A comparative analysis of resultative verbal compounds in Chinese and Japanese: Compounding in syntax and lexicon

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1. Introduction

How does natural language describe the world we live in? Vendler (1967) examines the semantics of verbs and postulates four types of verbal events. Since then, many scholars have observed that these four types of verbal events may constitute causal chains with actions and results.

(1) Causal chain:
<ACT> + <CAUSE> + <BECOME>

In this paper, we will look at how the causal chain is realized in the morpho-syntactic structure of natural language. So let us compare Japanese, which is a morpho-typologically complex language, with Thai, which is a morpho-typologically simple language. Compare (2) and (3).

(2) a. Taro-wa tori-o uchi-otoshi -ta.
   Taro-TOP bird-ACC shoot-drop PAST
   ‘Taro shot down a bird.’

b. *Taro-wa tori-o uchi-ochi -ta
   Taro-TOP bird-ACC shoot-come.down PAST
   ‘[Same as (2)a]’

(3) a. sômchaay sák sua sàññaat
    somchaay wash undershirt clean
    ‘Somchaay washed the shirt, and as a result the shirt became clean.’

b. sômchaay sák sua háy sàññaat
    somchaay wash undershirt GIVE clean
    ‘Somchaay washed the shirt, and as a result caused the shirt to become clean.’ (Cf. Uehara & Thepkanjana 2009:378)
a. The resultative construction in Japanese
   V1(<ACT>) \( \rightarrow \) V2(<CAUSE <BECOME>>)

b. The resultative construction in Thai
   VP1(<ACT>) + VP2(<BECOME>)

If the different ways of building resultative constructions in Japanese and Thai arise from their respective morpho-syntactic properties, then we would predict that Chinese, which is like Thai in being a morphologically simple language, should exhibit the pattern of (4b). However, the fact is quite the opposite.

\[(5)\]

a. Wusong da-si -le yi-zhi laohu.
   Wusong hit-die -PERF one-CL tiger
   ‘Wusong hit a tiger dead.’

   Wusong hit-kill -PERF one-CL tiger
   ‘[Same as (5a)]’

If we compare the Japanese examples in (2) with the Chinese examples in (5), we find that Japanese only permit merger of the pattern [action verb + causative verb], whereas Chinese only permits the pattern [action verb + change of state verb]. The common feature they share, though, is that they make the two verbs into a verbal compound.

When we compare the Thai examples in (3) and the Chinese examples in (5), we find that the first verb and the second verb in Thai are syntactically separate, but in Chinese they are compounded together. The two languages share the common feature that they only permit the pattern [action verb + change of state verb].

\[(6)\] Two questions:

A. Why it is that V1 and V2 in Chinese are compounded like the verbal compounds in Japanese, yet <CAUSE> cannot occur in the Chinese verbal compounds?

B. Why it is that Chinese patterns with Thai in having an action verb and a change of state verb in the resultative construction, but V1 and V2 in Chinese cannot be separated?

\[(7)\] Our proposal: (cf. Shen and Lin 2003, 2009)

A. Japanese and Chinese shares the property of expressing the causal chain by means of compounding: [ACT-CAUSE-BECOME]

B. But they differ in two respects.
a. Different grammatical levels for compounding:
   Japanese: at the lexical level, Chinese: at the syntactic level.
b. Different morphological realizations for <CAUSE>:
   <CAUSE> in Japanese is overt, <CAUSE> in Chinese is covert.

(8) a. Syntactic structure of the Chinese resultative construction

b. Syntactic structure of the Japanese resultative construction

2. Evidence 1: <CAUSE> in ancient Chinese
   In this section, we compare the cases of the ancient Chinese and the modern dialects, and argue that <CAUSE> exists in the Chinese RVC as a covert predicate.

余助苗长矣.

ISG help seedling grow SFP

‘I help the seedling to grow.’

(I Gongsunchou, Mengzi; BC)

(10) The northern Wei period (386-534 AD), (Cf. Ota 1958, Li 1987, Jiang 1999)

a. 今当打汝前两齿折。

Jin dang da ru qian liang chi she

now must hit 2SG front two tooth break

‘Now [one] should hit you and break two of your front teeth.’

(Xianyu-jing, 428c)

b. 汝何以辄打折其脚?

Ru he yi zhe da she q i jiao

2SG what with then hit break that foot

‘Why do you then break his foot?’

(Xianyu-jing 428c)

We should ask a question: How is the compounding type of resultative construction such as da-she ‘hit break’ derived from the separation type? (Cf. Furuya 1985, 2005)

(11) [Vt-CAUSE-Vi]

攪使調和

jiao shi tiaohe (8-71-558)

‘to stir [something] and cause it to be fully mixed’

(12) [Vt-Object-CAUSE-Vi]

温酒令暖

wen jiu ling nuan (5-52-367)

warm wine CAUSE warm

‘to warm the wine and cause it to become warm’

(13) [Vt-CAUSE-Subject-Vi]

攪和令飯散

jiaohuo ling fan san (7-65-501)

mix CAUSE rice scatter

‘to mix the rice and cause it to scatter’
(14) [Vt-Vi-Object]
踏破地皮
ta po dipi (3-17-181)
step break ground
‘to step and break the ground’

(15) The evolution of the expression of the causal chain in Chinese
a. The separation type 
   \[
   \begin{align*}
   &\langle \text{ACT} \rangle + \langle y \ \text{BECOME} \rangle \\
   \end{align*}
   \]
   ↓

b. Insertion of "CAUSE"
   \[
   \begin{align*}
   &\langle \text{ACT} \rangle + \langle \text{CAUSE} \langle y \ \text{BECOME} \rangle \rangle \\
   \end{align*}
   \]
   ↓

c. Compounding in syntax
   \[
   \begin{align*}
   &\langle \text{ACT} \rangle-\langle \text{CAUSE-\text{BECOMEi} \langle y \ \emptyset i \rangle} \rangle \\
   \end{align*}
   \]

Our proposal receives support from the southern Min dialect. (Cf. Cheng et al. 1999, Shen and Lin 2009).

(16) a. Li na tsau, gua toh pha ho i/li si.
   you if leave I then hit cause he/you die
   ‘If you leave, I will hit him/you to death.’

b. ?Li na tsau, gua toh pha-si i/li .
   you if leave I then hit-die he/you
   ‘[Same as (16b)]’

This indicates that the dialect of southern Taiwan is the same as the Chinese language spoken in the northern Wei period -- that is, the event predicate \text{\langle CAUSE \rangle} must be inserted between V1 and V2. Let us summarize the findings so far:

(17) \begin{align*}
\text{[no CAUSE]} & \rightarrow \text{[overt CAUSE]} \rightarrow \text{[covert CAUSE]} \\
\end{align*}

3. Evidence 2: \text{\langle CAUSE \rangle} in the modern Chinese

If the resultative construction in Chinese contains a covert \text{\langle CAUSE \rangle}, then we predict that the argument that the change of state verb applies to must be a causee, not a causer. This is equivalent to the Direct Object Restriction in English (Cf. Simpson 1983, Levin and Rappaport Hovay 1995).
(18) a. Zhangsan  chao-fan  -le  Lisi.  
    Zhangsan  make.noise-disturbed  -PERF  Lisi  
    ‘Zhangsan made noises and as a result Lisi was disturbed.’  
  
b. Zhangsan  kan-dao  -le  da  shu.  
    Zhangsan  cut-fall  -PERF  big  tree  
    ‘Zhangsan cut the big tree and caused it to fall.’  

(19) a. Zhangsan  chang  ge  chang-fan  le.  
    Zhangsan  sing  song  sing-disturbed  PERF  
    ‘Zhangsan sang songs, and as a result got disturbed.’  
  
b. Zhangsan  chang  ge  chang-fan  le  taziji.  
    Zhangsan  sing  song  sing-disturbed  PERF  himself  
    ‘Zhangsan sang songs, and as a result got himself disturbed.’  

However, we have sentences that appear to be counterexamples to this generalization.  

(20) Zhangsan  xue-fan  Yingyu.  -le.  
    Zhangsan  study-disturbed  English  -PERF  
    ‘Zhangsan studied English and as a result he got disturbed.’  

In (20), the change of state verb does not apply to the object NP Yingyu ‘English’, but to the subject NP Zhangsan. Thus (20) seem to be a counterexample to our proposal about <CAUSE>.  

Hopper and Thompson (1980) point out that there is no clear distinction between transitivity and intransitivity; the notion of transitivity comes as a continuum, ranging from high to low.  

(21) Disposal constructions  
a. Zhangsan  ba  da  shu  kan-dao  le  
    Zhangsan  DISP  big  tree  cut-fall  PERF  
    ‘Zhangsan cut the big tree and caused it to fall.’  
  
b. *Zhangsan  ba  Yingyu  xue-fan  le.  
    Zhangsan  DISP  English  study-disturbed  PERF  
    ‘Zhangsan studied English and as a result he got disturbed.’  

(22) Passive constructions  
a. Da  shu  bei  Zhangsan  kan-dao  le.  
    big  tree  PASS  Zhangsan  cut-fall  PERF  

The big tree was cut and caused to fall by Zhangsan.’

b. *Yingyu bei Zhangsan xue-fan le.
   English PASS Zhangsan study-disturbed PERF
   ‘English was studied and gotten disturbed by Zhangsan.’

4. Evidence 3: the irregularity of argument realization in Chinese

The third piece of evidence is the irregularity of argument realization with respect to the semantic restrictions of V2. Baker (1988) postulates UTAH, which claims that a direct mapping exists between the argument structure and the syntactic structure; that is, the external argument maps to the subject position, and the internal argument maps to the object position.

(23) Lexical conceptual structure:     \[ [(x) \text{ACT ON (y)}] \]
    ↓
Argument structure:       \( (x \ (y)) \)
    ↓
Syntactic structure: \[ [\text{NP (=x)} \ [V_{[\text{ACT}]} \ \text{NP (=y)}]] \]

If we adopt this hypothesis, we would expect the internal argument \((y)\) of a verb to occur in the underlying object position. But the internal argument of an unaccusative verb in Chinese needs to meet a semantic condition: that is, when the internal argument \(y\) denotes known information, it has to move to the subject position.

    look die -PERF one-CL person Lisi
    ‘Look, there is someone / *Lisi that died.’

b. Kan, ?yi-ge ren / Lisi si-le.
    look one-CL person Lisi die-PERF
    ‘Look, ?someone / Lisi died.’

With this in mind, let us examine the internal argument of the RVCs. Compare (25) and (26).

    cry -PERF on-site GEN those person
‘Those people who were on site cried.’

(26) Zhangsan jiang gushi, jiang-ku-le zai-chang de
Zhangsan tell story tell-cry -PER on.site GEN
naxie ren.
those person
‘Zhangsan told the story, and as a result caused those people who were on site to cry.’

(27)

5. Evidence 4: subject identity principle in Chinese and Japanese

A central proposal of this paper is that both Chinese and Japanese employ <CAUSE> to connect the action and the change of state in the resultative construction, but in Japanese this connection is established in lexicon, whereas in Chinese it is in syntax. In this section, we examine the selectional restrictions between V1 and V2 and illustrate the differences between Japanese and Chinese, providing support for our proposal.

Matsumoto (1998) postulates the “subject (the prominent argument) identity principle” based on the phenomena of transitivity harmony (Kageyama 1996: 248).
Subject (prominent argument) identity principle
When two verbs are compounded, the most prominent participants of the semantic structures of the two verbs must be identical.

This principle makes it possible to accurately compute the possible cases of argument identity in the nine V-V compounds, as follows.

The 9 patterns of argument identity

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Argument Identity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>V (1 (2)) - V (x (y)) → V-V (1=x (2=y))</td>
<td>Hanako kicked the man, and caused the man to fall.</td>
</tr>
<tr>
<td>b.</td>
<td>V (1 ( )) - V(x ( )) → V-V (1=x ( ))</td>
<td>*Hanako kicked the man, and the man caused Hanako to fall.</td>
</tr>
<tr>
<td>c.</td>
<td>V (2) - V (y) → V-V (2=x (y))</td>
<td>*The man kicked Hanako, and Hanako caused the man to fall.</td>
</tr>
<tr>
<td>d.</td>
<td>V (1 (2)) - V (x (y)) → V-V (1=x (2))</td>
<td>*The man kicked Hanako, and caused Hanako to fall.</td>
</tr>
<tr>
<td>e.</td>
<td>V (2) - V (x ( )) → V-V (2=x ( ))</td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td>V (2) - V (y) → V-V (2=x (y))</td>
<td></td>
</tr>
<tr>
<td>g.</td>
<td>V (1 (2)) - V (x ( )) → V-V (1=x (2))</td>
<td></td>
</tr>
<tr>
<td>h.</td>
<td>V (2) - V (y) → V-V (1=y (2))</td>
<td></td>
</tr>
<tr>
<td>i.</td>
<td>V (1 ( )) - V (y) → V-V (1=y ( ))</td>
<td></td>
</tr>
</tbody>
</table>

There are two major requirements that follow from the subject identity principle. First, a prominent argument cannot be identified with a non-prominent argument. Second, when two prominent arguments are identified, the resulting argument is still a prominent argument; namely, it is the subject argument. We can thus predict the semantic relation of a V-V compound in Japanese based on these two requirements. For instance, the RVC keri-taosu ‘kick and cause to fall’ permits only one interpretation, as shown in (30).

Hanako-wa otoko-o keri-taos-u.
Hanako-TOP man-ACC kick-fall-NONPAST

a. Hanako kicked the man, and caused the man to fall.
   (1=x (2=y))

b. *Hanako kicked the man, and the man caused Hanako to fall.
   *(1=y (2=x))

c. *The man kicked Hanako, and Hanako caused the man to fall.
   *(2=x (1=y))

d. *The man kicked Hanako, and caused Hanako to fall.
   *(2=y (1=x))
However, to our surprise, the subject identity principle doesn’t seem to apply to the RVCs in Chinese. The two major requirements mentioned above are not attested in Chinese.

(31) Zhe-ge migong zhuan-yun -le henduo ren.
This-CL maze go.around-giddy -PERF many people
‘Lit. Many people went around in the maze and as a result got giddy.’

(31’) Possible interpretations of (31)
a. Many people went around in the maze, and as a result many people got giddy.
b. *Many people went around in the maze, and as a result the maze got giddy.
c. *The maze went around many people, and as a result many people got giddy.
d. *The maze went around many people, and as a result the maze got giddy.

Next we look at the case of the newly introduced argument.

(32) Zhe-chang da han gan-si -le suoyou zhuangjia.
this-CL big drought dry-die -PERF all crop
‘Lit. This great drought caused all the crops to dry up and die.’

(32’) Possible interpretations of (32)
a. The crops dried up, and the crops died.
b. *The drought dried up, and the drought died.
c. *The drought dried up, and the crops died.
d. *The crops dried up, and the drought died.

Here we are confronted with a question: Why can RVCs in Chinese violate the subject identity principle? Our answer to this question is that, unlike the case of Japanese, the V-V compounds in Chinese are formed in syntax. In the RVCs in Chinese, CAUSE is the head of the predicate, and V1 is just an adverbial modifier as in (27).

If we adopt Li’s (1990, 1993) theory that the RVCs in Chinese are lexically formed without <CAUSE>, we will not be able to explain the facts of (31) and (32), namely that an internal argument functions as subject of the sentence in (31), and that the subject is an argument of neither V1 nor V2 in (32).
6. Evidence 5: insertion of temporal syntactic elements

Aspectual markers are inflectional elements suffixed to verbs, indicating the temporal properties of events. If x and y are formed as a compound, regardless of compounding levels, then the aspectual markers must be suffixed to the compound as a whole, not inserted between the two verbs.

(33) a. Zhangsan ba yao [he] [jinqu] -le.
   Zhangsan DISP medicine drink enter-go -PERF
   ‘Zhangsan drank the medicine.’
   b. Zhangsan ba yao [he] -le [jinqu].
   Zhangsan DISP medicine drink -PERF enter-go
   ‘[Same as (33a)]’

(34) a. Zhangsan cuihui -le diaobao
   Zhangsan wreck-destroy -PERF bunker
   ‘Zhangsan destroyed the bunker.’
   b. *Zhangsan ba diaobao cu -le -hui
   Zhangsan DISP bunker wreck -PERF -destroy
   ‘[Same as (34a)]’

Cui ‘wreck’ and hui ‘destroy’ constitute a V1-V2 compound, so V1-V2 can only occur in a position reserved for a verb. As a result, the perfective aspectual marker -le can only be suffixed to the end of the compound. What about the RVCs?

(35) a. Zhangsan ba Lisi fangpao -le
   Zhangsan DISP Lisi set.leave-leave -PERF
   ‘Zhangsan set Lisi free and as a result Lisi ranaway.’
   b. *Zhangsan ba Lisi fang -le -pao
   Zhangsan DISP Lisi set.free -PERF -leave
   ‘[Same as (35a)]’

The verbs fang ‘set free’ and pao ‘leave’ constitute an RVC. As shown in (35b), the perfective aspectual marker -le cannot be inserted into the two verbs. This indicates that the relationship between V1 and V2 of an RVC is very tight, which means that compounding is involved.
7. Evidence 6: Syntactic modifier on RVCs of Chinese

The 6th piece of evidence is that V1 of an RVC cannot be independently modified by a syntactic modifier. If V1 and V2 only constitute a serial verb construction without compounding, V1 should be able to receive external modification.

(36) Zhangsan ba yao da-kou-da-kou-di [he]
Zhangsan DISP medicine in.great.drafts drink
[jinqu] le.
Enter-go PERF
a. Drinking in great drafts
b. *Entering in great drafts

(37) *Zhangsan renzhende ting-xin -le tade hua.
Zhangsan seriously listen-believe -PERF his word
‘Zhangsan seriously listened and as a result believed in his words.’
 a. Seriously listening
b. *Seriously believing

Along the same line, we can predict that V1 of an RVC cannot be independently modified by an adverb. Firstly look at the verbal compounds in Japanese.

(38) a. Taro-wa kono kabin-wo shikiri-ni tatai-ta.
Taro-TOP this vase-ACC repeatedly hit-PAST
‘Taro hit the vase repeatedly.’
Taro-TOP this vase-ACC repeatedly kowashi-PAST
‘Taro broke the vase repeatedly.’

(39) a. Taro-wa kono kabin-wo shikiri-ni tatai-te kowashi-ta.
Taro-TOP this vase-ACC repeatedly hit-CON break-PAST
‘Taro hit the vase repeatedly and as a result he broke the vase.’
Taro-TOP this vase-ACC repeatedly hit-break -PAST
‘[Same as (39a)]’

The ungrammaticality of (39b) indicates that [tataki-kowasu] in Japanese is a verbal compound. RVC in Chinese is the same as Japanese.
(40)  a. Zhangsan buting-de za zhe-ge huaping.  
    Zhangsan repeatedly hit this-CL vase  
    ‘Zhangsan is hitting this vase repeatedly.’  
   b. *Zhangsan buting-de za-sui zhe-ge huaping.  
    Zhangsan repeatedly hit-break this-CL vase  
    ‘Zhangsan is breaking the vases repeatedly.’  

The ungrammaticality of (40b) indicates that za-sui is a verbal compound.

8. Conclusion

With all the comparisons of Chinese and Japanese reported in this paper, we come to the following conclusion: the causal chain, which is built with <CAUSE> as a connection between an action and a result, definitely is constrained by the morpho-syntax of the language. Japanese, which is morphologically complex, merges the predicates <ACT>, <CAUSE>, and <BECOME> in lexicon, whereas Thai, which is morphologically simple, connects <ACT> and <BECOME> in the syntactic structure, with the effect of <CAUSE> inferred from the context. On the other hand, we believe that the northern dialect of Chinese is undergoing a change to become more agglutinating since the time of middle Chinese, so, we propose that in the syntactic structure of Chinese, there is a covert predicate <CAUSE>. The result-denoting verb V2 moves to <CAUSE>, and then the verbal complex is further compounded with V1.

References


