CHAPTER I

INTRODUCTION

Some Mandarin Chinese predicates require a prototypical NP argument but this required NP argument must be base-generated as TOP in c-structure and identify with the missing OBJ to satisfy the Completeness and Coherence condition[1] of the f-structure. Since the required NP complement can be base-generated as TOP that identifies with the missing OBJ, other category types may be base-generated as the TOP identifying with the missing OBJ as well. The few previous studies on movement paradoxes have all focused on the relationship between the missing OBJ and the TOP (see Bresnan 2001, Zhang 2001) or on the subcategorized pattern of verbs based on their idiosyncratic properties (see Huang 1989, Her 1999). To restore an important missing piece in the research on movement paradoxes, this study focuses on the category type of phrase that can be base-generated as TOP of predicates with movement paradoxes in Mandarin Chinese. It attempts to propose a hierarchy for these category types based on their possibility of being realizing as TOP within an account based on the lexical-functional grammar (LFG).

[1] The Completeness Condition: All argument functions specified in the value of the PRED feature must be present in the local f-structure. All functions that receive a thematic role must have a PRED feature (Falk, 2001: 63). The Coherence Condition: All argument functions in an f-structure must be selected by their local PRED. Any argument function that has its own PRED feature must be assigned a thematic role (Falk, 2001: 63).

1.1 Transformational Grammar

GB (Government & Binding) (Chomsky, 1981), one of the major formal grammar theories, is a successor to Transformational Grammar (Chomsky, 1957, 1965). The basic concept of transformational grammar is that “functionally related sentences should be derived from the same structure” (Chomsky, 1957) and thus the relationship between two sentences can be expressed as in (1).

(1) a. He is a student.

b. Is he a student?

The interrogative sentence (1b) was derived from (1a) by subject-auxiliary inversion and so the relationship between (1a) and (1b) involves transformation (movement).

Chomsky (1977) further discusses topicalization in “On Wh-Movement” as one of the constructions involving movements. The evidence takes the form of extraction configurations, as in (2).

(2) a. We talked about [that problem]$_{NP}$ for days.

b. [That problem]$_{NP}$, we talked about t_i for days.

The GB framework assumes that (2b), the surface structure, is derived from (2a) by fronting the NP *that problem* (as in topicalization). After the transformation, the moved elements leave a trace (indicated by *t*) to maintain a structural relationship

with the deep structure (Chomsky, 1981). So the moved NP *that problem* in (2b) appears to move to its sentence-initial position from the original underlying position where it is required as an object of the preposition *about*.

GB principles propose that transformation is "structure-preserving", meaning that the surface structure should have the same structure as the deep structure. So GB proposes two basic assumptions, as in (3).

(3) a. The representational assumption

The underlying structure of language has the formal categorical properties of phrase structure.

b. The derivational assumption

The surface configurations of phrase structure categories are derived by transformational operations (movements) from basic syntactic representations of the same type.

(Bresnan, 2001: 19)

According to these two basic assumptions, the category type of the moved element in the surface configuration should be identified with its category type in the deep configuration. We repeat the example in (2) as below.

(4) a. We talked about [that problem]$_{NP}$ for days.

b. [That problem]$_{NP}$, we talked about t_i for days.

The moved element *that problem* has the same category type in its topicalized position as in the position from which it was moved. Thus the proposition that the NP *that problem* in the surface configuration is moved from the deep configuration seems to be true in English.

Mandarin Chinese, a topic-prominent language, also has a wide variety of topicalized sentences, as in (5).

(5) a. 我 負責 [這 個 活動]$_{NP}$

Wo3 *fu4ze2* [*zhe4* *ge4* *huo2dong4*]

I be-responsible-for this CLS activity

'I am responsible for this activity.'

b. [這 個 活動]$_{NP}$ 我 負責 t_i

[*zhe4* *ge4* *huo2dong4*] *wo3* *fu4ze2*

this CLS activity I be-responsible-for

'I am responsible for this activity.'

According to the transformational theory, (5b) should be the surface configuration derived from its deep configuration, (5a). Thus the NP 這個活動 *zhe4ge4huo2dong4* 'this activity' is moved to the topicalized position from which it is the object of 負責 *fu4ze2* 'be responsible for'. Since the NP 這個活動 *zhe4ge4huo2dong4* 'this activity' is the moved element, it should have the same

identifiable category type in both configurations and it is indeed so.

1.2 Projection Principle

In the Projection Principle, Chomsky (1981) claims that "representation at each syntactic level is projected from the lexicon." Take the verb *kiss* for example:

(6) a. kiss [__ NP]

b. Mary kissed a boy.

c. * Mary kissed.

(6a) is the lexical entry of the verb *kiss*. The underline __ represents the position of the verb *kiss* and *NP* tells us that the verb *kiss* must be immediately followed by an NP as in (6b), and if *kiss* is not followed by an NP, it is ungrammatical as in (6c). Thus a lexical item can project the structure of the phrase it heads, and define the complement of a lexical item (Chomsky, 1981).

The lexical entry of *kiss* has shown that the verb c-selects (category selects) or subcategorizes for an NP as its object complement and projects this property to the configuration of the d-structure and s-structure (Chomsky, 1981). The category type of the complement c-selected by a lexical entry depends on the semantic, but sometimes idiosyncratic, properties of the lexical item. Thus, some verbs might c-select a prepositional phrase while some verbs c-select a sentence, such as in (7) and (8), respectively.

(7) a. give [__ NP PP]

b. He gives a book to me.

c. * He gives a book.

(8) a. hope [__ CP]

b. I hope that it is true.

c. * I hope Mary.

From the above examples, it might be concluded that the Projection Principle integrates the idiosyncratic properties of a verb in the lexical entry to constrain the combination of certain words with certain constructions. We repeat the examples in (4) and (5) below with the relevant lexical entry.

(9) a. about [__ NP]

b. We talked about [that problem]$_{NP}$ for days.

c. [That problem]$_{NP}$, we talked about t_i for days.

(10) a. 負責 *fu4ze2* 'be responsible for' [__ NP]

b. 我 負責 [這 個 活動]$_{NP}$

Wo3 *fu4ze2* [*jhe4* *ge4* *huo2dong4*]

I take-charge this CLS activity

'I take charge of this activity.'

c. [這 個 活動]$_{NP}$ 我 負責 t_i.

[*jhe4* *ge4* *huo2dong4*] *wo3* *fu4ze2*

this CLS activity I take-charge

'I take charge of this activity.'

In (9), the lexical entry of the preposition *about* c-selects an NP as its object complement, as in (9a), and it obtains an NP *that problem* in (9b) to satisfy the subcategorized requirement for *about*. However, the question is then that (9c) seems to violate the subcategorization requirement in that there is no NP complement immediately following *about*, but that the example is still grammatical. According to GB theory, (9c) is derived from (9b) and the NP *that problem* which is in (9c) leaves a trace in the position from which it is moved to satisfy the NP-complement requirement.

In (10), we can see that the lexical entry of the Chinese verb 負責 *fu4ze2* 'be responsible for' subcategorizes for an NP as its object complement and obtains an NP in (10b). Again, in (10c), there is no NP complement immediately following 負責 *fu4ze2* 'be responsible for' but the sentence is still grammatical. As suggested in GB theory, the movement operation leaves a trace in the position of the object complement of 負責 *fu4ze2* 'be responsible for' and satisfies the subcategorization requirement. Therefore, there seems to be evidence in both English and Mandarin Chinese to support the extraction configuration proposed in transformational

theories.

1.3 Movement Paradoxes in English

However, Bresnan (2001) notes a grammatical phenomenon, “movement paradox”, which is not expected in the transformational approach to syntax. Although there is evidence to support the extraction configuration and movement operation in the transformational theory, the following examples illustrated by Bresnan (2001) raise questions as to how a sentence derived from an ungrammatical sentence can be grammatical on an analysis based on movement theory.

One of the movement paradoxes Bresnan (2001) illustrates is “category mismatch” which is exemplified as in (11).

(11) a. [That he was sick]$_{CP}$, we talked about for days.

b. *We talked about [that he was sick for days]$_{CP}$.

c.cf. We talked about [the fact that he was sick]$_{NP}$ for days.

(Bresnan 2001: 17)

As we discuss in the example in (9), the preposition *about* c-selects an NP as its object complement, but it obtains a CP-complement in (11a) which makes (11b) an ungrammatical sentence. According to GB theory, the grammatical sentence (11b) is derived from (11a) which is ungrammatical and so it is difficult to explain the derivational relationship between (11a) and (11b).

Another movement paradox Bresnan notes in her book is in the passive construction. Based on Transformational Grammar, the subject of the passive predicate in a passive construction is extracted from the position as the complement of the predicate in active form. Take the predicate *capture* as an example:

(12) a. This theory captures [that fact]$_{NP}$.

b. [That fact]$_{NP}$ is captured ___ by this theory.

(Bresnan 2001:17)

Bresnan (2001) notes that if the subject of the passive predicate is a CP, there will be a movement paradox illustrated as in (13).

(13) a. [That languages are learnable]$_{CP}$ is captured ___ by this theory.

b. *This theory captures [that languages are learnable]$_{CP}$.

c. cf. This theory captures [the fact that languages are learnable]$_{NP}$.

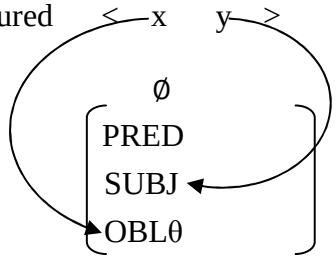
(Bresnan 2001: 17)

According to Transformational Grammar, the subject should be based-generated in the object position of *capture* and be moved to the sentence-initial position in (13a). But the sentence is ungrammatical when the that-clause CP is realized as the object of the predicate *capture* as in (13b) as the predicate *capture* c-selects an NP object. This movement paradox is not expected in Transformational Grammar, but it is not

surprising under the LFG framework. Bresnan (2001) suggests that “the passive relation is not a NP-movement…it is regulated by the mapping principles of a-structure to f-structure in the lexical mapping theory (Bresnan, 2001: 23).” The morpholexical correspondence between a-structure and f-structure in [that languages are learnable is captured by this theory] is as exemplified by Bresnan in (14).

(14) a-structure: captured < x y >

f-structure:



The a-structure of the passive form *captured* is different from that of the active form *capture*. In the a-structure of the passive predicate *captured*, the role (x) is suppressed or linked to an oblique function; the role (y) is mapped to SUBJ in the f-structure. Thus, the category mismatch between the topicalized CP and the object position of the active predicate *capture* might be because “the topicalized category CP is flexibly mapped to its argument role by the corresponding theory. It is not linked to its argument role by a series of transformational movements from an underlying object position in the phrase structure. So, within the constraints on their correspondences, mismatches are possible.” (Bresnan, 2001: 24) The active predicate *capture* subcategorizes for an object complement which is typically

realized as a nominal category instead of a CP. So (13b) is ungrammatical for the predicate c-selecting a complement of the wrong category. And this makes it difficult for Transformational Grammar to explain the derivational relationship between (13a) and (13b).

Another movement paradox given by Bresnan (2001) is in “VP Preposing” exemplified as in (15).

(15) Context: I said I would meet you, …

a. …and [meet you] I will ___!

b. *…and [met you] I will ___!

c. *…and [meeting you] I will ___! (Bresnan 2001:18)

In (15), the auxiliary verb *will* is emphasized by fronting its topical VP complement to the initial position of the clause. Since the topical VP complement is base-generated as the complement of *will*, its tense depends on the auxiliary verb as well, that is, the verb form of the fronted VP complement should be infinitive. But there is a problem if the auxiliary verb of the clause is a perfect auxiliary as in (16).

(16) Context: She said she would meet me,

a. …and [meet me] she HAS __!

b. *…and she HAS [meet me]!

c. …and she HAS [met me]!

In Transformational Grammar, the [meet me] in (16a) should be shifted from the position where it is required in (16b). But (16b) is ungrammatical in that the perfect auxiliary *HAS* requires a past participle as its complement verb, not an infinitive VP.

The final example of movement paradox in Bresnan's research is found in "subject auxiliary inversion". There is a "be + not" abbreviation form for the second person singular, the third person singular, the second person plural, the third person plural and the first person plural, but there is none for the first person singular in English. Let us look at the examples in (17) and (18).

(17) "be + not" abbreviation form in English

	Singular	Plural
First		aren't
Second	aren't	aren't
Third	isn't	aren't

(18) a. I am not your friend.

b. *I ain't / amn't your friend.

c. *I aren't your friend. (Bresnan 2001:18)

"Under subject-auxiliary inversion, many speakers of the Standard dialect find it natural to use the form *aren't* as the abbreviation form for the first person singular in interrogative sentences as in (19)." (Langendoen 1970, Dixon 1982, Gazdar et al.

1982, Kim and Sag 1996, Bresnan 1998a, b)

(19) a. Am I ___ not your friend?

b. Aren't I ___ your friend? (Bresnan 2001:18)

Now let us compare (18c) with (19b).

(18c) *I aren't your friend.

(19b) Aren't I ___ your friend?

According to Transformational Grammar, (19b) should be derived from its underlying structure (18c) by shifting the *aren't* to the sentence-initial position. It is thus difficult to explain the derivational relationship between (18c) and (19b) in Transformational Grammar.

1.4 Movement Paradoxes in Mandarin Chinese

There are also movement paradoxes in Mandarin Chinese, as the following example shows.

(20) a. 負責 *fu4ze2* 'be responsible for' [__ NP/VP]

b. 我 負責 [他的 英文]$_{NP}$

Wo3 *fu4ze2* *ta1de* *ying1wen2*

I be-responsible-for his English

'I am responsible for his learning of English.'

c. 我 負責 [教 他 英文]$_{VP}$

Wo3 *fu4ze2* *jiao1* *ta1* *ying1wen2*

I be-responsible-for teach him English

'I am responsible for teaching him English.'

d. *我 負責 [他 學 英文]$_{CP}$

**Wo3* *fu4ze2* [*ta1* *xue2* *ying1wen2*]

I be-responsible-for he learn English

'I am responsible for his learning of English.'

e. [他 學 英文]$_{CP}$ 我 負責

[*ta1* *xue2* *ying1wen2*] *wo3* *fu4ze2*

he learn English I be-responsible-for

'I am responsible for his learning of English.'

The lexical entry of the Chinese verb 負責 *fu4ze2* 'be responsible for' c-selects an NP or VP as its object complement but it obtains a CP in (20d) and thus it becomes an ungrammatical sentence. It is assumed that (20e) is derived from the ungrammatical (20d). So (20e) should be ungrammatical, which is contrary to the fact. This is also difficult for GB theory to give a good explanation. Huang (1989) cites some instances of movement paradox in Mandarin Chinese, as in (21).

(21) a. 拿手 *na2shou3* ‘be good at’ [__]

b. *他 最 拿手 [語言學]$_{NP}$

ta1 *zui4* *na2shou3* [*yu3yan2xue2*]$_{NP}$

he most be-good-at linguistics

‘He is good at linguistics.’

c. [語言學]$_{NP}$, 他 最 拿手

[*yu3yan2xue2*]$_{NP}$ *ta1* *zui4* *na2shou3*

linguistics he most be-good-at

‘He is good at linguistics.’

In terms of Transformational Grammar, (21c) is derived from (21b) by shifting the NP 語言學 *yu3yan2xue2* ‘linguistics’ to the sentence-initial position as the topic. But (21b) is an ungrammatical sentence in that 拿手 *na2shou3* ‘be good at’ does not c-select anything in its lexical entry, as in (21a). However, the theta grid associated with the lexical entry for the predicate 拿手 *na2shou3* ‘be good at’ requires a theme role as its complement and this theme role must match an NP argument to satisfy the theta-criterion (Chomsky, 1981: 36). The required NP complement can only appear as the topic, as in (21c). If the required NP complement is the object of the predicate, the sentence is ungrammatical as in (21b). So the derivational relationship between an ungrammatical sentence (21b) and a grammatical sentence (21c) presents a challenge to Transformational Grammar.

1.5 Aims of the Thesis

Bresnan (2001) suggests that it might be more appropriate to use LFG theory rather than transformational theory when dealing with movement paradox. LFG, which is a kind of constraint-based grammar, assumes that there is no movement and "a seemingly moved category is in fact base-generated where it appears" (Bresnan, 2001). LFG also claims that c-(onstituent) structure, f-(unctional) structure, and a-(rgument) structure are parallel structures encoding the grammatical information of a linguistic expression at one and the same time (Falk, 2001; Bresnan, 2001; Her, 2003). Since LFG has a paralleled-structure architecture, it is possible that the f-structure attribute of an element may mismatch with its position in a c-structure. Thus, Bresnan (2001) proposes that movement paradox is predictable in LFG theory for it represents the imperfect correspondence between c-structure constituent and f-structure function. The principle of this imperfect correspondence will be discussed in Chapter 3. The mismatches between c-structure and f-structure mean that the constituent types that link to a specific function need not be the same. However, this thesis will propose that the category mismatches are constrained, perhaps universally.

The chief goal of this study is therefore to examine the limitations of OBJ-TOP mismatches in Mandarin Chinese and English. Next, this study will try to

establish a plausible hierarchy for category types – NP, VP, CP, and PP. By establishing a hierarchy, this study intends to show the relationship between the ranking in the hierarchy and the ability to appear as TOP which satisfies the OBJ requirement of a predicate. Third, the present study intends to explain the OBJ-TOP mismatch in terms of f-structure, a-structure, and c-structure in LFG theory.