



The Korean Generative Grammar Circle

The 23rd Seoul International Conference on Generative Grammar

2021

A Comparative Approach to the Syntax-Semantics Interface

Edited by Tae Sik Kim & Suyoung Bae

August 11-13, 2021

Held virtually

Hosted by

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*A Comparative Approach to the
Syntax-Semantics Interface*

**Dates: August 11-13, 2021
Held virtually**

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Ways of telicization in Chinese resultative compounds

Chenchen Song¹ and Ke Wu²
Zhejiang University¹ and Beijing Institute of Technology²

1. Introduction¹

Resultative compounds (pretheoretical term) are an important part of Modern Chinese grammar. They consist of two lexical components (which we respectively use V and R to notate) that together make up a causative-resultative complex (V causing R). Such complexes denote telic events (accomplishments or achievements à la Vendler 1957), with R specifying an end point for V. See (1) for some examples from Standard Mandarin (STM).

(1) *da-sui* ‘hit-be.smashed’, *ku-zhong* ‘cry-be.swollen’, *ran-hong* ‘dye-be.red’, *chi-bao* ‘eat-be.full’

In each V-R collocation in (1) the V specifies an activity² and the R specifies its result, which is also the result of the entire complex event. For instance, *da-shui* denotes a hitting activity leading to a result state of the hit object being smashed. Note that the R morphemes are all verbal (hence our inclusion of “be” in their glosses), for they can appear in ordinary verbal contexts, as exemplified in (2).

(2) *Xiaoming de yanjing shi hong-guo, dan mei zhong.* [Standard Mandarin]
Xiaoming POSS eye EMPH be.red-EXP but not.have be.swollen
“Xiaoming’s eyes did get red, but they were not swollen.”

As (2) shows, *hong* ‘be.red’ can take an experiential aspect marker *guo* as ordinary verbs can, and the aspectual negator *mei* ‘not have’ can be naturally used in front of *zhong* ‘be.swollen’ as well. See Li & Thompson (1981) and McCawley (1992) for more evidence on the verbal status of ostensive adjectives in Chinese. Resultative compounds have been a hot research topic since half a century ago (see Chao 1968 for an early discussion and Hu 2018 for a recent one). In most previous studies it has been taken for granted that the R part of a resultative compound encodes the telos of the complex event. However, Song (2018) argues based on dialectal evidence that this is not the case for all Chinese varieties.

¹ Abbreviations: CLF=classifier, CRS=current relevant state, DISP=disposal, EMPH=emphatic, EXP=experiential, PASS=passive, PRT=particle, POSS=possessive, PRF=perfective, PROG=progressive, Q=question, SA=speech act, TEL=telic, TOP=topic

² While the V part of a resultative compound is very often an activity verb, as in our examples here, it could also be a stative or change-of-state/location verb, as in examples like *shou-si* ‘be.thin-be.dead; die of thinness’ and *sheng-gao* ‘ascend-be.high; rise up’. We abstract away from the causing subevent’s type in our notation V.

- (3) a. *Ta da-sui (le) huaping le.* [Standard Mandarin]
 he hit-be.smashed PRF vase CRS
 “He smashed the vase.”
- b. *Te dv-sui *(liu) huapingr li-ae.* [Dongying Mandarin]
 he hit-be.smashed TEL vase CRS-SA
 “He smashed the vase.” (adapted from Song 2018: 276)

As (3) shows, while the postverbal aspectual morpheme (conventionally dubbed *le*₁) is optional after a resultative compound in Standard Mandarin (in fact the sentence sounds more natural without it),³ its positional counterpart *liu* in Dongying Mandarin (DY)⁴ is obligatory. The same contrast is observed in several additional (e.g., negation, irrealis) contexts (see §2 for more detail).⁵ Song (2018) argues that the obligatory *liu* following resultative compounds in Dongying Mandarin is not a perfective marker but a telic marker, which turns a stative R into a telos for V and thereby joins V and R into a complex event. Thus, *dv* ‘hit’ and *sui* ‘be.smashed’ in (3b) cannot form a semantic unit without the help of *liu*. Song proposes the following distinctions between Standard Mandarin and Dongying Mandarin.

Table 1: Grammatical distinctions between STM and DY resultative compounds

	Standard Mandarin (STM)	Dongying Mandarin (DY)
Locus of telicity encoding	R	Inner Aspect (IAsp) <i>liu</i>
Type of R-event	change of state	State

So, the telicity of resultative compounds is lexically borne out in Standard Mandarin but syntactically derived in Dongying Mandarin. In addition, the two varieties differ in the type of eventuality encoded in R (at least in its surface form), which is a change of state in Standard Mandarin⁶ but simply a state in Dongying Mandarin. An R item in DY only becomes a change of state with the help of *liu*.⁷ In sum, the STM vs. DY comparison reveals two ways to encode telicity in Chinese resultative compounds: one by means of the inherent category of R, and the other by means of a separate functional category. This dichotomy gives us a generalization of the cross-dialectal variation as follows:

- (4) A Chinese resultative compound may have its telicity encoded in R or in a functional morpheme.

Our goal in this paper is to demonstrate that this generalization is too coarse and that there is at least one further means to telicize a Chinese resultative compound. Our evidence is from

³ Alternatively, one could say *Ta da-sui le huaping.* ‘he hit-be.smashed PRF vase’, with the sentence-final *le* (aka *le*₂) being omitted. But this sentence sounds rather unnatural when uttered on its own and is only acceptable in what Song (2015: 10) calls the “isolated written register” (such as in linguistics papers and reference grammars), so we generally avoid this pattern and only present examples that we deem natural in real-life usage.

⁴ Dongying Mandarin is a variety of Northern Mandarin spoken on the Yellow River Delta in Shandong Province.

⁵ The discussion here is limited to resultative compounds. The syntactic distribution of *le*₁ is rather convoluted in both STM and DY, which is codetermined by multiple factors including the nature of the verbal predicate.

⁶ Here we are talking about the *vocabulary item* R. It may well be syntactically complex (as in Lin 2004 and Kan 2007), but even in a decompositional analysis the complex structure ultimately still has to be spelled out by a single vocabulary item, which must be specified for all relevant features to enable syntax-phonology mapping.

⁷ The comparison in Table 1 is simplified a bit, with just the relevant contrasts. Song (2018) further distinguishes two types of Rs in DY, one requiring *liu* and the other repelling it. The latter type is the minority in DY.

Wenzhou Wu (WZ), a non-Mandarin variety of Modern Chinese spoken in southeastern Zhejiang Province on the East China Sea coast.⁸ Resultative compounds in Wenzhou Wu obligatorily require a postverbal morpheme too. But unlike in Dongying Mandarin, in Wenzhou Wu there are two such morphemes in complementary distribution, which we respectively transliterate as *ts'ih* and *hɔ*. See (5) for an illustration.

- (5) a. *Ngalangzi k'u-hong *(ts'ih) ba.* [Wenzhou Wu]
 eye.ball cry-be.red TEL CRS
 “(One’s) eyes turned red after crying.”
 b. *Hobeng tie-p'a *(hɔ).*
 vase hit-be.broken TEL
 “The vase was broken by hitting.”

As (5) shows, both *ts'ih* and *hɔ* are obligatory with resultative compounds in Wenzhou Wu. However, they are required by different contexts, more specifically by different Rs. A general observation is that *ts'ih* is mostly used with positive Rs whereas *hɔ* is mostly used with negative ones (see §2 for details). This contrast is lexical semantic in nature, which means that *ts'ih* and *hɔ* are not fully grammaticalized morphemes but at best half-grammaticalized. As such, the way WZ telicizes its resultative compounds is neither purely lexical (unlike STM) nor purely functional (unlike DY) but *semifunctional*.⁹

In this paper we will examine the WZ data in more detail and improve the generalization in (4). To this end, we adopt Song’s (2019) generalized root syntax theory for semifunctionality and Biberauer & Roberts’ (2015) parameter hierarchy approach to grammatical variation. We will show how the three-way variation between STM, DY, and WZ can be formally derived on the one hand and how it can be informatively parameterized on the other. A main takeaway of the present study is that an adequate theory of syntactic variation cannot exclusively rely on formal features but should also have room for some more lexical aspects of syntactic structure building (Borer 2005 has a similar view). Generalized root syntax is a useful tool in this regard.

Following this introduction, in §2 we present the cross-dialectal data in more detail. In §3 we present our formal analysis for the data. In §4 we further discuss the cross-dialectal variation from a parameterization perspective. In §5 we summarize our main findings.

2. Data

2.1. Dongying Mandarin

We begin this section with some of Song’s (2018) observations for Dongying Mandarin. First, as we have seen in (3), a *liu* is obligatory after DY resultative compounds in the completive context,¹⁰ whereas in STM the post-V-R *le* (*le*₁) is optional and preferably left out. See (6) for more examples.

⁸ Wu is another major Chinese variety alongside Mandarin, and Wenzhou Wu is also known as Wenzhounese. All WZ data in this paper are from the second author, who is a native speaker.

⁹ We are only concerned with the telicity of the complex event denoted by the resultative compound itself and do not intend to develop a theory of telicity for the entire verb phrase. See Dowty (1979), Smith (1997), Verkuyl (1993), Travis (2010), and many other previous studies for such theories.

¹⁰ DY clauses are obligatorily marked for discourse functions, so the completive context is further embedded in a speech act shell, which is a performative context in (6) meaning “Let me tell you...” marked by a particle *ae*.

- (6) a. *Te ku-hong *(liu) yae li-ae.* [completive context, DY]
 he cry-be.red TEL eye CRS-SA
 “He cried his eyes red.” (adapted from Song 2018: 279)
- b. *Ta ku-hong (le) yan le.* [STM]
 he cry-be.red PRF eye CRS
 “He cried his eyes red.”
- c. *Te zu-shu *(liu) fae li-ae.* [DY]
 he make-be.cooked TEL meal CRS-SA
 “He made the meal ready.” (ibid.)
- d. *Ta zuo-hao (le) fan le.* [STM]
 he make-be.good PRF meal CRS
 “He made the meal ready.”

STM *le*₁ is usually deemed a perfective viewpoint marker, but when a telic event occurs in a completive context, it is automatically viewed as a whole (or else it is incomplete), and no extra viewpoint marking is needed.¹¹ Thus, when there exists a *le*₁ in the sentence, as in (3a), (6b), and (6d), it sounds superfluous. By contrast, the post-V-R *liu* in DY is not a perfectivity marker for V-R but a telicity marker joining V and R into a complex event, so its occurrence in (3b), (6a), and (6c) is not only licit but also required.

Second, DY *liu* is required in various negative contexts too, where STM *le*₁ is forbidden or marginal.

- (7) a. *Te mu dv-sui *(liu) hupingr ae.* [negative completive, DY]
 he not.have hit-be.smashed TEL vase SA
 “He didn’t smash the vase.” (adapted from Song 2018: 283)
- b. *Ta mei da-sui (*le) huaping.* [STM]
 he not.have hit-be.smashed PRF vase
 “He didn’t smash the vase.”
- c. *Hou dv-sui *(liu) hupingr ae!* [negative imperative, DY]
 don’t hit-be.smashed TEL vase SA
 “Don’t smash the vase!” (ibid., p. 284)
- d. *Bie da-sui (?le) huaping!* [STM]
 don’t hit-be.smashed PRF vase
 “Don’t smash the vase!”
- e. *Bu dv-sui *(liu) hupingr ni hen* [negative conditional, DY]
 not hit-be.smashed TEL vase you very
naeshou han?!
 uncomfortable SA
 “You don’t feel comfortable until you smash the vase, right?” (ibid., p. 285)
- f. *Bu da-sui (?le) huaping ni hen nanshou dui-ba?!* [STM]
 not hit-be.smashed PRF vase you very uncomfortable right-SA
 “You don’t feel comfortable until you smash the vase, right?”

The negative completive context in (7a–b) simply negates the completive context; namely, it

¹¹ Alternatively, one could say that the postverbal *le* (*le*₁) and the sentence-final *le* (*le*₂) in STM have functional overlapping, in that both have a perfective side as part of their more complex semantics (see also note 12).

states that the event in question is not completed. The negative imperative context in (7c–d) is used when the speaker wants to tell the listener not to do something. The negative conditional context in (7e–f) posits a somewhat extreme condition and describes what would happen if it were true (i.e., the negation is rhetorical). So, the sentences literally mean “If you don’t smash the vase, you’ll feel very uncomfortable, right?” The general pattern in (7) is that while STM le_1 is not (quite) compatible with events that have not been realized,¹² DY *liu* is equally obligatory with unrealized telic events as it is with realized ones.

Third, the post-V-R *liu* in DY is also obligatory in future/irrealis contexts, where STM le_1 is forbidden.

- (8) a. *Ni dai dǎpǔr mǎe nē huǎngǐng lǎi dǎ-suī* ***(liu)** o? [future, DY]
 you will plan DISP the vase PRT hit-be.smashed TEL SA
 “Are you planning to smash the vase?” (adapted from Song 2018: 285)
- b. *Ni dasuǎn bǎ huǎpǐng gēi dǎ-suī* **(*le)** mǎ? [STM]
 you plan DISP vase PRT hit-be.smashed PRF Q
 “Are you planning to smash the vase?”
- c. *Wǒ mēnliǎng-zhōu nǐ zǎokēn dǎngmēr dǎi tāng-huǎi* ***(liu)** tóu. [subjunctive, DY]
 I guess-PROG you tomorrow probably will perm-be.bad TEL head
 “I guess you’ll probably damage your hair tomorrow when perming it.” (ibid., p. 286)
- d. *Wǒ cǎi nǐ míngtiān kēnēng huǐ tāng-huǎi* **(*le)** tóufa. [STM]
 I guess you tomorrow probably will perm-be.bad PRF hair
 “I guess you’ll probably damage your hair tomorrow when perming it.”

The sentences in (8a–b) describe a hypothetical future plan uttered as a rhetorical warning (“Be careful not to smash the vase!”), and those in (8c–d) describe an event that the speaker thinks might happen to the listener. In both contexts we see the obligatory *liu* vs. forbidden *le* contrast again. This is as expected under a telic marker analysis for DY post-V-R *liu* and a perfective (or realizational, see note 12) marker analysis for STM le_1 because events in future/irrealis contexts are not realized but may well be telic.

2.2. Wenzhou Wu

2.2.1. Basic pattern

The situation in Wenzhou Wu concerning resultative compounds is highly similar to that in Dongying Mandarin. First, as we have seen in (5), Wenzhou Wu resultative compounds obligatorily take an extra morpheme (either *ts’ih* or *hɔ*) in completive contexts too. See (9) for more examples¹³.

¹² While STM le_1 is deemed a perfective marker, this *perfective* is used in a loose sense and does not merely mean that the event is viewed as a whole (unlike in Slavic languages). Rather, le_1 indicates that the event has actually taken place before some reference time (without perfect meaning). Liu (1988) dubs this the *realizational* aspect (see also Klein et al. 2000 and Lin 2003), but a better term may be *perfectivity in anterior tense* (see Pan 1996).

¹³ Here we limit our attention to typical resultative compounds in WZ, where both V and R are open-class, purely lexical verbs. Resultative compounds with phasal complements (à la Chao 1968)—i.e., Rs like *hə* ‘be.good (in the sense of ready/completed)’, *y* ‘be.finished’, and *zeng* ‘be.completed’—do not and cannot take *ts’ih/hɔ*. This regular exception is reminiscent of the atelic vs. telic R distinction Song (2018) observes for DY (see note 7). We leave a more comprehensive investigation to future research (see, e.g., Song & Wu in prep.).

- (9) a. *Hoduo mengts'ih dei-kə *(ts'ih).* [Wenzhou Wu]
 school fame raise-be.high TEL
 “The school has been made famous.”
- b. *Jau sa-ka uduo hsie-t'a *(fiɔ).*
 there.be three-CLF house burn-be.down TEL
 “Three houses were burnt down.”

In (9a) *dei-kə* ‘raise-be.high’ obligatorily takes *ts'ih*, which indicates that the R subevent (i.e., the being high of the school’s fame)—and thereby the complex event (i.e., the being raised high of the school’s fame)—has been realized. In (9b) *hsie-t'a* ‘burn-be.down’ obligatorily takes *fiɔ*, which also indicates the realization of the R subevent (i.e., the being in ruins of the three houses) and thereby that of the complex event (i.e., the being burned down of the three houses). These two sentences represent the typical usage of *ts'ih/fiɔ* with resultative compounds in WZ. Of course, WZ and DY do not completely pattern alike, as they are still quite distant Chinese varieties. For instance, in clauses with resultative compounds the basic word order is VRO in DY but OVR in WZ. Besides, WZ is much less demanding in discourse marking than DY (see note 10), so the sentences in (9) are intuitively natural even without the final particle *ba* (the WZ counterpart of STM *le*₂). We abstract away from such details and focus on the obligatoriness of *liu/ts'ih/fiɔ* (and their uniformly post-V-R position regardless of the basic clausal word order). We will come back to the complementary distribution of *ts'ih* and *fiɔ* below.

Second, the post-V-R morpheme in Wenzhou Wu is required in negative contexts too, as in (10).

- (10) a. *Ngalangzi nau k'u-hong *(ts'ih).* [negative completive, WZ]
 eye.ball not.have cry-be.red TEL
 “He/she didn’t cry his/her eyes red.”
- b. *Gi nau dei hobeng tie-p'a *(fiɔ).*
 he not.have DISP vase hit-be.broken TEL
 “He didn’t break the vase.”
- c. *Fai dei ngalangzi k'u-hong *(ts'ih)!* [negative imperative, WZ]
 don’t DISP eye.ball cry-be.red TEL
 “Don’t cry your eyes red!”
- d. *Fai dei hobeng tie-p'a *(fiɔ)!*
 don’t DISP vase hit-be.broken TEL
 “Don’t break the vase!”
- f. *Fu dei ngalangzi k'u-hong *(ts'ih) ni fə-gu a?* [negative conditional, WZ]
 not DISP eye.ball cry-be.red TEL you not.good-spend SA
 “You don’t feel good until you cry your eyes red, right?”
- e. *Fu dei hobeng tie-p'a *(fiɔ) ni fə-gu a?*
 not DISP vase hit-be.broken TEL you not.good-spend SA
 “You don’t feel good until you broke the vase, right?”

These sentences perfectly match the DY patterns in (7). (10a–b) negate the realization or completion of the complex events in question (i.e., crying one’s eyes red and breaking the vase); (10c–d) give negative commands, telling the listeners not to carry out the complex events (not just the V subevents); and (10e–f) present the complex events as extreme conditions, thus rhetorically warning the listeners not to carry them out. In all these examples the extra morpheme

following V-R is obligatory, be it *ts'ih* or *ɦɔ*.

Third, the post-V-R morpheme in Wenzhou Wu is also obligatory in future/irrealis contexts, as in (11).

- (11) a. *Ni chiongbei dei ku'ng hsie-t'uɔ *(ts'ih) a?* [future, WZ]
 you prepare DISP pan grill-be.hot TEL Q
 “Are you planning to make the pan hot by heating it?”
- b. *Ni chiongbei dei hobeng tie-p'a *(ɦɔ) a?*
 you prepare DISP vase hit-be.broken TEL Q
 “Are you planning to break the vase?”
- c. *Ng kuchia ni mangchie kuo-vu-ch'y vai dei mengts'ih* [subjunctive, WZ]
 I feel you tomorrow speak-not-out will DISP fame
*tie-hsi *(ts'ih).*
 hit-be.loud TEL
 “I guess you will probably make a name for yourself tomorrow.”
- d. *Ng kuchia ni mangchie kuo-vu-ch'y vai dei hopeng tie-p'a *(ɦɔ).*
 I feel you tomorrow speak-not-out will DISP vase hit-be.broken TEL
 “I guess you will probably break the vase tomorrow.”

The sentences in (11a–b) are questions on the listeners' future plans (not necessarily rhetorical), while those in (11c–d) describe potential future events in the speakers' minds, which may or may not happen in the real world. Again, except for the *ts'ih/ɦɔ* alternation we see a perfect matching between these WZ sentences and the DY sentences in (8).

In sum, in all the WZ examples in (9)–(11) the post-V-R *ts'ih/ɦɔ* serves as a telicity marker that enables the verbal compound to express an activity (V) together with its result state (R). Without the help of *ts'ih/ɦɔ* a bare V-R sequence in WZ is not able to bear out the causative-resultative meaning.

2.2.2. *Ts'ih/ɦɔ* alternation

After presenting the common syntactic patterns of Wenzhou Wu and Dongying Mandarin concerning resultative compounds, next we address the *ts'ih/ɦɔ* alternation in WZ, which is a significant difference between the two Chinese varieties. While the obligatory post-V-R morpheme is consistently *liu* in DY, that in WZ alternates between *ts'ih* and *ɦɔ*, and as mentioned in §1, this alternation is conditioned by the meaning of R. Thus, the choice between *ts'ih* and *ɦɔ* is a matter of lexical-semantic selection (rather than a syntactic-categorial one). As a general observation, *ts'ih* typically co-occurs with Rs that denote positive or salient concepts (we will elaborate on the notion salience below), while *ɦɔ* typically co-occurs with Rs that denote negative or nonsalient concepts. See (12) for more examples.

- (12) a. *Gi sangt'ei ts'ih ja ts'ih-ɦɔ ts'ih/*ɦɔ.* [Wenzhou Wu]
 he body eat medicine eat-be.good TEL
 “He gets better after taking medicines.”
- b. *Vachy vu lo-dou ts'ih/*ɦɔ.*
 outside rain fall-be.big TEL
 “It is raining heavier outside.”

- c. *Gi nga-ch'y a ngə-hei *ts'ih/hɔ.*
 he eye-rim TOP endure-be.black TEL
 "He stayed up so late that he got black eyes."
- d. *Gi chia ha ts'o a-dang *ts'ih/hɔ.*
 he leg DISP car press-be.broken TEL
 "His leg was broken in a car accident."

In (12a–b) *ts'ih* is used after the R items *hə* 'be.good' and *dou* 'be.big', while in (12c–d) *hɔ* is used after the R items *hei* 'be.black' and *dang* 'be.broken'. Crucially, *ts'ih* and *hɔ* are strictly complementary after resultative compounds, and collocations like **ts'ih-hə-hɔ* and **ngə-hei-ts'ih* are ungrammatical.¹⁴ See (13) for a nonexhaustive list of *ts'ih*- and *hɔ*-selecting Rs ("be" is left out from the glosses to save space).

- (13) a. Rs that require *ts'ih*:
hong 'red', *hə* 'good', *dou* 'big', *k'a* 'fast', *kə* 'high', *zhi* 'long', *tou* 'more', etc.
- b. Rs that require *hɔ*:
hei 'black', *mə* 'bad', *sai* 'small', *ma* 'slow', *a* 'low', *tə* 'short', *hsie* 'less', etc.

A first impression from (13) is that *ts'ih* goes with positive Rs while *hɔ* goes with negative ones. Thus, "good," "high," and "more" select *ts'ih* while "bad," "low," and "less" select *hɔ*. Yet the picture is not as simple as that, for a closer look at (13) reveals that quite a few Rs are neither obviously positive nor negative in meaning, such as "red," "long," and "black." As such, the two types of Rs cannot be simply distinguished by positivity/negativity. As a more suitable distinctive property we find the cognitive linguistic notion *salience* useful. The idea of salience serves to capture concepts that are "better qualified to attract our attention than others" (Schmid 2007: 120), and it has been successfully applied to antonymic pairs. For instance, things that are big or tall take up larger physical space than things that are small or short, so the former are more noticeable and have a better chance to come into the observer's focus of attention, whereby they are more *salient*.¹⁵ Following this idea, we can delineate the *ts'ih*-selecting Rs as semantically more salient than the *hɔ*-selecting ones. Thus, while "red" and "long" are not clearly more positive than "black" and "short," they are clearly more salient in speakers' minds.¹⁶ Similarly, even though *t'uo* 'hot' in (11a) and *hsi* 'loud' in (11c) are not obviously more positive than their antonyms "cold" and "quiet," they are obviously more salient in the sense defined above, since hot/loud things come with stronger sensory stimuli and are thus easier to be noticed.

In sum, Rs that select *ts'ih* usually denote positive, prominent, or tangible result states, while Rs that select *hɔ* usually denote negative, inconspicuous, or intangible result states. However, this is still not the whole picture, because we also observe Rs that cannot be readily classified as salient or nonsalient yet still manifest strict *ts'ih/hɔ* selection. Thus, most Rs that denote

¹⁴ The distribution of *ts'ih/hɔ* is slightly different after monomorphemic verbs. See Song & Wu (in prep.).

¹⁵ Salience is conceptually related to markedness. Antonymic concepts are linguistically asymmetric; i.e., one of them is unmarked, while the other is marked. The unmarked term has a wider range of usage and is more likely to be used in neutral contexts. For example, *long* and *short* both describe length, yet only *long* is used in neutral questions like *How long is it?* whereas *How short is it?* involves a presupposition that the object in question is rather short. See Comrie (1989) and Shen (1999) for further discussions.

¹⁶ Whether a concept is salient or not is often influenced by extralinguistic factors like cultural background. Take "red" for example. It is more salient both in the sense that it catches people's eyes more easily (as all bright colors do) and in the sense that red is usually associated with auspiciousness and happiness in Chinese culture.

psychological/emotional states require *ts'ih* regardless of their positivity or salience degree, and so do many Rs that denote bodily feelings. See (14) for a nonexhaustive list (again, we omit the “be” from the glosses to save space).

- (14) Rs that require *ts'ih* regardless of [±salience]: *k'aho* ‘happy’, *naku* ‘sad’, *va* ‘bored’, *ho* ‘afraid’, *tsə* ‘restless’, *hsie* ‘laughing’, *k'u* ‘crying’, *ni* ‘hot’, *lie* ‘cold’, *ji* ‘itchy’, *chyə* ‘swollen’, etc.

Yet there are evidently exceptions to (14) too. For example, the psychological R *chiang* ‘be.surprised, be.fed.up’ requires *hɔ*. See (15) for a comparative illustration.

- (15) a. *Gi dei k'anang kuo-k'aho ts'ih/*hɔ.* [psychological Rs, WZ]
 he DISP guest speak-be.happy TEL
 “He made the guests happy by saying something.”
 b. *Gi ts'ih dijang ts'ih-naku ts'ih/*hɔ.*
 he watch film see-be.sad TEL
 “He became sad after watching the film.”
 c. *Gi bengku ts'ih-chiang *ts'ih/hɔ.*
 he apple eat-be.surprised TEL
 “He was fed up with apples because he had eaten too much.”

As (15) shows, *k'aho* ‘be.happy’ and *naku* ‘be.sad’, albeit opposite on the positivity or salience scale, both require *ts'ih*. By comparison, *chiang* ‘be.surprised, be.fed.up’ falls outside the psychological verb pattern and obligatorily takes *hɔ*, which in fact complies with the more general pattern of *hɔ*-selection since *chiang* is somewhat negative in the context of (15c).

Another group of Rs that require *ts'ih* regardless of their positivity or salience level are Rs that describe weather or climate situations, such as *ni* ‘be.hot’, *nang* ‘be.warm’, *li* ‘be.cool’, and *lie* ‘be.cold’. Note that most such Rs can be used to describe temperatures in a more general sense as well, and they obligatorily take *ts'ih* only in weather/climate-related contexts. See (16) for a comparative illustration.

- (16) a. *T'i-sei ha gi hsie-nang ts'ih/*hɔ.* [weather Rs, WZ]
 sky-color PASS he laugh-be.warm TEL
 “The weather was turned warm by his laughing.”
 b. *T'i-sei ha gi k'u-lie ts'ih/*hɔ.*
 sky-color PASS he cry-be.cold TEL
 “The weather was turned cold by his crying.”
 c. *Ts'o-lei ha t'aji sa-nang ts'ih/*hɔ.* [general temperature Rs]
 car-inside PASS sun shine.upon-be.warm TEL
 “The inside of the car got warm under the sunshine.”
 d. *T'uo k'uo-lie *ts'ih/hɔ.*
 soup put-cold TEL
 “The soup was put away and turned cold.”

The sentences in (16) illustrate the versatile behavior of *nang* ‘be.warm’ and *lie* ‘be.cold’. In (16a–b), *hsie-nang ts'ih* ‘laugh-be.warm’ and *k'u-lie ts'ih* ‘cry-be.cold’ describe weather changes after certain agentive actions. Imagine a fairy tale, where there is an elf who can change the

weather by laughing or crying. When he laughs, the weather turns warm; and when he cries, it turns cold. Knowing this, people would probably use (16a–b) to attribute weather changes to the mischievous elf, and in this usage *nang* and *lie* can only take *ts'ih*. By contrast, when the same Rs are used to describe nonweather temperatures, like those of cars (16c) and soups (16d), they follow the more general salience-based rule.

2.3. Interim summary

In §2 we comparatively presented data on resultative compounds from two Chinese varieties: Dongying Mandarin and Wenzhou Wu. While both language varieties require an extra morpheme after resultative compounds in various (e.g., completive, negative, irrealis) contexts, they differ in the choice (space) of this morpheme, which is just *liu* in Dongying Mandarin but either *ts'ih* or *hɔ* in Wenzhou Wu. Moreover, *ts'ih* and *hɔ* manifest strictly complementary distribution conditioned by the semantics of R in a V-R collocation. We have observed that while the *ts'ih/hɔ* alternation is largely determined by the positivity or salience level of R (with *ts'ih* being selected by [+salient] Rs and *hɔ* being selected by [–salient] Rs), there are many exceptions to this pattern, such as Rs denoting psychological/bodily feelings or weather situations (always requiring *ts'ih*). And there are still exceptions within these exceptions, such as the psychological R *chiang* ‘be.surprised/fed.up’. Both the conceptual-intentional nature of the R-*ts'ih/hɔ* pairing and the idiosyncratic exceptions therein signal a lower level of grammaticalization of the post-V-R morpheme in WZ¹⁷ than its counterpart in DY. In §3 we will propose a syntactic theory to explain this cross-dialectal variation. Before doing that, we recapitulate the main data points so far in Table 2.

Table 2. Variation in resultative compounds in STM, DY, and WZ

Post-V-R morpheme	Standard Mandarin (STM)	Dongying Mandarin (DY)	Wenzhou Wu (WZ)
Obligatoriness	nonobligatory (preferably left out)	obligatory	obligatory
Morpheme choice	<i>le</i> ₁	<i>liu</i>	<i>ts'ih/hɔ</i>
Choice condition	-	-	semantics of R
Functionality on V-R	perfective marker	telic marker	telic marker
Grammatical status	grammaticalized	grammaticalized	semigrammaticalized

3. Analysis

3.1. Standard Mandarin and Dongying Mandarin

Our analysis for WZ is an extension of Song’s (2018) analysis for DY, so we first review that

¹⁷ Further evidence for this is speakers’ intuition that *ts'ih* and *hɔ* (either in the post-V-R position or elsewhere) still have certain lexical content, with *ts'ih* carrying a “start, begin” connotation; and *hɔ*, a “finish, end” one. These are clearly related with the original meanings of the two morphemes as content words. Nowadays *ts'ih* (a cognate of STM *qī* ‘ascend, rise’) still has a lexical use (plus various aspectual uses), as in *ts'ih uduo* ‘build houses’. And even though most previous works (e.g., Pan 1996, Zhengzhang 1996) agree that the origin of *hɔ* is obsolete, we do notice one reference (Li & Ma 2016) arguing that its original lexical meaning is “withdraw, remove” and that it descends from Middle Chinese *kʰ iak* (畱, *què* in STM).

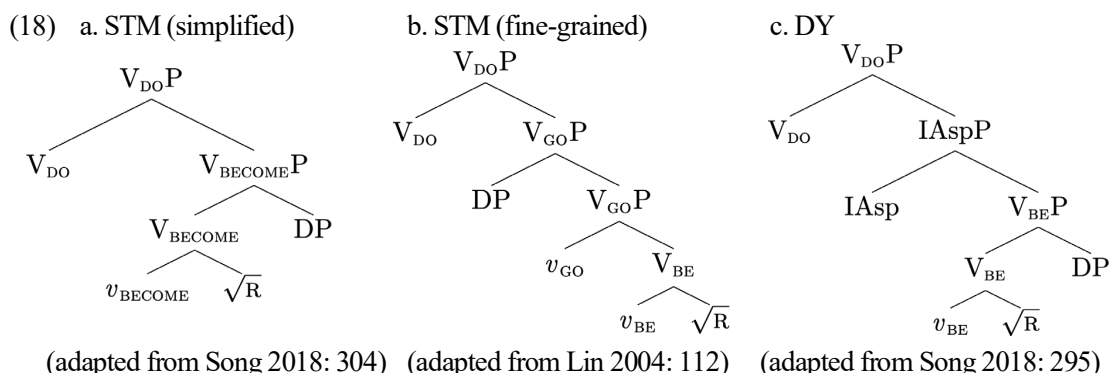
analysis. In short, Song (2018) reduces the STM vs. DY difference regarding resultative compounds to one of event structure organization. A resultative compound encodes a caused change of state: the cause is in V and the result is in R. This division of labor is invariant in STM and DY (and presumably in other Chinese varieties too). The variable is how a result state is turned into a change of state and thereby a telos of the complex event. Such a process is needed since two adjacent verbs need not be in a causative-resultative relation in Chinese; they could also be in a coordinative or modificational relation, as in (17).

- (17) a. *Gaokao* *guohou qing jinqing ku-xiao.* [Standard Mandarin]
 college.entrance.exams after please freely cry-laugh
 “Please freely cry or laugh after the college entrance exams.” (news title, *Guangzhou Daily*)
- b. *Ku-xiao le yixia, laihui chefei 40 zonggong, wo mai haochide bu-hao ma?*
 cry-laugh PRF once return fare 40 altogether I buy good.food not-good Q
 “(I) cry-laughed a bit. The return fare was 40 altogether. Wouldn’t it have been nicer if I had used the money to buy something delicious to eat?” (social media post, Sina Weibo)
- c. *Shandong you chu rencai le! Ba bieren ku-xiao le!*
 Shandong again produce talent CRS DISP others cry-laugh CRS
 “Shandong produced yet another ‘talent,’ who cried others into laughter!” (video title, Sohu)

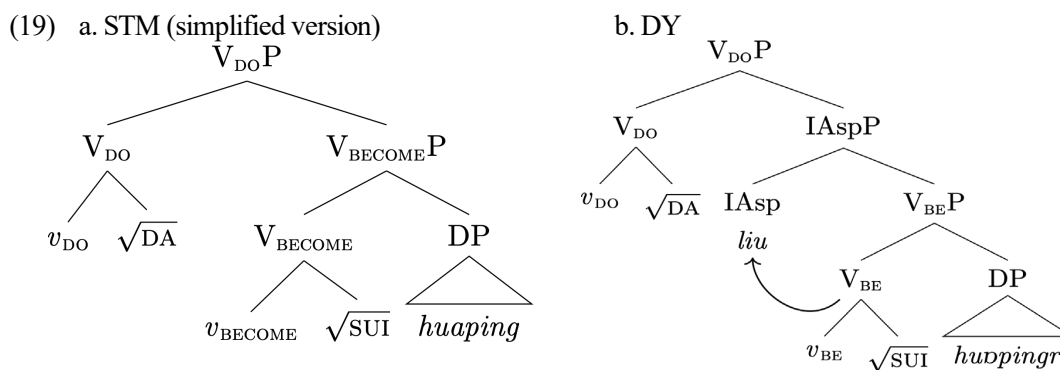
The STM string *ku-xiao* ‘lit. cry-laugh’ has three different interpretations. It is a coordinative compound in (17a), which is a news title encouraging students to cry or laugh freely after the college entrance exams. The same string is a modifier-head compound verb in (17b), which means laughing in a crying manner and is structurally similar to English compounds like *sleep-walk* and *freeze-dry*. Finally, the *ku-xiao* in (17c) is a resultative compound used causatively, which describes a talent show scene where a contestant cried on stage awkwardly and made the audience laugh. Ambiguity like this is very common in Chinese due to the paucity of overt inflection and the versatile application of verb serialization.

Thus, to get a causative-resultative reading out of two verbs it is not enough to merely juxtapose them; some further operation must be involved in the underlying representation. Song (2018) argues that this operation is lexical-category-based in STM and functional-category-based in DY (both in a traditional generative sense). In more decompositional terms, the R in a V-R— or more exactly its root (in the sense of distributed morphology; Halle & Marantz 1993 et seq.)— is assigned the category of a change-of-state verb in STM, either via direct categorization (18a) or via stacked categorizers (18b). In fact, (18b) is just the approach taken in previous studies like Lin (2004) and Kan (2007), while (18a) can be seen as a less fine-grained representation thereof. By comparison, the R in DY becomes a change-of-state subevent by means of an Inner Aspect functional category sandwiched between V and R, as in (18c).¹⁸

¹⁸ We use V_{DO} in the tree diagrams as a way of illustration. As mentioned in note 2, there is no event type restriction on the causing subevent in a resultative compound.



Here we have made some notational changes to the original trees in Lin (2004) and Song (2018). First, we eliminated the excessive use of little v and only kept it for the actual categorizer head. Elsewhere we simply use the conventional big V notation for lexical verbs, glossing over their inner structures. Second, we replaced Lin's δ with the more common GO (they basically notate the same semantic flavor of v ; for more detail on little v flavors and their stacking see Cuervo 2003). Third, we adopted a placeholder \sqrt{R} for the root part of R in a resultative compound and omitted the root-based structure of the causing verb (here V_{DO}). Thus, STM and DY may share the same R roots (for historical reasons) but have developed different functional structures above them (also for historical reasons). Besides, while v_{BECOME} is treated in Song (2018) as a grammatical primitive (i.e., a type of categorizer in STM), here we remain agnostic about this. One could also view v_{BECOME} as a collapsed version of v_{GO} and v_{BE} (similarly to the relationship between C and Top , Foc , Fin , etc.). This detail is inconsequential to us since in either case the change-of-state status of R in STM is encoded in its traditional lexical category (here incarnated in the form of a categorizer), which suffices to bear out the STM vs. DY distinction. See (19) for a concrete example.



The two trees in (19) represent the derivations of “break the vase” in STM and DY.¹⁹ In STM the roots \sqrt{DA} and \sqrt{SUI} are separately categorized by the verbalizers v_{DO} and v_{BECOME} , after which the two verbs are merged onto the clausal spine, as in (19a).²⁰ Since the activity VP structurally

¹⁹ We use the simplified version for STM from (18a) for expository convenience, but nothing substantial changes if the more fine-grained version from (18b) is used instead.

²⁰ We assume that the two instances of root categorization are prederived in separate workspaces. See Zwart

embeds the change-of-state VP, a causative-resultative meaning can be directly read off the tree. Hence, (19a) gives rise to a well-formed phrase *da-sui huaping* ‘lit. do.hitting-become.broken the vase’. In DY, by comparison, the roots $\sqrt{\text{DA}}$ and $\sqrt{\text{SUI}}$ are categorized by v_{DO} and v_{BE} , as in (19b), which yield an activity and a stative verb respectively. The [DO [BE]] configuration cannot give rise to a caused-change-of-state reading on its own; rather, it is the intervening IAsp head (spelled out as *liu*) that glues V_{DO} and V_{BE} into a complex event. Technically, IAsp bears a realizational function just like STM *le*₁ (see note 12). However, being sandwiched between the activity and the state, it only scopes over the latter but not the former,²¹ and so the realizational function is only applied to the state subevent. Since the realization of a state is just the entering into that state, we get a change-of-state reading in effect. In this way the DY V_{BE} becomes a telos of V_{DO} , and the intuitive analysis of the phrase *da-sui-liu huaping* ‘lit. do.hitting-[be.broken-PRF] vase’²² is just that *liu* telicizes the V-R collocation. We will keep glossing the post-V-R *liu* in DY (and its WZ counterparts) as TEL, since its realizational function is merely applied to R, whereas its telicizing function, albeit indirect and emergent, is applied to V-R as a whole.

3.2. Generalized root syntax

Recall from §2.2 that the basic syntactic pattern of resultative compounds in Wenzhou Wu is the same as that in Dongying Mandarin, and that the two varieties merely differ in the grammatical status of the post-V-R morpheme: while DY *liu* is a grammaticalized morpheme that can be attached to all V-Rs,²³ WZ *ts’ih/fi* have more lexical semantic idiosyncrasies and are only half-grammaticalized. As such, the theoretical puzzle is how to accommodate semigrammatical items in a decompositional framework like distributed morphology (or any other high-granularity theory). This is a puzzle because, take distributed morphology for instance, while it pushes syntactic methods all the way down to the word-internal level, its very definition of root categorization presupposes a strict dichotomy between lexical and functional vocabulary items, leaving no room for in-between items. This is reflected in the so-called categorization assumption (Embick & Marantz 2008: 6): “Roots cannot appear (cannot be pronounced or interpreted) without being categorized; they are categorized by merging syntactically with category-defining functional heads. ...Concerning the functional heads themselves, we assume that there exist different types of n, v, and so on.” Embick (2015: 45–46) puts this in even more stringent terms, saying that “[i]t is not just any functional morpheme that can categorize a Root. There is a special set of morphemes in the grammar that perform this function; they are sometimes called *categorizers*.”

Although the categorization assumption is usually taken for granted, Song (2019: 102) points out that it in fact suffers from a logical flaw and therefore is inappropriate as an axiom. In short, if only traditional lexical categories, which are incarnated as little *x* functional heads in distributed morphology, qualify as categorizers and only they bear category-defining features as the categorization assumption upholds, we are led to the absurd conclusion that the defining features

(2007, 2009 et seq.) for more discussion on such layered derivation.

²¹ As Song (2018: 304) points out, this unified treatment of outer and inner Asp is similar in spirit to Soh’s (2008) unification of the various meanings of STM *le* under the semantic function “transition.”

²² V_{BE} moves to IAsp as shown in (19b). Song (2018) motivates this syntactic step by Roberts’s (2010) defective goal theory. We abstract away from the technical details due to space limitations.

²³ More exactly all “atelic” V-Rs in the sense of Song (2018), since there are two types of resultative compounds in DY (see note 7). We abstracted away from this detail for it is irrelevant to our focus. What matters here is that all resultative compounds that do require an extra morpheme invariably take *liu* in DY.

of non-little-*x* functional heads, from the more conventional D/T/C to the more recent Num/App/Top, do not define categories; ergo, non-little-*x* functional categories are not categories. This obviously makes the definition of *category* in generative syntax inconsistent—unless the term *categorizer* itself is idiomatic, which is an equally unfortunate situation for a precision-seeking formal framework like distributed morphology.

Based on the above reasoning, Song (2019) puts forth a theory of *generalized root syntax*, which simply removes the second half of the categorization assumption and thus frees the tool of root syntax from the shackles of traditional lexical categories. Song dubs this the “generalized categorization assumption.”

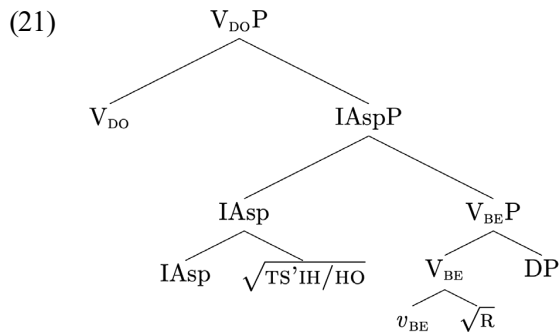
(20) Generalized categorization assumption (Song 2019: 103)

Roots ... cannot appear without being categorized; they are categorized by merging syntactically with category-defining functional heads. A category-defining functional head (or categorizer) is any head with a nonempty syntactic feature specification (i.e., any non-Root category).

On this more general assumption, categorization by little *x* is just a particular scenario of a more basic syntactic rule, where the categorizer happens to be one that defines a traditional lexical category. Given this broader understanding of root categorization, Song (2019) gives it a new name *root support*, in the sense that a root is used to support a formal syntactic category. As a caveat, (20) does not predict that any random root-categorizer combination will yield an interpretable vocabulary item, just as the original categorization assumption does not predict that any root-*n/v* combination yields an existing noun/verb (e.g., *dog* is both a noun and a verb but *cat* is only a noun). Opponents of distributed morphology (or of root syntax in general) often use this as a counterargument, but it is important to distinguish two views: *i*) that any functional category in principle qualifies as a root categorizer, and *ii*) that any root-categorizer combination yields an interpretable item. These are two separate propositions, and root syntax does not uphold *ii*) in any of its incarnations. Whether a root-categorizer combination can yield an interpretable item is a matter of language-specific lexicalization. Only when a lexical entry (or several interconnected entries as in distributed morphology) has been created for it can it retrieve a licit interpretation at the syntax-phonology/semantics interface. The granularity level of a theory does not alter this basic fact.

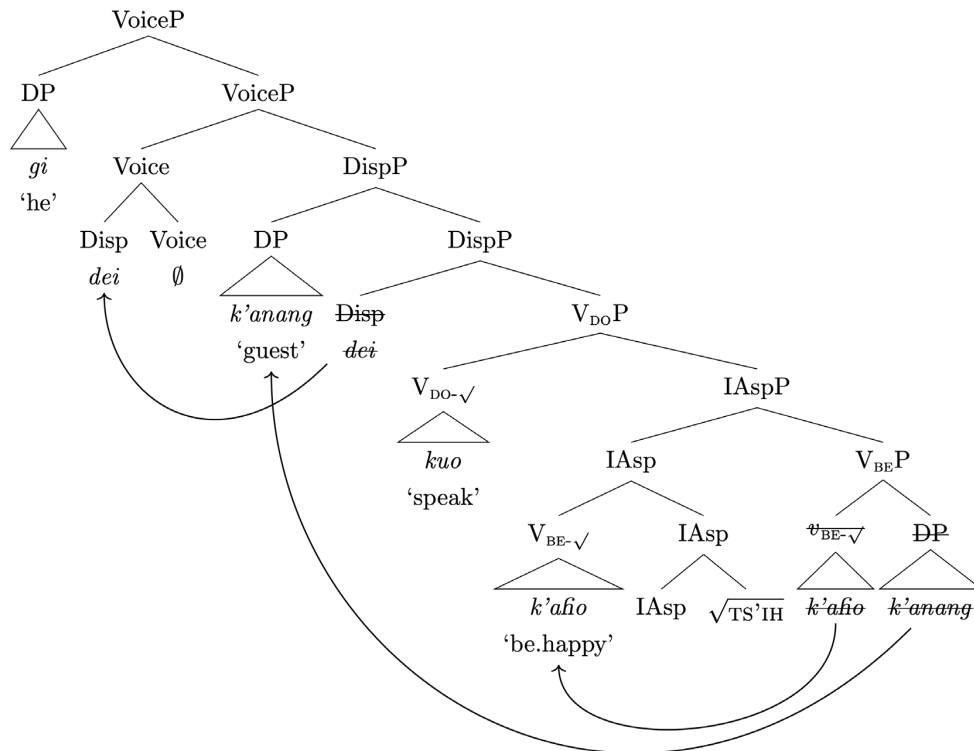
3.3. Wenzhou Wu

We find generalized root syntax a suitable tool to formally derive the grammatical status and syntactic distribution of the post-V-R *ts'ih/fiɔ* in Wenzhou Wu. We present the derivation in (21). Again, our choice of V_{DO} in the tree diagram is merely expository (see note 2 and note 18).

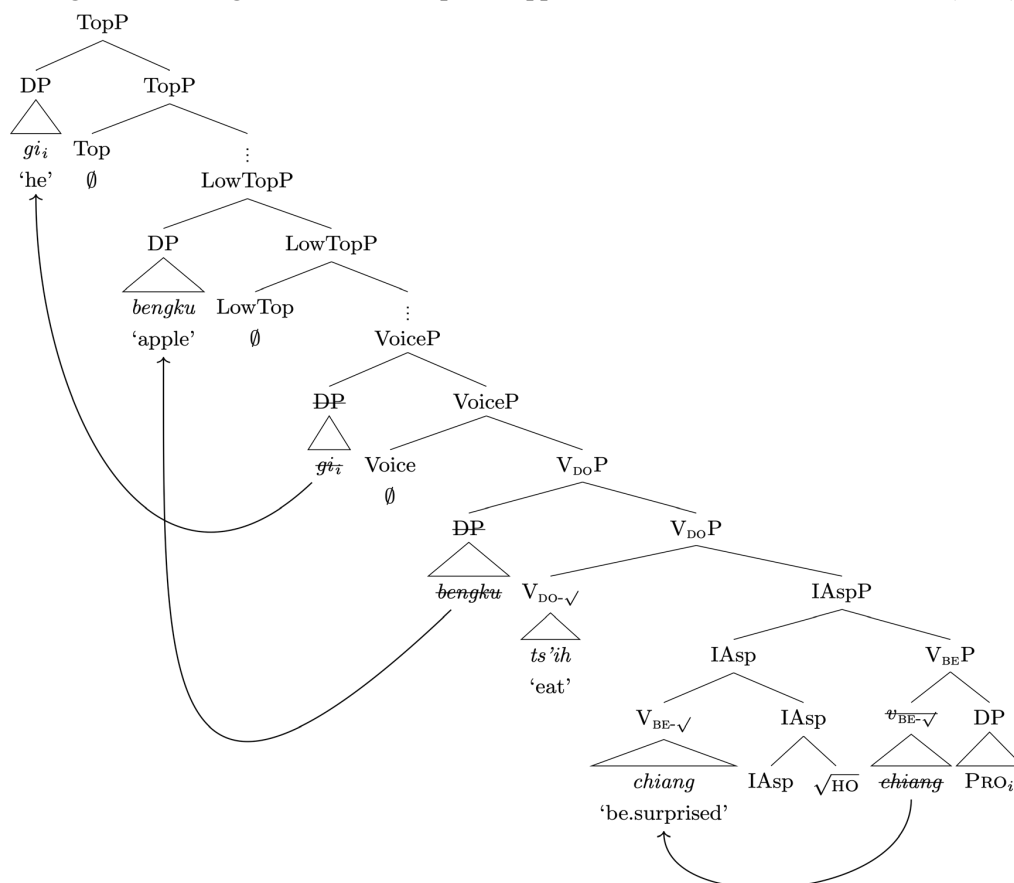


The structure in (21) is almost identical to that in (18c), except that the IAsp head here is supported by a root; hence its semigrammatized status. Both the root-supported IAsp and the root-supported v_{BE} are prederived in separate workspaces before they join the clausal spine (see note 20). Thus, the *ts'ih/hɔ* alternation can be reduced to an effect of inter-root selection. We make two additional remarks on (21). First, remember from §3.1 (note 22) that the V-R-*liu* order in DY is derived by V_{BE} -to-IAsp movement, which is itself an effect of defective goal agreement (Roberts 2010). The same rule is applicable in WZ (i.e., V_{BE} moves up and left-adjoins to IAsp), for the defective goal theory only relies on formal features and is unaffected by root support. Second, even though we assume that the object of the resultative compound, if any, is base-generated at the $V_{BE}P$ level, it clearly moves up in the course of derivation, as the default word order in WZ is O-V-R-*ts'ih/hɔ*. See (22) for two concrete examples.

(22) a. *Gi dei k'anang kuo-k'afio ts'ih.* 'He made the guests happy by saying something.' (=15a)



b. *Gi bengku ts'ih-chiang ho*. 'He was fed up with apples because he had eaten too much.' (=15c)



As the trees in (22) show, there are a lot more complexities in the derivation of full sentences, especially in relation to arguments and linearization. But if we just look at the resultative compound part, it is easy to see that both trees follow the pattern in (21). A root-supported IAsp is sandwiched between V and R, scoping over the R and turning it into a change of state. Meanwhile, the roots supporting IAsp and v_{BE} (and thereby the root-supported IAsp and v_{BE}) enter into an idiosyncratic selectional relationship, which is presumably already present at the lexical-array-forming stage and eventually gives rise to the *ts'ih/hō* alternation. This much is the key information in (22). As for the less important differences between (22a) and (22b), we only comment on two points: *i*) the sentence in (22a) has an object-oriented R (it is the guests who are happy), which we derive by a head-complement structure, while the sentence in (22b) has a subject-oriented R (it is "he" who is fed up), which we derive by coindexation;²⁴ *ii*) the sentence in (22a) raises the object into a disposal phrase (i.e., the WZ counterpart of the STM *ba*-construction), while that in (22b) raises the object into a low topic phrase (see, e.g., Paul 2005). The two mechanisms may have to do with DP properties like affectedness and definiteness.

²⁴ It is common practice to explain the argument structures of Chinese resultative compounds by some version of control theory. See Lin (2004) for a detailed discussion.

4. Parameterization

After presenting our analysis for Wenzhou Wu, in this section we reflect on the cross-dialectal variation between Standard Mandarin, Dongying Mandarin, and Wenzhou Wu in more depth, with a particular interest in a potential parameterization thereof. Let us first repeat the generalization from (4):

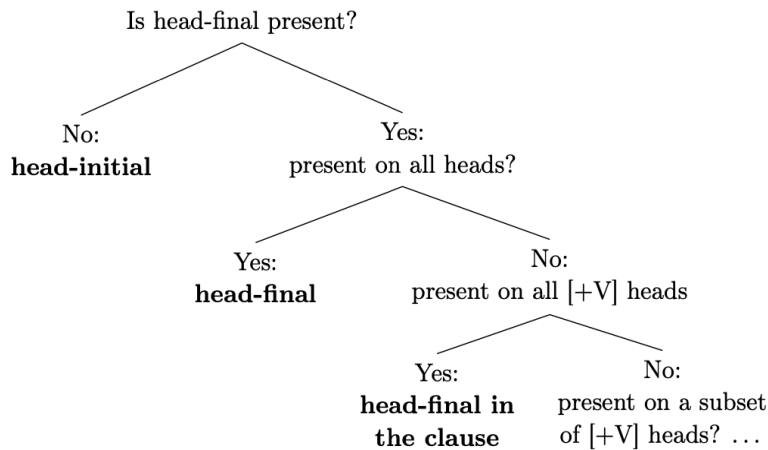
(23) A Chinese resultative compound may have its telicity encoded in R or in a functional morpheme.

As our investigation in the foregoing sections reveals, this generalization is inadequate both empirically and theoretically. Empirically, it misses an important third way of telicization in resultative compounds; namely, that via a semifunctional morpheme. Theoretically, it is inaccurate to say that telicity is *encoded* in a certain locus, because the telicity of a resultative compound is an emergent property holding for the entire compound and maybe also for some additional element (e.g., the obligatory post-V-R morpheme in DY/WZ). Thus, it is meaningful to say that the DY phrase *dv-sui-liu* ‘hit-[be.smashed-PREF]’ denotes a telic event but meaningless to say that the telicity is encoded in *liu*. Rather, the inherently perfective or realizational *liu* only indirectly telicizes the V-R by imposing a change of state or inchoative reading on *sui* ‘be.smashed→become.smashed’ and thereby making it a suitable telos for *dv* ‘hit’ and a qualified result subevent, because logically speaking, when X causes Y, Y does not obtain out of thin air but must go through a *change* from absence to presence. Hence, strictly speaking the result of a causing subevent must be [+dynamic]. It just so happens that natural language grammars, in particular Chinese language grammars, build dynamic results from stative verbs rather than create separate lexical entries for them. Bearing the above considerations in mind, we update the generalization in (4)/(23) to that in (24).

(24) A Chinese resultative compound may obtain its telic meaning from R, a functional morpheme, or a semifunctional morpheme.

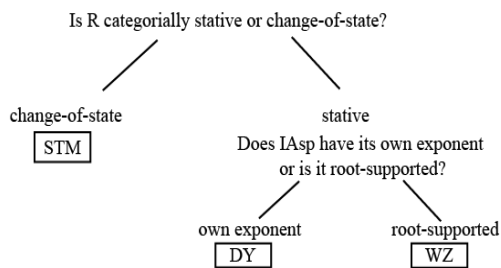
Yet this generalization is still not ideal, since it signals a “flat” model of crosslinguistic variation, where each Chinese variety picks a certain way of resultative compound telicization out of three options under equal probability. Whether this conforms to reality awaits further investigation, but to our knowledge the STM way is more common among Chinese dialects, whereas the DY and especially the WZ way are quite rare. As such, a more sophisticated model is needed to better delineate the three-way variation in (24). To this end, we find Biberauer & Roberts’ (2015) hierarchical approach to parametric variation useful (see also Roberts 2012, 2019; Biberauer et al. 2014; and Biberauer 2017 among others). Its core idea is that parameters are not hard constraints prescribed by universal grammar but emergent properties of the interaction of three factors (Chomsky 2005): *i*) our biological linguistic endowment (universal grammar), *ii*) the language-acquiring experience (primary linguistic data), and *iii*) general optimization strategies (i.e., third factors). The interaction of these three factors gives rise to hierarchies that organize grammatical parameters in a more systematic way on the one hand and reflect a quite general learning path (NONE>ALL>SOME) on the other. See (25) for a concrete example.

(25) A simplified take on the parameterization of word order (Biberauer & Roberts 2015: 8)

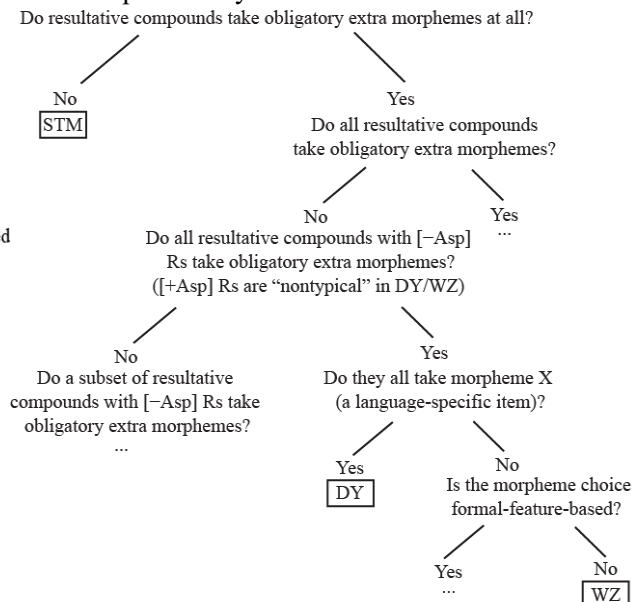


There are consistently head-initial/final languages as well as mixed-order languages in the world, which are arranged in a hierarchical fashion guided by several yes/no questions. These are hypothetically also the questions children ask in the acquisitional process. We tentatively apply this method to the different ways of telicization in Chinese resultative compounds. Since our starting point is already a fairly narrow grammatical domain, the relevant questions are all highly specific. So, our particular hierarchy may just be a tiny corner of a much larger one. To better present our idea, in (26) we first lay out the parametric options in a typologically oriented way and then convert it into the parameter-hierarchy fashion.

(26) a. Typologically oriented



b. Acquisitionally oriented



While both models in (26) are more informative than (24), they differ from each other in three aspects. First, the questions in (26b) follow a NONE>ALL>SOME path, which makes it more

acquisitionally friendly. Second, (26b) has room for more language types (indicated by ellipses) while (26a) does not. Third, in (26a) the STM branch and the non-STM branch have equal complexity status, while in (26b) the STM branch is the default or “easy” option compared to the DY and WZ branches. This is consistent with our impression that the STM-type is more common among Chinese varieties.

Before we conclude this paper, we make two final remarks on (26b). First, resultative compounds are not only an important part of Chinese grammar but also “an important milestone in [Chinese]-speaking children’s early grammatical development” (Hsu et al. 2019: 3). They abound in primary linguistic data and are acquired fairly early. Studies report that Mandarin-speaking children can already productively use resultative compounds at 2.5–3 years old (see, e.g., Chen 2008, 2017; Deng 2019; and Hsu et al. 2019). Moreover, among all types of verb complements (e.g., resultative, temporal/locational, quantity, degree), resultative complements are acquired first and serve as a syntactic prototype (Zhang 2008: 15). As such, giving them a parameterization in an acquisitionally oriented way seems more useful. Besides, since the obligatory extra morphemes in DY/WZ are aspectual, and aspects (especially the realizational aspect) are acquired by Chinese-speaking children at an even earlier age (well before 2.5 years old; see, e.g., Erbaugh 1992 and Liu 2015), (26b) is also plausible in a realistic sense.

Second, while the original conception of parameter hierarchies is firmly based on the Borer-Chomsky conjecture (Baker 2008), which says that all parameters of variation are attributable to differences in the formal features of functional heads, (26b) partly deviates from this conjecture. Thus, the difference between WZ and DY is not exclusively formal-feature-based but also concerns the presence or absence of root support for a particular functional head. Insofar as our analysis is on the right track, we think this syntactic option should be taken into account in the theorization of crosslinguistic variation too. Baker (2008) probably did not have the advancement of root syntax in mind when formulating the Borer-Chomsky conjecture, but Borer herself has actually expressed an idea similar to ours: “[A]ll variation, both within a language and across languages, is reducible not only to the properties of range assigners to functional open values, but [also] to their morpho-phonological properties.” (Borer 2005: 264)

We echo Borer’s (2005) view in this paper and think that generalized root syntax could be a constructive part of a more complete theory of parameters. We leave an exploration of this idea to future research.

5. Conclusion

In this paper we comparatively studied the syntactic behavior of resultative compounds in three Chinese varieties: Standard Mandarin, Dongying Mandarin, and Wenzhou Wu. These varieties systematically differ in whether they require an obligatory post-V-R morpheme and, if they do, whether the choice of that morpheme is a purely grammatical issue. The cross-dialectal variation is repeated in (27).

- (27) a. STM has no obligatory marking on resultative compounds.
 b. Typical DY resultative compounds (i.e., the atelic ones) obligatorily take a *liu*.
 c. Typical WZ resultative compounds (i.e., the nonphasal ones) obligatorily take a *ts’ih/hɔ*.

Due to limited scope, we have focused on DY/WZ resultative compounds that are in some sense typical (see note 13). And in this slightly restricted data set the two varieties sharply differ in the choice of their obligatory morpheme: While DY consistently chooses *liu*, WZ chooses either

ts'ih or *hɔ* depending on the lexical semantics of R, mainly on its cognitive salience, with [+salient] Rs taking *ts'ih* and [-salient] Rs taking *hɔ*. However, there are quite a few idiosyncratic exceptions to this rule.

We attributed the above variation to the way a Chinese variety telicizes its resultative compounds. First, while STM does this via the syntactic category of R (a change-of-state verb), both DY and WZ do this via a functional morpheme, which we analyzed as a low perfective/realizational aspect marker (at IAsp) scoping over a stative R as well as a telicizer for the entire V-R (by converting R into a qualified telos). Second, between DY and WZ, while DY employs a single function word (*liu*) to telicize the V-R, WZ does so via two semifunctional words (*ts'ih* and *hɔ*), which we analyzed as the IAsp head supported by two different roots. On this analysis, the semantically based idiosyncratic *ts'ih/hɔ* alternation is reduced to an effect of lexical selection between the root in R and that supporting IAsp.

After laying out our analysis, we further discussed the parameterization of the three-way variation. We deem this a meaningful move because *i*) resultative compounds are a milestone in language acquisition, and *ii*) our case at hand provides a potential extension to the mainstream theory of parameters. We first gave a “flat” generalization and eventually improved it with the parameter hierarchy theory. Our main innovation is that the parameterization we proposed references not only formal features but also roots—at least the presence/absence thereof. Besides, our parameter hierarchy bears out an order of “easiness” for its different branches and thereby predicts a certain typological skew among Chinese varieties (with the STM-type being the most common and the WZ-type being the rarest). We leave the attestation of this prediction, along with other remaining issues (e.g., nontypical resultative compounds, the usage of *liu/ts'ih/hɔ* with simple verbs), to future research.

References

- Baker, M. 2008. *The syntax of agreement and concord*. Cambridge: Cambridge University Press.
- Biberauer, T. 2017. Factors 2 and 3: A principled approach. *Cambridge Occasional Papers in Linguistics* 10, 38–65.
- Biberauer, T. & I. Roberts. 2015. Rethinking formal hierarchies: A proposed unification. *Cambridge Occasional Papers in Linguistics* 7, 1–31.
- Biberauer, T., A. Holmberg, I. Roberts & M. Sheehan. 2014. Complexity in comparative syntax: The view from modern parametric theory. In Newmeyer, F. & L. Preston (eds.), *Measuring grammatical complexity*, 103–127. Oxford: Oxford University Press.
- Borer, H. 2005. *In name only*. Oxford: Oxford University Press.
- Chao, Y.-R. 1968. *A grammar of spoken Chinese*. Berkeley: University of California Press.
- Chen, J. 2008. The acquisition of verb compounding in Mandarin Chinese. Vrije Universiteit Amsterdam dissertation.
- Chen, J. 2017. When transparency doesn't mean ease. *Journal of Child Language* 44(3), 695–718.
- Chomsky, N. 2005. Three factors in language design. *Linguistic Inquiry* 36(1), 1–22.
- Comrie, B. 1986. Markedness, grammar, people, and the world. In Eckman, F., E. Moravcsik & J. Wirth (eds.), *Markedness*, 85–106. Boston: Springer.
- Cuervo, M. 2003. Datives at large. MIT dissertation.
- Deng, X. 2019. The acquisition of resultative verb compounds in Mandarin Chinese. *Journal*

- of *Chinese Linguistics* 47(1), 42–81.
- Dowty, D. 1979. *Word meaning and Montague Grammar*. Kufstein: Reidel.
- Embick, D. 2015. *The morpheme: A theoretical introduction*. Berlin: De Gruyter Mouton.
- Embick, D. & A. Marantz. 2008. Architecture and blocking. *Linguistic Inquiry* 39(1), 1–53.
- Erbaugh, M. 1992. The acquisition of Mandarin. In Slobin, D. (ed.), *The crosslinguistic study of language acquisition*, vol. 3, 373–455. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Halle, M. & A. Marantz. 1993. Distributed morphology and the pieces of inflection. In Hale, K. & S. J. Keyser (eds.), *Essays in linguistics in honor of Sylvain Bromberger*, 111–176. Cambridge MA: MIT Press.
- Hu, X. 2018. *Encoding events: Functional structure and variation*. Oxford: Oxford University Press.
- Hsu, N., M. Rispoli & P. Hadley. 2019. Mastering the grammar of complex events: Evidence from Mandarin resultative verb compounds. *Language Learning and Development* 15(3), 255–277.
- Kan, Z. 2007. *Causative verb and causative constructions at the syntax-semantics interface*. Shanghai Jiao Tong University dissertation.
- Klein, W., P. Li & H. Hendriks. 2000. Aspect and assertion in Mandarin Chinese. *Natural Language & Linguistic Theory* 18, 723–770.
- Li, M. & B. Ma. 2016. On the pronunciations and functions of Wenzhounese *yao*-rime function words *zhuo*, *que*, and *ruo*. *Journal of Wenzhou Vocational & Technical College* 16(3), 84–88.
- Li, N. & S. Thompson. 1981. *Mandarin Chinese*. Berkeley: University of California Press.
- Lin, J. 2004. *Event structure and the encoding of arguments*. MIT dissertation.
- Lin, J.-W. 2003. Temporal Reference in Mandarin Chinese. *Journal of East Asian Linguistics* 12, 259–311.
- Liu, H. 2015. A longitudinal study of children's acquisition of *le* in Mandarin Chinese. *Journal of Shanxi Normal University* 42(2), 156–159.
- Liu, X. 1988. The grammatical meanings of Modern Chinese suffix *le*. *Studies of the Chinese Language* 5(39), 321–330.
- McCawley, J. 1992. Justifying part-of-speech assignments in Mandarin Chinese. *Journal of Chinese Linguistics* 20(2), 211–246.
- Pan, W. 1996. The tenses and aspects of Wenzhounese. In Zhang, S. (ed.), *The aspects of verbs*, 254–284. Hong Kong: The Chinese University of Hong Kong.
- Paul, W. 2005. Low IP area and left periphery in Mandarin Chinese. *Recherches linguistiques de Vincennes* (33), 111–134.
- Roberts, I. 2010. *Agreement and head movement*. Cambridge, MA: MIT Press.
- Roberts, I. 2012. Macroparameters and Minimalism: A programme for comparative research. In Galves, C., S. Cyrino, R. Lopes, F. Sandalo & J. Avelar (eds.), *Parameter theory and linguistic change*, 320–335. Oxford: Oxford University Press.
- Roberts, I. 2019. *Parameter hierarchies and universal grammar*. Oxford: Oxford University Press.
- Schmid, H. J. 2012. Entrenchment, salience, and basic levels. In Geeraerts, D. & H. Cuyckens (eds.), *The Oxford handbook of cognitive linguistics*, 117–138. Oxford: Oxford University Press.
- Shen, J. 1999. *Asymmetry and markedness theory*. Beijing: The Commercial Press.
- Smith, C. 1997. *The parameter of aspect*. Second edition. Dordrecht: Springer.

- Soh, H.-L. 2008. The syntax and semantics of change/transition. In Rothstein, S. (ed.), *Theoretical and cross-linguistic approaches to the semantics of aspect*, 387–419. Philadelphia: Benjamins.
- Song, C. 2015. Structural variation in Chinese compound verbs: A comparative study of Standard Mandarin and Dongying Dialect. University of Cambridge master's thesis.
- Song, C. 2018. Severing telicity from result. *Journal of East Asian Linguistics* 27(3), 275–307.
- Song, C. 2019. On the formal flexibility of syntactic categories. University of Cambridge dissertation.
- Song, C. & K. Wu. in prep. Counterparts of *le* in Dongying Mandarin and Wenzhou Wu.
- Travis, L. 2010. *Inner aspect: The articulation of VP*. Berlin: Springer.
- Vendler, Z. 1957. Verbs and times. *The Philosophical Review* 66 (2): 143–160.
- Verkuyl, H. 1993. *A theory of aspectuality*. Cambridge: Cambridge University Press.
- Zhengzhang, S. 1996. On the Wenzhounese counterparts of *zhe* and *le*. In Hu, M. (ed.), *Essays on tenses and aspects in Chinese dialects*, 47–65. Nanjing: Jiangsu Education Publishing House.
- Zwart, J.-W. 2007. Layered derivations. ACTL lecture, Mar 9, London.
- Zwart, J.-W. 2009. Prospects for top-down derivation. *Catalan Journal of linguistics* 8, 161–187.