

# **A long-distance dependency analysis of Mandarin *bei*-passives in LFG**

**Brian Hsu  
Haverford College  
2009**

## Abstract

This paper presents an account of *bei*-passives in Mandarin Chinese within the framework of Lexical Functional Grammar (LFG). I propose treating *bei*-passives as a type of *long-distance dependency* (LDD) construction analogous to English *tough*-type sentences, and discuss the merits of this analysis. Recent research on the topic has generally concluded that “short” and “long” passives have separate derivations (Huang, Li, & Li 2009). Since this account can be challenged upon grounds of desired theoretical simplicity and explanatory adequacy, one desired outcome is a uniform derivation of *bei*-sentences. The LDD analysis proposed here is able to account for the defining properties of long *bei*-passives, including unbounded dependencies and resumptive pronouns. I also argue that the unique control structure of “adversative passives” can be explained naturally by an LDD structure. However, certain differences between short passives and long passives cannot be completely accounted for under the present account, and should encourage further inquiry.

## 1.0 Introduction

The structure of Mandarin passive sentences with *bei* has historically been one of the most heavily discussed issues in Chinese syntax. In the past two decades, research within the Principles & Parameters (P&P) framework has produced new analyses for Chinese passives to account for its seemingly idiosyncratic forms. Much of this work concludes that *bei*-passives in fact have multiple derivations producing separate syntactic structures, which I refer to as the non-uniform analysis. This thesis explores the creation of a uniform account within the framework of Lexical-Functional Grammar (LFG), a constraint-based formal grammar.

In the introductory sections to follow, I will first summarize the essential characteristics of *bei*-sentences, discuss past theories of their derivations, and the present non-uniform account. The latter half of the paper begins with a brief presentation of LFG formalism and theory relevant to missing-object constructions, followed by a proposed account of *bei*-passives within LFG.

### 1.1 The Mandarin *bei*-passive

Passive sentences with *bei* in Mandarin have proven rather difficult to succinctly characterize due to their numerous possible realizations, so I will present their various forms in roughly descending order of frequency. The canonical *bei* passive in Mandarin is a missing-object construction that takes the following forms below. By convention, a distinction is made between “long passives” and “short passives.” Long passives like (1) include an agent/cause NP (*Lisi* in the given examples) following *bei*, and short passives such as (2) have no post-*bei* agent NP. *Bei* is understood as the indicator of a passive relation, and as the matrix verb whose subject precedes it.

- (1) Zhangsan bei Lisi ma-le  
 Zhangsan BEI Lisi scold-PFV  
 'Zhangsan was scolded by Lisi'<sup>1</sup>
- (2) Zhangsan bei ma-le  
 Zhangsan BEI scold-PFV  
 'Zhangsan was scolded'

Generally, the subject of *bei* is coreferent with a missing-object gap of a post-*bei* VP. Under most circumstances, that subject cannot be coindexed with an overt NP in the object position as shown in (3) and (4). The parentheses around *Lisi* indicate that the post-*bei* agent NP is optional.

- (3) \* Zhangsan bei (Lisi) ma-le ta  
 Zhangsan BEI Lisi scold-PFV him  
 'Zhangsan was scolded (by Lisi)'
- (4) \* Zhansan bei (Lisi) ma-le Zhangsan  
 Zhangsan BEI Lisi scold-PFV Zhangsan  
 'Zhangsan was scolded (by Lisi)'

However, both short and long passives permit instances where the embedded object position is filled but not coreferent with the matrix subject. These sentences are usually termed 'adversative passives' (Huang, Li, & Li 2009). In (5-7), the matrix subject *Zhangsan* is interpreted as having suffered the consequences of a situation described in the post-*bei* complement. In most adversative passives, the subject is interpreted as the possessor of the object NP as in (5). However, this need not be the case with idiomatic expressions like (6) such as in less common, context-dependent examples like (7), interpreted as *Zhangsan* being negatively affected by *Lisi's* hitting of two people.

- (5) Zhangsan bei (Lisi) tou-le qian  
 Zhangsan BEI Lisi steal-PFV money  
 'Zhangsan had his money stolen (by Lisi)'

---

<sup>1</sup> PFV denotes a perfective aspect marker, not relevant to this discussion.

- (6) Zhangsan bei (Lisi) chao-le youyu  
 Zhangsan BEI Lisi fry-PFV squid  
 'Zhangsan was fired by Lisi'
- (7) Zhangsan bei (Lisi) da-shang-le san-ge ren  
 Zhangsan BEI Lisi hit-wound-PFV two person  
 'Zhangsan had Lisi hit and wound two people' (Lin 2009)

We can summarize Mandarin passives with *bei* as follows: long passives have an agent NP following *bei*, short passives have no agent NP. Both forms are typically “gapped” by a missing-object. However, object gaps can also be filled with a non subject-coreferent NP in adversative passives.

## 1.2 Long versus short passives

In the each of the sentences given so far, the agent/cause NP following *bei* has been optional. That is, both short and long form passives have been equally acceptable. However, short passives are more limited than long passives in their potential distribution, as summarized extensively by Huang, Li, & Li (2009). Firstly, long passives allow for unbounded dependencies between the subject of *bei* and an embedded object gap. Short passives require this co-indexing relation to be local, allowing exactly one verb between *bei* and the object gap. Note the contrast in acceptability between (8) and (9) where the gap follows the verb ‘hit.’

- (8) Zhangsan bei Lisi pai Wangwu da-le.  
 Zhangsan BEI Lisi send Wangwu hit-PFV  
 'Zhangsan was “sent-Wangwu-to-hit” by Lisi.'
- (9) \* Zhangsan bei pai Wangwu da-le  
 Zhangsan BEI send Wangwu hit-PFV  
 'Zhangsan was “sent-Wangwu-to-hit.” (Huang, Li, & Li 2009)

Long passives, but not short passives, allow for “gapless” forms where the subject of *bei* is coreferent with a resumptive pronoun in the object position as in (10). Crucially, a resumptive pronoun

may only be used if there is some extra content following it, such as *yixia* “once,” otherwise the sentence is ungrammatical as noted previously in (3).<sup>2</sup>

(10) Zhangsan bei Lisi ma-le ta yixia  
Zhangsan BEI Lisi scold-PFV him once  
'Zhangsan was scolded once by Lisi'

(11) \* Zhangsan bei ma-le ta yixia  
Zhangsan BEI scold-PFV him once  
'Zhangsan was scolded once'

Differences also exist with regard to the placement of certain adverbials. Whereas long passives allow for both manner and place adverbials following the agent argument, only manner adverbials may appear in short passives. In the examples below, a manner adverbial *momingqimiao de* ‘confusingly’ can occur within short and long passives, whereas a place PP adverbial *zai xuexiao* ‘at school’ can only appear in a long passive.

(12) Zhangsan bei (Lisi) momingqimiao de pian-zou-le  
Zhangsan BEI Lisi confused DE abduct-PFV  
'Zhangsan was abducted in a state of confusion (by Lisi)'

(13) Zhangsan bei \*(Lisi) zai xuexiao pian-zou-le<sup>3</sup>  
Zhangsan BEI Lisi at school abduct-PFV  
'Zhangsan was abducted at school' (Huang, Li, & Li 2009)

Lastly, only long passives, in literary styles, allow for an optional *suo* particle, whose function in this case is purely stylistic.

---

<sup>2</sup> A recent account by Lin (2009) argues that the extra content must be a weak NP, which licenses a variable to be bound by an Operator.

<sup>3</sup> The asterisk ‘\*’ here indicates that the sentence is ungrammatical without the presence of the element within parentheses.

- (14) Zhaxie shiqing bu neng bei \*(tamen) suo liaojie  
these thing not can BEI they SUO understand  
'These things cannot be understood by them' (Huang, Li, & Li 2009)

These four differences with regard to long distance dependencies, resumptive pronouns, adverbial placement, and the *suo* particle have been taken to justify non-uniform accounts of the *bei*-construction, which will be described in the following section. Regardless of the framework used for analysis, these distributional facts must be accounted for under any analysis of the Mandarin *bei*-construction.

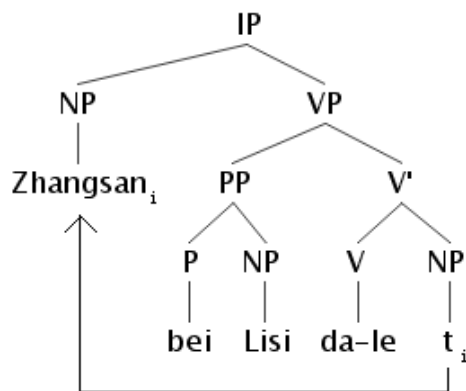
## 2. Movement and Complementation

To better understand motivations behind contemporary analyses of *bei*-sentences, a quick historical overview is quite helpful. Early attempts at deriving the *bei*-construction generally followed two methods – the movement approach and the complementation approach. I will present a brief overview in line with the more thorough discussion by Huang, Li, & Li (2009).

### 2.1 Movement

Advocates of a movement analysis first treated *bei*-sentences as a case of A-movement on par with the English *be*-passive.

(15) 'Zhangsan was hit by Lisi'



The movement approach has the benefit of accurately generating gapped passive forms, and predicting the general ungrammaticality of overt elements in the object position in sentences like (3) and (4). However, the treatment of the *bei*-NP sequence as a PP becomes highly problematic. PPs in Mandarin are generally highly flexible with regard to their placement, yet any alternative position for [*bei* NP] leads to ungrammaticality. Furthermore, short passive sentences such as (2) would necessarily be instances of preposition stranding, a phenomenon for which there is no other evidence in Mandarin. All this suggests that [*bei* NP] is not a PP.

Additionally, the movement analysis is unable to account for adversative passives like (5-7), in which there is no object gap following the embedded verb. In this case, the origin of the “experiencer” NP *Zhangsan* is unclear.

Lastly, the movement approach suggests that the subject NP (*Zhangsan*) is uniquely assigned a patient theta role by the embedded verb. However, subjects in *bei*-passives can readily be modified by subject-oriented adverbs like *guyi* ‘intentionally,’ as in (16). This suggests that the subject position is in fact assigned a sort of Proto-Agent theta role of the sort discussed by Dowty (1991)



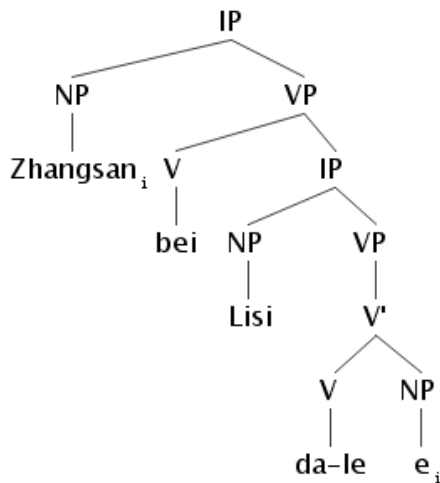
- (16) Zhangsan guyi bei (Lisi) da-le  
 Zhangsan intentionally BEI Lisi hit-PFV  
 'Zhangsan intentionally got hit (by Lisi)'

Given these weaknesses of the movement approach, many have extensively argued for *bei*'s status as not a preposition, but a verb (Her 1989, Ting 1998, Tang 2001), which brings us to the origin of the complementation approach.

## 2.2 Complementation

The complementation approach proposes that the passive structure is base-generated by the verb *bei*. In this analysis, *Bei* subcategorizes for a subject and a clausal complement, in which a deleted object position is coindexed with the subject.

- (17) 'Zhangsan was hit by Lisi'



The complementation approach corrects many of the weaknesses seen in the movement analysis. It properly captures *bei*'s fixed position within the constituent hierarchy, and the fact that it is not a preposition. It also allows for the subject *Zhangsan* to receive an agent theta-role from *bei*, consistent with data like (16), and would be capable of generating adversative passives by removing the coindexing between the matrix NP and complement object.

However, this analysis requires the controversial use of an empty pronoun ‘pro’ in an object position. Furthermore, it is now unclear as to how to predict the ungrammaticality of matrix subject-coreferent pronouns in sentences like (3), which are available to typical complementation structures in Mandarin with verbs like *shuo* ‘to say’ (18).

(3) \* Zhangsan<sub>i</sub> bei (Lisi) ma-le ta<sub>i</sub>  
Zhangsan BEI Lisi scold-PFV him  
‘Zhangsan was scolded (by Lisi)’

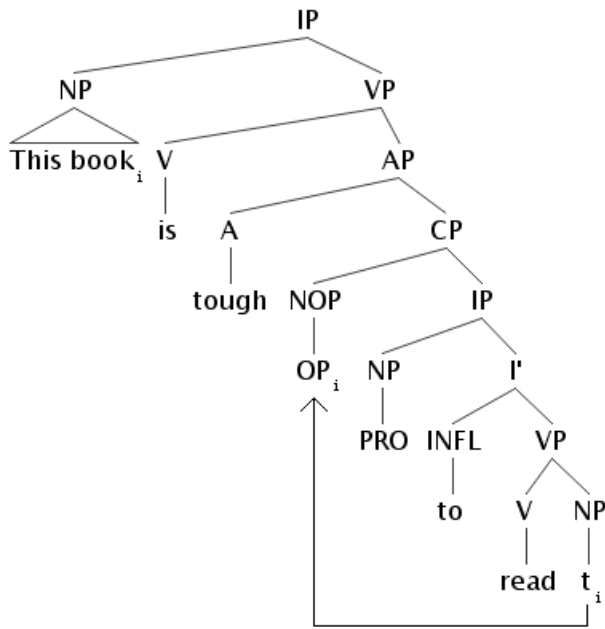
(18) Zhangsan<sub>i</sub> shuo Lisi ma-le ta<sub>i</sub>  
Zhangsan say Lisi scold-PFV him  
‘Zhangsan says that Lisi scolded him’

In essence, it becomes clear that *bei*-sentences have characteristics of both movement and complementation structures, but neither alone is able to properly accommodate for all features of the construction.

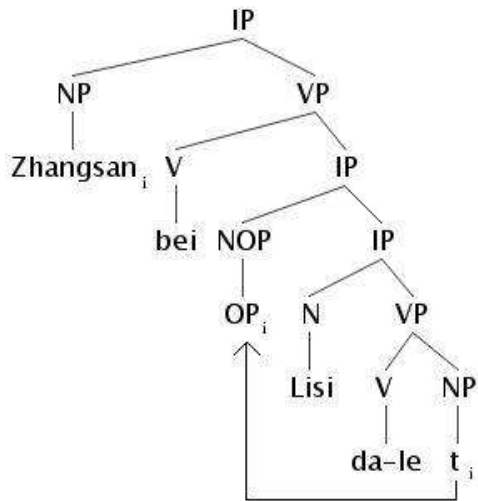
### 3. Present account within Principles & Parameters

The present account for Mandarin long passives was proposed by Feng (1995), and has been adopted as the dominant analysis within the Principles & Parameters framework (Huang, Li, & Li 2009). The structure of long passives is regarded as analogous to *tough*-type sentences in English (e.g. *This book is tough to read*), which are analyzed as instances of A’ null operator (NOP) movement (Huang, Li, & Li 2009). The NOP movement analysis for *This book is tough to read* is depicted in (19), followed by its proposed application to a long passive in Mandarin in (20).

(19) 'This book is tough to read'



(20) 'Zhangsan was hit by Lisi'



(Huang, Li, & Li 2009)

The NOP movement structure is able to capture the respective benefits both the movement and complementation approaches, as it includes aspects of both movement and complementation structures. Furthermore, unbounded dependencies, found in *bei* long passives, are a central feature of

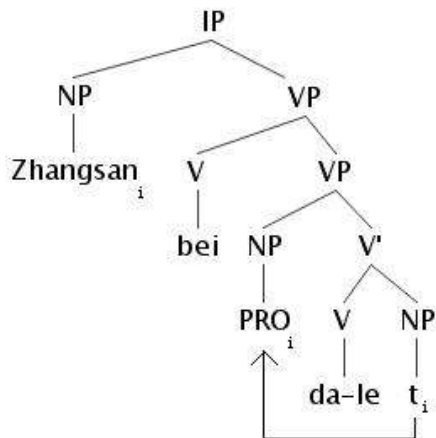
A'-movement. It is also noted that *Bei* passives are subject to extraction islands, another essential characteristic of A'-movement.

According to this derivation, a null category object is moved to a null operator position at the embedded clause boundary, which is controlled by the matrix subject. It maintains a constituent hierarchy quite similar to that found in the complementation approach, and allows for a thematic subject of *bei*. Movement within the complement clause accounts for the ungrammaticality of an overt subject-coindexed NP in the object position.

Once we've assumed a NOP movement approach to long passives, the question arises as to whether short passives are related in their derivation. Having established that in long passives *bei* subcategorizes for an embedded IP, advocates of a uniform approach have claimed that short passives are simply agent-deleted equivalents of long passives, given that Mandarin permits phrases to have null subjects. However, citing the differences in distribution – in unbounded dependencies, resumptive pronouns, the *suo* particle and adverbial placement – many scholars have proposed that the two passive forms must be derived by two *bei* verbs with different selectional properties (Huang, Li, & Li 2009, Tang 2001, Ting 1998).

In order to account for short passives, Huang, Li, & Li propose that unlike long passives, they are best analyzed as a case of A-movement analogous to *get*-passives in English. *Bei* selects an agent subject and a VP complement which undergoes passivization. Within VP, a null PRO is moved from an object position to the specifier of VP (following the VP-internal Subject Hypothesis), and is controlled by the subject of *bei*.

(21) 'Zhangsan was hit'



This analysis would account for the ungrammaticality of place adverbs but not manner adverbs, if one maintains that place adverbials only occur under IP and not VP. Furthermore, unbounded dependencies and resumptive pronouns are not allowed in cases of A-movement like the above (Huang, Li, & Li 2009). Though it appears derivationally similar to the long passive structure at first glance, it rests upon the critical assumption that in short passives, but not long passives, the complement verb must undergo passivization. Unlike English verbs, passivized verbs in Mandarin are not easily distinguished from their active counterparts by differences in inflection. Nonetheless, it is noted that short passives, like long passives, involve instances of both movement and complementation.

Despite being able to account for the aforementioned differences between short and long passives, this non-uniform account of *bei* has its theoretical shortcomings. Ting (1998) notes that there is nothing to block the generation of short passives within the NOP movement structure, since Mandarin sentences are known to readily take null PRO subjects (Huang 1984). This reduces the motivation for a separate short passive structure to a limited selection of cases. A separate derivation then seems to be an ad hoc solution to account for a small set of problematic data.

In considering the choice between uniform and non-uniform accounts, we are once again confronted with the problem of descriptive versus explanatory adequacy at the heart of modern linguistics. It is theoretically undesirable to claim that multiple *beis* can project separate structures. However, a uniform account will be preferable insofar as it is able to descriptively account for the troubling data.

This thesis examines the creation of an account for the Mandarin *bei*-construction within the framework of Lexical-Functional Grammar (LFG), which has the benefit of having pursued constraint-based approaches to missing-object constructions. I will argue that the characteristics of *bei* are best accounted for under a *long-distance dependency* (LDD) structure analogous to *tough*-predicates<sup>4</sup>. In the next section, I will present an overview of LFG and a survey of its general theoretical claims most relevant to the structure of Mandarin passives.

#### **4.1 Introduction to Lexical-Functional Grammar**

Lexical-Functional Grammar (LFG) is a generative model of syntax developed in response to certain criticisms of the dominant transformational approach. LFG is not a theory but a formal architecture for modeling syntax, based on the following theoretical motivations.

Across all languages there is an inverse relationship between the complexity of constituent structure hierarchies and complexity in morphological forms. Morphologically impoverished languages such as English exhibit highly configurational phrase structure, while languages with rich morphological systems such as Austronesian languages allow for relatively fluid organization of constituents. When it comes to the expression of grammatical relations, “morphology competes with syntax” (Bresnan 2001). Early generative models, developed on the basis of highly configurational languages like English, were

---

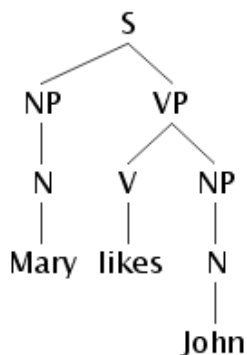
<sup>4</sup> Hence, LDD will refer to a class of constructions in LFG, “unbounded dependency” will refer to non-local linkages between a gaps and antecedents.

deemed inadequate to account for non-configurationally encoded grammatical information within more “lexocentric” languages. Furthermore, it seemed tenuous at best to claim that even non-configurational languages have their grammatical relations derived exclusively via a hierarchical underlying structure (Bresnan 2001).

To account for these facts, the alternative framework first proposed by Bresnan and Kaplan (1982), LFG, posits that natural language utterances are composed of multiple levels of representation which are derived in parallel, rather than in series as claimed in transformational frameworks. In LFG, syntactic information is represented by both a *constituent structure* (c-structure) and a *functional structure* (f-structure). C-structure refers to the hierarchical organization of constituents, represented by the phrase structure rules and tree diagrams similar to kind developed in transformational grammars. F-structure contains all of an utterance’s abstract grammatical information represented in the form of an attribute-value matrix. Here is a sample representation in LFG of the English sentence *Mary likes John*.

(22) Mary likes John

*C-structure*



*F-structure*

|       |                            |
|-------|----------------------------|
| PRED  | 'like <SUBJ,OBJ>'          |
| TENSE | PRES                       |
| SUBJ  | [ PRED 'Mary'<br>NB SING ] |
| OBJ   | [ PRED 'John'<br>NB SING ] |

Within an f-structure matrix, attributes are arranged in the left column while values are on the right. Attributes are symbols, such as SUBJ, OBJ, TENSE, NB, or PRED. A value can either be a symbol (e.g. SING, PRES), a semantic form in single quotes (e.g. 'Mary,' 'John') or another embedded attribute-

value matrix. All semantically meaningful content possesses a PRED attribute whose value is a semantic form in quotes. F-structure information is partly encoded within the lexical entries of individual words, and partly within functional equations affixed to our c-structure rewrite rules. Only morphologically complete words can form the terminal nodes of c-structure trees. Below is a miniature LFG grammar capable of generating *Mary likes John*.

*Annotated c-structure rewrite rules*

- (23) S → NP VP  
           ↑SUBJ=↓      ↑=↓
- (24) NP → N  
           ↑=↓
- (25) VP → V NP  
           ↑=↓      ↑OBJ=↓

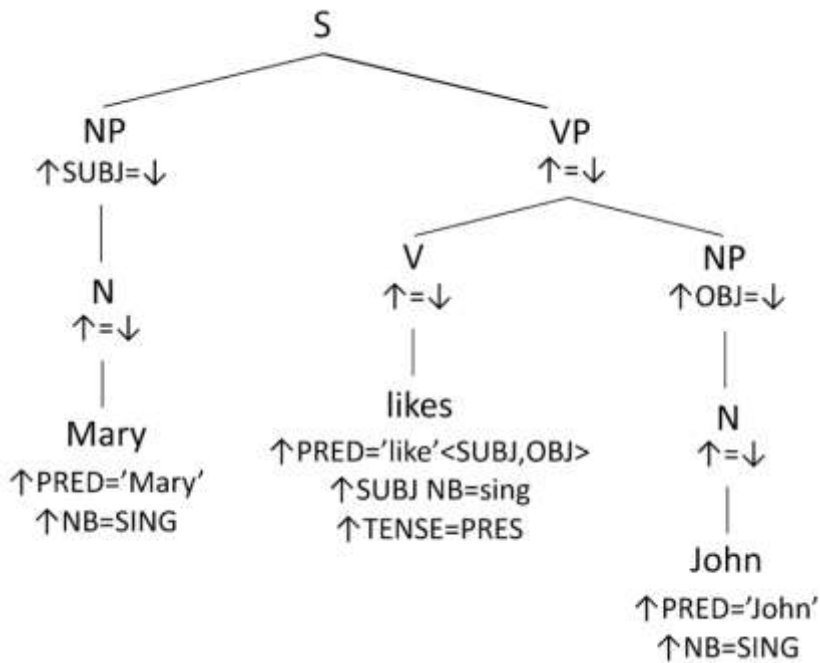
*Lexical entries*

- (26) N → Mary  
           ↑PRED='Mary'  
           ↑NB=SING
- (27) N → John  
           ↑PRED='John'  
           ↑NB=SING
- (28) V → Likes  
           ↑PRED='like'<SUBJ,OBJ>  
           ↑SUBJ NB=sing  
           ↑TENSE=PRES

The annotated c-structure rewrite rules specify functional relationships between mother and daughter node. Upward arrows '↑' specify information about the mother node and downward arrows '↓' refer to the daughter node. Thus, a functional identity equation like '↑=↓' indicates that the mother node's functional information is identical to that of its daughter node. In (23), '↑SUBJ=↓' specifies that the mother node S contains an attribute PRED whose value is the f-structure information contained in its daughter node NP. Rewrite rules for individual lexical entries are represented in the same manner. The rule '↑SUBJ NB=sing' in (28) imposes a constraint specifying that its mother node's attribute SUBJ must have 'NB=SING' as part of its value. The annotated C-structure tree appears as follows:



(29)



This ultimately yields the f-structure matrix repeated below.

(30)

|       |  |      |        |    |      |
|-------|--|------|--------|----|------|
| PRED  | 'like' <SUBJ, OBJ>   |      |        |    |      |
| TENSE | PRES   |      |        |    |      |
| SUBJ  | <table border="1"><tr><td>PRED</td><td>'Mary'</td></tr><tr><td>NB</td><td>SING</td></tr></table> | PRED | 'Mary' | NB | SING |
| PRED  | 'Mary'   |      |        |    |      |
| NB    | SING   |      |        |    |      |
| OBJ   | <table border="1"><tr><td>PRED</td><td>'John'</td></tr><tr><td>NB</td><td>SING</td></tr></table> | PRED | 'John' | NB | SING |
| PRED  | 'John'   |      |        |    |      |
| NB    | SING   |      |        |    |      |

In LFG, abstract grammatical categories such as subject and object are assumed to be linguistic universals, independent of language-specific phrase structure configuration. These are referred to as grammatical functions (GFs), represented in f-structure as SUBJ (subject), OBJ (object), OBL (oblique), etc.

In the case of verbs, the value of PRED also contains a subcategorization frame within arrow brackets specifying subcategorized GFs, also referred to as dependents. For the lexical entry for *like* in (28), the verb selects two GFs, a SUBJ and an OBJ.

Once all functional equations have been instantiated and the minimally complete f-structure representation has been built, it is subject to a series of well-formedness constraints determining its acceptability, quickly introduced below (Kaplan and Bresnan 1982).

- (31) *Completeness*: For any PRED trait within an f-structure, each of its dependent GFs must appear as a trait within that f-structure. (Completeness excludes ill-formed examples like \**John hit*. PRED of *hit* selects an OBJ)
- (32) *Coherence*: Each GF must be designated by a PRED within its f-structure nucleus. (Coherence excludes ill-formed examples like \**John slept the child*. An OBJ is not selected by PRED of *slept*)
- (33) *Uniqueness*: A given attribute may have at most one value.

Since phrase structure is not seen as being derived from an underlying deep structure, LFG does not support the sort of movement used within P&P or Minimalism. Thus, empty category phenomena like topicalization, raising, and other missing-object structures must be specified within f-structure by structure-sharing and control equations, or in certain cases, via lexical derivations. Since canonical *bei*-sentences in Mandarin resemble these sorts of phenomena, I will now discuss the treatment of raising and control within LFG in relation to their application to the *bei*-sentences.

#### 4.2 Functional vs. anaphoric control in LFG

Within LFG, empty category phenomena are often treated as cases of functional and anaphoric control, two structures most often used to account for raising and equi structures. Here, I will briefly describe the two forms of control, which have traditionally been said to be licensed within the lexical entries of individual verbs.

### 4.2.1 Raising

Like in other frameworks, raising refers to cases where a verb selects a subject and a verbal complement whose subject is realized as the subject of the main verb. However, the raising verb's subject is required only for syntactic well-formedness (Extended Projection Principle) and it receives its theta-information uniquely from a complement verb. In other words, the matrix subject is a syntactic but not semantic dependent of the raising verb.

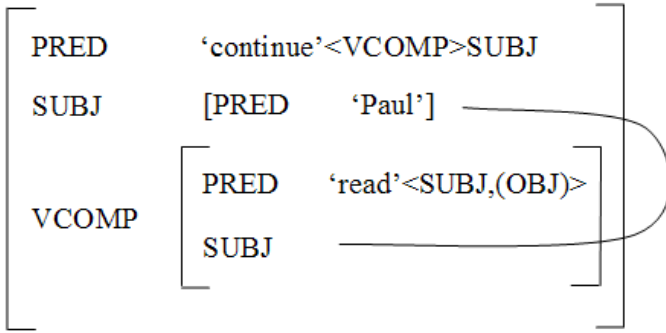
For a sentence like *Paul continues to read*, the f-structure representation contains only one subject *Paul*, whereas both verbs *continue* and *read* subcategorize for a SUBJ function within their PRED attributes. To prevent a violation of the Principle of Completeness, the main verb's SUBJ is identified with the SUBJ of its VCOMP, the verbal complement GF (as opposed to clausal complement COMP. In c-structure, VCOMPs are realized as VP, COMP as IP). This linkage is referred to either as *structure-sharing relation* or *functional control*, and is specified by a functional equation within the raising verb. The following lexical entries and f-structure representation are proposed for *Paul continues to read*. For the purposes of this discussion, extraneous f-structure features such as tense and agreement can be omitted.

(34) Paul continues to read

|    |                             |    |                                       |
|----|-----------------------------|----|---------------------------------------|
| V→ | continues                   | V→ | read                                  |
|    | ↑PRED='continue'<VCOMP>SUBJ |    | ↑PRED='read'<SUBJ,(OBJ)> <sup>5</sup> |
|    | ↑SUBJ=↑VCOMP SUBJ           |    |                                       |

---

<sup>5</sup> Parentheses indicate that the OBJ GF is optional and hence not required for Completeness.



Within the PRED attribute of *continues*, we specify that its SUBJ is a syntactic but not semantic dependent of that verb by placing it outside of the arrow brackets of its subcategorization frame. The functional control relation is established by the second functional annotation ‘ $\uparrow$ SUBJ= $\uparrow$ VCOMP SUBJ’, which indicates identity between the subject of *continues* with the subject of its verbal complement. Thus, the SUBJ function of *read* is realized as the SUBJ of *continues*.

Raising is only one instance of functional control, also used in most instances of topicalization, relative clauses, and question structures. Whereas raising is said to be lexically specified, other functional control phenomena can be specified structurally via annotated c-structure equations. Noting that some sort of structure-sharing identity seems to be involved in *bei*-sentences between the matrix subject and an embedded object, we could attempt to treat *bei* as a sort of raising verb by hypothesizing the lexical entry below. In (36) a functional equation introduces a structure-sharing identity between the subject of *bei* and an object NP within its verbal complement.

- (35) V  $\rightarrow$  bei  
 $\uparrow$ PRED= $\uparrow$ bei’<VCOMP>SUBJ  
 $\uparrow$ SUBJ= $\uparrow$ VCOMP OBJ

However, this has many immediately apparent weaknesses. Since raising verbs categorize for VCOMPs not COMPs, there would be no syntactic position in c-structure available for the post-*bei* NP in long passives. Thus, long passives would be difficult to account for under a standard functional

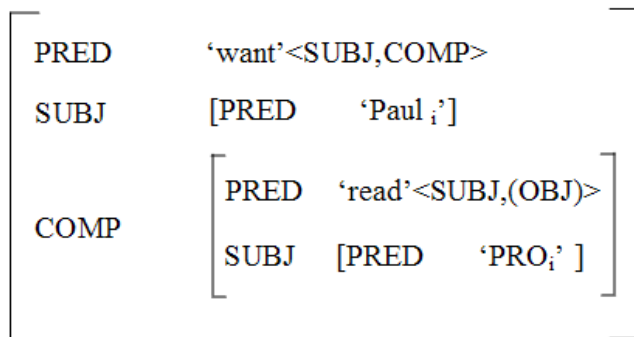
control/raising account. Furthermore, as has been already shown, the subject position of *bei* is not semantically null, and does not receive its theta-information exclusively from a further embedded VP as this hypothesis suggests, which casts further doubt upon the feasibility of a pure raising analysis.

#### 4.2.2 Equi

In instances of equi, the missing SUBJ of a verbal complement is realized as the dependent of a more prominent, less embedded verb. While there is some ambiguity as to whether or not equi could be treated as an instance of functional control in languages like English and Chinese due to a lack of conclusive morphological evidence, I will adopt Dalrymple’s claim that equi verbs are universally cases of anaphoric control (2001). According to her analysis, unlike raising verbs, equi verbs subcategorize for a COMP complement, and not VCOMP. Furthermore, infinitive verbs can universally license an optional PRO subject to be anaphorically bound with an antecedent (Bresnan 2001). PRO can then be co-indexed with another argument via a lexically specified anaphoric control relation. In anaphoric control, the controlled element is syntactically independent of its controller (Dalrymple 2001). For example, the subject equi sentence *Paul wants to read* is represented as follows:

(36) Paul wants to read

|   |  |
|---|--|
| <p>V→ wants<br/>         ↑PRED='want'&lt;SUBJ,COMP&gt;<br/>         ↑COMP SUBJ INDEX= ↑SUBJ INDEX</p> | <p>V→ read<br/>         ↑PRED='read'&lt;SUBJ,(OBJ)&gt;<br/>         ↑TENSE=inf<br/>         (↑SUBJ PRED='PRO')</p> |
|---|--|



Along these lines, we could hypothesize a lexical entry for *bei* as an instance of equi/anaphoric control.

- (37) V→ bei  
↑PRED='bei'<SUBJ,COMP>  
↑COMP OBJ INDEX=↑SUBJ INDEX

Since *bei*'s SUBJ is subcategorized within brackets, it is identified as a semantic argument of the verb receiving some sort of proto-agent theta-role which includes agents and experiencers. This accurately predicts the matrix subject of *bei*'s ability to be modified by subject-oriented adverbs like *guyi* 'intentionally.' However, it would be quite unprecedented to allow PRO to be substituted into an OBJ position, which is identical to the criticism voiced against the complementation approach within the standard framework.

#### 4.3 Her's object equi analysis of *bei*

Previous accounts of *bei*-passives within LFG such as one by Her (1989) treat *bei* as licensing a type of object equi structure. Accordingly, *Bei* selects a subject, object, and verbal complement. *Bei* also introduces two control equations, between SUBJ and VCOMP OBJ and between OBJ and VCOMP SUBJ.<sup>6</sup>

- (1) Zhangsan bei Lisi ma-le  
Zhangsan BEI Lisi scold-PFV  
'Zhangsan was scolded by Lisi'

- (38) V→ bei  
↑PRED='bei'<SUBJ,OBJ,VCOMP>  
↑SUBJ INDEX = ↑VCOMP OBJ INDEX  
↑OBJ INDEX = ↑VCOMP SUBJ INDEX

---

<sup>6</sup> In Her's analysis, equi is analyzed as an instance of functional control, which I have represented as anaphoric control for consistency.

(39)

|       |   |
|-------|---|
| PRED  | ‘bei <SUBJ,OBJ,COMP>’   |
| SUBJ  | [PRED ‘Zhangsan <sub>i</sub> ’]   |
| OBJ   | [PRED ‘Lisi <sub>k</sub> ’]   |
| VCOMP | [PRED ‘ma’<SUBJ,OBJ><br>SUBJ [PRED ‘PRO <sub>k</sub> ’]<br>OBJ [PRED ‘PRO <sub>i</sub> ’] |

While this does account for the co-indexing patterns of *bei*-passives, it faces significant theoretical issues. Again, the existence of subject-object equi deletion is doubtful within existing theories of raising and equi. Even more critical issues arise when one has to explain why Mandarin in particular allows this sort of object equi construction in addition to more standard cases of equi, and why other languages do not seem to do so at all. Thus, this approach does not seem to be justified by cross-linguistic considerations.

Lastly, Her’s analysis does not yet address the issue of unbounded dependencies within *bei*-passives, and it is somewhat unclear how this would be done, as unbounded dependencies have not otherwise been associated with equi verbs in LFG.

### 5.1 A long-distance dependency account for *bei*-passives in LFG

Clearly, Mandarin passives cannot be accounted for as instances of simple anaphoric control nor functional control, though it has features of both. The dilemma here clearly parallels the one between movement and complementation approaches within the transformational framework, which was ultimately resolved by adopting the analysis used for the structure of *tough*-type sentences in English, a case of A’-movement which includes both predication and movement. In fact, it turns out that an

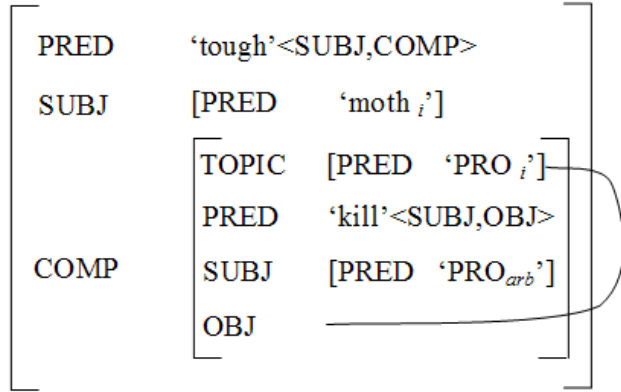
existing LFG analysis of *tough*-sentences will present a promising springboard to approach Mandarin *bei*-sentences.

Constructions that are analyzed in the transformational framework as A'-movement such as topicalization, relativization, and *tough*-movement are classified in LFG as *long-distance dependencies* (LDD), given their characteristic ability to license unbounded linkages between gaps and their referents. Mandarin long passives allow such dependencies, and have been shown to obey the island constraints that are characteristic of such constructions (Huang, Li, & Li 2009). Thus, an analysis of the *bei*-construction in LFG as a type of LDD is well-justified. Universally, LDDs are licensed by the presence of discourse functions like TOPIC and FOCUS that can be lexically specified or associated with specific c-structure nodes.

Faced with a similar anaphoric vs. functional control dilemma for *tough*-type sentences, Dalrymple and King (2000) propose that *tough*-sentences are in fact lexically specified LDDs. A *tough*-type predicate subcategorizes for a thematic SUBJ and an embedded clause COMP, while introducing a TOPIC discourse function within COMP controlled by SUBJ. Lastly, it introduces a functional control equation linking TOPIC and an object within COMP. For example, the lexical entry of a *tough*-predicate and the f-structure representation of *books are tough to read* can be represented as follows, using their example.



(40) Moths are tough to kill



(41)  $V \rightarrow$  tough  
 $\uparrow$ PRED='tough'<SUBJ,COMP>  
 $\uparrow$ COMP TOPIC INDEX =  $\uparrow$ SUBJ INDEX  
 $\uparrow$ COMP TOPIC =  $\uparrow$ COMP OBJ

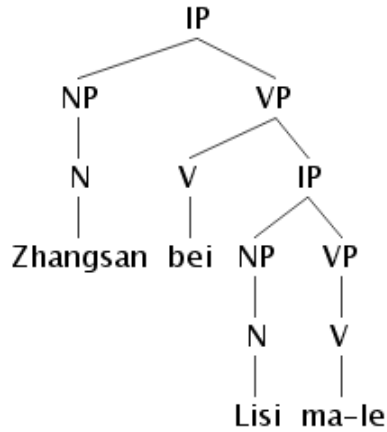
This analysis can easily be adapted to the structure of Mandarin passives, as it allows for a thematic matrix subject while retaining a functional control structure that avoids the problematic use of an object PRO. This structure has also been adopted by Sudmuk (2003) to account for the *thuuk* passive construction in Thai, which bears many resemblances to Mandarin passives. Thus, we can posit the following lexical entry for *bei*.

(42)  $V \rightarrow$  bei  
 $\uparrow$ PRED='bei'<SUBJ,COMP>  
 $\uparrow$ COMP TOPIC INDEX =  $\uparrow$ SUBJ INDEX  
 $\uparrow$ COMP TOPIC =  $\uparrow$ COMP OBJ

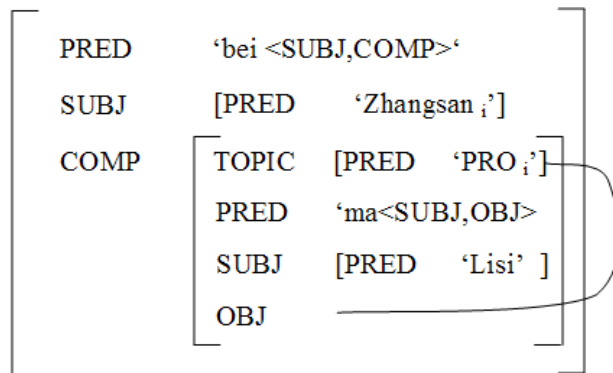
The second functional annotation introduces the anaphoric control relationship between SUBJ and the TOPIC of COMP, and the third one licenses functional control between TOPIC and a within-clause OBJ. This accounts very well for the canonical realization of the *bei*-construction, the gapped long passive, whose c-structure and f-structure representations are shown below.

- (1) Zhangsan bei Lisi ma-le  
 Zhangsan BEI Lisi scold-PFV  
 'Zhangsan was scolded by Lisi'

(43)



(44)



In this analysis, the matrix subject *Zhangsan* is properly treated as a thematic subject of *bei*. By positing a functional control relation within COMP, it accurately predicts the ungrammatical instances of a matrix subject coreferent NP in its object position like (3) and (4).

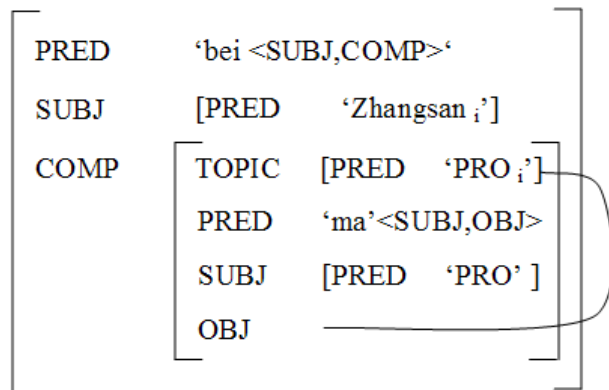
- (3) \* Zhangsan bei (Lisi) ma-le ta  
 Zhangsan BEI Lisi scold-PFV him  
 'Zhangsan was scolded (by Lisi)'

- (4) \* Zhansan bei (Lisi) ma-le Zhangsan  
 Zhangsan BEI Lisi scold-PFV Zhangsan  
 'Zhangsan was scolded (by Lisi)'

This LDD structure can also account for gapped short passives. In this case, the SUBJ of COMP is realized as the null pronoun 'PRO,' which does not affect the structure-sharing between TOPIC and another GF.

- (2) Zhangsan bei ma-le  
 Zhangsan BEI scold-PFV  
 'Zhangsan was scolded'

(45)



Lastly, we must modify the current lexical entry in order to allow unbounded dependencies between TOPIC and an embedded GF. Languages vary in what GFs are allowed to be structure-shared with TOPIC (Dalrymple and King 2000); in Chinese *bei*-passives, it seems that structure-sharing is only permitted between TOPIC and an OBJ GF. (46-48) show that extractions from other types of GFs such as SUBJ, OBL (oblique) and ADJUNCT are not permitted. In part, this is likely because of restrictions upon what phrase structure categories may occur as SUBJ. OBLs are generally PPs, and adjuncts are often PPs or AdvPs, which cannot occupy the position of SUBJ, restricted to NPs. That *bei*-passives do not allow an extraction from COMP SUBJ (a subject island) is expected under an LDD analysis.

- (46) \*Zhangsan bei [[\_\_]<sub>SUBJ</sub> da-le Lisi]  
 Zhangsan BEI hit-PFV Lisi

- (47) \*Xiang Zhangsan bei [Lisi [\_\_]<sub>OBL</sub> jie-le qian]  
 Toward Zhangsan BEI Lisi borrow-PFV money

- (48) \*henhen-de bei [Lisi [ ]<sub>ADJUNCT</sub> da-le Zhangsan]  
 Cruelly BEI Lisi hit-PFV Zhangsan

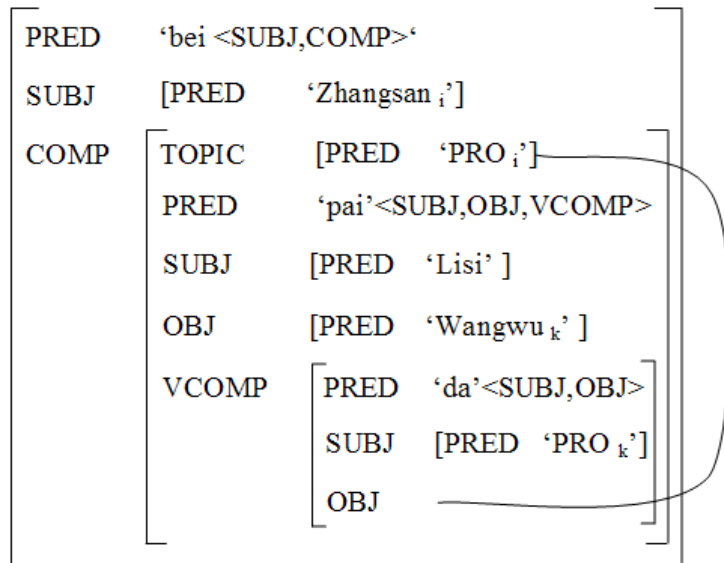
We represent the constraint on the dependency path of TOPIC within a revised lexical entry for *bei* in (49). In the third functional equation, '{COMP|VCOMP}\*' indicates that OBJ may be embedded within any number (0, 1, multiple) of intervening embedded clauses.

- (49) V → bei  
 ↑PRED='bei' <SUBJ,COMP>  
 ↑COMP TOPIC INDEX = ↑SUBJ INDEX  
 ↑COMP TOPIC = ↑COMP {COMP|VCOMP}\* OBJ

This allows us to generate long passives with unbounded dependencies like (8), repeated below.

- (8) Zhangsan bei Lisi pai Wangwu da-le.  
 Zhangsan BEI Lisi send Wangwu hit-PFV  
 'Zhangsan was "sent-Wangwu-to-hit" by Lisi.'

(50)



An analysis of Mandarin *bei*-passives as a lexically specified LDD analogous to *tough*-sentences accounts quite well for the canonical gapped *bei*-passive, in both short and long forms.

## 5.2 Resumptive pronouns as evidence for an LDD account

The similarity of resumptive pronoun distribution in *bei*-passives and in relative clauses was one of the primary motivations behind the null operator analysis of *bei*, since both are cases of A' movement (Huang, Li, & Li 2009, Ting 1998). Similarly, in LFG, resumptive pronouns, like unbounded dependencies, are a defining characteristic of LDD constructions. Some languages make extensive use of anaphoric binding in LDDs, whereas resumptive pronoun use is marginal in English and Chinese. However, it is generally agreed upon in all frameworks that licensing conditions for gaps and resumptive pronouns are not identical (Lin 2009, Falk 2002).

Thus, in cases where a resumptive pronoun can optionally appear such as (10), we can say that the conditions are such that either functional or anaphoric control will be well-formed. Within the transformational A'-movement analysis, Lin (2009) argues the licensing conditions for resumptive are semantic, driven by the presence of Weak NP. Investigations into the nature of the syntactic and semantic conditions necessary for anaphoric binding of resumptive pronouns in Mandarin are fairly recent, and require broader investigations into other types of LDDs in the language. However, this does not seem to present a significant theoretical problem for an LDD analysis of Mandarin passives for the moment, and in fact provides evidence for the LDD-based hypothesis.

In summary, the ability for Mandarin passives to exhibit unbounded dependencies and bind resumptive pronouns (though in limited contexts), provides significant motivations for their analysis as lexically derived LDD structures. Based on a theory first developed for *tough*-type sentences in LFG, such an analysis proves to be quite applicable to gapped long and short passives. It also accounts quite naturally for two crucial features, unbounded dependencies and resumptive pronouns. Now we turn to the question of adversative passives.

### 5.3 Adversative passives in the LDD account

The nature of adversative passives presents a dilemma for the LDD analysis of *bei*-passives as thus formulated. In adversative passives such as (5), there is no object gap within the complement clause of *bei*. Thus, there is no OBJ gap available to be structure-shared with TOPIC as required by the functional control equation within *bei*.

- (5) Zhangsan bei (Lisi) tou-le qian  
Zhangsan BEI Lisi steal-PFV money  
'Zhangsan had his money stolen (by Lisi)'

Specifying that functional control equation as optional however, conflicts with the longstanding convention in LDD theory that all use of all discourse function operators (OPs) like TOPIC are subject to a well-formedness constraint called the Extended Coherence Condition (ECC).

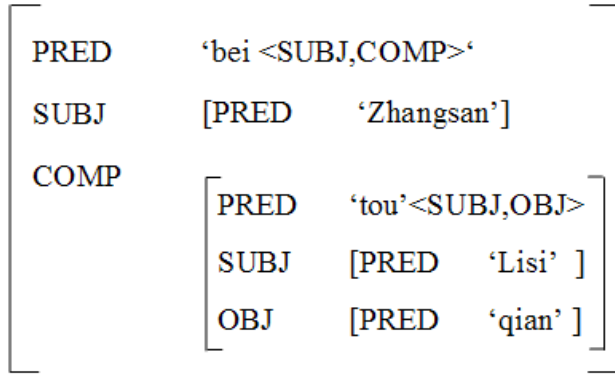
- (51) *Extended Coherence Condition*: An OP must link to a theta-role bearing Grammatical Function (GF), either through structure-sharing or anaphoric binding. (Alsina 2008)

In essence, no TOPIC can be present within an f-structure nucleus without binding a resumptive pronoun or being structure-shared with a "gap" via functional control. Thus, in adversative passives like (5) are in violation of the ECC and ill-formed if a TOPIC is selected but not linked with an OBJ.

One tempting solution is to make two functional equations optional, the first one that licenses the SUBJ-controlled TOPIC and the second one that licenses structure-sharing. Thus, in an adversative passive, no TOPIC is selected and no structure-sharing is licensed. Violation of the ECC is thus averted.

The f-structure of (5) could then be generated as follows:

- (52)  $V \rightarrow bei$   
 $\uparrow \text{PRED} = 'bei' < \text{SUBJ}, \text{COMP} >$   
 $\uparrow \text{COMP TOPIC INDEX} = \uparrow \text{SUBJ INDEX}$   
 $\uparrow \text{COMP TOPIC} = \uparrow \text{COMP} \{ \text{COMP} | \text{VCOMP} \}^* \text{OBJ}$



As such, the f-structure of an adversative passive is identical to that of an ordinary complement-selecting predicate like *shuo* ‘to say.’ However, this is unacceptable since we would then be unable to predict the fact that with few exceptions, *bei* disallows a pronoun coreferent with its subject within COMP, whereas this occurs regularly in regular complementation verbs. This contrast is seen in the non-gapped, non-adversative passives in (4) and (53) below.

- (4) \* Zhangsan<sub>i</sub> bei Lisi ma-le ta<sub>i</sub>  
 Zhangsan BEI Lisi scold-PFV him  
 ‘Zhangsan was scolded (by Lisi)’
- (53) Zhangsan<sub>i</sub> shuo Lisi ma-le ta<sub>i</sub>  
 Zhangsan say Lisi scold-PFV him  
 ‘Zhangsan said that Lisi scolded him’

The intuition is that in adversative passives like (5-7), the subject of *bei* is very directly affected by the events described in its complement, even if it is not overtly repeated or structure-shared with an NP or pronominal. In a similar vein, Huang, Li, & Li (2009) account for adversative passives in the transformational framework by claiming that in these constructions, a null “outer object” NP is moved to NOP.

It seems that there are two solutions available to the problem of adversative passives. One would be to loosen the strength of the ECC to allow TOPIC to occur without structure-sharing or

anaphoric binding. This would also entail the task of specifying the contexts in which this is allowed. Alternately, a more realistic solution is to pursue Huang, Li, & Li's line of thought by saying that TOPIC binds some sort of GF marked with an "affectee" theta-role. In fact, further evidence for this comes from the existence of *bei*-passives in which the complement verb is intransitive and licenses no OBJ function at all, discussed briefly by Her (1989) and Lin (2009).

(54) Mao bei laoshu tao-le  
 cat BEI mouse escape-PFV  
 'The cat had the mouse run off on him' (Her 1989)

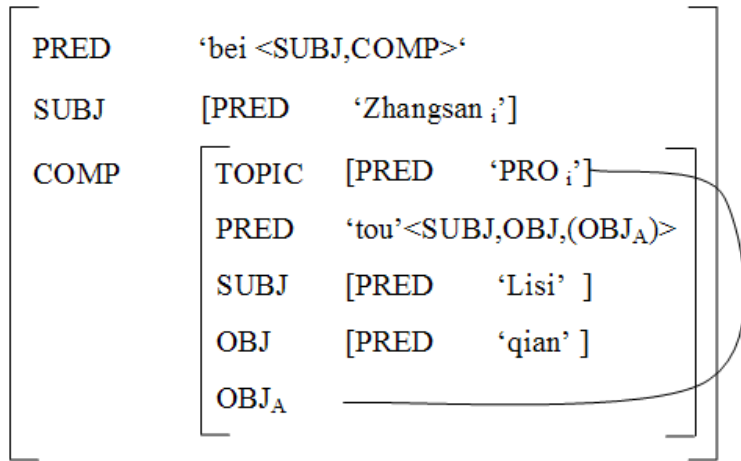
(55) Zhangsan bei Lisi ku-le san tian  
 Zhangsan BEI Lisi cry-PFV three day  
 'Zhangsan had Lisi cry [on him] for three days' (Lin 2009)

There is strong cross-linguistic evidence for the existence of affectee arguments as components of verb argument structure (Huang, Li, & Li 2009). Thus, we can propose that in both adversative and "intransitive" types of *bei* passives, TOPIC is structure-shared with an "affectee object" GF, OBJ<sub>A</sub>. We hypothesize for now that such affectee arguments exist within verb argument structure, yet cannot be realized as overt NPs in c-structure due to constraints on argument-function mapping and on VP constituent structure. They are however capable of being structure-shared with discourse functions such as TOPIC. Thus, the adversative passive (5) will be represented as follows.

(5) Zhangsan bei (Lisi) tou-le qian  
 Zhangsan BEI Lisi steal-PFV money  
 'Zhangsan had his money stolen (by Lisi)'

(56)





There seems to be a highly pragmatic motivation for the existence of such LDD constructions. Verb argument structure is significantly more complex than simple declarative sentences would suggest. By licensing a TOPIC to be structure-shared with an affectee object, *bei*-passives are a mechanism by which more complete expression of argument structure is made possible.

Thus, our LDD analysis can account quite well for canonical gapped passives as well as non-gapped, adversative forms. The remaining question – whether a uniform account of short passives and long passives is possible – will now be addressed.

## 6.0 Short passives within the LFG account

As argued previously, a uniform account of long and short passives would, if feasible, present a more explanatorily powerful theory. Beginning with the hypothesis of a uniform LDD treatment of passives, I will return to the main arguments that have been cited in favor of a non-uniform account, and discuss any possible implications for the LDD theory of *bei*.

## 6.1 The *suo* particle

One oft-cited argument in favor of a non-uniform treatment of short and long passives has been the fact that only long passives permit the presence of a literary *suo* particle.

- (14) Zhexie shiqing bu neng bei \*(tamen) suo liaojie  
these thing not can BEI they SUO understand  
'These things cannot be understood by them' (Huang, Li, & Li 2009)

Putting aside issues regarding its semantic value, it appears that the *suo* particle must always immediately follow an NP, and hence should be treated as a bound nominal clitic (2003). It is then unsurprising that *suo* is incompatible with short passives, since there is no NP available for cliticization.

## 6.2 Resumptive pronouns in short passives

It has also been noted that resumptive pronouns seem to occur in long passives, but not short passives, as seen in the contrast between (10) and (11), repeated here.

- (10) Zhangsan bei Lisi ma-le ta yixia  
Zhangsan BEI Lisi scold-PFV him once  
'Zhangsan was scolded once by Lisi'
- (11) \* Zhangsan bei ma-le ta yixia  
Zhangsan BEI scold-PFV him once  
'Zhangsan was scolded once'

According to the LDD theory as currently proposed, the difference between short and long passives is that in short passives, COMP SUBJ is realized not as an overt NP but a pronominal 'PRO.' The f-structures of the above sentences are represented as follows.

(56)

|      |   |
|------|---|
| PRED | 'bei <SUBJ,COMP>'   |
| SUBJ | [PRED 'Zhangsan <sub>i</sub> ']   |
| COMP | [TOPIC [PRED 'PRO <sub>i</sub> ']<br>PRED 'ma'<SUBJ,OBJ><br>SUBJ [PRED 'Lisi' ]<br>OBJ [PRED 'ta <sub>i</sub> ' ]<br>ADJUNCT [ .... 'yixia' ] |

(57)

|      |  |
|------|--|
| PRED | 'bei <SUBJ,COMP>'  |
| SUBJ | [PRED 'Zhangsan <sub>i</sub> ']  |
| COMP | [TOPIC [PRED 'PRO <sub>i</sub> ']<br>PRED 'ma'<SUBJ,OBJ><br>SUBJ [PRED 'PRO' ]<br>OBJ [PRED 'ta <sub>i</sub> ' ]<br>ADJUNCT [ .... 'yixia' ] |

It is not initially clear why (57) should be ungrammatical while (56) is acceptable. However, there is a possible solution. Like controlled arguments in equi, resumptive pronouns are bound through anaphoric binding. Hence, PROs, such as the one in COMP TOPIC, are subject to such binding linkages as resumptive pronouns. Thus, we can hypothesize that within COMP of short passives, SUBJ PRO acts as sort of "island" blocking anaphoric binding with the structurally less prominent COMP OBJ PRO, hence preventing short passives from making use of resumptive object pronouns. Whether or not this analysis is correct will have to be confirmed by data from other languages

### 6.3 Distribution of manner and place adverbials

A more compelling argument for non-uniform treatment of passives lies in the distribution of manner and place adverbials within the complement clause of *bei*. In long passives, both manner and place adverbials can follow the agent argument, but only manner adverbials may appear in short passives.

- (12) Zhangsan bei (Lisi) momingqimiao de pian-zou-le  
Zhangsan BEI Lisi confused DE abduct-PFV  
'Zhangsan was abducted in a state of confusion (by Lisi)'
- (13) Zhangsan bei \*(Lisi) zai xuexiao pian-zou-le  
Zhangsan BEI Lisi at school abduct-PFV  
'Zhangsan was abducted at school' (Huang, Li, & Li 2009)

It should be noted that the use of any such adverbials within *bei*'s complement clause is somewhat marginal to begin with. Adverbials are much more commonly found prior to *bei*, outside of its complement clause. Nonetheless, the argument here is that place adverbials must modify IP, while manner adverbials can only modify VP. Thus, the inability for place adverbials to occur in short passives implies that short passives must be VPs and long passives must be IPs.

Within the architecture of LFG, this claim can in fact be accommodated without having to resort to positing two separate *beis* with different selectional properties, since the framework does not require strict correspondences between c-structure phrasal categories and f-structure grammatical and discourse functions.

For example, the TOPIC function is not restricted to correspondence with any particular phrase structure category, as shown by English topicalization structures. In this case, TOPIC is structurally introduced within the specifier of IP (or CP, depending on theory) which can be occupied by a variety of c-structure phrasal categories (Dalrymple 2001). This is shown in the following examples.

- NP: *Those books*, I have finished reading.
- AP: *Unsatisfied*, John left the room.
- PP: *At school*, Billy is doing well.

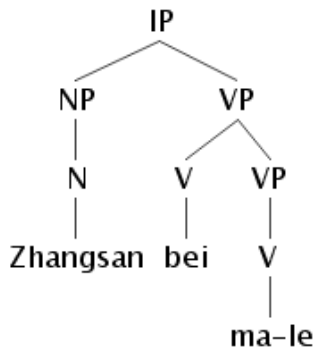
Though somewhat more restricted, the same can be said for Chinese topicalization structures

- NP: *zhexie shu*, wo nian-le  
these book I read-PFV  
'*These books*, I read.'
- PP: *zai xuexiao* Zhangsan bu gaoxing  
at school Zhangsan not happy  
'*At school*, Zhangsan is not happy.'

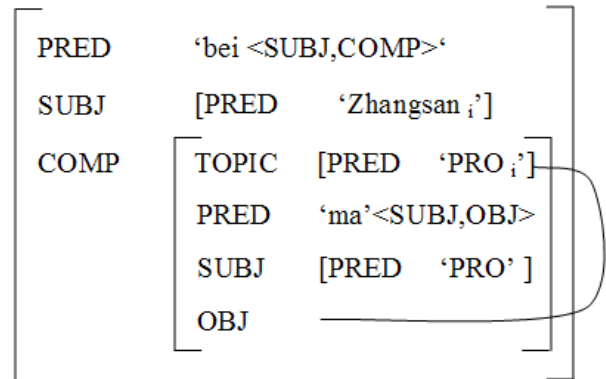
Thus, we can claim that the complement of *bei* is universally assigned a TOPIC discourse function.

Depending on whether or not there is an embedded subject NP, that complement can be either a VP or an IP, as shown in the representations below.

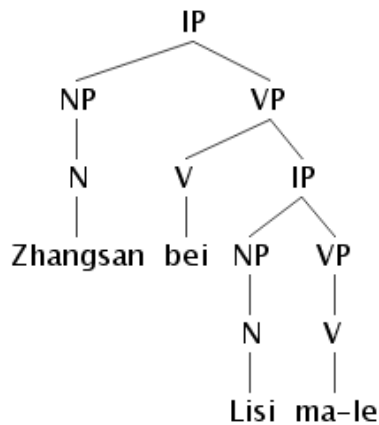
(58)



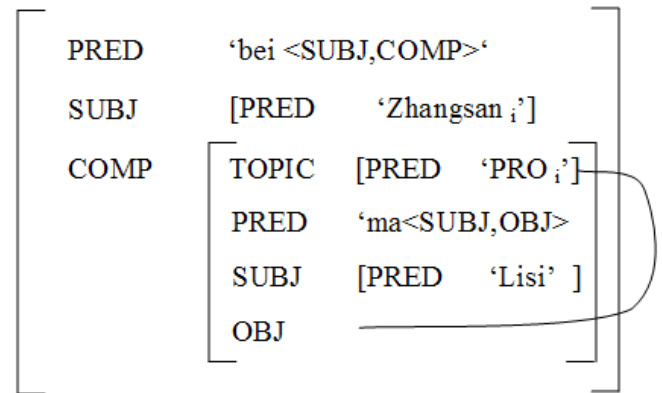
(59)



(60)



(61)



Intuitively, no place adverbial like *zai xuexiao* 'at school' is allowed in the short passive because there is no available IP node. However, it doesn't seem that an ungrammatical short passive with place adverbial like (13) presents a true violation of the principle of Economy of Expression as formulated by Bresnan (2001)

(62) *Economy of Expression*: All syntactic phrase structure nodes are optional and are not used unless required by independent principles (completeness, coherence, semantic expressivity).

Since adverbials do contribute to semantic expressivity, one could in fact construct a c-structure tree for (13) where the complement of *bei* is an IP with no SUBJ NP. As such, a direct appeal to the principle of Economy does not seem to be a solution to the problem.

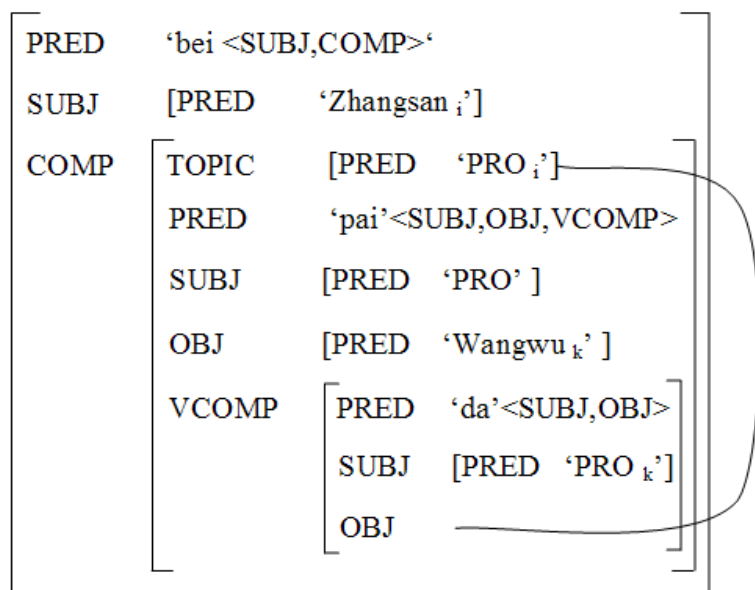
#### 6.4 The problem with unbounded dependencies in short passives

The most critical challenge to the uniform LDD treatment of *bei*-passives however, is the fact that long passives do exhibit unbounded functional control dependencies while short passives cannot.

- (9) \* Zhangsan bei pai Wangwu da-le  
 Zhangsan BEI send Wangwu hit-PFV  
 'Zhangsan was "sent-Wangwu-to-hit."  
 (Huang, Li, & Li 2009)

Why are long-distance dependencies impossible without an overt post-*bei* NP? This is highly unexpected from our current theory. As previously shown in (45), the presence of a PRO SUBJ in gapped short passives does not block the functional control linkage between TOPIC and an OBJ somewhere within its f-structure. And it is not clear why it should do so, since PRO is not an element that can be controlled via functional control and thus cannot be said to interfere with it. The following f-structure could be generated to represent (9) without appearing to violate any constraints.

(62)



The solution is quite unclear, as this problem is wholly unexpected by the LDD hypothesis, which does not seem at all equipped to explain the data. This indeed suggests that short passives are generated by a separate, non-LDD derivation.

## 6.5 Problems with a non-uniform analysis in LFG

However, it is also uncertain how a separate, non-LDD derivation for short passives should be formulated in LFG. Recall that within Huang, Li, & Li's account, both short passives and long passives are said to involve movement and complementation. Long passives are an instance of A'-movement and short passives involve passivization, a type of A-movement. It would be significantly problematic to adopt their short passive derivation to LFG framework because English-style passivization is regarded as a relation change derived within the lexicon, and not via a movement operation in syntax (Bresnan 2001). Neither does it involve either anaphoric or functional control.

To pursue this analysis in LFG, one would have to claim that in each short passive, *bei* is responsible for altering the lexical entry and subcategorization requirements of its complement verb. This would present a very radical departure from the analysis I have given for long passives, where no such relation change takes place. Furthermore, we have seen that adversative passives can be very naturally accounted for under an LDD construction, since TOPIC is able to functionally control an affectee object. Since short passives can also be adversative, the issue arises as to how to account for adversative short passives if not TOPIC discourse function is available. It seems that with regard to *bei*-passives, LFG framework is quite resistant to the sort of non-uniform derivation of short and long passives currently proposed in P&P.

## 7. Conclusion

In this thesis, I have reviewed the essential characteristics of Mandarin *bei*-passives and discussed their treatment within the transformational P&P framework. I have also proposed an account in LFG framework in *bei*-passives as an LDD construction similar to English *tough*-type predicates, which accounts particularly well for the presence of unbounded dependencies and resumptive pronouns. However, the fluid coindexing properties of *bei* should encourage studies of resumptive pronoun



licensing in Mandarin, and the issues of adversative and intransitive passives should prompt further investigations into the semantic content of *bei* and argument-function mapping in LFG.

Though largely successful in characterizing Mandarin passives, the LDD analysis has yet to resolve two essential questions – why are manner but not place adverbials allowed in short passives, and why can't short passives exhibit unbounded dependencies? The latter presents a particularly strong counter-argument to a uniform LDD derivation as currently proposed. This remains a compelling topic for further inquiry.

As one of the most thoroughly discussed and debated issues in Chinese syntax, *bei* passives have long merited an up-to-date treatment within LFG framework. However, their analysis in LFG is made particularly difficult by their very flexible control structure and the lack of morphological markings in the language. Furthermore, *bei*-passives involve or possess features of other syntactic structures as diverse as topicalization, equi, and null pronominal licensing. Thus, a rigorous analysis of passives will provide invaluable contributions to linguistic theory not only within Chinese, but also cross-linguistically, regardless of the specific framework used in the approach.

### **Acknowledgements**

I would like to thank my thesis advisors Vera Lee-Schoenfeld and K. David Harrison for their invaluable guidance over the past few months. The writing and research process would not have been nearly as enjoyable without them. I am also grateful to Shizhe Huang and Jason Kandybowicz for all their support, and to Angus Downton for his feedback on earlier drafts. All errors are my own.

## Bibliography

- Alsina, Alex. 2008. A theory of structure-sharing: focusing on Long-Distance Dependencies and Parasitic Gaps. In *Proceedings of the LFG08 Conference*, eds. Miriam Butt and Tracy Holloway King. Stanford, CA: CSLI Publications.
- Bresnan, Joan. 2001. *Lexical-functional Syntax*. Oxford: Blackwell.
- Dalrymple, Mary. 2001. *Lexical Functional Grammar*. San Diego: Academic Press.
- Dalrymple, Mary and Tracy Holloway King. 2000. Missing-object constructions: lexical and constructional variation. In *Proceedings of the LFG00 Conference*, eds. Miriam Butt and Tracy Holloway King. Stanford, CA: CSLI Publications.
- Dowty, David. 1991. Thematic proto-roles and argument selection. *Language*. 67: 547-619.
- Feng, Shengli. 1995. Guanyue lilun yu Hanyu de beidong ju [GB theory and passive sentences in Chinese]. *Zhongguo Yuyanxue Luncong [Studies in Chinese Linguistics]*. 1: 1-28.
- Falk, Yehuda. 2002. Resumptive Pronouns in LFG. In *Proceedings of the LFG02 Conference*, eds. Miriam Butt and Tracy Holloway King. Stanford, CA: CSLI Publications.
- Her, One-Soon. 1989. An LFG account for Chinese BEI sentences. *Journal of the Chinese Language Teachers Association*. 24: 67-89.
- Huang, C.-T. James. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry*. 15: 531-574
- Huang, C.-T. James, Y.-H. Audrey Li, and Yafei Li. 2009. *The Syntax of Chinese*. Cambridge: Cambridge University Press.
- Lin, Tzong-Hong Jonah. 2009. Licensing “gapless” *bei* passives. *Journal of East Asian Linguistics*. 18: 167-177.
- Sudmuk, Cholthicha. 2003. The *thuuk* Construction in Thai. In *Proceedings of the LFG03 Conference*, eds. Miriam Butt and Tracy Holloway King. Stanford, CA: CSLI Publications.
- Tang, Sze-Wing. 2001. A Complementation Approach to Chinese Passives and its Consequences. *Linguistics*. 39: 257-296.
- Ting, Jen. 1998. Deriving the *Bei*-construction in Mandarin Chinese. *Journal of East Asian Linguistics*. 7: 319-354.
- Ting, Jen. 2003. The nature of the particle *suo* in Mandarin Chinese. *Journal of East Asian Linguistics*. 12: 121-139.