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中國語文研究

Antisymmetry, Morphological Merger, and Chinese Resultative Compounding

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Abstract

This paper takes Chinese resultative compounds as a concrete case to investigate how the theory of antisymmetry (Kayne 1994, 2022) can be applied in the study of word formation. Drawing on the insights and techniques of the syntax of word formation, in particular Morphological Merger from Distributed Morphology (Marantz 1988; Embick and Noyer 2001), we demonstrate that the formation of the Chinese resultative compound involves operations both in narrow syntax and at the level phonological form (PF): the former involves conflation, which has to obey the left-adjunction requirement imposed by Linear Correspondence Axiom (LCA), while the latter is a variety of Morphological Merger, the Local Dislocation Merger, that occurs at or after lexical insertion, thus being immune to LCA restriction. This study emphasizes the importance of being careful about the internal mechanism of word formation, which might either be subjected or immune to LCA restriction depending on whether the combination of the morphemes occurs in narrow syntax or at PF. This paper also argues that conflation can constitute a dimension of parametric variation, which is used to explain the difference between Chinese and English resultatives in terms of the subject-manner verb thematic relationship. Additionally, a micro parameter concerning the phonological requirement of functional features in Chinese is proposed, addressing issues such as the obligatory head movement of the secondary predicate in Chinese and the necessity of a manner verb (to form a resultative compound) to causativize an otherwise unaccusative verb.

Keywords

LCA, Morphological Merger, conflation, Chinese resultative compounds

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1 Introduction

Regardless of the changes in theoretical details throughout the history of generative syntax, one of the central issues concerns how the hierarchical structure is "flattened" to give rise to the surface form with a linear order. In the recent theoretical development in Chomsky's (1995, 2000, 2001, 2013) Minimalism, this is part of the optimal design of language: how narrow syntax can satisfy the externalization conditions at the interface of phonological form (PF). Against this background, although developed during the government and binding period, Kayne's (1994) Antisymmetry Theory, particularly the Linear Correspondence Axiom (LCA), deals with syntactic problems at the core of minimalist syntax, as this theory exactly aims to explain the fundamental principle that governs the externalization of the hierarchical structure derived in narrow syntax, as summarized in the recent paper by Kayne (2022).

Besides, a further question, in a sense sparked by the Antisymmetry Theory, arises: if LCA is responsible for the externalization of the outcome derived from narrow syntax, could there be a possibility that the linearized elements at PF are subject to other rules that result in some rearrangements of the linear order? This especially makes sense when another theory in the generative tradition, Distributed Morphology (DM) (cf. Halle and Marantz 1993; Marantz 1997, 2007; Embick and Noyer 2001; Embick 2010), is brought into the theoretical picture. A leading proposal in DM is that syntax is responsible for the derivation of both phrases and words, and the atoms of syntactic derivation are not words but morphemes. This means when a mechanism like LCA externalizes the hierarchical structure derived in narrow syntax, the linearized items are morphemes. These morphemes, on the other hand, might go through some further arrangement based on some morphological/phonological rules. This is exactly the spirit of a variety of the Morphological Merger (the Local Dislocation Merger) proposed in DM (cf. Embick and Noyer 2001; Embick 2010). If we adopt the basic spirits of LCA and DM, we would expect to attest morphological structures that might be purely governed by LCA on condition that the linearization of morphemes is based on their hierarchical structure in narrow syntax; it is also possible that at least part of the morphological structure of a word is the outcome of the post-syntax Morphological Merger.

The primary objective of this paper at the conceptual level is to explain how the final morphological structure, specifically the linearization of morphemes in a complex word, is derived through both narrow syntax operation and PF operation. In this paper, the outcome of the narrow syntax operation is subject to LCA (Kayne 1994, 2022), whereas the morphological/PF operation is based on Morphological Merger in DM (cf. Embick 2010). The Chinese resultative compound is chosen as a case study, attempting to show how LCA and Morphological Merger both take effect in the formation of a compound. Therefore, this paper can be viewed as a follow-up study of Kayne 2022. In particular, it will show that the resultative compound involves both LCA-based and Morphological Merger-triggered morphological

processes. If this analysis is on the right track, it presents a complex picture of word formation, offering insights into the analysis of morphological structures in general.

Another objective of this paper is to move beyond the specific LCA technique and explain how morphological properties in the lexicon can contribute to a dimension of parametric variation. The hypotheses following this line, put forth in this paper, address such issues as to why Chinese but not English permits the mismatched thematic relationship between the subject and the manner verb, why the secondary predicate in Chinese but not English has to undergo head movement to form a compound with the manner verb, and why a manner verb is often required (forming a resultative compound) to causativize an otherwise unaccusative verb in Chinese.

The rest of this paper is organized as follows. Sections 2 and 3 present the essential theoretical points of LCA and DM (especially Morphological Merger) relevant to morphological structures. Section 4 explains the major properties of the Chinese resultative construction with theoretical points from Sections 2 and 3. Section 5 concludes our discussion.

2 LCA: Hierarchical structure and linearization

The primary concern of LCA in Kayne 1994 and the subsequent work is to provide a fundamental mechanism that maps the hierarchical structure derived from syntax onto a linear order. The crucial point is that "asymmetric c-command invariably maps into linear precedence" (Kayne 1994: 3). A direct consequence of this guiding principle then is that any symmetric structure will be ruled out because linear order cannot be derived. From a minimalist perspective, it can be rephrased as follows: symmetric structures cannot be externalized at the PF level. This single criterion serves as an important "filter" of the proposed structures in the studies of syntax. In this section, I provide an introduction to LCA, with a specific focus on the theoretical points relevant to the analysis of compounds to be presented in Section 4.

Kayne (1994) presents LCA as follows:

(1) *Linear Correspondence Axiom*
d(A) is a linear ordering of T.
(Kayne 1994: 6)

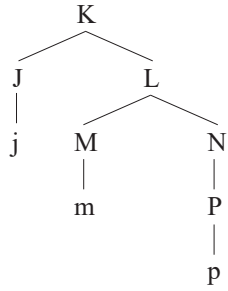
Explanations are in order. A is a maximal set of the ordered pairs $<X_i, Y_j>$, X and Y being any non-terminal nodes of a given phrase marker P such that X asymmetrically c-commands Y. T is the set of all the terminal nodes in this phrase marker. d(A) is the linear mapping of all the terminal nodes. What (1) states is that, for any two non-terminal nodes X and Y in P, if X asymmetrically c-commands Y, then there will be a fixed linear arrangement of all the terminal nodes of P. In other words, when such a condition is unsatisfied, linear mapping will not occur, leading to the rejection of the syntactic derivation due to the failure of externalization. Obviously, to fully capture the essence of LCA, two structural relationships are essential: c-command and asymmetric c-command:

(2) Asymmetric C-Command
X asymmetrically c-commands Y iff X c-commands Y and Y does not c-command X.
(Kayne 1994: 4)

(3) C-Command
X c-commands Y iff X and Y are categories and X excludes Y and every category that dominates X dominates Y.
(Kayne 1994: 18)

Presented below is a simple example of a structure that meets the requirements of LCA:

(4)

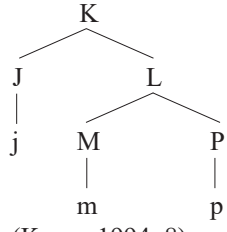


(Kayne 1994: 7)

In the above structure, the ordered pairs of non-terminal nodes with an asymmetric c-command structural relationship are <J, M>, <J, N>, <J, P>, and <M, P>. The images of these pairs in terms of the ordered pairs of the terminal nodes dominated by these non-terminal nodes are therefore <j, m>, <j, p>, and <m, p>, thus giving rise to the linear order of all these terminal nodes {j, m, p}. Since all the terminal nodes are now involved in the linear order, this structure is admissible.[1]

The following example shows how a structure is illegitimate because it fails to meet the requirement imposed by LCA.

(5)



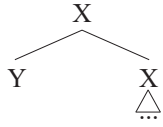
(Kayne 1994: 8)

[1] When we say a structure is admissible in this paper, it means the terminal node can be externalized with a linear order with LCA being respected. Of course, a legitimate structure should meet other requirements like feature valuation for the derivation to converge.

The ordered pairs of asymmetrically c-commanding non-terminal nodes are <J, M> and <J, P>, and the corresponding ordered pairs of terminal nodes are <j, m> and <j, p>, which fail to give rise to a total linear order involving *j*, *m*, and *p*, because the linear order of *m* and *p* cannot be determined. Therefore, LCA is violated. It is evident that the problem lies in the symmetric c-command relationship between M and P.

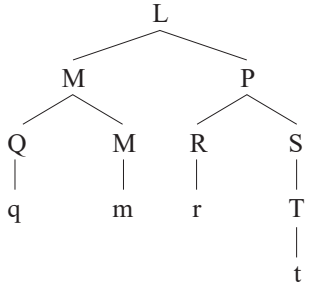
LCA has an empirical consequence of admitting and rejecting a series of structures. For example, two non-head sisters and two head sisters are both rejected. We refer readers to Kayne 1994 for a detailed analysis of these various structures. The focus of this paper pertains to the structure involving head adjunction and head movement, as our empirical focus is on the formation of compounds involving such operations. A crucial assumption of adjunction in Kayne's theory is the differentiation between categories and segments. Kayne (1994) takes the argument in May 1985 and Chomsky 1986 that adjunction creates two segments of the same category. That is, when Y is adjoined to X, the result is still X, and the lower X is only a segment of the same category:

(6)



In minimalism, Chomsky (1995) still takes the notion of segment to distinguish adjunction from merger. In Kayne 1994, the definition of c-command in (3) only involves categories while segments are excluded. We can now delve into the explanation of how head adjunction is implemented:

(7)



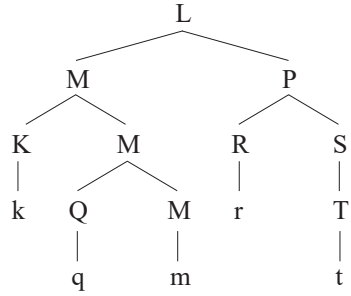
(Kayne 1994: 17)

In the above structure, M is a head, and Q is another head adjoined to M through adjunction. Consequently, the lower M is a segment of category M which does not engage in a c-command relationship. Therefore, this lower M does not c-command Q. The higher M, which is a category, also does not c-command Q because M includes Q. On the other hand, Q does c-command the category M because Q does not include M, and every category dominating Q also dominates M. This means Q asymmetrically c-commands M, and therefore *q* and *m* can be

linearized with *q* preceding *m*. A conclusion derived from this is that following LCA, head adjunction to another head must take place via left-adjunction because the adjoined head asymmetrically c-commands the host head.

Another conclusion is that multiple adjunctions to the same head are banned. The following structure is therefore rejected:

(8)



(Kayne 1994: 19)

In the above structure, M is a head; and Q and K are adjoined to M recursively. In order to make this structure admissible, K and Q should be involved in an asymmetric c-command relationship, so that *k* and *q* can be linearized. However, according to the definition of c-command, K c-commands Q and Q also c-commands K, resulting in a symmetric relationship between K and Q.

These two conclusions, namely the invariable left-adjunction and the rejection of multiple adjunctions, will be crucial in the discussion of word formation, if we do not regard word formation as a special process in a separate module, but within narrow syntax (hence with two interfaces with phonological and C-I systems respectively). This calls for a theory that includes word formation in narrow syntax, which is exactly what DM argues for. In the next section, DM, especially those concerning word formation, will be introduced, based on which I will explain how DM and LCA should work together.

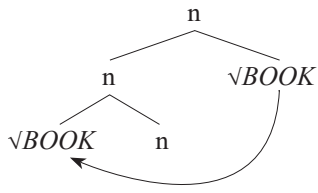
3 DM and LCA

Kayne (2022) explicitly asserts that word formation is within the realm of LCA, with the claim that "(a)ll morpheme order differences are traceable back to movement differences" (Kayne 2022: 2). This implies that the linearization of morphemes is also governed by LCA, meaning that the linearization of morphemes is also mapped from the hierarchical structure of narrow syntax. This perspective is widely adopted in the literature across different topics (cf. Biberauer et al. 2014; Roberts 2010). Therefore, implementing an LCA-based analysis of word formation requires a theory that takes words as the result of syntactic derivation. Theories of this type include DM and XS-Model (Borer 2013). In this paper, I will mainly draw upon the technical details from DM, which has developed a systematic mechanism regarding the morphological

process, although most, if not all, of them are compatible with those in the XS-Model.[2]

The central claims relevant to the current purpose are as follows. The word in the traditional sense (like a verb or a noun) is not stored in the lexicon, but is derived from narrow syntax. The atoms of syntactic derivation, therefore, are not words but morphemes. In DM, morphemes include functional items that bear a feature or a bundle of features. Another type of morphemes is the root, which lacks a category. A root can enter derivation only when it is categorized, and categorization itself is the result of a merger in syntax involving a categorizer (*n*, *v*, for example) and a root. For example, the noun *book* is formed via the merging of *n* and the root BOOK.

(9)



The above structure, to a certain extent, represents the "standard" derivation of a single noun like *book*. It, in fact, already adheres to the LCA restriction: the word formation is completed when the root incorporates into the *n* head, forming a complex head. In the traditional operation, this incorporation (after head movement) is always achieved via left-adjunction, with the root preceding *n*.

Since word formation starts from the merging of morphemes in narrow syntax (hence resulting in a hierarchical structure), locality conditions apply as in the mainstream syntactic derivation. Therefore, the hierarchical relationship between morphemes will determine how morphemes are linearized in a word. LCA, therefore, naturally works in this domain. However, DM-based studies propose that linearization and word formation can also take place at PF where it is the linear order (adjacency) of morphemes instead of the hierarchical structure (as no hierarchical structure exists at PF) that will play a role. Before delving into the specifics of this type of "merger" of morphemes in word formation, it is necessary to introduce the concept of "late insertion". The spirit of late insertion is based on the proposal that the derivation in syntax does not involve any phonological form. As introduced above, the atoms of syntactic derivations are morphemes which are feature (bundles) or roots. Now, if we put aside Roots, morphemes are terminal nodes, which will be arranged in a hierarchical structure at the end of narrow syntax derivation. In this process, morphemes do not have any phonological forms. After

[2] Borer (2013) is more concerned about the formation of complex words that often involve the engagement of an event structure, the latter being another dimension of the XS-Model developed in Borer 2005b.

narrow syntax derivation is completed, at PF, vocabulary items stored in the lexicon are inserted in the terminal nodes. Vocabulary items are phonological exponents of the feature or feature bundles of the morphemes in the terminal nodes, and there are restricted conditions to determine which vocabulary item can be inserted as the exponent of a certain morpheme in the terminal node. The primary criterion for the insertion condition is that the vocabulary item with the largest subset of the features of the morpheme will be the selected exponent. Now we can understand why this process is called late insertion: vocabulary items (phonological exponents) are inserted late, after the derivation in narrow syntax is completed.

Following DM, elements in a phrase marker (here referred to as morphemes) are linearized at the point of vocabulary insertion. Since exponents are inserted into terminal nodes after narrow syntax derivation, it is doubtless that the linearization of these exponents is largely determined by the hierarchical structure, which is the result of syntactic derivation. If LCA is taken seriously, this linearization process should be governed by the following principle: an asymmetric c-command relationship should be maintained via all the relevant nodes, ensuring a linear order precedence covering all terminal nodes (exponents). When exponents are linearized, with these exponents being the elements in a word, the result is the linearization of morphemes in a single word. The formation of a word involves affixation, which is termed "Morphological Merger" in Marantz 1988: 261:

(10) Morphological Merger
At any level of syntactic analysis (D-Structure, S-Structure, phonological structure), a relation between X and Y may be replaced by (expressed by) the affixation of the lexical head of X to the lexical head of Y.
(Embick and Noyer 2001: 561)

The affixation of two morphemes might take place at PF before vocabulary insertion, thereby being completely determined by the hierarchical structure. One example of such Morphological Merger is tense lowering in English. Apart from lowering, Embick and Noyer 2001 and other DM-based studies following it (cf. Acedo-Matellán 2016) also argue that Morphological Merger might take place at or after the insertion of vocabulary items. The Morphological Merger of this type is called "Local Dislocation Merger". At this stage, there is no hierarchical structure. The sole structural determinant of whether exponents X and Y can be combined into a single word is their linear adjacency: only adjacent elements have the potential to go through this operation. Also, it is clear that this operation is immune to LCA as the latter is to govern the mapping of hierarchical structure onto linear order. While adjacency is a necessary condition, it is not sufficient: not all the adjacent exponents will undergo Morphological Merger. Another condition is the phonological requirement of the relevant exponents. This is different from lowering which happens in narrow syntax where exponents are not inserted. Since Local Dislocation Merger takes place when the exponents are inserted, the merger operation will be sensitive to the phonological properties of the exponent.

In other words, this operation is Vocabulary sensitive. If, for example, in a phrase marker the relevant nodes have the following linear order at PF, X, Y, and Z being exponents of the morphemes in the terminal nodes:

(11) [X * Y * Z] (* symbolizing linear precedence)

Then X and Z will never go through merger as they are intervened by Y in the linear order. On the other hand, if X and Y take some special phonological properties, for example, X has a phonological property making it unable to stand alone and has to be attached to another head, and Y has a property such that it can (although not necessarily) go through Morphological Merger with another head, then we can expect to have the following consequence:

(12) [[X+Y] * Z] (+ symbolizing the result of Morphological Merger, meaning X and Y form a morphological word)

In theory, when conditions permit, the order can also be [Y+X], but this requires the specific condition that X, Y, and Z are in the same constituent. For details, see Embick and Noyer 2001.

Now, we can summarize what we have from LCA and DM regarding word formation:

(13) **LCA and DM restriction in word formation**
   a. A word is formed via syntactic derivation that takes morphemes as atomic elements.
   b. Morphemes will have their phonological exponents (vocabulary items) inserted in the terminal nodes after the derivation of narrow syntax is completed.
   c. If the order of the exponents in a word is determined by the hierarchical structures of the morphemes in narrow syntactic derivation, LCA will take effect.
   d. If the exponents are combined via Morphological Merger at PF (i.e. Local Dislocation Merger), only adjacency relationship, rather than hierarchical structure, will play a role. LCA, therefore, does not take effect in this operation.

4 Chinese resultatives: An LCA and DM-based account

4.1 Resultative compounds in Chinese: Data and issues

This section will describe the properties of Chinese resultative compounds and summarize the major issues to be accounted for. As mentioned at the beginning of this paper, I treat the analysis of Chinese resultative compounds as a concrete case study demonstrating how LCA and DM work together in word formation. Apart from this, I also attempt to provide an explanation for the core issues in resultatives, in particular the variation between Chinese and English resultatives regarding the subject-manner verb thematic relationship as well as the special requirement of causativizing the unaccusative verb in Chinese.

A crucial property of the resultative construction across languages is that it involves two predicates at least viewed from the surface form, typically a verb and an adjective phrase. At the surface level, what makes Chinese resultative construction special is that it involves a compound: the verb and the secondary predicate form a compound, not to be separated as in its English counterpart:

(14) a. Zhangsan za ping le tiekuai.
Zhangsan hit flat PERF metal
'Zhangsan hit the metal flat.'
b. John hammered the metal flat.

In (14a), *za* and *ping* form a compound that cannot be separated by a degree intensifier like *hen* (very):

(15) Zhangsan za *(*hen)* ping le yi kuai tiekuai.
Zhangsan hit very flat PERF one CL metal
Intended meaning: 'Zhangsan hit a piece of metal and made it very flat.'

Although the chunk in Chinese resultatives like *za-ping* in (14a) is often termed a V-V compound, the lack of overt categorial and tense markers makes it difficult to determine whether the secondary predicate like *ping* is a verb or not. The same lexical item can function as a typical adjective in Chinese:

(16) Zhe kuai tiekuai hen ping.
this CL metal very flat
'This piece of metal is very flat.'

As shown in (16), *ping* is taken as a predicative adjective, modified by the degree adverbial *hen*. For descriptive convenience, I will use the term V-A compound to establish a descriptive distinction between the first and second elements in the resultative compound. Although this distinction is primarily for descriptive purposes, I will demonstrate in subsequent analysis that the secondary item does originate as an adjective in the derivation. Another reason is that, even at the descriptive level, the resultative predicate (like *ping* in (14a)) describes a state which is often denoted by an adjective.

Another difference between Chinese and English resultatives concerns the thematic relationship between the subject and the verb. In English, the subject is invariably the agent of the action denoted by the verb, but in Chinese, this thematic relationship is not obligatory. In (14a), this thematic relationship does hold, but it is not attested in the following examples. Such a situation is impossible in English:

(17) a. Zhe ben shu du lei le Zhangsan.
this CL book read tired PERF Zhangsan
'This book made Zhangsan tired due to Zhangsan's reading of it.'

b. Zhe ping jiu he zui le shi ge ren.
this CL alcohol drink drunk[3] PERF ten CL person
'This bottle of wine has made 10 people drunk.'

(18) a. *This book has read John tired.
b. *This bottle of wine drank 10 people drunk.

One could argue that there is a special mapping from thematic structure to syntax in Chinese that arranges the patient of the verb in the subject position: in (17), both subjects are in fact patients. However, the following example shows that the subject does not necessarily have to be either the patient or agent of the verb:

(19) Zhe chang jiuhui he zui le suoyou ren.
this CL wine-party drink drunk PERF all people
'This wine party has caused people to drink so much that all the people got drunk.'

Again, this is impossible in English:

(20) *This party drank 10 people drunk.

Despite the flexible relationship between the subject and the verb, the subject does have an invariable theta-role: it is always the causer of the resultant state. For example, in (19), it was the wine party that caused all the people to get drunk.

The rest of this paper will address the issues summarized in this section, in particular the underlying mechanism(s) responsible for the formation of Chinese resultative compounds.

4.2 Previous studies of Chinese resultatives

The Chinese resultative construction is among the most studied topics in Chinese syntax (cf. Li 1990, 1995; Huang 1992, 2006; Cheng 1997; Zhang 2001, 2007; Hu 2018, among many others). As it is not feasible to list all the previous studies, this paper summarizes the representative solution. Similar to the studies of English resultatives, the most typical solution to the various issues in Chinese resultatives takes the resultative construction to consist of two sub-events, the causing event and the resultant event. I will concentrate on Huang 2006 to present this line of explanation.

By taking an event decomposition approach in the sense of Hale and Keyser 1993, 2002 and Rappaport Hovav and Levin 2001, Huang's (2006) research presents a semantic interpretation of resultatives. Furthermore, with a parametric review, the cross-linguistic variation between Chinese and English resultatives is also accounted for.

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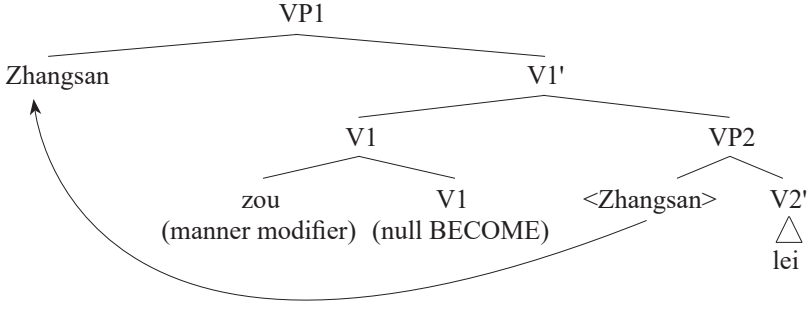
[3] It is important to note that there is no derivational relationship between *he* (drink) and *zui* (drunk).

In Huang 2006, it is assumed that bare/intransitive resultatives denote an inchoative event, aligning with the assumption made in this research. Additionally, it suggests that this event can be decomposed into two sub-events, a BECOME event and a stative event. The transitive resultative denotes a causative event, which is formed by adding a CAUSE event to the inchoative event. Besides, both CAUSE and BECOME events can be modified by the manner verbs:

(21) Event structures of inchoative and causative events:
a. Inchoative event structure:
[BECOME$_{<MANNER>}$ [X <STATE>]]
b. Causative event structure:
[X CAUSE$_{<MANNER>}$ [BECOME [X <STATE>]]]
(Huang 2006)

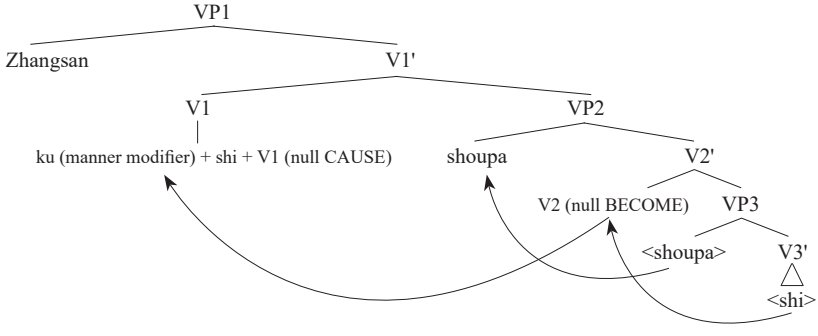
According to Huang, every sub-event forms a VP; moreover, the subject of the BECOME predicate is always the one moved from the subject position of the stative VP. The manner V is not a major predicate, but is inserted as an adjunct of the BECOME or CAUSE head for modification. Now, we can examine how this analysis applies to the explanation of Chinese resultatives:

(22) a. Syntactic derivation of inchoative events



Zhangsan zou-lei le.
Zhangsan walk-tired PERF
'Zhangsan walked so much that he got tired.'

b. Syntactic derivation of causative events



Zhangsan ku-shi le shoupa.
Zhangsan cry-wet PERF handkerchief
'Zhangsan cried so much that his handkerchief got wet.'

In (22a), *Zhangsan* initially functions as the subject of the stative event but later moves to the [Spec BECOME] position to serve as the subject of the BECOME event. *Zou* is the manner V inserted to modify the BECOME predicate. Also, *lei* moves to form a V-V compound with *zou*. In (22b), *shoupa*, the subject of the stative event, again moves to serve as the subject of the BECOME event; *Zhangsan* is inserted in the [Spec CAUSE] position, serving as the causer argument. *Ku* is the manner V, inserted to modify the CAUSE predicate. *Shi* is firstly merged in the head of VP3, which is the stative event phrase; it moves first to the V2 position, which is the head of the BECOME event, and further moves to the V1 position, which is the head of the CAUSE event. The movement of *shi* to V1 results in the incorporation of the manner V and the null CAUSE, giving rise to a V-V compound.

In order to explain why an English unergative V cannot be involved in bare resultatives like (22a) and why "reversed theta-role assignment" is not attested in English, Huang introduces a parametric account. The basic assumption is that verbs in Chinese (or analytical languages in general) lack the obligatory theta feature (or L-syntax in Hale and Keyser 1993), while the theta feature is obligatory for verbs in synthetic languages like English. Therefore, in cases like (22a), the modifier V *zou* does not require an agent role, but its English counterpart *walk* requires it, which cannot be attained in sentences like (22a). Sentences like *the alcohol drank ten people drunk* is not allowed in English because *drink* needs an agent, which is unavailable in such sentences; in Chinese, this problem does not appear simply because Chinese unergative Vs do not obligatorily need an agent argument.

Huang's analysis provides a unified account of the various issues in Chinese resultatives. Apart from the explicate mapping between the event structure and syntactic derivation, this account also reveals the derivational relationship between intransitive/bare resultative construction (22a)[4] and transitive resultative V-V compound construction (22b). It captures the fact that even with a manner verb in the V-V compound, the structure in (22a) is fundamentally an unaccusative structure headed by the v_{BECOME} head. The following evidence from Hu 2018 further supports this conclusion:

(23) a. Zhe kuai tiekuai (**guyi*) za-po le.
this CL metal (intentionally) hit-break PERF
b. Zhe kuai tiekuai *bei* (*guyi*) za-po le.
this CL metal BEI (intentionally) hit-break PERF
'The metal was intentionally broken by one's hitting.'

[4] In this paper, if not otherwise specified, "resultative" refers to the transitive resultative construction.

As shown above, the construction in (23a) is not compatible with *guyi*, indicating that it is not passive.

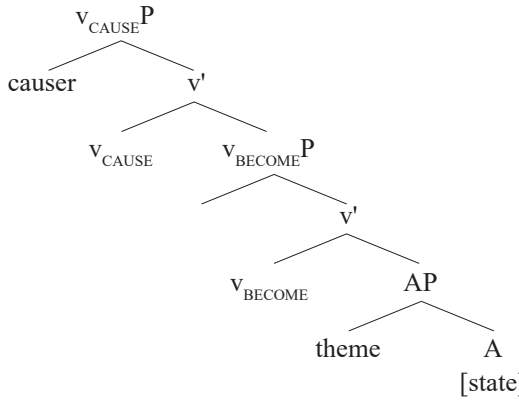
While we agree with the main points presented in Huang's analysis, two issues remain unresolved. The first one concerns the thematic relationship between the subject and the matrix verb. The core hypothesis of Huang (2006) regarding this issue is as follows: the subject of the resultative does not have to be the agent of the manner verb, because in Chinese, verbs are unobligated to assign a theta-role (hence the subject does not need to be its agent); but in English, a verb invariably needs to assign a theta-role and that's why the subject is always the agent of the manner verb. This hypothesis becomes problematic if we take either of the mainstream approaches to argument structures. If we take the lexicalist approach, we would need to argue that in all languages, verbs need to assign a theta-role. If we take the constructivist approach (like Distributed Morphology, First Phase Syntax (Ramchand 2008), or Borer's (2005a, 2005b) exo-skeletal model), we would have to say that verbs never assign any theta-role in any language. Another issue pertains to the morpheme order in the resultative compound. In Huang 2006 and most of the other studies on Chinese resultatives, the resultative compound is formed via head movement and incorporation: the secondary predicate moves and incorporates into the V_{BECOME} head (i.e. the case of intransitive resultatives) or the V_{CAUSE} head (transitive resultatives). If we take LCA seriously, a problem arises: a prediction of LCA is that head movement and incorporation always involve left-adjunction, as explained in Section 2. This means that if the secondary predicate moves to the head where the manner verb is inserted, the secondary predicate should be positioned to the left of the manner verb. That is, we should not have *da-ping* and *ku-shi*, but **ping-da* and **shi-ku*, contrary to fact. Here, I do not mean that the syntactic derivation proposed in Huang 2006 is incorrect, but emphasize that a further explanation is required for the morpheme order in the Chinese resultative compound, which is especially a crucial issue in research (like the present one) that centres on the deep process of word formation.

4.3 The formation of Chinese resultative compounds

The present study concurs with Huang 2006 in terms of the syntactic structure of Chinese resultatives, but differs from this analysis regarding how the resultative compound is formed. A new hypothesis will also be proposed on the thematic relationship between the subject and the manner verb in the Chinese resultative construction, as well as its distinction from English (Germanic) resultatives.

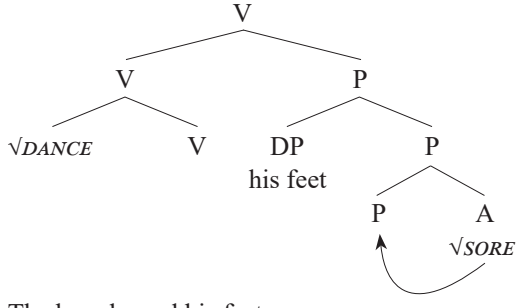
The syntactic structure of resultatives is as follows, which is quite similar to Huang's (2006) proposal except that the most embedded predicate head is an adjective instead of a verb, which is more compatible with the interpretation of a resultant state.

(24)



The crucial point is how the manner verb is realized in the derivation. In the DM-based framework, a verb is derived via the merging of a verbal categorizer with a Root. Also, a verb can be formed via the incorporation of a complement in the sense of Hale and Keyser 1993, 2002, which is the case of the formation of verbs like *saddle* and *shelf*. I refer readers to Hale and Keyser 2002 for details. However, when taking the above structure, which is also often adopted as the syntactic structure of English resultatives (with differences in details in one way or another, cf. Ramchand 2008; Mateu 2012; Acedo-Matellán 2016, among others), there is no way for the manner verb to engage in the derivation. Exactly out of this concern, the theoretical technique of conflation is introduced, which is taken in studies like Haugen 2009, Mateu 2012, Harley 2005, Folli and Harley 2020, among others. The gist of conflation, different from incorporation, is that a Root is selected from the lexicon and is directly adjoined to a verbal head. The Root is not moved from the complement position of a verb, and hence no trace is left. The following example of English resultatives from Mateu 2012 illustrates this operation:

(25)

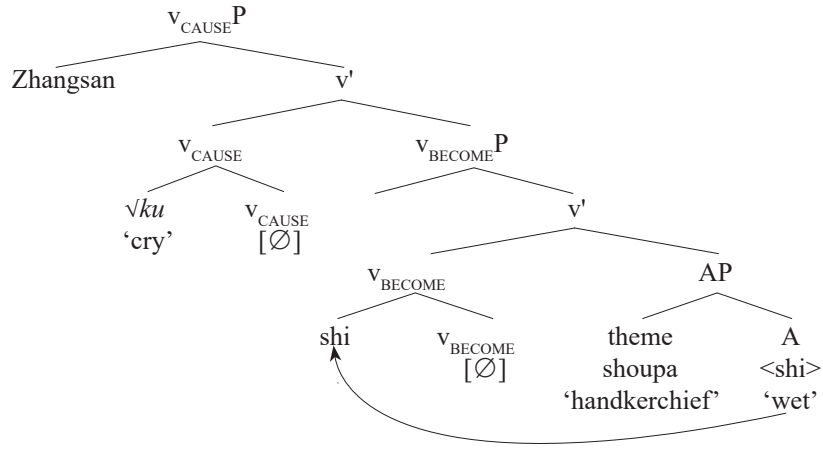


The boy danced his feet sore.
(Mateu 2012: 258)

In the above example, the Root DANCE is left adjoined to the V head to facilitate manner modification or verb naming (Harley 2005). I argue that the manner verb

in Chinese resultative is indeed adjoined to the v_{CAUSE} head via conflation. The syntactic derivation is as follows:[5]

(26)



Zhangsan ku-shi le shoupa.
Zhangsan cry-wet PERF handkerchief
'Zhangsan cried so much that his handkerchief got wet.'

At the end of the derivation, the adjective moves and incorporates into the null v_{BECOME}. It is important to note that currently the only substantial difference between the present derivation and the one in Huang 2006 is that the present study does not assume that the complex head formed in the v_{BECOME} node will further incorporate into the v_{CAUSE} head. If the head in v_{BECOME} further moves to the v_{CAUSE} head, two problems will emerge in terms of LCA restriction. First, if the head in the v_{BECOME} node adjoins to the v_{CAUSE} head, recursive adjunction will occur, which is banned by LCA, as shown in section 3. Second, even if recursive adjunction is allowed, there is a morpheme order problem: the complex head in the v_{BECOME} head (*shi*) has to be adjoined to the left of the head in v_{CAUSE} node (*ku*), forming a compound *shi-ku*, but what we have is *ku-shi*. The solution proposed here is straightforward: there is no head movement from v_{BECOME} to v_{CAUSE}. Therefore, at PF, when the vocabulary items are inserted, the following linear order of morphemes is obtained: *ku* * *shi* * *shoupa*.

At this stage, Morphological Merger could still occur to form a complex word (morphological word). The condition is that the two vocabulary items are adjacent to each other, and they can both function as bound morphemes which can

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[5] The v_{BECOME} in this structure is a bit misguiding, as there is only a single head in the structure that bears the verbal feature, which is v_{CAUSE}. The v_{BECOME} is responsible for the expression of a change of state, which corresponds to $P_{DIRECTION}$ head in Mateu 2012, or P_{PATH} in Acedo-Matellán 2016 and Hu 2022b. In the unaccusative structure, without a higher verbal head, this v_{BECOME} head is verbal (or we can say there is still a verbal head above, but this is irrelevant here).

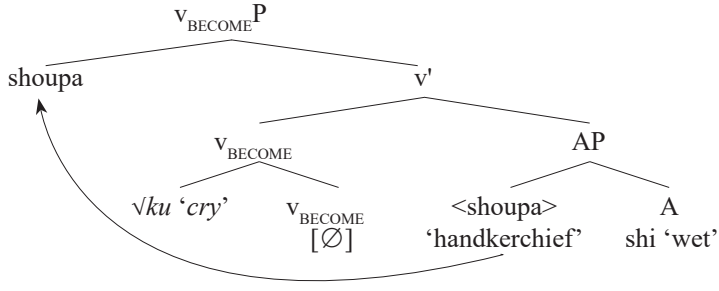
be "happily" combined with each other to form a morphological word. Now *ku* and *shi* are adjacent to each other, and they are both potentially bound morphemes.[6] Morphological Merger at PF (i.e. Local Dislocation Merger) therefore takes place, giving rise to the final surface form as follows:

(27) [ku-shi] * shoupa

If this account is on the right track, it provides a concrete case to show how LCA works in word formation. Specifically, this account provides a clear situation to show which aspects of word formation are governed by LCA and which are not. It also indicates how Local Dislocation Merger in DM "cooperates" with LCA: the former at PF applies to the morphemes already linearly ordered by LCA. In the above example, the formation of the complex heads in the v_{BECOME} and its linear order with v_{CAUSE} are governed by LCA, and the movement of the former into the latter is also banned by LCA. However, after vocabulary items are inserted into these two heads, the Morphological Merger of these two items in word formation is no longer restricted by LCA.

The same operation is also applicable to the intransitive resultative in Chinese. In this case, the left adjunction of the manner verb targets the v_{BECOME} head, which blocks the head movement of the secondary predicate (i.e. the adjective) to the v_{BECOME}:

(28)



Shoupa ku-shi le.
handkerchief cry-wet PERF
'The handkerchief got wet (because someone's tears made it wet).'

Now we still have an unresolved issue: the thematic relationship between the subject and the manner verb. If, in both Chinese and English resultatives, the

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6 Readers may ask the following questions: What makes a morpheme potentially bound? What evidence can be taken to support that these words/morphemes are potentially bound? In DM and most, if not all, theories of morphology, whether a morpheme is bound or potentially bound is simply an idiosyncratic property of the root stored in the lexicon. As for the second question, it is an agreed fact that regardless of theoretical accounts, resultative chunks like *ku-shi* are compound-like words, meaning that the two morphemes are morphologically bound so that they can be combined to form a morphological word. Additionally, in general, most, if not all, mono-syllabic words/morphemes in Chinese can get involved in a compound.

manner verb is adjoined to the v head via the operation of conflation, why is it necessary for the subject in English resultatives to be the agent of the manner verb, while in Chinese, this requirement does not exist? To deal with this issue, we need to make explicit the mechanism of the syntax of argument structure, especially how theta-roles are assigned and why they are related to verbs. In this paper, I take the constructivist spirit taken in various models like the XS-model (Borer 2005a, 2005b, 2013), DM, and First Syntax Phrase (Ramchand 2008). According to these approaches, theta-roles are assigned not by lexical verbs, but by the positions in which the arguments are inserted in the functional structure that encodes the information of events. Hu (2022a) further argues that this implies it is not the lexical verb, but rather the limited functional heads that are responsible for introducing arguments and assigning theta-roles. For example, core arguments are assigned by functional heads like v_{CAUSE}, v_{DO}, and v_{BECOME}, which assign theta-roles like causer, agent, and theme. Applied arguments are introduced by prepositions (often in the shape of applicative heads, cf. Pylkkänen 2008). This means that if an argument is interpreted as an agent, this is because it is inserted in the specifier of v_{DO}, which is responsible for the assignment of the agent role. Similarly, a causer role is assigned to the DP in the specifier of v_{CAUSE}. Based on these studies, I postulate the following hypothesis on the operation of conflation:

(29) **Language variation regarding conflation**
   a. Whether a Root can be adjoined to a functional head via conflation is language specific.
   b. Macro-parameter of conflation: a macro-parameter can emerge if a language completely rejects conflation.
   c. Micro-parameter of conflation: for those that allow conflation, variation might occur regarding which functional head allows or rejects conflation.

The hypotheses presented in (29a) and (29b) are not something completely novel. They are indeed the point proposed by Mateu (2012) in the account for the variation between verb-framed and satellite-framed typology. Mateu (2012) argues that a language displays the typical properties of satellite-framed languages if conflation (Root adjunction to v) is possible; otherwise, it is a verb-framed language. English (Germanic in general) and Chinese belong to the former, while Romance languages and Japanese belong to the latter. Following this logic, it is a natural consequence that micro-parameters might emerge in the satellite-framed languages depending on which functional heads allow conflation, which is consistent with the parameter hierarchy spirit in Roberts 2019. This is precisely the point made in (29c). Based on this hypothesis, I argue that the difference between Chinese and English concerning the subject-manner verb thematic relationship can be reduced to the following reasons:

(30) **Micro-parameters of conflation in Chinese and English**
   a. English allows v_{DO} but not v_{CAUSE} or v_{BECOME} to host conflation.
   b. Chinese allows conflation on v_{CAUSE} and v_{BECOME}.

In the aforementioned literature, conflation happens more or less freely. But problems do occur. For example, if the manner verb in English resultatives is indeed the conflation of Root adjunction to v_{CAUSE}, we would expect the Chinese style thematic relationship. The argument in [Spec v_{CAUSE}] should be assigned the theta-role of causer, which triggers the becoming event (change of state) to take place. The manner verb is simply a modification of the manner of the causing head, which does not assign any theta-role. This is indeed the case in Chinese resultatives. In the aforementioned examples where the subject is not the agent of the manner verb, it is invariably the causer of the change of the state. To further illustrate, relevant examples are reiterated below:

(31) a. Zhe chang jiuhui he zui le suoyou ren.
this CL wine-party drink drunk PERF all people
'This wine party has caused people to drink so much that all the people got drunk.'
b. Zhe ping jiu he zui le shi ge ren.
this CL alcohol drink drunk PERF ten CL person
'This bottle of wine has made 10 people drunk.'

In (31a), the subject *jiuhui* 'wine party', despite bearing no thematic relationship with the manner verb *he* 'drink', is the causer of the result such that all people got drunk. The same thematic relationship applies in (31b). The conflation theory can naturally explain this phenomenon. The subject is introduced by the v_{CAUSE} head, and is therefore assigned the theta-role of causer by this head. On the other hand, the manner Root is only a modification of the functional head v_{CAUSE}, which in theory is not involved in theta-role assignment, an assumption exactly in line with the spirit of the constructivist approach. In theory, if English resultatives involve the same conflation operation, there is no reason to exclude the same thematic relationship. However, in reality, this is just impossible: the subject must be the agent of the manner verb; otherwise, the sentence would be considered ungrammatical. The relevant examples are repeated below for clarity:

(32) a. *This bottle of wine drank drunk ten people.
b. *This book read tired John.

The ungrammaticality can be explained by the hypotheses in (29) and (30). Following these hypotheses, in English resulatives, it is v_{DO}, not v_{CAUSE}, that introduces the external argument, and hence the theta-role must be the agent rather than the causer. This explains why the subject with a theta-role of causer but not agent like those in (32) are ungrammatical. On the other hand, in Chinese resultatives, since the little v introducing the external argument is v_{CAUSE}, the subject invariably takes the theta-role of causer. This explains why even if the subject is not the agent of the manner verb, the sentence still remains acceptable as long as it takes a causer role as shown in the aforementioned Chinese examples.

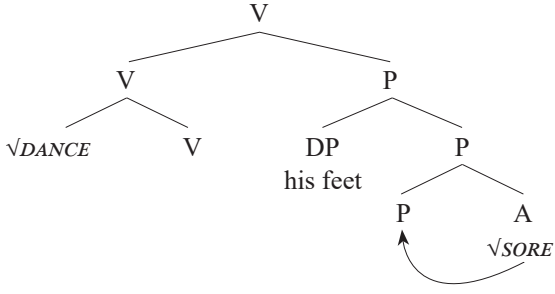
The reason why the subject in Chinese resultatives is sometimes taken as the agent is that the causer, which is the theta-role assigned in syntax, can also be understood as the agent.

At this point, we need independent evidence to support the notion that in English resultatives, it is a v_{DO} but not v_{CAUSE} that introduces the external argument. In fact, the absence of a causative head in the English resultative construction is not a new assumption (cf. Rothstein 2003; Borer 2005b; Hu 2018). A direct piece of evidence comes from the fact that causative meaning is not always available in English resulatives, which is taken by Borer (2005b) to support the assertion that a causative head is not involved in English resultatives:[7]

(33) a. On May 7, 1945, the people of Amsterdam danced the Canadians to Dam Square.
b. Reluctant to let him go, the audience clapped the singer off the stage.
c. At the opening of the new Parliament building, the crowd cheered the huge gates open.
(Rothstein 2003, as cited in Borer 2005b: 225)

When it comes to the existence of v_{DO} conflation in English, Mateu (2012) and Acedo-Matellán (2016) provide sufficient evidence. For example, in both English resultative and directed motion event constructions, it is v_{DO} that hosts the conflation of a manner verb:

(34) a. English resultative construction



The boy danced his feet sore.
(Mateu 2018: 258)

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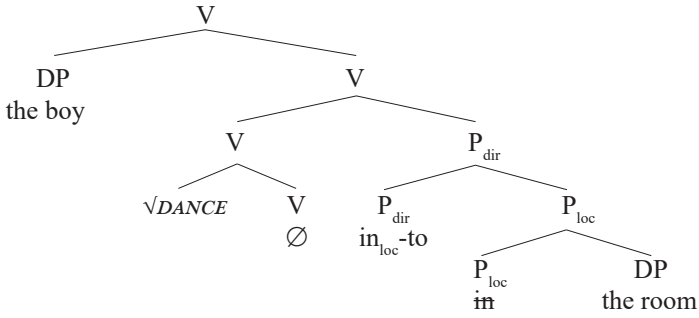
7 In this paper, I do not go into the details of the reason why causative meaning is often detected in English resultatives if there is no v_{CAUSE} in the structure. In Hu 2018, I have argued that in the event denoted by the English resultative, what is syntactically encoded is that, in the same temporal span, an action and a change of state co-occur simultaneously, giving rise to the default pragmatic inference that the action causes the change of state to happen. When there is a strong context, this default inference can be cancelled as is the case of the examples cited here in (33).

b. English directed motion event construction



The boy danced into the room.
(Mateu 2018: 256)

If the present account is on the right track, the underlying reason behind the variation between Chinese and English resultatives concerning the subject-manner verb thematic relationship is essentially a typical realization of the micro-parameter specified on the compatibility of conflation with a functional head. While Mateu (2012) proposes a macro-parameter depending on whether conflation is impossible at all, this paper provides a further classification of the specific heads that allow conflation which gives rise to the micro-parameter.

Based on this analysis, Chinese resultative constructions share the underlying structure not with English resultatives but causatives in the following examples:

(35) a. John's face reddened.
b. The summer heat reddened John's face.

The example in (35a) is an unaccusative construction that denotes a change of state, with v_{BECOME} serving as the verbal head, while in (35b), the verbal head is v_{CAUSE}. In both examples, *en* is the exponent of the verbal feature regardless of whether it is v_{CAUSE} or v_{BECOME}. In Chinese intransitive resultatives, a manner Root is adjoined to v_{BECOME}, which later undergoes Morphological Merger with the adjective, forming the resultative head. In this transitive resultative, the Root is adjoined to v_{CAUSE} as explained. In this sense, the manner verb can be taken as a light verb or a type of verbal categorizer like *en* in English, which is a point made in Hu 2018, where the theoretical details are slightly different.

There is a further issue that I am unable to delve into in detail due to space constraints: what determines whether a functional head (more specifically, little v of different flavours) allows conflation? Mateu (2012) adopts Synder's (2001) compounding parameter which in a sense treats this property as a macro-parameter. In line with the spirit of Acedo-Matellán 2016, this might be related to the phonological properties of the exponent that realizes the features of various types of little v, i.e. features like v_{CAUSE}, v_{DO}, and v_{BECOME}. Without delving into specifics, I tentatively follow the latter approach, which is in line with the recent parametric theory like the Borer-Chomsky Conjecture (Baker 2008; Roberts and Holmberg 2010; Borer

2013) that attributes parameters to the properties in the lexicon, and provides a better account for the more fine-grained micro-variation examined in this paper.

4.4 Remaining parametric issues

In the previous studies on Chinese resultative constructions, regardless of various assumptions, it has generally been accepted to some extent that the secondary predicate must combine with the manner verb to form a compound. But why must this compounding process happen? For example, in Huang 2006 and the present analysis outlined above, there seems to be no reason to stop the secondary predicate (which is the complement of the v_{BECOME} head) from remaining in its original position, forming a resultative construction as follows:

(36) a. *Zhangsan ku shoupa (hen) shi.
Zhangsan cry handkerchief very wet
Intended: 'Zhangsan cried so much that his handkerchief got wet.'
b. Zhangsan ku de shoupa (hen) shi.
Zhangsan cry DE handkerchief very wet
'Zhangsan cried so much that his handkerchief got wet.'

As (36a) is ungrammatical, an explanation is required to clarify the reason behind its ungrammaticality. In fact, the structure in (36a) bears resemblance to the English resultative construction where the secondary predicate and the manner verb are separated by the object DP. To make (36a) grammatical, *de* is necessary, as shown in (36b) .

Also, it is crucial to address a related issue as to why in Chinese, an unaccusative verb cannot independently serve as a causative verb, but needs to be combined with a manner verb to form a resultative compound in causative constructions:

(37) a. *Zhangsan po le panzi.
Zhangsan break PERF plate
Intended: Zhangsan broke a plate.
b. Zhangsan da po le panzi.
Zhangsan hit break PERF plate
'Zhangsan broke a plate.'

I argue that the above phenomena are in fact related to a single lexicon-related factor:

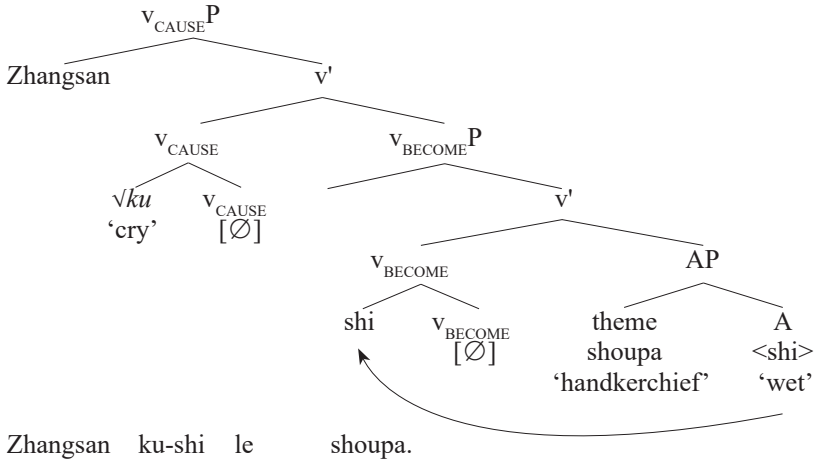
(38) The phonological requirement of a functional morpheme in Chinese
In Chinese, a functional morpheme requires an overt phonological exponent.

(38) is essentially a phonological requirement of a functional morpheme. Following DM, a functional morpheme is a feature that lacks phonological form in narrow syntax, and only acquires a phonological exponent at the late-insertion stage. The phonological realization of a feature is an important dimension of parametric variation, and in this sense, the hypothesis in (38) is in line with the essential spirit of parametric theory within the DM framework and the Borer-Chomsky Conjecture mentioned in the previous section. There are at least three possible ways for a feature to take an overt phonological exponent: (a) there is a functional

item in the lexicon that can be directly inserted in the corresponding position; (b) a Root is adjoined to the morpheme to form a complex head; and (c) a head with an overt phonological form is incorporated into this morpheme via head movement.

Based on the above assumptions, we can now revisit the issues introduced at the beginning of this subsection. In our case, the related morphemes/features are v_{CAUSE} and v_{BECOME}. I take (26), repeated as (39) below, to illustrate our point:

(39)



Zhangsan ku-shi le shoupa.
Zhangsan cry-wet PERF handkerchief
‘Zhangsan cried so much that his handkerchief got wet.’

In the above structure, if the secondary predicate *shi* ‘wet’ stays in its initial position, the v_{BECOME} head will remain phonologically null. To fulfill the requirement in (38), *shi* can move and incorporate into the null v_{BECOME} head, forming a complex head in the v_{BECOME} head position, giving this head an overt exponent. Alternatively, if there is a functional item in the lexicon that can realize the v_{BECOME} feature, the requirement will also be satisfied. This, I argue, is the case of *de* insertion in (36b). I take Huang’s (2006) point that *de* is a functional item that realizes the v_{BECOME} feature, and inserting this item in the v_{BECOME} head position in the late-insertion stage gives this morpheme a phonological exponent. The same requirement in (38) explains why a resultative compound is always necessary to causativize an otherwise unaccusative verb. The underlying reason is straightforward: the v_{CAUSE} head requires a phonological form, and Root adjunction is a feasible way to meet this requirement. In a sense, the requirement specified in (38) offers a new explanation for at least some instances of analyticity in Chinese, thereby aligning with the analyticity parameter hypothesis in Huang 2015.

Before ending this section, it is crucial to note that we have not addressed all important issues in resultatives, as the primary focus of this paper revolves around the process of word formation concerning LCA and DM. Issues like strong and weak resultatives, the direct object restriction, among others, have not been discussed. For detailed information on these topics, I recommend referring to the studies on resultatives cited in this section.

5 Conclusion

Building upon the ideas summarized in Kayne 2022, this paper attempted to see how LCA works in word formation. For this purpose, DM, which takes word formation as part of syntactic derivation, is also involved. This provides the foundation for LCA to work in word formation. The combination of LCA with DM, in particular Morphological Merge at PF, is also introduced to illustrate the workings of LCA within narrow syntax, and when LCA's effect will cease in word formation (if the latter takes place after narrow syntax derivation). In this sense, this paper can be taken as an attempt to demonstrate the collaborative nature of narrow syntax operation and pure morphological operations in word formation, which goes beyond the pure application of LCA alone.

Chinese resultative compounds are taken as the empirical case for these theoretical objectives. While concurring with previous studies, in particular Huang 2006, this study provides an explanation for the following issues: (a) why the resultative compound formation in Chinese seems to violate the left-adjoining operation concerning head-movement and incorporation; and (b) why Chinese but not English allows theta-role "mismatch" in resultatives. Regarding (a), it is shown that the formation of a Chinese resultative compound involves both operations in narrow syntax and the morphological domain, in particular conflation in narrow syntax and Morphological Merger at PF. In the V-A compound, V is the result of conflation through the left adjunction of a Root to v_{CAUSE} or v_{BECOME} in transitive and intransitive resultatives, which is governed by LCA, while the combination of V and A occurs through Local Dislocation Merger, because V and A are adjacent to each other after narrow syntax derivation. This then resolves the puzzle of morpheme order in the V-A compound: previous studies have generally argued that the A is finally incorporated into v_{CAUSE}, where the manner verb is adjoined to v_{CAUSE}. This violates LCA on two levels: firstly, this involves recursive adjunction, which is banned by LCA; secondly, even if this recursive adjunction is possible, A would need to be positioned to the left of V since adjunction must occur on the left side of the head to comply with LCA. In the present account, by decomposing the word formation process into two steps, both problems are resolved. Regarding question (b), this paper also proposes a new hypothesis of conflation to explain the puzzling difference between Chinese and English resultatives regarding the subject-manner verb thematic relationship. While drawing on insights from previous studies on conflation, it is proposed that conflation constitutes a dimension of cross-linguistic variation, including both macro- and micro-parameters: the former pertains to the feasibility of conflation as proposed by Mateu (2012), while the latter concerns which little v can host conflation. Chinese permits conflation in v_{CAUSE}, thereby requiring the subject to be the causer, whereas in English it is v_{DO} that hosts conflation with the subject taking the role of agent. At the end of this paper, I further attempted to tackle two additional questions: why must the secondary predicate in the Chinese resultative construction go through head movement? Why is a manner verb always required to causativize an otherwise accusative verb, while in languages like English, many unaccusative verbs can function independently as causative verbs? These

two questions are addressed with a single hypothesis regarding the phonological/morphological requirement of functional features in Chinese.

As a concluding remark, I want to emphasize that although this paper adopts LCA as a narrow syntax operation, the core hypotheses it proposes do not hinge on this theory. As demonstrated throughout Section 4, the core LCA technique is the left adjunction regarding head movement and incorporation. This technique is widely employed in generative syntax, including theories not specifically relying on LCA, such as DM (cf. Embick 2010) and the head movement theory in Roberts 2010. Also, regardless of one's stance on the validity of LCA, the relationship between antisymmetry in the hierarchy of syntactic structure and the final surface linear order of a phrase is something that one cannot ignore,[8] deserving serious investigation irrespective of theoretical frameworks in syntax.

Acknowledgments

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[8] I thank Zeljko Boskovic for pointing out this aspect to me.

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反對稱性、形態合併與漢語動結式複合詞

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提要

本文以漢語動結式複合詞作為具體的研究案例，探究“反對稱理論”（Kayne 1994, 2022）在構詞研究中的應用。採用分布式形態學中有關句法構詞的理念與技術，尤其是形態合併（Marantz 1988; Embick and Noyer 2001），本文指出漢語動結式複合詞的構建涉及狹義句法與音系形式兩個層面：前者帶來融合操作，遵守綫性對應理論（LCA）帶來的左向嫁接要求；後者涉及到形態合併操作的一種類型，即局部移位合併；這個合併操作發生在詞項插入時，或在此之前發生，因此不受 LCA 的制約。本研究表明，探究構詞的內在機制時需要謹慎區分兩種情況，即構詞過程是否受到 LCA 的制約，這取決於語素的組合是在狹義句法階段還是在音系形式階段發生。本文也指出，融合可以成為跨語言差異的一個維度，這個維度解釋了漢語和英語動結式中主語和方式動詞之間論旨關係的差異。此外，本文提出了基於漢語功能特徵音系需求的微觀參數，由此解釋了漢語動結式中的兩個現象：次謂詞必須經歷核心詞移動，以及要將非賓格動詞致使化，必須添加一個方式動詞（構成動結式複合詞）。

關鍵詞

綫性對應理論，形態合併，融合，漢語動結式複合詞