai tóufa jiù hén bái
Sanmao once born-down-come hair JIU very white
Sanmao’s hair was very white from the moment he was born.

b.  Sännáo yì shēng-xià-lai tóufa jiù bái-de hén lihai
Sanmao once born-down-come hair JIU white-DE very serious
Sanmao’s hair turned very white from the moment he was born.

This indicates zuì ‘become intoxicated’ and liè ‘become cracked’ are both COS verbs with no stative counterpart:

(10)  a.  zuìV ‘become intoxicated’: \( \lambda x \lambda e \text{BECOME}(\text{intoxicated}'(x))(e) \)

b.  lièV ‘become cracked’: \( \lambda x \lambda e \text{BECOME}(\text{cracked}'(x))(e) \)

Importantly, these verbs participate felicitously as V2 in RVCs, consistent with the assumption that V2 is a COS verb:

(11)  tā hē-zuì-le jiǔ  (12)  Sännáo pèng-liè-le jìngzi
3SG drink-intoxicated-PERF wine  Sanmao knock-crack-PERF mirror
(S)he got drunk from drinking wine.  Sanmao knocked the mirror cracked.

3  RVCs and V-dào are aspectually parallel

This section shows that RVCs parallel V-dào compounds in their aspectual properties. Since in V-dào, V2 encodes change, its similarity with RVCs is again compatible with the assumption that V2 in RVCs encodes change.

3.1 Types of RVCs

Mandarin result-encoding verb compounds have been categorised into causative (13-14) and non-causative (15), based on their ability (or otherwise) to participate in the BA and passive BEI constructions (13b, c) and (14b, c), vs (15b, c) (Huang, 1988):

(13)  Causative

a.  xiāoháir yā-biǎn-le ní-tuán
child press-flat-PERF mud-ball
The child pressed the mudball flat.

b.  xiāoháir bā ní-tuán yā-biǎn le
child BA mud-ball press-flat PERF
The child pressed the mudball flat.

c.  ní-tuán bèi xiāoháir yā-biǎn le
mudball BEI child press-flat PERF
The mudball was pressed flat by the child.
(14) Causative, “inverted”

a. zhè dùn fàn zhēn chī-qióng-le wǒ  
   this CL meal really eat-poor-PERF 1sg  
   The eating of this meal has really made me poor.
b. zhè dùn fàn zhēn bǎ wǒ chī-qióng-le  
   this CL meal really BA 1sg eat-poor-PERF  
   The eating of this meal has really made me poor.
c. wǒ zhēn bèi zhè dùn fàn chī-qióng-le  
   1sg really BEI this CL meal eat-poor-PERF  
   I have really been made poor by the eating of this meal.

(15) Non-causative, subject-oriented

a. Sānmáo chī-bǎo-le fàn  
   Sanmao eat-full-PERF rice  
   Sanmao became full from eating rice/a meal.
b. *Sānmáo bǎ fàn chī-bǎo-le  
   Sanmao BA rice eat-full-PERF  
   *Sanmao ate full rice.
c. *fàn bèi Sānmáo chī-bǎo-le  
   rice BEI Sanmao eat-full-PERF  
   *Sanmao became full by eating rice.

Manner of motion V-dào compounds are non-causative motion events with a spatial endpoint.

(16) a. lǎoshǔ pǎo-dào-le dòng-kǒu  
    mouse run-arrive-PERF hole-mouth  
    The mouse ran to (the mouth of) the hole.
b. *lǎoshǔ bǎ dòng-kǒu pǎo-dào-le  
    mouse BA hole-mouth run-arrive-PERF  
    *The mouse ran to the hole.
c. *dòng-kǒu bèi lǎoshǔ pǎo-dào-le  
    hole-mouth BEI mouse run-arrive-PERF  
    *The mouse ran out of the hole.

Despite the variety in argument realization patterns, the aspectual behaviour of Mandarin resultative compounds, including V-dào, is remarkably consistent.

3.2 RVCs and V-dào are “covert accomplishments”

Although RVCs contain an activity verb, they exhibit achievement-like behaviour. In general, RVCs cannot occur in the progressive aspect (17) (Tai 1984, Chief 2008:105-106).\footnote{Although there are systematic exceptions, see Chief (2008:245-246).} Tai (1984) also shows RVCs display achievement-like behaviour in negation contexts, in contrast to monomorphemic verbs in the same contexts which behave as activities.
(17) a. wǒ zài xué(*-huì) zhōngwén
Isg PROG learn-know/master Chinese
I am learning Chinese
b. wǒ zài shā(*-sˇı) Zhāngsān
Isg PROG kill-die Zhangsan
I am killing Zhangsan.
c. *zhè dùn fàn zài chǐ-qióng wˇo
this CL rice PROG eat-poor Isg
Intended: The eating of this meal is really making me poor.
d. Sānmáo zài chǐ(*-bˇào) fàn
Sanmao PROG eat-full rice
Sanmao is eating rice/a meal.

Other kinds of aspectual modification can, however, indicate the RVC describes an event with duration. Modification with sān fˇenzhˇong nèi ‘within three minutes” (18a), or yòng-le sān fˇenzhˇong ‘used three minutes” (18b) can receive an interpretation of the activity event of pressing the mudball being performed during those three minutes.

(18) a. xiǎoháir sān fˇenzhˇong-nèi yǎ-biˇan-le ní-tuán
child three minutes-within press-flat-PERF mudball
The child pressed the mudball flat in three minutes.
b. xiǎoháir yòng-le sān fˇenzhˇong (cái) yǎ-biˇan ní-tuán
child use-PERF three minutes (then) press-flat mud-ball
The child took three minutes to press the mudball flat.

Similarly, V-dào compounds cannot occur in the progressive (19a), but contain a description of a subevent with duration: (19b, c) can mean the mouse was running within those three minutes.

(19) a. *lǎoshˇu zài pˇao-dào dˇòng-kˇou
mouse PROG run-arrive hole-mouth
Intended: The mouse is running to (the mouth of) the hole.
b. lǎoshˇu sˇān fˇenzhˇong-nèi pˇao-dào- le dˇòng-kˇou
mouse three minutes-within run-arrive-PERF hole-mouth
The mouse ran to the hole in three minutes.
c. lǎoshˇu yòng-le sˇān fˇenzhˇong pˇao-dào- le dˇòng-kˇou
mouse use-PERF three minutes run-arrive-PERF hole-mouth
The mouse used three minutes to run to the hole.

3.3 An account
To account for these observations, I assume that the resultative clause denotes a set of achievement events related to an activity event. The relevant relationship may be one of causation, as in the case of causative resultatives (20), or of culmination (Parsons, 1990), in the case of non-causative resultatives (21)—(22).
(20) a. xiăoháir yă-biˇan-le ní-tuán
    child press-flat-PERF mud-ball
    The child pressed the mudball flat.
b. λe ∃e′ [BECOME(ﬂat′(mb))(e) ∧ press′(mb)(c)(e′) ∧ CAUSE(e)(e′)]

(21) a. Sănmao ch¯ı-bˇao-le fàn
    Sanmao eat-full-PERF rice
    Sanmao became full from eating rice/a meal.
b. λe ∃e′ ∃y [BECOME(full′(s))(e) ∧ eat(y)(s)(e′) ∧ food(y) ∧ CUL(e)(e′)]

(22) a. lˇaoshˇu pˇao-dào-le dòng-kˇou
    mouse run-arrive-PERF hole-mouth
    The mouse ran to (the mouth of) the hole.
b. λe ∃e′ [BECOME(be.at′(h)(m))(e) ∧ run(m)(e′) ∧ CUL(e)(e′)]

The distinction between causation and culmination discriminates between those compounds that occur felicitously in BA/BEI constructions and those that do not. In this approach, the “head” of the resultative compound, at least aspectually, is V2, which describes a change of state or location (23a, 24a) (see also Chief 2008). In RVC formation, V2 selects for an activity verb which describes an event that causes or culminates in the event of change described by V2 (23b, 24b).

(23) a. biˇan ‘(become) flat’: λy λe BECOME(ﬂat′(y))(e)
b. RVC formation
   Resultative -biˇan: λP λy λx λe ∃e′ [BECOME(ﬂat′(y))(e) ∧ P(y)(x)(e′) ∧ CAUSE(e)(e′)]

(24) a. bˇao ‘(become) full’: λy λe BECOME(full′(y))(e)
b. RVC formation
   Resultative -bˇao: λP λy λx λe ∃e′ [BECOME(full′(y))(e) ∧ P(y)(x)(e′) ∧ CUL(e)(e′)]

For current purposes, I assume the causative or culminative nature of the RVC is not determined by the COS verb, and thus COS verbs may in general form either kind of compound.

4 V-zài compounds: Inferred results

If resultative compounds are formed from a COS verb (or coverb encoding a spatial endpoint), this would predict the locational coverb zài ‘be at’ cannot form a spatial resultative.5 Thus examples such as (25), where a manner of motion verb with a locational coverb yields an interpretation of change of location, are unexpected under this view, and their availability requires an explanation.

(25) a. w¯uy¯a yòu jiào-le yì sh¯eng ...f¯ei-zài qiáng-shang
    crow again call-PERF one sound ...fly-be.at wall-upon
    The crow cawed once more, and flew onto the wall. (PKU)
b. xiăo hóuzi tiào-zài mˇa-bèi-shang
    small monkey jump-be.at horse-back-upon
    The little monkey jumped onto the back of the horse. (Tai 1975:158, 9b)

5This applies only to the case where V1 itself does not encode change. Result-encoding compounds with COS V1 also occur (e.g. dòng-liè ‘freeze-cracked’). I do not discuss these in this paper.
This section shows that (i) \( zài \) ‘be at’ encodes stative location; (ii) the directional interpretation of \( V-zài \) arises from pragmatic factors and is not structurally encoded.

### 4.1 \( zài \) is always locational

The state/COS alternation found in adjectives, discussed above, is not available for locative predicates. That is, the event structure of individual coverbs does not vary. (26) shows that \( zài \) ‘be at’ is locative, whereas \( dào \) ‘arrive/to’ and some other coverbs, e.g. \( jìn \) ‘enter’ encode motion with a final destination.

(26) \( zài \) wū-li / \( dào \) wū-li / \( jìn \) wū-li  
\( \text{be.at house-within / arrive house-within / enter house-within} \)

be in the house / arrive in the house / enter the house

The examples in (27)-(28) show that, even in contexts such as co-occurrence with perfective -le or a future marker, where COS interpretations are found for adjectives/stative verbs, \( zài \) (unlike \( dào \)) in (27) does not encode change of location.\(^6\)

(27) Sān máo dào/*zài-le fáng-li  
Sanmao arrive/be.at-PERF room-within

Sanmao got into the room.

(28) tā hūi zài fáng-li  
3SG will be.at room-within  
(S)he will be/*get in the room.

These data point to a stative, locative meaning for \( zài \) ‘be at’ (29a), in contrast to a change of location meaning for \( dào \) ‘arrive’ (29b).\(^7\)

(29) a. \( zài \) ‘be at’: \( \lambda y_1 \lambda x \lambda e \text{ be.at}(y_1)(x)(e) \)

b. \( dào \) ‘arrive’: \( \lambda y_1 \lambda x \lambda e \text{ BECOME(be.at}(y_1)(x))(e) \)

### 4.2 A pragmatic account for directional \( V-zài \)

If \( zài \) ‘be at’ is always locative, how do the directional interpretations for \( V-zài \) in (25) above arise? This is related to an enduring question in the expression of directed motion events: How does an interpretation of directed motion arise in sentences such as those in (30) where there is no obvious directional morpheme?

(30) The boat floated under the bridge. / Mary ran in the room.

Two alternatives have been proposed regarding this issue. Under the lexical ambiguity approach (Alonge 1997, Follì and Ramchand 2005, Fábregas 2007), these interpretations arise from lexical ambiguity, in particular, the ability of certain manner of motion verbs, and some prepositions, to take on a meaning of directed motion. The pragmatic licensing approach (Nikitina 2008, Tutton 2009, Levin et al. 2009) takes the directional interpretation to arise from contextual-pragmatic

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\(^6\)Henriette de Swart (p.c.) suggests the lack of a directional reading for \( zài \) sentences could reflect a blocking effect from the availability of more specific options such as the use of \( dào \) to encode directionality. While this could be correct for the cases in (27)-(28), it cannot be true across the board, given that manner of motion verbs with \( zài \) do allow directional interpretations even though \( V-dào \) is also available to express directionality. In light of blocking, then, the directional interpretation of \( V-zài \) is even more intriguing, and calls for an explanation.

\(^7\)As noted above (section 2.1), \( y_1 \) represents individuals of type ‘location’.
factors such as aspectual properties of the manner verbs, and the nature of the ground described by the prepositional complement.

Below, I show that patterns in naturally-occurring data from the PKU corpus argue for a pragmatic interpretation of resultative \(V\)-\(zài\). First of all, examples such as (31) show that directional readings of manner of motion verb with \(zài\) do not arise consistently.

(31) yǒu shíhou fēi-\(zài\) kōng-zhōng de wūyā huì diào xià-lai
    have time fly-be.at sky-within ASSOC crow will fall down-come
    Sometimes, crows flying in the air would fall down. (locational) (PKU)

Moreover, I showed in other work (Tham, to appear) that directional readings for \(V\)-\(zài\) are facilitated by contextual/pragmatic factors that include the following: First, the manner of motion verb describes short, punctual motion, e.g. almost all instances of \(tiào\)-\(zài\) ‘jump-be.at’ showed directional interpretations.

(32) \(\begin{array}{lll}
\text{Verb} & \% \text{ result } V\-zài & \text{ Tokens/N} \\
\hline
\text{\textit{tiào}} 'jump' & 98\% & 45/46 \\
\text{\textit{fēi}} 'fly' & 27\% & 18/66 \\
\text{\textit{zòu}} 'walk' & <0.1\% & 3/3832
\end{array}\)

Second, the sentence contains a less elaborated path description; e.g. no source location is described (33a). The coverb is more likely to be \(dìào\) if a source location is mentioned (33b).

(33) a. …cā de yī shēng, nà guìzi de nǎodài biān fēi-zài yì biān le
    …ONOM ASSOC one sound that devil ASSOC head then fly-be.at one side SF-PRT
    A sound of slicing, and the devil’s (Japanese soldier) head flew to one side.

b. yūhángyuán cóng dìqū fēi-dào/*zài yuèqū-shàng
    astronaut from earth fly-arrive/*be.at moon-upon
    The astronaut flew from the earth to the moon.

Third, the manner of motion can be inferred to be relatively “simple”, e.g. there is no adverbial modification indicating difficulty of the motion:

(34) tā zhēngzhá-zhe pá-dào/*zài yī gè xiǎo shāndòng
    3SG struggle-DUR crawl-arrive/*be.at one CL small cave
    He crawled, struggling, to a small cave.

Following Cummins (1996, 1998), I propose that manner of motion verb with \(zài\) has a resultative interpretation when the motion event is interpreted as a single, short, unbroken movement. Thus manner verbs such as \(tiào\) ‘jump’, which easily describe a single, unbroken movement, are most natural in, and show the greatest proportion of, resultative \(V\)-\(zài\). Some manners of motion such as flying, crawling or climbing, may consist of either a series of repetitive motion or a single motion, describable by the same verb. The second kind of interpretation is more likely to arise when the motion is interpreted as being over short, local distances and (described as) containing little to no “subordinate” movements, rather than when a longer path is understood, or when subordinate movements are highlighted by the description. Hence the correlation between the above conditions and resultative \(V\)-\(zài\). This suggests the resultative interpretation of \(V\)-\(zài\)
compounds arises pragmatically, and should be distinguished from those resultative compounds
where V2 structurally encodes change.

5 The potential construction

This section further distinguishes V-dıao compounds and RVCs from V-zài, showing the former
form a natural class in allowing the potential construction.

5.1 The potential construction targets compounds where V2 encodes change

RVCs can be modalized in the potential construction, expressing the (im)possibility of
attaining the result by inserting a negation morpheme -bu- or the morpheme -de- between V1 and
V2.

(35) a. tā de yáchǐ tài zāng le, tā zěnme yě shuā-bu-bái
    3SG ASSOC tooth too dirty SF-PRT, 3SG how also brush-NEG-white
    His/her teeth are too dirty, no matter what (s)he does (s)he can’t brush them white.
b. yáyī yídèng shuā-de-bái
dentist definitely brush-POT-white
    The dentist will definitely be able to brush them white.

Among motion verb compounds, only V-dıao compounds, i.e., those formed with a directional
coverb including dıao ‘arrive/to’, jìn ‘enter/into’, etc. may participate in the potential construction.

(36) a. xuéxiào tài yuán le, wōmen kōngpà zhǒu-bu-dıao
    school too far SF-PRT IPL afraid walk-NEG-arrive
    The school is too far, (I’m) afraid we can’t get there by walking.
b. zhīyōu láoshǒu cāi jǐ-de-jìn zhěmé xià de dòng-kǒu
    only mouse then squeeze-POT-enter so small ASSOC hole
    Only a mouse could squeeze into such a small hole.

Crucially, V-zài ‘V-be.at’ compounds with (or without) a directional interpretation cannot
participate in the potential construction.

(37) *wūyā fēi-bu-zāi qiáng-shang
crow fly-NEG-AT wall-upon
    Intended: The crow was unable to fly on the wall.

The table below lays out the relationship between the event structure of V2 and corresponding
compatibility with the potential construction:

(38)

<table>
<thead>
<tr>
<th>VV compound</th>
<th>RVC</th>
<th>V-dıao</th>
<th>V-zài</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examples</td>
<td>shuā-bái ‘brush-white’</td>
<td>zōu-bu-dıao ‘walk-arrive’</td>
<td>fēi-zāi ‘fly-be.at’</td>
</tr>
<tr>
<td>Ok in potential construction?</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>V2 encodes change?</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>

Result-encoding VV compounds may be formed with change encoded in V1. For instance, the
verb biàn ‘change’ may combine with a COS V2 or a stative V2:
result in Mandarin verb compounds

(39) wūyā bián-chéng/wéi fēnghuang le
crow change-become phoenix SF-PRT
The crow has changed into a phoenix.

But only if V2 is COS, such as chéng ‘become’ can the compound participate in the potential construction (40). If V2 is the stative wéi ‘as’, the potential construction is disallowed.

(40) a. wūyā shì bián-bu-chéng/*wéi fēnghuang de
crow be change-NEG-become/as phoenix DE
A crow can’t turn into a phoenix.

b. wūyā zénme bián-de-chéng/*wéi fēnghuang ne?
crow how change-DE-become/as phoenix Q-PRT
How can a crow turn into a phoenix?

The potential construction thus provides further support for treating V2 in RVCs such as shuā-bái ‘brush-white’ and yā-biān ‘press-flat’ as COS.

5.2 An analysis of the potential construction

I label the functions corresponding to the potential morphemes -bu- and -de- as NPOT (negative potential) and PPOT (positive potential) respectively. These combine with a predicate P over events of change to yield a predicate over worlds (namely, those worlds for which there is (or is not) an accessible world in which the event of change takes place).

(41) a. -bu- “NPOT” : \([-bu-]\) = \(\lambda P \lambda w \neg \exists w' \exists e [R(w)(w') \land P(e) \text{ in } w']\)
b. -de- “PPOT” : \([-de-]\) = \(\lambda P \lambda w \exists w' \exists e [R(w)(w') \land P(e) \text{ in } w']\)

(42) xiǎoháir yā-biān ní-tuán
child press-flat mudball
The child is unable to flatten the mudball by pressing it.

The meaning of (42) in (44) is obtained by applying NPOT to the predicate over events, i.e. the meaning of (43a), given in (43b).

(43) a. xiǎoháir yā-biān ní-tuán
child press-flat mudball
“The child press the mudball flat.”

b. \(\lambda e \exists e' [\text{BECOME}(\text{flat}'')(\text{mb})(e) \land \text{press}'(\text{mb})(c)(e') \land \text{CAUSE}(e)(e')]\)

(44) NPOT((43b)) =
\(\lambda w \neg \exists w' \exists e' [R(w)(w') \land \text{BECOME}(\text{flat}'')(\text{mb})(e) \land \text{press}'(\text{mb})(c)(e') \land \text{CAUSE}(e)(e') \text{in } w']\)

I assume that culminative resultatives also participate in the potential construction in the same way, but do not show the derivation here for reasons of space.

6 Stepping back: conclusions and implications

Summing up, I have shown for resultative VV compounds in Mandarin with activity V1, whether causative, culminative, object- or subject-oriented, that change is encoded in V2. In many RVCs,
V2 appears to be an adjective, but property-concept adjectives systematically alternate to COS verbs. The assumption that apparent adjectives in V2 position of RVCs are COS verbs extends naturally to compounds where V2 is a COS verb with no stative counterpart. This case is clearly exemplified by V-dào compounds, aspectual properties of which are shared by RVCs. In further support of this conclusion, I showed the resultative interpretation of V-zài, where V2 is stative, arises pragmatically. Finally, RVCs may participate in the potential construction, which allows only compounds where V2 is COS, further affirming my proposal.

We may thus conclude that lexically-specified results in resultative compounds arise from a COS verb that, in many cases, alternates with an adjective, and not from an activity-to-accomplishment shift. This conclusion converges with the observation that accomplishment verbs are rare in Mandarin (Tai 2003, Chief and Koenig 2007) (45), and with the general lack of deadjectival caused COS verbs in the language (46).

\[(45)\] Sun Mazi ba Lao Luo sha-le, mei sha-si
Sun Mazi BA Lao Luo kill-PERF, NEG kill-die
Sun Mazi killed Lao Luo but Lao Luo didn’t die.
(Chief and Koenig 2007: attested example)

\[(46)\] *xiao-hai bian-le ni-tuan
child flat-PERF mud-ball
Intended: The child flattened the mudball

Lexical accomplishments – although not deadjectival causatives – also seem to be rare in English (Rappaport Hovav (2008), see also Filip and Rothstein (2006) for proposals to the same effect for Germanic). This suggests the contrast between accomplishments and causatives could provide a fruitful avenue for exploring cross-linguistic differences in event structure operations.

This work also raises questions for the analogy, frequently made between spatial paths and property scales, that relative degree on a property scale is parallel to location on a path Rappaport Hovav and Levin (2010), and change of state is analogous to change of location (Talmy 2000, Folli and Ramchand 2005). Although compatible with the assumption that change of state and change of location do indeed show parallels, the current work points to an important difference between property concept states and stative location. Specifically, while adjectives may show zero alternations with COS verbs, locative predicates do not seem to alternate freely with change of location meanings. This is presumably because a gradable property is necessarily a point (or interval) on a scale. But while paths constitute at least two connected locations, a location need not be a point on a path.

References


