

LOCALITY OF FEATURE AND CATEGORY MOVEMENT

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SZE-WING TANG The Parametric Approach to the Resultative Construction in Chinese and English¹

1 Introduction

A concern of generative grammar is to determine and characterize the linguistic capacities of human languages. The language faculty, a particular component of human cognitive system, has an initial state, genetically determined and uniform for the species. The goal of generative grammar is to provide a theory of the initial state of the language faculty, namely Universal Grammar. While certain grammatical principles are assumed to be universal, there is also a lot of variation between different languages. To capture the facts in natural languages, a theory of Universal Grammar should meet the condition of descriptive adequacy and explanatory adequacy. However, there is a tension between descriptive adequacy and explanatory adequacy in the study of Universal Grammar. In the early stages of generative grammar, the task was to find a rule system to derive the facts in natural languages. Under this view, Universal Grammar provides a format for permissible rule systems; any instantiation of this format language variation is due to radically different language specific rule systems. The problem of explanatory adequacy at once arises.

In the recent years, most inquiries into generative grammar has pursued the working hypothesis that Universal Grammar is a simple theory with fundamental principles. This approach is also known as the Principles-and-Parameters approach. Under this view, a language is not a rule system but a system of universal principles with a finite set of finitely valued parameters. Language specific rules are eliminated and are deduced from the invariant principles of

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Universal Grammar with parameters set in one of the permissible ways.

Under the Principles-and-Parameters approach, to satisfy the goal of explanatory adequacy the number and the value of parameters provided by Universal Grammar must be restricted. In other words, Universal Grammar allows only limited options for parameters.

Recent studies on language variation have been converging on the reduction of the parametric properties proposed in the literature to formal-morphological features of the lexicon (Borer 1983, Fukui 1986, 1995, Wexler and Manzini 1987, Cheng 1991, Takano 1996, among others). Language variation is determined by detectable properties.

In pursuing the Minimalist Program developed in Chomsky 1993, 1995a, b, 1996, the options for parameters should be subject to minimalist scrutiny. Any stipulations that are not motivated by economy considerations and by properties of the interface levels, namely Logical Form (LF) and Phonetic Form (PF), should be eliminated. Within minimalist assumptions, there is only one computational system of human language invariant across languages and one lexicon. Beyond PF options and lexical arbitrariness, variation is limited to general properties of lexical items.

This paper concerns issues centering on a typological difference between Chinese and English regarding Simpson's generalization in the resultative construction. Simpson (1983) points out that in the resultative construction, the resultative predicate must be predicated of the object of the verb. If there is no object, the resultative predicate cannot be predicated of the subject. Her generalization is supported by the data in (1).

- (1)
- | | | |
|----|----------------------------|----------------|
| a. | John painted the car red. | (transitive) |
| b. | The ice-cream froze solid. | (unaccusative) |
| c. | *John laughed sick. | (unergative) |
| d. | John laughed himself sick. | |

In (1a) the judgment is not ambiguous. The resultative predicate *red* is predicated of the object *the car*. Though *the ice-cream* in

(1b) is a 'surface subject', it is analyzed as a 'deep object' of the unaccusative verb. In (1c) *laugh* is an unergative verb and there is no object for the resultative predicate *sick* to predicate of. Therefore, (1c) is ungrammatical. One way to predicate the resultative predicate of the subject of the unergative verb is to add a 'fake reflexive' to serve as an object, as in (1d).

However, the object restriction of resultative construction is immediately refuted by the resultative construction in Chinese.¹

- (2)
- | | | |
|----|---|-----------------|
| a. | transitive | |
| | Zhangsan ba ma | qi-de hen lei. |
| | Zhangsan BA horse ride-Res very tired | |
| | (i) 'Zhangsan rode the horse and got it tired.' | |
| | (ii) *'Zhangsan rode the horse and he got tired.' | |
| b. | unaccusative | |
| | Zhangsan xia-de | tiao-le qi-lai. |
| | Zhangsan frighten-Res jump-Perf up-come | |
| | 'Zhangsan was so frightened that he jumped up.' | |
| c. | unergative | |
| | Zhangsan ku-de | hen lei. |
| | Zhangsan cry-Res very tired | |
| | 'Zhangsan cried and became very tired.' | |

In (2a) *ma* 'horse' is the object of the transitive verb *qi* 'ride'. It is the object *ma* 'horse' but not the subject *Zhangsan* that the resultative predicate *lei* 'tired' is predicated of. The verb *xia* 'frighten' is an unaccusative verb. The surface subject *Zhangsan* is interpreted as an object of the unaccusative verb. Therefore, the resultative predicate can be predicated of *Zhangsan*. Simpson's generalization still holds in (2a) and (2b). In (2c) *ku* 'cry' is an unergative verb and *Zhangsan* is the subject of the verb. According to Simpson's generalization, (2c) should be ruled out because there

¹ The morpheme *ke* is a marker which marks the noun that is immediately following it as a preverbal object. The morpheme *de* is a suffix indicating that the sentence is resultative. In this paper, these two morphemes are simply glossed as 'BA' and 'Perf' respectively. I use the following abbreviations in glosses: Cl: classifier and Perf: perfective marker. This paper uses *he* to stand for third person singular pronoun.

is no object that the resultative predicate *lei* 'tired' can be predicated of. Interestingly the resultative predicate can be predicated of the subject and (2c) is a grammatical sentence in Chinese. The resultative construction in Chinese poses a serious problem for Simpson's generalization.

One way to save Simpson's generalization is to analyze the so-called unergative verbs in the resultative construction as unaccusative verbs such that the surface subject of intransitive verbs is an object, as suggested by Sybesma (1992), who follows Hoekstra's (1988) ergativity shift analysis. For example, in Sybesma's analysis the unergative verb *ku* 'cry' shifts to ergativity in (2c) and thus the surface subject *Zhangsan* will be treated as an object of the unaccusative verb. Assuming that *ku* 'cry' is an unaccusative verb with no external argument, Sybesma proposes that the structure of both sentences (2c) and (3) is (4), in which irrelevant details are omitted.

- (3) Shoupa ku-de hen shi.
handkerchief cry-Res very wet
'The handkerchief got wet from crying.'
- (4) *e* V [DP X]

In (4) 'V' is the unaccusative verb; 'DP' is the 'object' of the verb, such as *Zhangsan* in (2c) and *shoupa* 'handkerchief' in (3); and 'X' is the resultative predicate, such as *lei* 'tired' in (2c) and *shi* 'wet' in (3). DP and the resultative predicate form a small clause. To derive the word order of sentences (2c) and (3), DP in the embedded small clause raises to the empty subject.

Though Simpson's generalization can be saved under Sybesma's analysis, to treat *Zhangsan* in (2c) on a par with *shoupa* 'handkerchief' in (3) as well as the surface subject of the 'standard' unaccusatives, such as *Zhangsan* in (2b), is problematic. In (3) *shoupa* 'handkerchief' is interpreted as an event participant affected by the event of crying. In (2b) the surface subject, which is the internal argument of the unaccusative verb *xia* 'frighten', has a meaning of affectedness and does not have an agentive interpretation. If (2c) were derived from the same structure as (3) and (2b), *Zhangsan* would also be interpreted as an event

participant being affected. In fact, *Zhangsan* in (2c) is interpreted as an agent of the event of crying.

- (5) Zhangsan guyi ku-de hen lei.
Zhangsan deliberately cry-Res very tired
'Zhangsan cried deliberately and became very tired.'

Dowry (1991) points out that the most salient property of an agent is volitional involvement in the event or state. The agent-oriented adverb *guyi* 'deliberately' clearly shows the volition of the agent of the event in (5). How does the subject *Zhangsan* receive the external θ -role, namely Agent, in the argument structure? It cannot receive the external θ -role from V in the configuration in (4) because unaccusative verbs do not assign the external θ -role, according to Burzio's (1986) generalization. To get the external θ -role, *Zhangsan* could raise to the specifier of some projection. This possibility is precluded by a general principle that θ -relatedness is a property of the position of merger and its very local configuration and, in consequence, there is no raising to a θ -position (Chomsky 1995a). The assumption that the surface subject in (2c) is an underlying object of an unaccusative verb is questionable.²

If the ergativity shift analysis in Chinese is taken to be correct, another problem of this analysis is that it is not clear why in English the unergative verb *laugh* cannot shift to ergativity in (1c) such that the subject *John* is the underlying object and the resultative predicate *sick* can be predicated of *John*. The difference between Chinese resultative construction and English resultative construction still remains unexplained.

Contrary to Sybesma's analysis, Cheng and Huang (1994) claim that the typological difference between Chinese and English regarding Simpson's generalization in the resultative construction is parametric. It turns out that Simpson's generalization is violable in

²In addition, Cheng and Huang (1994) point out that Sybesma's underlying treatment of unergatives and unaccusatives in Chinese fails to capture the distinction between deep unaccusatives and surface unaccusatives. They argue that examples like (3) should be different from deep unaccusatives. For detailed discussions, see Cheng and Huang 1994.

Chinese. Though they do not specify how to formulate this Universal Grammar parameter, their proposal opens up a new way of looking at the variation between Chinese and English in the resultative construction, and the typological differences between Chinese and English in terms of the Principles-and-Parameters approach.

To achieve the goal of explanatory adequacy, the so-called 'parameter of Simpson's generalization' should be further scrutinized. Pursuing in the spirit of the Minimalist Program within the Principles-and-Parameters approach, in this paper I further develop the general idea proposed by Cheng and Huang (1994) into an analysis that the variation on the resultative construction in Chinese and English is reduced to a parameter concerning the (non)existence of a functional category. The analysis proposed in this paper not only captures the differences between these two languages but also contributes to simplifying the theory of parameters. I will present my proposal of the resultative construction in section 2. My analysis will be extended to resultative VV compounds in Chinese in section 3. I argue in section 4 that my analysis is supported by empirical evidence.

2 Deriving the parametric variation of Simpson's generalization

Before accounting for the parametric variation of Simpson's generalization, let me spell out the assumptions on which my analysis relies. Along the lines of Huang (1988, 1992), I propose that (6a) and (6b) are the structures of the transitive resultative construction and the unergative resultative construction, respectively.³

³ C.-C. J. Tang (1990) proposes an alternative analysis that in (6a) Obj is generated in the subject position of the embedded resultative clause instead of the specifier of the lower VP. As my focus is mainly on (6b), whether Obj should be in the embedded resultative clause seems irrelevant to our discussion.

- (6) a. transitive
 [_{CP} Subj [_{VP} V [_{VP} V [_{FP} F [_{XP} pro/PRO, X]]]]]]
 b. unergative
 [_{CP} Subj [_{VP} V [_{FP} F [_{XP} pro/PRO, X]]]]]

Subjects are generated in the specifier position of outer vP and objects of transitive verbs are in the specifier position of inner VP in the VP shell structure, along the lines in Larson 1988, Hale and Keyser 1993, Chomsky 1995a. 'X' is the resultative predicate, which forms a resultative clause XP with an empty subject. XP is a complement of a functional category F. The internal structure of XP is irrelevant to our discussion.

Yue-Hashimoto (1971), Huang (1982), C.-C. J. Tang (1990), and Sybesma (1992) assume that F is the position where the resultative morpheme *de* is located. In Yue-Hashimoto 1971 and Sybesma 1992, the functional category F is analyzed as a category called 'Extent' which has its own maximal projection whereas in Huang 1982 and C.-C. J. Tang 1990, F is analyzed as a complementizer. To avoid confusion, this functional category is called 'F' in this paper, which is merely a temporary convenience.

Regarding the function of F, I assume with Yue-Hashimoto and Sybesma that in the resultative construction F is taken to function as a kind of closure to the open range of the matrix predicate, which denotes the culmination in temporal extension. I further assume that F bears some strong aspectual feature. Since the feature is strong, it has to be checked overtly (Chomsky 1995a). The strong feature of F can be checked by Merge: the resultative morpheme *de* is inserted in the checking domain of F to check the strong feature.

Morphologically the resultative morpheme *de* is a suffix/clitic (Y.-H. A. Li 1990, C.-C. J. Tang 1990, also Huang 1992:fn1), which is required to undergo movement to be attached to the matrix verb to form a 'V-*de*' complex. Before Spell-Out, the V-*de* complex will undergo movement to the light verb *v*. The word order 'Subject-V-*de*-(Object)-Resultative' is derived. In transitive sentences, if the light verb *v* is phonetically realized as the

morpheme *ba* (see footnote 1),⁴ the word order 'Subject-*ba*-Object-*V-de*-Resultative' is derived.

Furthermore, the morpheme *de* seems not to be 'dummy' at all, contrary to what Sybesma (1992) claims. The resultative morpheme *de* literally means 'obtain'. In the resultative construction with *de*, the interpretation could be that the event denoted by the matrix verb 'obtains' the result of the event denoted by the resultative predicate. It is conceivable to assume that the result can be 'obtained' only if the event is bounded. I assume that F is [+F, +L], a functional category with lexical nature, in the spirit of Fukui's (1995) classification of categories. Historical evidence suggests that the resultative morpheme *de* emerged from lexical categories (Yue 1984). In other Chinese dialects, the resultative morpheme is realized as *dou* 'arrive at' (Cantonese) and *ga* 'arrive at, until' (Taiwanese). These functional elements still carry rich semantic content indicating a change of state. Dialectal evidence further suggests that the resultative morpheme is not merely 'dummy' and should be interpretable at the LF interface.

In addition, I assume that the empty pronominal pro/PRO is subject to the Generalized Control Theory (Huang 1984, 1989), which requires that an empty pronominal be controlled in its control domain (if it has one) by the closest nominal element.⁵ Under the

⁴ The claim that *ba* is the phonetic realization of the light verb in Chinese is due to Huang (1991, 1992), Gu (1992), and Sybesma (1992).

⁵ According to Huang (1989), α is the control domain for β iff it is the minimal category that satisfies both (a) α is the lowest S or NP that contains (i) β , or (ii) the minimal maximal category containing β ; and (b) α contains a SUBJECT accessible to β . I put aside the question how the effects of government in control theory and binding theory are derived, given that the notion government has been eliminated (Chomsky 1993 et seq.) and continue to use this term in our discussion. In addition, the status of control theory, in the computational system is not clear. It could be part of the external interpretive apparatus that applies at LF, akin to binding theory (Chomsky 1993, 1995b), or it could be reduced to movement, advocated by Hornstein (1997) and Manzini and Roussou (1997). Hornstein suggests that PRO is the residue of movement equivalent to an NP trace. Manzini and Roussou propose that the Aspect feature of the embedded infinitival clause raises to the matrix I and is checked with the subject DP. Therefore the predicate of the embedded clause can be predicated of the matrix subject. If the movement approach is correct, we have

Generalized Control Theory, pro and PRO are instances of the same category. The effects of Generalized Control are subject to the Minimal Distance Principle (Rosenbaum 1970, Chomsky 1980, Larson 1990, Huang 1992) which requires that the empty element be controlled by a controller that minimally c-commands the empty element.

Based on the above assumptions, let us discuss how the parametric variation of Simpson's generalization is derived. In the configurations in (6), the resultative clause FP immediately dominating pro/PRO is not the control domain of pro/PRO because there is no accessible SUBJECT in FP, assuming that verbal predicates in Chinese do not have agreement. Hence, the control domain of pro/PRO is extended to the matrix clause. In the matrix clause, the minimal c-commanding noun phrase is the object in (6a) and the subject in (6b) and thus pro/PRO is controlled by the object and the subject respectively. Since the empty subject of the resultative predicate in (6b) is controlled by the matrix subject of the unergative verb, it turns out that in Chinese the resultative predicate can be 'predicated' of the subject of the unergative verb.

If the above analysis is extended to the resultative construction in English, the subject of unergative verbs would be expected to be a controller and serves as the subject of the resultative predicate, assuming that the resultative predicate X does not have agreement.⁶ To rule out this possibility, I propose that in the resultative clause in English the functional category F does not

to explain why in the resultative construction the NP trace can be covert in Chinese but it has to be realized as a reflexive in English in Hornstein's approach (see (1d)) or why the movement of the Aspect feature is blocked in English resultative construction in Manzini and Roussou's approach. Due to limited space, I leave all these possibilities open and still follow the Generalized Control Theory.

⁶ The resultative clause XP can be analyzed as a small clause (Stowell 1981, 1983, among others). Moro (1995) argues that small clauses need not necessarily have agreement. If the naked-infinitive in (i) is treated as a small clause (Contreras 1995), this suggests that small clauses in English do not have agreement.

(i) John saw [Mary leave].

exist. Let us assume that the resultative clause in English is 'XP' and ignore its internal structure.

- (7) * $[_\alpha \text{ Subj}] [_\nu \text{ V}] [_x \text{ pro/PRO, X}]$ (unergative)

If the resultative predicate X does not have agreement, there will be no accessible SUBJECT in the resultative clause. The control domain of pro/PRO will be extended to the matrix clause and as a result the empty pronominal pro/PRO is controlled by the matrix subject, as shown in (7). However, this would entail a violation of binding condition B, which requires that a pronominal be free in its governing category.⁷ The following examples show that the resultative clause functions as a subcategorized complement of the verb and it is transparent to government (Stowell 1981, 1983). For example, the subject of the resultative clause receives Accusative Case from the matrix verb, as indicated in (8a), and the matrix subject and the subject of the resultative clause are in the same governing category, as shown by (8b), in which the pronoun *him* is bound in its governing category violating binding condition B and the reflexive *himself* is bound in its governing category satisfying binding condition A.⁸

- (8) a. I shot him/*he dead.
b. John_i laughed himself/*him_i sick.

⁷ I assume with Huang (1983) that a governing category is defined as (i).

- (i) α is a governing category for β if and only if α is the minimal category containing β , a governor of β , and a SUBJECT that, if β an anaphor, is accessible to β .

⁸ One may wonder why the unergative verbs, such as *laugh* in (8b), can assign the Accusative Case in the resultative construction but not in (i).

- (i) *John laughed her.

One way to rule in (8b) is to assume that [assign Accusative Case] is an optional feature (Lee 1995). (i) is not ruled out by Case, instead, it is ruled out by θ -Theory that unergative verbs do not have an internal argument. See Hale 1996 for an explanation in the approach of lexical semantics. In the resultative construction, the subject of the resultative clause receives the Accusative Case from the matrix verb and receives a θ -role from the resultative predicate in English. Hence, (8b) is grammatical.

In (7), as pro/PRO and the matrix subject are in the same governing category, binding condition B is violated. As a result, the subject of the resultative clause cannot be an empty pronominal.⁹

In any event, since the subject of the resultative clause cannot be an empty pronominal in English, it has to be overt, as shown in (9).

- (9) $[_\alpha \text{ Subj}] [_\nu \text{ V}] [_x \text{ DP X}]$

The effects of Simpson's generalization emerge in English.

In contrast, in Chinese the empty pronominal subject can be controlled by the matrix subject, as shown by the configuration in (6b), without violating binding condition B by virtue of the existence of FP, which blocks the government by the matrix verb. FP/XP becomes the governing category of the empty pronominal subject and the empty pronominal is free in its governing category.¹⁰ That is the reason why the resultative predicate seems to be able to be predicated of the subject of the unergative verbs in Chinese.

This line of reasoning suggests a narrow modification of the parametric variation of Simpson's generalization: In Chinese, the empty pronominal in the resultative clause is 'protected' by the functional category F so that binding condition B is not violated when the empty pronominal is controlled by the matrix subject. Thus, on the surface, the resultative predicate appears to be predicated of the subject of unergative verbs in Chinese. Bringing these ideas together, I conclude that parametric variation of Simpson's generalization is deduced from parametric variation regarding the functional category F. My analysis should be consistent with the restrictive theory of parameters that the relevant

⁹ PRO may also be ruled out because of the violation of the PRO theorem. However, as pointed out by Huang (1989), the effects of the PRO theorem can be reduced to the Generalized Control Theory and the binding theory.

¹⁰ See C.-C. J. Tang 1990 for a detailed argument in terms of the barriers framework (Chomsky 1986). In addition, the governor of the empty pronominal in the resultative clause in Chinese could be I or Asp. The perfective marker *le* in (2b) suggests the possibility of the existence of IP or AspP in the resultative clause in Chinese.

parametric factor is limited to the formal-morphological features of the lexicon.

3 Some notes on resultative VV compounds

As noted by Cheng and Huang (1994), Simpson's generalization is also violated in unergative resultative VV compounds, such as *qi-lei* 'ride-tired' in (10), in which the resultative verb is predicated of the object if there is one, otherwise it is predicated of the subject.

- (10) a. Zhangsan qi-lei-le na pi ma
Zhangsan ride-tired-Perf that CI horse
(i) 'Zhangsan rode the horse and got it tired.'
(ii) *'Zhangsan rode the horse and he got tired'
b. Zhangsan qi-lei-le
Zhangsan ride-tired-Perf
'Zhangsan rode and became tired.'

In (10a) the resultative verb *lei* 'tired' is predicated of the object *na pi ma* 'that horse' instead of the subject *Zhangsan*. Simpson's generalization is obeyed. However, the resultative verb is predicated of the subject *Zhangsan* in (10b), contrary to Simpson's generalization.

To account for the violation of Simpson's generalization in resultative VV compounds in Chinese, I assume that resultative VV compounds are derived from (6), in which F bears some strong aspectual feature. If the strong feature of F is not checked by Merge (i.e. the resultative morpheme *de* is not selected in the numeration), F attracts the resultative verb in the embedded clause. First of all, the resultative verb raises to F to check the strong aspectual feature. For morphological reasons, the resultative verb is attached to the matrix verb forming a resultative VV compound (cf. Huang 1992, Sybesma 1992, Cheng to appear). Given that F is a [+F, +L] element, a functional category with lexical nature, the derivation from X to V via F does not create a 'sandwiched' chain.

'Lexical-Functional-Lexical', violating chain uniformity (Yafei Li 1990, Chomsky and Lasnik 1993, Fukui 1993, Sakai 1994).¹¹

Assuming that the subject of the embedded resultative clause is an empty pronominal, according to the Generalized Control Theory, it will be controlled by the closest nominal element. As shown by (11a), the empty pronominal is controlled by the object. That is the reason why the resultative predicate *lei* 'tired' can only be predicated of the object *na pi ma* 'that horse'. As the empty pronominal subject in the embedded resultative clause is free in its governing category, i.e. the embedded resultative clause FP, the empty pronominal subject is controlled by the matrix subject *Zhangsan* in (10b) without violating binding condition B. The representation of (10b) can be illustrated in (11b).

- (11) a. Subj VV Obj, [_{FP} F [_{NP} pro/PRO, ...]]
b. Subj, VV [_{FP} F [_{NP} pro/PRO, ...]]

However, some VV compounds have unexpected behavior, for instance *da-sheng* 'do-win' in (12).¹²

- (12) Zhangsan da-sheng-le Lisi.
Zhangsan do-win-Perf Lisi
'Zhangsan defeated Lisi.'

In (12) the resultative verb *sheng* 'win' is predicated of the subject *Zhangsan* instead of the object *Lisi*. According to the Simpson's generalization, the resultative predicate *sheng* 'win' should be predicted of the object instead of the subject.

It should be noticed that the resultative verb *sheng* 'win' was derived from a transitive verb. (13) indicates that *sheng* 'win' was used as a transitive verb in classical Chinese.

¹¹ As pointed out by Jim Huang (personal communication), the X-to-V movement in the resultative construction is similar to the verb movement through Infl in Chinese genitive nominalization (Huang 1991, to appear, Gu 1992, Liu 1997). This seems to be an interesting direction to pursue but due to limited space, I leave this question open here.

¹² Thanks to Sui-Sang Mok (personal communication) for drawing my attention to this problematic case.

(13) Yao bu sheng de.

evil not win virtue.

'Evil cannot surpass virtue.'

(*Qianfuhun* by Fu Wang, 85-163 A.D.)

Given that *sheng* 'win' was a transitive verb in classical Chinese, in the spirit of Huang (1995), I suggest that historically *sheng* 'win' was the head of the compound *da-sheng* and *da* 'do, hit' was not a manner-of-doing verb but a light verb. The light verb is obligatory when the first verb becomes the head.¹³ The meaning of the light verb is still preserved in modern Chinese.

(14) #Zhangsan shi da-sheng-le Lisi bushi ti-sheng-le Lisi.

Zhangsan be hit-win-Perf Lisi not kick-win-Perf Lisi

'Zhangsan defeated Lisi by hitting but not by kicking.'

The contrast in (14) shows that the verb *da* does not specify the manner in which *Zhangsan* won. In fact, it is interpreted as 'do' instead of 'hit'. This type of VV compounds should be different from other resultative VV compounds. I propose that a subset of VV compounds, in which the second verb is only predicated of the subject, such as *da-sheng* 'do-win', is formed in the lexicon, not derived from complex predicates. The compound enters the numeration and is introduced into the derivation as one lexical item. It is always predicated of the subject, on a par with transitive verbs. As the second verb is part of the transitive verb, it is never predicated of the object. As for those VV compounds derived from complex predicates, the two verbs are two lexical items in the numeration and introduced into the derivation separately. The resultative verb is always predicated of the empty pronominal subject in the embedded resultative clause. If there is an object, it controls the empty pronominal. If there is no object, then the empty pronominal will be controlled by the matrix subject.

¹³ The VV compounds in which the first verb is a light verb occurred probably in medieval and pre-modern Chinese (Huang 1995).

4 A consequence

I have proposed that parametric variation of Simpson's generalization is associated with the (non)existence of the functional category F in the resultative construction. In this section I will argue how the analysis can be supported by independent evidence.

It has been widely assumed that eventualities can be categorized into four groups with respect to internal temporal reference: accomplishments, achievements, activities, and states (Vendler 1967). An accomplishment type of event refers to dynamic events with successive stages and a natural final endpoint. Achievements have a definite endpoint but the duration is very brief. Though activities are also dynamic events, they differ from accomplishments and achievements in that they do not have a natural endpoint. States do not indicate processes going on in time and have no natural finishing points.

The event structure of the resultative construction consists of two aspectual subparts: [action + state] (Pustejovsky 1988, 1991, Grimshaw 1990, Cheng and Huang 1994, among others). Notice that the first subevent, i.e. the action, should be understood as a dynamic event. Action type of events includes activities and accomplishments. Verbs that express states and achievements cannot be the matrix verb in the resultative construction. The following examples are attributed to Gu (1993).

(15) *Zhangsan ai-de Lisi hen xingfu.

Zhangsan love-Res Lisi very happy

'Zhangsan loved Lisi so much that Lisi was very happy.'

(16) *Zhangsan si-de daijia hen shangxin.

Zhangsan die-Res everyone very sad

'Zhangsan died so that everyone is sad.'

The matrix verb *ai* 'love' in (15) denotes a state and the matrix verb *si* 'die' in (16) denotes an achievement. The judgment of these examples is deviant. Verbs expressing states and achievements fall outside of the resultative construction because states and achievements are not actions.

Furthermore, the first subevent should denote a natural endpoint so that the second subevent, i.e. the resultant state, specifies the endpoint of the first subevent. It is ungrammatical if the first subevent does not have a natural endpoint (Simpson 1983, Tenny 1994, Levin and Rappaport Hovav 1995, among others).

Recall that the function of F is to close off the open range of the matrix verb and to denote the culmination in temporal extension. The existence of F in Chinese resultative constructions entails that the matrix verb denotes an open range and an unbound event. The unbound event is incompatible with the resultant state, which has to be closed off by F first and then it can be followed by the resultant state. On the other hand, the nonexistence of F in English resultative constructions entails that the matrix verb is able to denote a bound event that has a natural endpoint. Though some verbs in English, such as *laugh* in (1d), denote activities, activities may shift to accomplishments when the verb combines with the resultative predicate in English.¹⁴

It has been noted in the literature that unlike English, Chinese does not have verbs expressing accomplishments (Chu 1976, Tai 1984, Szeto 1988, Smith 1991). To denote accomplishments in Chinese, the verb must combine with a resultative verb. The contrast can be observed in the following examples:

- (17) a. #*Jc* 'n wrote a letter yesterday, but he didn't finish it.
 Zhangsan zuotian xie-le yi-fen xin,
 Zhangsan yesterday write-Perf one-Cl letter
 keshi mei xie-wan.
 but not write-finish
 '(lit) Zhangsan wrote a letter yesterday, but he
 didn't finish it.'
- b. #*Jc* 'n wrote a letter yesterday, but he didn't finish it.
 Zhangsan zuotian xie-le yi-fen xin,
 Zhangsan yesterday write-Perf one-Cl letter
 keshi mei xie-wan.
 but not write-finish
 '(lit) Zhangsan wrote a letter yesterday, but he
 didn't finish it.'

¹⁴ See, for example, Tenny 1987, 1994, Parsons 1990, Pustejovsky 1991, Smith 1991, Verkuyl 1993, among many others for discussions on the shifting between event types.

- c. #Zhangsan zuotian xie-wan-le yi-fen xin,
 Zhangsan yesterday paint-finish-Perf one-Cl letter
 keshi mei xie-wan.
 but not write-finish
 'Zhangsan wrote a letter yesterday, but he didn't
 finish it.'

The predicate *write a letter* can denote an accomplishment. Therefore, the conjunction in (17a) is contradictory and becomes odd. In Chinese the verb *xie* 'write' states the fact that the action of writing took place but not necessarily that Zhangsan finished writing a letter. The judgment of the conjunction in (17b) is perfectly acceptable. Notice that the perfective marker *le* in (17b) does not indicate completion but termination (Smith 1990).¹⁵

¹⁵ Sybesma (1997) argues that the aspect marker *le* is a resultative verb. However, he acknowledges that if *le* in (17b) is treated on a par with the resultative verbs, such as *wan* 'finish' in (17c), the contrast between (17b) and (17c) cannot be explained. Furthermore, he points out that affective verbs, such as *chi* 'eat' in (i), seem different from effective verbs, such as *xie* 'write' in (17b).

(i) #Wo chi-le yi-tiao yu, keshi meiyou chi-wan.
 I eat-end one-Cl fish but not eat-finish
 'I ate a fish, but I didn't finish it.'

(ii) is contradictory because *le* is interpreted as a resultative verb that literally means 'end'. However, it is not the case that a predicate that consists of an affective verb and *le* always denotes accomplishments. In some situation when *le* follows an affective verb, the predicate can still denote activities instead of accomplishments. (ii) shows the contrast between the two interpretations of *le*. The example is due to Ma (1983: 13).

(ii) Kan ni, chi-le liang-wan fan, na yi wan ye meiyou chi-le.
 look you eat-Perf two-bowl rice which one-bowl also not eat-end
 'Look at you! You ate two bowls of rice, but you can't eat them up.'

(iii) is perfectly acceptable. The first *le* is interpreted as an aspect marker whereas the second one is a resultative verb. The event denoted by the first clause is an activity. I suggest that *le* can function as either an aspect marker or a resultative verb. Ma (1993) points out that in Beijing dialect the second *le* in (iii) is pronounced as *lou* whereas the first one is pronounced as *le*. Standard Chinese does not have such phonological distinction. It turns out that *le* carries two meanings and thus ambiguity arises.

Therefore, (17b) is not a contradictory statement.¹⁶ To change the event to an accomplishment, the resultative verb *wan* 'finish' is added. The event of (17c) has a natural final endpoint by virtue of the existence of the resultative verb and thus is interpreted as an accomplishment. The conjunction in (17c) is contradictory. Recall that resultative VV compounds are formed by moving the resultative predicate from the embedded resultative clause to F. The shifting between activities and accomplishments in Chinese suggests that the existence of F in Chinese is necessary.

Dowty (1979) points out that (18) is ambiguous: (a) John could have the intention of painting a picture but changed his mind and did nothing at all, or (b) John started painting a picture and almost but not quite finished it. The adverb *almost* can have scope either over the action or over the result. However, as noted by Tai (1984), (19) is not ambiguous. It only has an action reading: Zhangsan has not started painting.

- (18) John almost painted a picture.
 (19) Zhangsan jihu hua-le yi-zhang hua.
 Zhangsan almost paint-Perf one-Cl picture
 'Zhangsan almost started painting a picture.'

These examples further suggest that contrary to English, simple action verbs in Chinese only denote unbound events, namely activities. Accomplishments cannot be formed without the existence of F in Chinese.

The discussion can be summarized as follows. In English, action verbs can denote accomplishments whereas in Chinese action verbs do not denote accomplishments but activities. To denote accomplishments, the mediation of F is necessary in Chinese. In this regard, parametric variation between Chinese and English with respect to the (non)existence of F can further be supported by the

¹⁶ As pointed out by Lisa Cheng (personal communication), in some cases such as (f), the reading of completion seems salient. Unfortunately, I do not have any explanation in this paper.

(f) #Zhangsan zuotian kan-le yi-ben shu, keshi mei kan-wan.
 Zhangsan yesterday read-Perf one-Cl book, but not read-finish
 'Zhangsan read a book yesterday, but he didn't finish reading it.'

different aspectual properties of action verbs in these two languages.

5 Conclusion

Under the theory of parameters, to achieve explanatory adequacy, it is necessary to restrict the options for parameters provided by Universal Grammar. On minimalist assumptions, there is only one computational system of human language invariant across languages and one lexicon. Cross-linguistic variation is determined by detectable properties particularly limited to general properties of lexical items.

The violability of Simpson's generalization in Chinese is argued to follow from the existence of a functional category F, coupled with the Generalized Control Theory. The assumption that the presence of the functional category F in Chinese but not in English not only accounts for the violability of Simpson's generalization in Chinese but also is motivated by empirical evidence. Consequently, Simpson's generalization is not a parameter that has to be learned. What needs to be learned is the functional category F. On conceptual grounds, it is desirable because the parametric properties are restricted to the lexicon. If the analysis along the lines I have defended in this paper is on the right track, the conclusion may lend additional support to the claim that parametric variation should be limited to the properties of lexical items, leaving the computational system invariant.

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SZE-WING TANG

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