

MOVEMENT FROM OBJECT POSITION IN CHINESE: A RESTRICTION ON SUBSTITUTION

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ABSTRACT

There is a subject-object asymmetry in Chinese, such that the extraction of a possessor NP from a possessive NP is quite free from subject position but restricted from object position. A possessive NP consists of a possessor NP which is the modifier, and a possessed NP that is the head, usually remaining in the subject or object position. When a possessive NP functions as subject in a simple sentence, the possessor NP can always be extracted to clause-initial position to act as a new topic of the sentence, but only a few possessor NPs can be extracted from object position. This article analyzes the substitutability of NPs in subject and object position, concluding that where there is a restriction on NP movement from object position, this is essentially caused by a semantic contradiction possibly created during the movement. Based on a hierarchy of NP subcategories, θ -roles, and possessive relations, this paper also develops two generalizations to stipulate the necessary conditions for the movement of relevant NPs from object position. This work may therefore help provide an explanation for subject-object asymmetry in Chinese.

1. CHINESE SUBJECT-OBJECT ASYMMETRY IN POSSESSOR EXTRACTION

It has long been recognized in Chinese that there is a type of sentence which has both a possessor NP and a possessed NP in clause-initial position, as exemplified in (1):

- (1) *Zhangsan baba hen youqian.*
 Zhangsan dad very rich
 'Zhangsan, his dad is very rich.'

There is obviously a possessive relation between 'Zhangsan' and 'dad' in the above sentence.

Traditionally, a sentence such as (1) is analyzed with 'Zhangsan dad' as the subject; in other words, 'Zhangsan dad' is an NP where 'dad' is the head. The reason is that *Zhangsan baba* 'Zhangsan dad' has a variant *Zhangsan de baba* 'Zhangsan's dad',¹ so (2) is a variant of (1) in terms of this analysis:

¹ *De* is a complicated morpheme having a variety of usages in Chinese: here it can be glossed as a possessive structural particle.

- (2) *Zhangsan de baba* hen youqian.
 Zhangsan POSS dad very rich
 'Zhangsan's dad is very rich.'

Ding (1961/1979), Chao (1968), Li & Thompson (1976, 1981) and Hu (1979/1984) argue that a structure like *Zhangsan baba* is different from *Zhangsan de baba* in clause-initial position, because we can insert an adverb between *Zhangsan* and *baba* in (1), but in (2), such an adverb has to be inserted after *Zhangsan de baba*, as shown in (3) below:

- (3) a. *Zhangsan* [yexu] *baba* hen youqian. cf. (1)
 Zhangsan maybe dad very rich
 'Zhangsan, maybe his dad is very rich.'
- b. * *Zhangsan* *(de) [yexu] *de baba* hen youqian. cf. (2)
 Zhangsan POSS maybe POSS dad very rich
 ('Zhangsan, maybe his dad is very rich.')
- c. *Zhangsan de baba* [yexu] hen youqian.
 Zhangsan POSS dad maybe very rich
 'Maybe Zhangsan's dad is very rich.'

It is clear that the syntactic relationship between *Zhangsan* and *baba* in (1) is much looser than that in (2). Sentences (1) and (2) should therefore be bracketed as in (4a) & (4b) respectively:

- (4) a. [Zhangsan] [baba hen youqian]
 b. [Zhangsan de baba] [hen youqian]

Following Teng (1974),² Huang (1982) treats such topics as extractions from a nonsentential subject, in his discussion of violations of the Left Branch Condition of Ross (1967). In his view, the structure of (4a) is that (5).³

- (5) *Zhangsan*_i, [_{NP} *t*_i *baba*] hen youqian. (Huang 1982: 516)

² Teng (1994) mentions a kind of 'subject' which is derivable by topicalization and deletion of the genitive marker *de*, and analyzes the lower clause as a 'sentential predicate' (see also Chao 1968).

³ Such an extraction should only apply to possessive NPs like *Zhangsan baba*, excluding other sentences with a sentential-predicate but without the possessive relation, for instance:

Neichang huo xingkuai xiaofangdui lai-de kuai.
 that-cl fire fortunately fire-brigade come-ASP quick
 'It was fortunate that the fire brigade came quickly enough for the fire.'

The topic *neichang huo* 'that fire' is obviously base-generated and not extracted, since there is no possessive relationship between *neichang huo* 'that fire' and *xiaofangdui* 'fire brigade'.

Huang assumes that such an extracted possessor is licensed by receiving a θ -role from the possessed head. He states:

- (6) 'inalienable possession nouns differ from other nouns in that they obligatorily assign a thematic role Possessor to an argument, whereas other nouns need not do so.' (1984: 563)

It is interesting that such an extraction⁴ of possessor seems to only work from subject position, but not from object position. For example, (7a) is an acceptable sentence, while (7b) is not:

- (7) a. *Zhangsan*_i, [_{NP} *t*_i *baba*] *hen* *youqian*.
 Zhangsan dad very rich'
 'Zhangsan, (his) father is very rich.'
- b. * *Zhangsan*_i, *wo* *kanjian* [_{NP} *t*_i *baba*] *le*.
 Zhangsan I see dad ASP
 (Nonsensical)

The possessor *Zhangsan* in *Zhangsan baba* can be extracted from subject position as in (7a), but not from object position as in (7b). Thus, Huang (1982, 1984 and 1987) and Xu & Langendoen (1985) claim that there is a subject-object asymmetry in Chinese, such that when the head of an NP is a possessed noun, extraction of the possessor is possible from subject, but not object position.

Nevertheless, there are exceptions to this asymmetry,⁵ where a possessor NP can be extracted from the object position on a par with the subject position, as shown by the following contrasts:

- (8) a. *Zhe-zhi ji*_i, [_{NP} *t*_i *chibang*] *zui* *haochi*.
 this-CL chicken wing most delicious
 'This chicken, its wings are most delicious.'
- b. *Zhe-zhi ji*_i, *wo* *chi* [_{NP} *t*_i *chibang*].
 this-CL chicken I eat wing
 'This chicken, I'll eat its wings.'
- (9) a. *Zhe-pian lunwen*_i, [_{NP} *t*_i *dier zhang*] *hen* *bucuo*.
 this-CL thesis second chapter very good
 'This thesis, the second chapter is very good.'

⁴ The term 'extract' in this paper is refers to a movement of a possessor NP from a matrix possessive NP. It may either be 'topicalized' if the landing site is clause-initial, or 'preposed' if the landing site is preverbal (also see footnote 8).

⁵ Huang (1984: 563, fn. 33) notes such exceptions.

- b. *Zhe-pian lunwen_i, wo xian kan-le [_{NP} t_i dier zhang].*
 this-CL thesis I first read-ASP second chapter
 'This thesis, I read the second chapter first.'

In the (a) examples, the topics are extracted from the subject position, while in the (b) examples,⁶ the topics are extracted from the object position, and all of these sentences are absolutely acceptable. The important question is then why it is sometimes possible to extract the possessor NP from a matrix possessive NP in object position, as in (8b) and (9b), but sometimes it is not, as in (7b). We can hardly explain Chinese subject-object asymmetry unless a plausible answer to this question is provided.

2. RESTRICTING SUBSTITUTION

2.1 The movement of object

Before proposing my solution to the subject-object asymmetry mentioned above, I discuss object movement inherently associated with possessor extraction.

Assuming that SVO is the basic word order of the Chinese language—an order which is realized in the majority of Chinese sentences,⁷ we note that this basic word order has variants—derived forms where one or more elements move from the basic position to other positions. Such movements include preposing an object to the position between subject and VP, topicalizing an object to clause-initial position, and extracting a possessor NP from subject position or object position.⁸

⁶ It is not necessary for the extracted nouns to be definite. For sentences (8b) and (9b), we can also say:

- (i) *Ji_i wo xihuan chi [_{NP} t_i chibang].*
 chicken I like eat wing
 'As for chicken, I like to eat its wings.'
 (ii) *Lunwen_i, wo tongchang xian kan [_{NP} t_i gaiyao].*
 thesis I usually first read abstract
 'As for a thesis, I usually read its abstract first.'

⁷ Whether the basic word order of current Chinese is SVO or SOV has long been discussed. Li & Thompson (1974, 1975), for example, consider it as SOV, while Huang (1982), Travis (1984), Sun and Givón (1985) as well as Lu (1991) argue that it is SVO.

⁸ In this paper, the term 'prepose' is defined as moving a constituent from the object position to the medial position between subject and VP, and the term 'topicalize' refers to movement from any position to the clause-initial position.

In Chinese, an object can usually either be preposed to the medial position between the subject and the verb or be topicalized to the initial position of the sentence,⁹ as shown in (10):

- (10) a. Wo kan-guo zhe-ben shu le.
 I read-ASP this-CL book ASP
 'I have read this book.'
- b. Wo zhe-ben shu_i kan-guo t_i le.
 I this-CL book read-ASP ASP
 'I have read this book.'
- c. Zhe-ben shu_i wo kan-guo t_i le.
 this-CL book I read-ASP ASP
 'This book, I have read.'

The object *zhe-ben shu* 'this book' in (10a) is preposed to the medial position in (10b) and topicalized to the initial position in (10c). All three sentences in (10) have the same D-structure, reflected in the basic word order. They thus have the same semantic interpretation, regardless of their totally different S-structures. Evidence provided by sentences like (10) lead us to suppose the following semantic equality in Chinese:

$$(11) \quad [{}_S \text{ NP}_i \text{ V NP}_j] = [{}_S \text{ NP}_i \text{ NP}_j \text{ V}] = [{}_S \text{ NP}_j \text{ NP}_i \text{ V}]$$

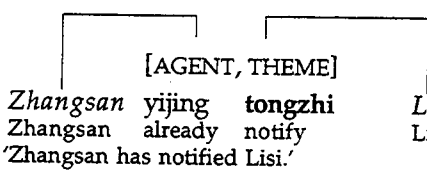
On the other hand, in many transitive sentences, where selectional restrictions permit the substitution of NPs in subject and object positions, this

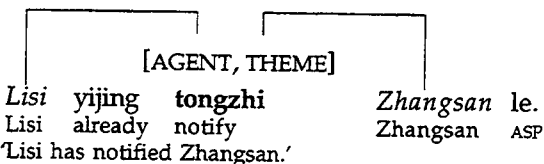
⁹ Since the movements are so complicated in the language, the moved element I discuss in this paper is limited to a simple NP or the possessor of a simple NP. A simple NP means an NP containing no small clause. Otherwise, the situation may get more complex. For example, if the object is a clause by itself, the subject NP of the clause can only be topicalized to the initial position of the main sentence but not preposed to the medial position, indicating that topicalization is more accessible than preposing, as shown in the following example:

- (i) Wo juede [ta de hua] hen dui.
 I think he poss words very right
 'I think what he says is right.'
- (ii) [Ta de hua] wo juede hen dui.
 he poss words I think very right
 'What he says I think is right.'
- (iii) * Wo [ta de hua] juede hen dui.
 I he poss words think very right

Even though *ta de hua* 'what he says' is in the object position of the main sentence, it is the subject of the small objective clause, and is subject to different restrictions on its movement.

exchange of syntactic positions leads to a reversed semantic interpretation, as in (12 a & b):

- (12) a. 

Zhangsan yijing tongzhi Lisi le.
Zhangsan already notify Lisi ASP
'Zhangsan has notified Lisi.'
- b. 

Lisi yijing tongzhi Zhangsan le.
Lisi already notify Zhangsan ASP
'Lisi has notified Zhangsan.'

Selectional restrictions of the verb 'notify' permit the exchange of the subject/object 'Zhangsan' and the object/subject 'Lisi' in (12a & b). But θ -role assignments are reversed in (12a) and (12b). Thus, we have the following semantic inequality:

$$(13) \quad [{}_S NP_i V NP_j] \neq [{}_S NP_j V NP_i]$$

It is interesting, nevertheless, that a dilemma emerges if the equality (11) is applied to each side of (13). According to (11), the left side of the inequality (13) should show equivalences as in (14), while the right side of (13) should yield the equivalences of (15):

$$(14) \quad [{}_S NP_i V NP_j] = [{}_S NP_i NP_j V] = [{}_S NP_j NP_i V]$$

$$(15) \quad [{}_S NP_j V NP_i] = [{}_S NP_j NP_i V] = [{}_S NP_i NP_j V]$$

Because the middle item $[{}_S NP_i NP_j V]$ in (14) is exactly the same as the last item in (15), and the middle item $[{}_S NP_j NP_i V]$ in (15) is exactly the same as the last item in (14), the deduction shown in (16)—that the first items of (14) and (15) are semantically equal to each other—is in absolute contradiction to (13):

$$(16) \quad [{}_S NP_i V NP_j] = [{}_S NP_j V NP_i]$$

I assume, therefore, that sentences like (12a) and (12b) undergo neither object preposing nor topicalization, because if these movements applied, they would result in identical syntactic forms with opposite interpretations, such as the middle term in (14) and the last term in (15). Consequently, we are unable to determine whether sentence (17) below is derived from (12a) by object preposing or from (12b) by topicalization, because θ -roles cannot be properly interpreted:

- b. *Zhe-ben shu_i wo kan-guo t_i le.*
 this-CL book I read-ASP ASP
 'This book, I have read.'

In other words, (18a), not (18b), can be altered either by object preposing, as in (19a), or by topicalization as in (19b). Sentences such as (18b) are ruled out since 'book' cannot 'read' the object 'I/me', so no false overlap as in (14) and (15) will happen with the movements in (19). The contradiction of (11) and (13) can then be dealt with by claiming that the equivalences of (11) only apply to one side or the other of inequality (13), but not to both, where selectional restrictions permit the exchange of subject and object NPs.

2.2 Extraction of a possessor NP

There is a striking similarity between object movement and the extraction of a possessor NP from object position. Consider sentences which undergo extraction of a possessor NP from object position, such as (8b) and (9b), repeated below:

- (20) *Zhe-zhi ji_i wo chi [NP t_i chibang].*
 this-CL chicken I eat wing
 'This chicken, I'll eat its wings.'
- (21) *Zhe-pian lunwen_i wo xian kan-le [NP t_i dier zhang].*
 this-CL thesis I first read-ASP second chapter
 'This thesis, I read the second chapter first.'

On a par with object movement, the extracted possessors can be extracted not only to clause-initial position as in (20) and (21), but also to medial position as follows:

- (22) *Wo zhe-zhi ji_i chi [NP t_i chibang].*
 I this-CL chicken eat wing
 'This chicken, I'll eat its wings.'
- (23) *Wo zhe-pian lunwen_i xian kan-le [NP t_i dier zhang].*
 I this-CL thesis first read-ASP second chapter
 'This thesis, I read the second chapter first.'

Thus, (22) and (23) suggest the following generalization:

- (24) a. [_S subject V [_{NP} possessor possessed]]
 b. [_S possessor_i subject V [_{NP} t_i possessed]]
 c. [_S subject possessor_i V [_{NP} t_i possessed]]

This means that for a sentence (a), the possessor may either be extracted to the initial position as in (b) or to the medial position as in (c); the semantic interpretations of (a), (b) and (c) should be the same.

Possessor movement is inherently similar to object movement in the sense that if subject and possessor in (24a) can properly be substituted for one another, no extraction of the possessor is permitted. Consider the contrasts below:

- (25) a. *Lisi kanjian Zhangsan baba le.*
 Lisi see Zhangsan dad ASP
 'Lisi saw Zhangsan's father.'
- b. *Zhangsan kanjian Lisi baba le.*
 Zhangsan see Lisi dad ASP
 'Zhangsan saw Lisi's father.'
- (26) a. * *Zhangsan_i Lisi kanjian [_{NP} t_i baba] le.*
 Zhangsan Lisi see dad ASP
 (Nonsensical)
- b. * *Lisi Zhangsan_i kanjian [_{NP} t_i baba] le.*
 Lisi Zhangsan see dad ASP
 (Nonsensical)

Sentence (26a), with the possessor extracted to clause-initial position from (25a), is a nonsensical sentence, because it can also be treated as derived from (25b)—a sentence with a reversed semantic interpretation—with the possessor extracted to medial position. Equally, sentence (26b), with the possessor extracted to medial position from (25a), can be viewed as derived from (25b), with the possessor extracted to clause-initial position. Hence the unacceptable ambiguity.

On the other hand, in sentences which undergo both kinds of movement, the subject and the possessor are not mutually substitutable. For example, for the sentences in (20) and (21), or (22) and (23), we cannot do the following replacements:

- (27) a. *Wo chi zhe-zhi ji de chibang.*
 I eat this-CL chicken POSS wing
 'I'll eat this chicken's wings.'
- b. * *Zhe-zhi ji chi wo de chibang.*
 this-CL chicken eat I POSS wings
 *'This chicken will eat my wing.'
- (28) a. *Wo xian kan-le zhe-pian lunwen de dier zhang.*
 I first read-ASP this-CL thesis POSS second chapter
 'I read the second chapter of this thesis first.'

- b. * *Zhe-pian lunwen xian kan-le wo de dier zhang.*
 this-CL thesis first read-ASP I POSS second chapter
 'This thesis read my second chapter first.'

Sentences such as (20) and (21), or (22) and (23), can therefore only be recognized as being derived from (27a) and (28a) respectively, but impossible from (27b) and (28b). But possessors in object position in sentences such as (27a) and (28a) may undergo either clause-initial extraction or extraction to medial position, for there is no possible overlap of two opposite interpretations.

To avoid causing such unacceptable overlaps with opposite interpretations in movement from object position, a restriction on substitution must be proposed for both object movement and extraction of possessor from object position.

2.3 A restriction on substitution

Based on what we have so far discussed in the last two sections, I claim that the mutual substitutability of subject and moved NP from object position is the crucial reason for the relevant unacceptable movements.

I assume the generalization (I) governing object movements in Chinese, as formulated below:

- (29) Y is subject to the rule *Move α* , if:
 • [_S X verb_i Y] CANNOT properly substitute for [_S Y verb_i X]

More examples are shown as follows in (30) and (31):

- (30) a. *Wang jiaoshou mei jiao-guo Disan Ban.*
 Wang professor not teach-ASP third class
 'Prof. Wang didn't teach Class Three.'
- b. * *Disan Ban mei jiao-guo Wang jiaoshou.*
 third class not teach-ASP Wang professor
 'Class Three didn't teach Prof. Wang.'
- c. *Disan Ban Wang jiaoshou mei jiao-guo.*
 third class Wang professor not teach-ASP
 'Class Three, Prof. Wang didn't teach.'
- d. *Wang jiaoshou Disan Ban mei jiao-guo.*
 Wang professor third class not teach-ASP
 'Class Three, Prof. Wang didn't teach.'
- (31) a. *Wang jiaoshou bu xihuan Lisi.*
 Wang professor not like Lisi
 'Prof. Wang does not like Lisi.'

- b. *Lisi bu xihuan Wang jiaoshou.*
 Lisi not like Wang professor
 'Lisi does not like Prof. Wang.'
- c. * *Wang jiaoshou Lisi bu xihuan.*
 Wang professor Lisi not like
 (Nonsensical)
- d. * *Lisi Wang jiaoshou bu xihuan.*
 Lisi Wang professor not like
 (Nonsensical)

The object in (30a) can either be preposed as in (30c) or topicalized as in (30d), because it is not possible for the subject and object in (30a) to replace one another, as shown in (30b). On the contrary, the acceptable (31a) and (31b) show that the NPs in subject position and object position are substitutable with each other, so no movement of the object is allowed as seen in (31c) and (31d).

In a similar fashion, I assume the generalization (II) in (32), developed from (29), concerning the extraction of possessor from object position, as demonstrated in (33) and (34):

- (32) A possessor *Y* in object position is subject to the rule *Move α*, if:
- [_S X verb_i [_{NP} possessor *Y* possessed]] CANNOT properly substitute for [_S Y verb_i [_{NP} possessor X possessed]].
- (33) a. *Wo zhi qi zhe-zhang zhuzi de tui.*
 I just paint this-CL table POSS leg
 'I'll just paint the legs of the table.'
- b. * *Zhe-zhang zhuzi zhi qi wo de tui.*
 this-CL table just paint I POSS leg
 '*This table will just paint my legs.'
- c. *Wo zhe-zhang zhuzi zhi qi tui.*
 I this-CL table just paint leg
 'This table, I'll just paint (its) legs.'
- d. *Zhe-zhang zhuzi wo zhi qi tui.*
 this-CL table I just paint leg
 'This table, I'll just paint (its) legs.'
- (34) a. *Zhe-zhi mao yao-duan-le nei-zhi gou de weiba.*
 this-CL cat bite-broken-ASP that-CL dog POSS tail
 'This cat bit that dog's tail in two.'
- b. *Nei-zhi gou yao-duan-le zhe-zhi mao de weiba.*
 that-CL dog bite-broken-ASP this-CL cat POSS tail
 'That dog bit this cat's tail in two.'

- c. * *Zhe-zhi mao nei-zhi gou yao-duan-le weiba.*
 this-CL cat that-CL dog bite-broken-ASP tail
 (Nonsensical)
- d. * *Nei-zhi gou, zhe-zhi mao yao-duan-le weiba.*
 this-CL dog that-CL cat bite-broken-ASP tail
 (Nonsensical)

Generalization (II) not only indicates that the substitutability of the NP in subject position and the possessor in object position is the crucial reason for the ill-formedness of extraction from object position, but also is consistent with the well-formedness of the extraction of possessor NPs from subject position. NP movement in Chinese is always from right to left. When a possessor NP in subject position is to be extracted, topic position is the only position to which the possessor NP can move. Moreover, the extraction of a possessor from subject position is a so-called vacuous movement, where no effect of the movement can actually be observed on the surface string,¹¹ so such an extraction is always free.

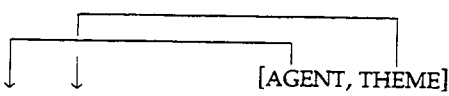
3. SEMANTIC HIERARCHIES

To go one step further, we observe that both generalizations (I) and (II) should be improved because sometimes they fail to apply to certain sentences.

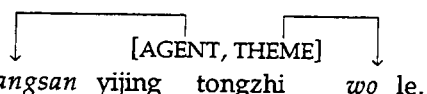
As argued earlier, the θ -role interpretation of (17), repeated as (35) below, is impossible, hence object movement is prohibited. If we replace the name *Lisi* by *wo* 'I', however, as in (36), θ -role interpretation turns out to be clear:

- (35) ? *Zhangsan Lisi yijing tongzhi le.*
 Zhangsan Lisi already notify ASP (Nonsensical)
- ? ← [AGENT, THEME]
- (36) a. *Zhangsan wo yijing tongzhi le.*
 Zhangsan I already notify ASP
 'Zhangsan, I have already notified.'
- [AGENT, THEME]

¹¹ Chomsky (1986b) argues that vacuous movement may not be an optimal analysis, because there is no overt evidence in child language acquisition for such an assumption.

- b. 
 I Zhangsan already notify ASP
 'Zhangsan, I have already notified.'

In (36a) and (36b), the first person singular pronoun *wo* 'I' has to be interpreted as Agent and the proper noun *Zhangsan* as Theme. In order to express 'Zhangsan has already notified me', normal SVO word order has to be used as in (37):

- (37) 
 Zhangsan yijing tongzhi wo le.
 Zhangsan already notify I ASP
 'Zhangsan has already notified me.'

The evidence of (36) shows that there is a θ -role interpretation hierarchy in this case, which can be schematized as follows:

- (38) a. Pronoun > Proper noun > Definite common noun > Indefinite common noun
 b. Agent > Theme > Goal

The schemata mean that on the one hand, a pronoun—highest on the hierarchy—takes precedence to receive a higher θ -role over a proper noun, a definite common noun or an indefinite common noun, in that order. On the other hand, Agent, which is higher than Theme or Goal, takes precedence to be interpreted as a higher argument. So *wo* 'I' is interpreted as Agent and *Zhangsan* as Theme in (36a) and (36b).

All pronouns stay at the same level on the hierarchy, for instance:

- (39) *Zhangsan ta yijing tongzhi le.*
 Zhangsan he already notify ASP
 'Zhangsan, he has notified already.' (= He has already notified Zhangsan.)
 (Not 'Zhangsan has already notified him.')
- (40) a. * *Wo ta yijing tongzhi le.*
 I he already notify ASP (Nonsensical)
- b. * *Ta wo yijing tongzhi le.*
 he I already notify ASP (Nonsensical)

In (39), it is the third person pronoun that is interpreted as Agent on a par with the first person pronoun in (36a), while the ill-formedness of the examples in (40) shows that the first and the third person pronouns are at

the same level. Thus, generalization (I) in (29) should be revised as (41) below:

- (41) Y is subject to the rule *Move α* , if:
- [_S X verb_i Y] CANNOT properly substitute for [_S Y verb_i X];
 - Y is lower than X on the hierarchy for θ -role interpretation.

In the case of possessor extraction, the moved NP has already received a Possessor θ -role from the possessed head, so the θ -role interpretation hierarchy as presented in (38) is not available. There is, however, another type of semantic hierarchy that must be pointed out, which improves generalization (II) of (32) above.

The possessive relationship is often distinguished into two types: alienable and inalienable (Huang 1982, Guéron 1984, Xu & Langendoen 1985, Cheng & Ritter 1987 among others).¹² I assume that the possessive relationship consists of the following three types:

- A. The possessed is a fundamental part of the body of the possessor (henceforth body/part):

- (42) a. *zhe-zhi ji de chibang*
 this-CL chicken POSS wing
 'this chicken's wings'
- b. *zhe-ben shu de dier zhang*
 this-CL book POSS second chapter
 'the second chapter of this thesis'

In these NPs, 'wings' and 'the second chapter' are integral parts of 'chicken' and 'thesis' respectively.

- B. The possessed is something that the possessor may own (henceforth owner/owned):

- (43) a. *Zhangsan de qian*
 Zhangsan POSS money
 'Zhangsan's money'
- b. *zhe-ge ren de zhishi*
 this-CL person POSS knowledge
 'this person's knowledge'

¹² Whether a possessive relationship is alienable or inalienable is not always a matter of consensus. For example, Huang (1982) considers kinship as inalienable, while Cheng & Ritter (1987) do not.

'Money' in (43a) is not an integral part of 'Zhangsan' but is owned by 'Zhangsan'. Similarly, 'knowledge' in (43b) is the spiritual wealth of a person who may or may not own it.

- C. There is a sort of human relationship (including kinship) between the possessor and the possessed:
- (44) a. *Lisi de baba*
 Lisi POSS dad
 'Lisi's dad'
- b. *Zhangsan de laoshi*
 Zhangsan POSS teacher
 'Zhangsan's teacher'

Fathers have children and teachers have students. Nobody literally owns his/her counterpart in such a relationship.

Among the three types of possessive relationships, type A (body/part) is inalienable while type B (owner/owned) is alienable. Whether type C (human relationship) is inalienable or not depends on one's approach. It is interesting that only type A (i.e., body/part) relationships allow extraction of the possessor from object position, while the other two types B and C do not. Consider the following examples:

- (45) a. *Wo renshi zhe-ben shu de zuozhe.*
 I know this-CL book POSS author
 'I know the author of this book.'
- b. * *Zhe-ben shu renshi wo de zuozhe.*
 this-CL book know I POSS author
 *'This book knows my author.'

In terms of generalization (II), 'this book' in (45a) should be able to undergo movement because it is not possible for it to exchange positions with 'I'. But the fact is that no extraction is acceptable, as (46) shows:

- (46) a. * *Wo zhe-ben shu renshi zuozhe.*
 I this-CL book know author
 ('I know the author of this book.')
- b. * *Zhe-ben shu wo renshi zuozhe.*
 this-CL book I know author
 ('I know the author of this book.')

The reason for the ill-formedness in (46) is that the relationship between 'author' and 'this book' is type B instead of the necessary type A. The sentences will be good if we change the relationship to type A:

- (47) a. *Wo xihuan zhe-ben shu de dier zhang.*
 I like this-CL book POSS second chapter
 'I like the second chapter of this book.'
- b. * *Zhe-ben shu xihuan wo de dier zhang.*
 this-CL book like I POSS second chapter
 *'This book likes my second chapter.'
- c. *Wo zhe-ben shu xihuan dier zhang.*
 I this-CL book like second chapter
 'This book, I like (its) second chapter.'
- d. *Zhe-ben shu wo xihuan dier zhang.*
 this-CL book I like second chapter
 'This book, I like (its) second chapter.'

The only difference between (45a) and (47a) is that the possessive relationship in the former is type B while in the latter it is type A. Therefore, (45a) allows no possessor extraction, as (46) shows, while (47a) does allow possessor extraction, as shown in (47c) and (47d). On this basis, I claim that the type A possessive relationship is much higher or stronger than the other two types:

- (48) Body/Part (A) > Owner/Owned (B), Human Relation (C)

In (46) which bears a type B relationship, 'author' can certainly be interpreted as 'some other book's author', other than the 'book' mentioned here, so that the sentences are bad. With the relationship of type A in (47), however, the possessor of 'the second chapter' must be the 'book' in question, because whenever we mention a body/part relation, both the possessor and the possessed must be generated together. Thus, the possessor of 'the second chapter' in (47) cannot be interpreted as any other book.

This does not imply, however, that the body/part relationship is the most important factor in possessor extraction. As a matter of fact, this relationship must still be under the control of generalization (II), as shown in the sentences of (34) earlier, where the body/part relation is involved, but still no movement is permitted.

Based on the above analyses, generalization (II) can be revised as follows:

- (49) Possessor Y in object position is subject to the rule *Move α* , if:
- [_S X verb_i [_{NP} possessor Y possessed]] CANNOT properly substitute for [_S Y verb_i [_{NP} possessor X possessed]],
 - the relationship between possessor Y and possessed is a body/part relationship.

4. A CONCLUSION

It is interesting to note that what we are talking about is essentially associated with the Empty Category Principle (ECP) proposed by Chomsky (1981, 1986a), which requires that empty categories created by movement can only occur in those positions that are properly governed. Haegeman (1991) explains a type of subject-object asymmetry with the ECP in English:

- (50) a. Whom_i do [_{IP} you think [_{CP} t'_i that [_{IP} Lord Emsworth will invite t_i]]]? (Haegeman 1991: 403)
- b. * Who_i do [_{IP} you think [_{CP} t'_i that [_{IP} t_i will invite Poirot]]]]? (Haegeman 1991: 403)

The object can be extracted across the complementizer in (50a), because the lowest trace is not only governed but also theta-marked by the verb 'invite'; the subject however cannot be extracted from its clause because there is an overt complementizer to interfere with government from the medial trace.

What is of interest is that this kind of subject-object asymmetry also exists in possessor extractions in Chinese, even though there is no *that*-like complementizer and overt WH-movement at all in this language. For example:

- (51) a. *Zhe shu_i [_S ni dudu [_{NP} t_i disan zhang]].*
 this book you read-DUB third chapter
 'This book, you read its third chapter.'
- b. *Zhe shu_i [_S wo jianyi [_{CP} t'_i [_S ni dudu [_{NP} t_i disan zhang]]]]*
 this book I suggest you read-DUB third chapter
 'This book, I suggest you read its third chapter.'
- (52) a. *Zhangsan_i [_S [_{NP} t_i baba] hen youqian].*
 Zhangsan dad very rich
 'Zhangsan, his father is very rich.'
- b. * *Zhangsan_i [_S wo faxian [_{CP} t'_i [_S [_{NP} t_i baba] hen youqian]]].*
 Zhangsan I find dad very rich
 ('I found out that Zhangsan's father is very rich.')

The well-formedness of (51b) may also be explained using the ECP, in that the lowest trace is both governed and theta-marked by its head—but what is the barrier preventing extraction in (52b)? In other words, further significant work is left to be done on what constitutes a barrier for this kind of extraction from subject position in Chinese, which is obviously different from that in English.

Similarly, there is some difference between these two languages in object movement. Pollock (1989) presents a new approach in the analysis of traditional inflection, which was considered as one constituent with two different sets of features, i.e., [$\pm$ Tense, $\pm$ Agreement]. Instead, Pollock proposes that each set of features is a syntactic head of a maximal projection, which are called T(ense)P and AGR(eement)P, etc.. Further, Pollock argues that each of the maximal projections is a potential barrier for certain types of movements in both English and French (see also Guilfoyle, Hung & Travis 1989), so that is why an object does not readily move up to the initial position in English or French.

Since there are apparently no such projections in Chinese, it would seem that Chinese sentences should be relatively transparent for object movement. As a result, an object in a Chinese sentence is able to be either preposed to the medial position, or topicalized to the clause-initial position. I would suggest that the most crucial head of a sentence, obligatory in Chinese, is aspect, which functions a little like tense in English.¹³ Such an ASPP, however, does not seem to constitute a barrier for any type of object movement, nor does INFL in English in some other approaches (see, for example, Haegeman 1991 and DeArmond 1992). A sentence with an object topicalization, for instance, 'Beans, I like', is grammatical. All the questions mentioned above, such as the role of the ECP in government, barriers to movement, and the head of a sentence in Chinese, may be further investigated in light of what has been discussed in this article.

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¹³ I am currently working on this issue for my PhD dissertation. Also see Cheng (1989).

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