

POSSESSOR EXTRACTION IN MANDARIN CHINESE REVISITED: A PRO ANALYSIS*

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In this paper, the pro analysis along with multiple object analysis (Huang 1992, 1999) is used to approach the possessor extraction out of the subject and object positions in a parallel way. This analysis not only simplifies the way to the treatment of the obscure possessor extraction data, but also reveals the unique properties of the (radical) pro-drop parameter and multiple subject/object construction in Mandarin Chinese.

Key words: possessor extraction, pro, multiple object structure, focus anchoring

1. Introduction

This paper investigates the possessor extraction in Mandarin Chinese in an attempt to find a uniform way of explaining the extraction from both the subject and object position. It is found that studies on possessor raising in English mostly focus on the extraction from the object position, which is strictly prohibited. However, no extraction from the subject position has been discussed in the literature, probably avoiding the dubious vacuous subject raising. In Mandarin Chinese, the extraction from the object position is prohibited and has been interpreted from different perspectives, such as non-constituent movement (Hsu 2009), PF CVC (Kuo 2009), and relativized minimality/improper movement (Ting 2009). Interestingly, among these analyses, only Hsu (2009) asserts that some cases of object extraction are permissible. We will take these data into account, since they represent the intuitions of some native speakers who accept the possessor extraction out of the object position in Mandarin Chinese. We will propose a uniform analysis which can tolerate two kinds of possessor extraction in line with the *pro* analysis (Huang, et al. 2009) and the multiple object analysis (Huang 1992, 1999).

The organization of this paper is as follows. Section 2 focuses on the

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review of the literature on English possessor extraction. Section 3 turns to possessor extraction in Mandarin. Section 4 gives forth our own solution. Section 5 concludes this paper.

2. English Possessor extraction

2.1 The distribution

Ross (1967, 1986) initiates the attempt to answer the question of possessor raising from the viewpoint of Left Branch Condition (LBC). He notices that this restriction on sub-extraction from NP and AP is not a universal phenomenon and formulates his observation on LBC as below.

- (1) Left Branch Condition (Ross 1967, 1986)
No NP which is the leftmost constituent of a larger NP can be reordered out of this NP by a transformation rule.

The notion of 'left branch' hinges on the fact that the sub-extracted element, such as possessors like *whose* in (2a) is located at a position to the left of the nominal projection and cannot be raised from this position. However, the extraction can be repaired by pied-piping the whole constituent as in (2b).

- (2) Possessor extraction
a. *Whose do you like [--car]?
b. *Whose car* do you like --?

Since Ross's pioneering observations on LBC from the perspectives of the linear or hierarchical position of the sub-extraction element (Corver 2006), the issue has been heatedly discussed from various perspectives, two of which have often been paid attention to by most linguists. They are (i) the nature of the phrase dominating the left-branch element and (ii) the licensing of the trace left behind after sub-extraction. In the following, we will briefly review some crucial analyses under these two branches.

2.2 Subjacency account: the domain of LBC

The first concern of LBC here is on the domain over the left-branch element, which means that it is the violation of locality condition that causes LBC. However, Chomsky (1973) has already suggested that the LBC effect cannot be attributed to a locality condition like Subjacency. More specifically, Chomsky (1981:168) further pinpoints that similar sub-extraction examples are illegitimate in a language like Italian, which bounding nodes for Subjacency are NP and S' (Rizzi 1982) and which sub-extraction from LBC should be predicted to be licit along this vein. This false prediction means that the LBC effect cannot be dealt with under the Subjacency and should turn to other principles of

grammar, such as the Empty Category Principle (ECP), as suggested by Chomsky (1981) and Corver (1990, 2006). Later, another locality analysis in terms of the phase theory (Chomsky 2001) will be introduced in Section 2.3.

2.3 ECP account: the licensing of the trace

Chomsky (1981:168) deals with the illegitimacy of various kinds of extraction such as possessors by proposing that N is not a proper governor with respect to the trace left by extraction, even if N still governs the SpecNP. The feasibility of this analysis counts on the assumption that the trace in SpecNP cannot be properly governed from any governor outside the NP domain. The logic of this inference comes from the fact that “potential proper governors do not have access to [Spec, NP] if this position falls within the government domain of the lexical head N” (Corver 2006). This observation is further validated by Giorgi and Longobardi’s (1991:101) Uniqueness Constraint on Government as below.

- (3) If a position β is governed by a lexical head α , it has no other governor.

This analysis predicts that any left-branch elements that cannot be removed from within NP is under the governing domain of N, which may form a case-dependency with these left-branch elements, such as the assignment of genitive case to the possessor, or which may enter into an agreement relationship with N, such as number or gender agreement. Rizzi (1990:32) has the similar elaboration on the fact that N is not a sufficient governor and that NP-external governor cannot govern into the nominal domain.

In light of these ECP accounts, Corver (1990, 1992, 1997a, b) claims that the left branch extraction can be explained in terms of DP-hypotheses for nominal structures (Abney 1987). In this model, the possessive marker *-s* can be taken as the head D. Here, N fails to properly govern the trace left by the extracted element and the intervening barriers (VP or IP) also block the antecedent government.¹ Corver (1992) extends this line of analysis to the example as (2a), repeated below. To (2a), Corver does not consider *whose* a constituent, because *who* occupies the SpecDP position and *-s* in the D head as illustrated in (4). Thus, *whose* has to be frozen *in situ*, except that it is pied-piped with the rest of the noun phrase, *car* as in (2b).

- (2) a. *Whose do you like [--car]?
b. *Whose car* do you like --?

- (4) [DP who [D' 's [NP]]]

¹ Under the barrier approach, the two heads cannot directly be moved to the SpecCP due to the fact that they cannot escape the barrierhood of the intervening maximal projections, VP and IP, by adjoining to them.

2.4 Other analyses

Huang (1982:508-9) has noticed that LBC cannot be coped with by means of Condition on Extraction Domain (CED), ECP or even Subjacency. That is, LBC has not been thought of as an island effect by Huang. Turning to Case Filter and Theta-Criterion, he claims that the illicit (5a) is caused by the fact that the trace of *whose* cannot acquire Case. This leads to the failure of theta-assignment to the chain between *whose* and the trace, [*whose*, t] according to the Visibility Condition (Chomsky 1981). As for (5b), after *who* is raised to the SpecCP, the whole NP [_{NP} t_i mother] fails to be assigned Case by the passive verb *seen*. Thus, it is still out. That is, Huang (1982:508-9) resorts to the Case Filter and Theta-Criterion; to him, the island analysis does not make any sense.

- (5) a. *Whose_i did you see [_{NP} t_i mother]?
b. *Who_i was seen [_{NP} t_i mother]?

3. Mandarin Possessor extraction

3.1 Hsu (2009): possessor and possessive modifier analysis

Hsu (2009) makes use of Bošković's (2005) ideas to analyze possessor extraction in Mandarin Chinese and further distinguishes possessor from possessive modifier regarding extraction. Below are her major findings.

First, she claims that there is no so-called subject-object asymmetry in possessor extraction; either subject or object can freely be extracted only if the information structure is legitimately matched.² For example, the extraction of object possessor in (6c) is as good as that of subject possessor in (6a), while (6b) is illicit. Hsu (2009) vaguely attributes the different judgment between (6b) and (6c) to the availability of a specific contrast in speakers' minds, given Krifka's (2007) definition of Focus as having "a list of alternatives." She assumes that the kinship term in (6b) is weak in building up the concept of "a list of alternatives." When the possessor *Zhangsan* is topicalized, it is difficult for the NP remnant *baba* 'father' to acquire the focus interpretation, except that a contrastive device is used as in (7). It indicates that the proper context will improve the acceptability of the movement. Comparatively, (6c) and (8) own a body-part relationship and an alienable relationship, respectively, which seem to be strong enough to construct a contrastive focus. It is a pity that Hsu has not devoted much discussion to this speculation.

- (6) a. Zhangsan_i xianran [t_i shoubi] hen chang.
Zhangsan obviously arm very long
'Zhangsan obviously has very long arm.'

² This judgment is strikingly distinct from Ting's (2009), which object possessor cannot be extracted, as we will review below.

- b. ?*Zhangsan_i, wo renshi [t_i baba].
 Zhangsan I know father
 ‘Zhangsan, I know [his] father.’
- c. Na-zhi-tuzi_i, wo mingming kanjian-le [t_i erduo]!
 that-CL-rabbit I obviously see-Asp ear
 ‘It is true of that rabbit that I saw its ears!’
- (7) a. Ni renshi Zhangsan-de baba ma?
 you know Zhangsan-De father Part
 ‘Do you know Zhangsan’s father?’
- b. Zhangsan_i (a), wo bu renshi [t_i baba] keshi renshi [t_i mama].
 Zhangsan Part.I not know father but know mother
 ‘Zhangsan, I don’t know [his] FATHER, but [I] know [his] MOTHER.’
- (8) ?LiAn_i (a), wo kan-guo [t_i bu-shao dianying].
 LiAn Part. I see-Asp not-few movie
 ‘Speaking of Li An, I’ve seen several of [his] movies.’

Second, she considers possessor extraction in the subject position as a kind of A-bar movement or A-movement (Hsu and Ting 2006) each with independence evidence. A-bar movement here is a manifestation of Focalization or Topicalization, while A-movement is a reflection of the Multiple Nominative Construction, proposed by Hsu and Ting (2006). On the other hand, the possessor extraction in the object position is rigidly an A-bar movement, motivated by focus or topic. It implies that possessor raising from an argument position to the sentence-initial position in Mandarin Chinese is allowed; in other words, Mandarin Chinese does not abide by LBC with respect to possessor extraction. In that sense, LBC, not being an intervention or interference, has no effect on possessor extraction.

Third, Hsu has also noticed that the distinction between possessor and possessive modifier is closely related to the typological distinctions between DP and NP languages embraced by Bošković (2005) with respect to the modifier extraction of LBC as in (9).

- (9) a. [_{DP} D [_{AP} A [_{NP} N]]] (AP-over-NP, DP languages)
 b. [_{NP} AP N] (NP-over-AP, non-DP languages)

Bošković claims that there are two kinds of DP languages. The possessor in the DP languages such as English is non-extractable, because the possessor as a modifier is a non-constituent as in (9a), which movement is prohibited in general. On the other, the DP languages such as Hungarian allow possessor extraction due to the fact that the possessor is a constituent in SpecDP, which can be extracted to the initial position. Hsu proposes that possessor without *de* in Mandarin Chinese is just like the possessor in Hungarian, being extractable in (10a), while the possessive modifier with *de* behaves like that of English, being

non-extractable in (10b). That is, a possessor in Mandarin Chinese is located in SpecDP as a whole just like that in Hungarian, not forming a constituent with its possessee; thus, extracting possessors in Mandarin Chinese is legitimate. However, the possessive *de*-phrases as pre-nominal modifiers in A(djectival) position is not permitted to be extracted. Accordingly, the extraction of possessive modifier observes the general structural analysis, which takes LBC as a non-constituency violation, not an island violation.

- (10) a. Zhangsan_i xianran [t_i shoubi] hen chang.
 Zhangsan obviously arm very long
 ‘Zhangsan obviously has very long arm.’
 b. *Zhangsan_i-de xianran [t_i shoubi] hen chang.
 Zhangsan-De obviously arm very long
 ‘Zhangsan obviously has very long arm.’

In brief, the extraction of the possessor or possessive modifier from the subject and the object position is treated differently in this analysis. The latter has not been exhaustively elaborated on the reason why the kinship term in (6b) is weak in building up the concept of “a list of alternatives,” different from (6c) and (8).

3.2 Ting (2009): Multiple Nominative and A-movement analysis

Ting (2009) shows different judgment from Hsu (2009) on possessor extraction from object position. Object possessor is not extractable in Ting (2009) but extractable in Hsu (2009). Hence, Ting’s subject-object asymmetry in possessor extraction generates different analyses on this issue.

Given the possessor extraction analyses of Xu (1993, 2005) and Hsu and Ting (2006), she claims that the possessor *tuzi* ‘rabbit’ is extracted from the SpecDP in the lower SpecTP position to the higher SpecTP, as illustrated in (10).

- (11) [TP [DP₁ tuzi]_j T [TP [DP₂ t_j D [NP erduo]]_i T [AP t_i chang]]]
 rabbit ear long
 ‘Rabbit’s ear is long.’

The multiple T-head analysis is supported by the presence of *shi* ‘be’, which is taken as a head of a functional projection between the higher TP and the lower TP as in (12), rather than between two Specifier positions of a TP.

- (12) [TP [DP₁ tuzi]_j T [ShiP *shi* [TP [DP₂ t_j D [NP erduo]]_i T [AP t_i chang]]]]
 rabbit be ear long
 ‘Indeed, rabbit’s ear is long.’

The movement from SpecDP to SpecTP is motivated by feature checking in line with Nash and Rouveret (1997) and Neeleman and Weerman (1999). The cyclic TP is taken as a proxy category, which is used to check up the unchecked feature T in the possessor from SpecDP.

Ting claims that this analysis not only can solve the dilemma caused by DP-type languages (9a), which should obey LBC, but also can explain why object possessor is not extractable in Mandarin. To the first question, Ting considers possessor in Mandarin Chinese as an argument in SpecDP, not an adjectival modifier in A. Hence, its extraction from the SpecDP position is a licit A-movement, not being blocked by LBC as possessive modifier (Bošković 2005).

Further, she asserts that the non-extractable object possessor as in (13) does not nullify the Multiple Nominative Construction analysis either by virtue of A-movement or A-bar movement as a topic.

- (13) ?*Zhangsan_i, wo renshi [t_i baba].
 Zhangsan I know father
 ‘Zhangsan, I know his father.’

For the first possibility, if object possessor extraction is an A-movement, the movement will cross another intervening A-binder *wo* ‘I’ in (13), violating Relativized Minimality (Rizzi 1990). Second, by adopting Gavruseva’s (2000) idea that the languages allowing possessor movement to A-bar position own rich agreement like Hungarian, she claims that within split nominal structure, KP-DP-NP, once the head K contains a strong [Q] feature as in Hungarian, the possessor can be moved to the SpecKP, an A-bar position, and then to the initial topic position. On the other hand, when the head K contains a weak [Q] feature in the languages such as English, German, Dutch, and Mandarin Chinese, the possessor can only move to SpecDP, an A-position, not to SpecKP, an A-bar position. Hence, in this case, further movement to the initial A-bar topic position is prohibited. By this two-track method, Ting explains the unavailability of possessor extraction from object.

From the above descriptions, the major difference between Hsu (2009) and Ting (2009) lies in the (non-)extractability of the object possessor, which Ting (2009) regards as a violation of Relativized Minimality (in the case of A-movement) or as a result of improper movement (in the case of A-bar movement). Both are two manifestations of LBC.

3.3 Kuo (2009): Phase and PF Spell-Out analysis

Kuo argues for the existence of possessor raising based on Phase Theory (Chomsky 2001) and against a base-generation account. She proposes that a PF Spell-Out condition can explain why possessor can be extracted from the subject position and from the unaccusative postverbal NPs and why it cannot from the object position.

She assumes that possessor with *-de* is part of a complex noun phrase in subject position and has not undergone raising, while possessor without *-de* is moved to the SpecTP to acquire nominative Case assigned by T in a recursive TP under multiple nominative analysis (Xu 2005), similar to Hsu and Ting’s (2006) idea. Evidence for this claim comes from the distribution of sentential

adverbs *xianran* ‘apparently’, which cannot appear within the complex NP with *-de* in (14a), but which can intervene between the possessor and the possessee without *-de* in (14b). She postulates that the possessor with *-de* is frozen in its original place, while that without *-de* has undergone movement. In fact, the detailed arguments of this view are pending, particularly in comparison with (10b) with *-de* frozen in front of *xianran*.

- (14) a. [_{NP} Geruisen (*xianran) de baba] si-le.
 Grissom apparently De father die-Asp
 ‘Grissom’s father (apparently) died.’
 b. [_{NP} Geruisen] (xianran) [_{NP} baba] si-le.
 Gruisen apparently father die-Asp
 ‘Grissom’s father (apparently) died.’

In particular, Kuo has noticed that the extraction of possessor from the object position can be repaired by a resumptive pronoun, *ta* ‘he’ as below.

- (15) a. *Geruisen (de)_i wo xihuan [t_i baba].
 Grissom DE I like father
 ‘I like Grissom’s father.’
 b. Geruisen (de)_i wo xihuan [ta_i baba].
 Grissom DE I like he father
 ‘I like Grissom’s father.’

She proposes that although possessor raising does exist in Chinese, it is subject to the constraint in (16) (Kuo 2009:113). That is, in a possessor raising chain, an overt copy of the possessor is needed in each spell-out domain to make the chain visible at PF.³

- (16) PF-Chain Visibility Condition (CVC)
 At PF, a possessor raising chain has to be visible in each spell-out domain.

In terms of the Phase Impenetrability Condition (PIC), she holds that possessor raising is permissible only if it has to target the edge of the *vP* (a phase) on its way to the TP-adjoined position.⁴ CVC and PIC can be used to explain the illicit object extraction as in (17a), which obeys locality condition but violates CVC. As shown, there are two spell-out domains. One is the lower spell-out domain, VP, and the other the higher spell-out domain, TP-*vP*. Accordingly, the two copies of the possessor raising chain, the two traces, end up in different spell-out domains. Since there is no overt realization of the possessor in the lower spell-out domain VP, the CVC is violated. In contrast, the resumptive pronoun can make visible the lowest copy/trace of the possessor raising chain in

³ Kuo defines the spell-out domain as the complement of a phase or the root clause (Chomsky 2001).

⁴ She has not specified the nature of this movement.

(17b). Thus, the CVC is obeyed.

- (17) a. * $[_{TP} \text{Geruisen}_i [_{TP} \text{wo} [_{vP} t_i [_{VP} \text{xihuan} [_{NP} t_i \text{baba}]]]]]$.
 Grissom I like father
 ‘I like Grissom’s father.’
- b. $[_{TP} \text{Geruisen}_i [_{TP} \text{wo} [_{vP} t_i [_{VP} \text{xihuan} [_{NP} \text{ta}_i \text{baba}]]]]]$.
 Grissom I like he father
 ‘I like Grissom’s father.’

Kuo’s CVC analysis can explain and predict the ungrammaticality of the object possessor extraction, which is not caused by locality condition but a PF spell-out domain condition. It also can predict the legitimate possessor extraction from subject and unaccusative postverbal NP as in (18a, b), respectively. In (18a), the copy/trace in question is in the same spell-out domain as the possessor; thus, the CVC is respected. Adopting Chomsky’s (2000) postulation that the vP phase is defective or even does not show up with unaccusatives, Kuo assumes that both copies of the possessor raising chain are in the same spell-out domain, TP, in (18b). Hence, CVC is obeyed and the sentence is licit. However, if a resumptive pronoun appears as in (18c), the sentence will be out, since the resumption as a last resort is not necessary in this case.

- (18) a. $[_{TP} \text{Geruisen}_j [_{TP} [_{NP} t_j \text{baba}]_i [_{vP} t_i [_{VP} \text{xihuan} \text{Sala}]]]]]$
 Grissom father like Sara
 ‘Grissom’s father likes Sara.’
- b. $[_{TP} \text{Geruisen}_i [_{vP/VP} \text{si-le} [_{NP} t_i \text{baba}]]]$
 Grissom die-ASP father
 ‘Grissom’s father died.’
- c. * $[_{TP} \text{Geruisen}_i [_{vP/VP} \text{si-le} [_{NP} \text{ta}_i \text{baba}]]]$.
 Grissom die-ASP he father
 ‘(Lit.) Grissom father died his father.’

As we can see, LBC is now not a condition any more in this analysis and is even not existent. But it indeed has some effects on possessor extraction. But these effects results from different factors: non-constituent movement (Hsu 2009), PF CVC (Kuo 2009), and relativized minimality/improper movement (Ting 2009). Given that the extraction from the object position is true on some occasions (Hsu 2009), it seems that it is impossible to achieve a unified account bridging between extraction from subject and one from object extraction via the three previous analyses. Below, we will use the ideas proposed in Huang, et al. (2009) to approach this goal.

4. The proposal

4.1 Possessor extraction out of subject position

In this section, we will adopt the idea of Huang et al. (2009), which makes use

of Generalized Control Rule (GCR) (Huang 1984, 1989) to deal with some island violations in the topic structures.

Huang et al. (2009) have noticed that the Left Branch Condition (LBC), prohibiting extraction from the left branch, is strictly implemented in the Chinese example, as repeated in (19).

- (19) *Zhangsan_i, wo kanjian-le [e_i baba].
 Zhangsan I see-Asp father
 ‘Zhangsan_i, I saw [his_i] father.’

However, they also note that when the extracted domain is in the subject position as in (20), the sentence is felicitous.

- (20) Zhangsan_i, [[e_i baba] hen youqian].
 Zhangsan father very rich
 ‘Zhangsan_i, [his_i] father is rich.’

Similar contrast also occurs in complex NP islands and adjunct islands as in (21). The topicalization of an element, *Lisi*, is prohibited to be extracted from the complex NP in the object position in (21a), while the extraction is allowed from the complex NP in the subject position as in (21b). By the same token, similar prohibition also occurs within the adjunct island in the intermediate adjunct position in (22a). But when the adjunct island is in the initial position as in (22b), topicalization is allowed.

- (21) a. *Lisi_i, wo renshi [henduo [[e_i xihuan] de] ren].
 Lisi I know many like De person
 ‘*Lisi_i, I know many people who e_i likes.’
 b. Zhangsan_i, [[e_i xihuan de] ren] hen duo.
 Zhangsan like De person very many
 ‘Zhangsan_i, people who [he_i] likes are many.’
- (22) a. *Lisi_i, zhe-jian shi [gene_i mei lai] mei you guanxi.
 Lisi this-Cl matter with not come not have relation
 ‘Lisi_i, this matter is not related to [his_i] not having come.’
 b. Lisi_i, yinwei e_i piping-le Zhangsan, (suoyi) meiren yao ta.
 Lisi because criticize-Asp Zhangsan so nobody want him
 ‘(As for) Lisi_i, because [he_i] criticized Zhangsan, nobody wants him.’

Based on these facts, Huang (1984, 1989) proposes that all the empty categories in (20-22) can be recognized as a *pro*, since Mandarin Chinese prevalently allows an empty pronoun in all argument positions (*pro*), in contrast to English, which only permits an empty pronoun pronominal in a Caseless position (*PRO*). Further, in terms of the similarities of *PRO* and *pro*, he brings up the Generalized Control Rule to account for the behaviors of [+pronominal] empty pronouns as formulated in (23).

- (23) Generalized Control Rule (GCR)
An empty pronoun is co-indexed with the closest nominal.

Accordingly, Huang et al. (2009) suggest that the closest nominal antecedent of the empty pronoun can be in an A-position or in an A'-position. In that sense, *pro* functions as a kind of “empty” resumption pronoun in this language, somewhat different from the “overt” visibility resumption requirement of Kuo (2009). In that sense, since there is no movement involved, Subjacency, CED, or other island constraints are irrelevant in interpreting the contrast in these examples.

Further, the examples in (20), (21b) and (22b) are licit because the closest nominal antecedents by GCR are the topics in A'-position, which naturally co-index with the empty resumptive pronouns in question without violating any principle of grammar. In contrast, in (19), (21a), and (22a), under GCR, the closest c-commanding antecedents are the subjects *wo* ‘I’ in the former two cases and *zhejian shi* ‘this matter’ in the last case, not the topics. It means that the topics have nothing to do with the comments in all these cases. Thus, the unintended readings arise, respectively. The readings in (24) do not make sense in these topic structures.

- (24) a. %As for Zhangsan, I saw my father.
b. %As for Lisi, I know many people who I likes.’
c. %As for Lisi, this matter is not related to its not having come.

The theory is easy for us to verify. For example, these sentences can be improved to some degree if the domains in question are preposed to the positions in front of subject, around the left periphery of the sentence below the topics as in (25)-(27).

- (25) Zhangsan_i, [e_i baba]_j, wo kanjian-le t_j.
Zhangsan father I see-Asp
‘Zhangsan_i, I saw [his_i] father.’
- (26) ?Lisi_i, [henduo [[e_i xihuan] de] ren]_j, wo renshi t_j.
Lisi many like De person I know
‘Lisi_i, I know many people who e_i likes.’
- (27) *Lisi_i, [gen e_i mei lai]_j, zhe-jian shi t_j mei you guanxi.
Lisi with not come this-Cl matter not have relation
‘Lisi_i, this matter is not related to [his_i] not having come.’

In the light of this, we can propose that the object preposing in (25-26) can be considered as a way to “repair” these island violations. This salvaging effect directly supports the fact that the seeming extraction site relating to the left branching condition in Mandarin as in (25) is actually a base-generated *pro*. When the *pro* is close to its antecedent, the topic *Zhangsan*, the construal of *pro* is definitely identified, satisfying the requirement of GCR. However, the

preposing of prepositional clause in (27) is not improved, because Mandarin Chinese essentially prohibits preposition *gen*-phrase/clause dislocation.⁵ This does not affect our previous inference.

This repairing device can obtain further confirmation from the following illicit relative clause containing a LBC as in (28) (Huang, et al. 2009:219). As predicted, (28a) is improved when [_i baba] is preposed as in (28b). Structurally, the *pro* in (28b) is c-commanded by the relative head, *nage nuhai* ‘that girl’.

- (28) a. *[wo kanjian-le [_i baba] de] na-ge nuhai_i
 I see-Asp father De that-Cl girl
 ‘the girl that I saw [her] father’
 b. ?[[_{pro} baba] wo kanjian-le de] na-ge nuhai_i
 father I see-Asp De that-Cl girl
 ‘the girl whose father I saw’

However, the illicit example raised by Hsu (2009) ((10)), repeated as in (29a), still constitutes a counterexample to this *pro* analysis. From the minimal pairs in (29) and (30), it seems that the presence of *-de* affects the construal of *pro*. So far, we will leave the property of *-de* aside but still sticks to the *pro* account.⁶

- (29) a. *Zhangsan_i-de xianran [_{pro} shoubi] hen chang.
 Zhangsan-De obviously arm very long
 ‘Zhangsan obviously has very long arm.’
 b. Zhangsan_i xianran [_{pro} shoubi] hen chang.
 Zhangsan obviously arm very long
 ‘Zhangsan obviously has very long arm.’
- (30) a. ?Zhangsan_i-de, [_{pro} shoubi] hen chang.
 Zhangsan-De arm very long
 ‘Zhangsan obviously has very long arm.’
 b. Zhangsan_i, [_{pro} shoubi] hen chang.
 Zhangsan arm very long
 ‘Zhangsan obviously has very long arm.’

4.2 Possessor extraction out of object position

⁵ Thank Professor Audrey Li for pointing out that even without extraction, this sentence sounds strange as in (i).

(i) *gen Lisi mei lai, zhe-jian shi mei you guanxi.
 with Lisi not come this-Cl matter not have relation

⁶ As pointed out by Audrey Li, (30a) sounds better when topic marker like *-(y)a*: is added. She further suggests that *Zhangsan-de* may not be a syntactic unit and cannot be dislocated together. That is the reason why it is unacceptable. In other words, we can infer that the presence of the topic marker only means that *Zhangsan-de* may be a phonological unit, but not necessarily a syntactic one. It follows that given this fact, the position of *de* is still an important issue.

(i) ?Zhangsan_i-de-(y)a, [_{pro} shoubi] hen chang.
 Zhangsan-De-Top arm very long
 ‘Zhangsan obviously has very long arm.’

4.2.1 Focus anchoring account and LF-movement

The advantage of this analysis might be that it can account for the licit extraction from the object position in the examples elicited from Hsu (2009), as repeated below.

- (31) Na-zhi-tuzi_i, wo mingming kanjian-le [t_i erduo]!
that-Cl-rabbit I obviously see-Asp ear
'It is true of that rabbit that I saw its ears!'
- (32) a. Ni renshi Zhangsan-de baba ma?
you know Zhangsan-De father Part
'Do you know Zhangsan's father?'
- b. Zhangsan_i (a), wo bu renshi [t_i baba] keshi renshi [t_i mama].
Zhangsan Part. I not know father but know mother
'Zhangsan, I don't know [his] FATHER, but [I] know [his] MOTHER.'
- (33) ?Li An_i (a), wo kan-guo [t_i bu-shao dianying].
LiAn Part. I see-Asp not-few movie
'Speaking of Li An, I've seen several of [his] movies.'

Hsu (2009) attributes the free extraction from the object position by way of A'-movement to the clear-cut information structure between the topic and the gap. As we have reviewed previously, the explicit mechanism is left unexplored.

As proposed in the last section, preposing for the purpose of *pro* construal is a repairing gadget for the LBC violation. However, the sub-extraction examples from the object positions in (31-33) are all acceptable sentences, even though the empty gaps are intervened with subjects. That is to say, the salvaging device is of no use here. How can these examples be interpreted without violating any grammatical rules?

Given that the information structure of body-part relationship, contrast focus, and inalienable relationship is on the right track (Hsu 2009), we assume that these special connections can be built up in a way of focus anchoring. According to Tang and Lee's (2000) Generalized Anchoring Principle as depicted in (34), which is an extension of Enç's (1987) tense anchoring, a sentence can wipe out the so-called "incompleteness effect" as in (35a) through contrastive focus across conjunction in (35b) at the LF interface level (cf. Tsai 2007).

- (34) Generalized Anchoring Principle⁷
Every sentence must be either tensed or focused at the LF interface level.
- (35) a. % Akiu na shu.
Akiu take book
'Akiu took books.'
- b. Akiu na shu, wo na qikan.
Akiu take book I take journal
'Akiu takes books, and I journals.'

Along this vein, we can say that the examples in (31-33) are made possible by resorting to this focus anchoring principle at the level of LF. More specifically, the incompleteness of (31), (32), and (33) is salvaged by focusing the body-part relationship as in (36), by stressing the contrasts as in (37), and by emphasizing the inalienable relationship as in (38), respectively. It is assumed that only when the focus domains are stressed can all these sentences be fully interpreted.

- (36) Na-zhi-tuzi, wo mingming kanjian-le [Foc ERDUO]!
that-Cl-rabbit I obviously see-Asp ear
'It is its ear that I saw from the rabbit!'
- (37) a. Ni renshi Zhangsan-de baba ma?
you know Zhangsan-De father Part
'Do you know Zhangsan's father?'
- b. Zhangsan (a), wo bu renshi [Foc BABA] keshi renshi [Foc MAMA].
Zhangsan Part.I not know father but know mother
'Zhangsan, I don't know [his] FATHER, but [I] know [his] MOTHER.'
- (38) ?LiAn (a), wo kan-guo [Foc BU-SHAO DIANYING].⁸
LiAn Part. I see-Asp not-few movie
'It is [his] movies that I saw a few from An Li.'

Given this focus anchoring account, we further propose that conceptually, at the level of LF, the whole focused elements containing the empty resumptive

⁷ Along the line of Huang (2005), Tsai (2007) further extends the focus account to the other compensatory cases such as counterfactual and imperative in (i).

(i) a. Akiu na shu? bu keneng!
Akiu take book not possible
'Akiu took the book? No way!'

b. na shu!
take book
'Take the book.'

⁸ The sentence turns out to be bad when the quantifier *bu-shao* 'not few' is reduced as below. Thus, we consider the quantifier as a focused element in the domain.

(i) *Li An (a), wo kan-guo [Foc DIANYING].
Li An Part. I see-Asp movie
'It is [his] movies that I saw from An Li.'

pronouns will be pied-piped and adjoined to the position between the subject and the topic, in the sense of Nishiguachi (1986) and Fiengo et al. (1988), as demonstrated below.

- (39) Na-zhi-tuzi_i, [pro_i erduo]_j wo mingming kanjian-le t_j!
 that-CL-rabbit ear I obviously see-Asp
 ‘It is its ear that I saw from the rabbit!’
- (40) Zhangsan_i(a), [pro_i baba]_j wo bu renshi t_j keshi [pro_i mama]_j renshi t_j.
 Zhangsan Part. FatherI not know but mother know
 ‘Zhangsan, I don’t know [his] FATHER, but [I] know [his] MOTHER.’
- (41) ?LiAn_i (a), [pro_i bu-shao dianying]_j wo kan-guo t_j.
 LiAn Part. not-few movie I see-Asp
 ‘It is [his] movies that I saw a few from An Li.’

By means of GCR, the *pro*’s can straightforwardly refer to the topic. Thus, the focus anchoring principle compensates the incompleteness of these sentences by means of stressed focuses deduced from various types of relationships, such as body-part, contrast, and inalienability. But the *pro* does not undergo its construal until the focused elements have been raised to the position after the topic at the level of LF.

This analysis has at least two defects. First, the construal of *pro* is postponed until LF in these special cases, which require more empirical or theoretical evidence. Second, the co-indexation of *pro* with the topic *Zhangsan* in the second conjunct of (40) seems hard to achieve because of the long distance in between.

4.2.2 Multiple object analysis

To avoid these dilemmas, we propose another non-LF-movement analysis based on the analysis of outer object embraced in Huang (1992, 1999). Huang (1992) analyzes (42) as involving a complex predicate with an outer object. The empty outer object in V’ adjoined position can control the null possessor *Pro* within NP before movement. After operator movement, the matrix subject *Zhangsan* and the operator in adjoined IP position can be co-indexed by predication/strong binding. In other words, by means of predication/strong binding, operator movement, and control, (42) gets interpreted as a kind of tough movement.

- (42) Zhangsan bei tufe_i dasi-le baba.
 Zhangsan Pass bandits kill-Asp father
 ‘Zhangsan had his father killed by the bandits.’

- (43) Zhangsan_i bei [IP OP_i [IP tufe_i [V' t_i [V' dasi-le [NP Pro_i baba]]]]].

We propose that in analogy to the multiple nominative (subject) analysis (Xu 2005, Hsu and Ting 2006, Hsu 2009, and Kuo 2009), the sentences in question also manifest a multiple object structure in line with Huang's outer object analysis. The outer objects such as *na-zhi-tuzi* 'that rabbit', *Zhangsan*, and *Li An* in (44)-(46), respectively, are base-generated at the adjunction position of V', from where each of them can control the *pro* within NP. Later after V-to-v raising, the outer objects are all topicalized to the sentence-initial A-bar position, similar to the operator movement in (43) but different from it in the lack of further predication. In addition, this analysis can remedy the construal problem posed by (40) via across-the-board topicalization, which elicits the topicalized element *Zhangsan* from the adjoined V' position in the first and second conjuncts at the same time as illustrated in (45).

- (44) Na-zhi-tuzi_i, wo mingming [v_p kanjian_j-le [v' t_i t_j [NP pro_i erduo]]]!
 that-CL-rabbit I obviously see-Asp ear
 'It is its ear that I saw from the rabbit!'
- (45) Zhangsan_i (a), wo bu [[v_p renshi_j [v' t_i t_j [NP pro_i baba]]]
 Zhangsan Part. I not know father
 keshi [v_p renshi_k [v' t_i t_k [NP pro_i mama]]]].
 but know mother
 'Zhangsan, I don't know [his] FATHER, but [I] know [his] MOTHER.'
- (46) ?Li An_i (a), wo [v_p kan-guo_j [v' t_i t_j [NP pro_i bu-shao dianying]]].
 LiAn Part. I see-Asp not-few movie
 'It is [his] movies that I saw a few from An Li.'

The advantages of this multiple object analysis are four-fold. To begin with, it can avoid the analytical problem posed by LF movement and construal analysis, since there is no *ad hoc* LF movement and construal in this account, but a prevalent topicalization in Mandarin Chinese. Second, the awkward construal of *pro* in the second conjunct with the matrix subject in (40) no longer occurs in this analysis by virtue of across-the-board topicalization in (45). Third, the multiple object analysis parallels the multiple nominative analysis in configurational structure, which not only manifests the "symmetry" in hierarchy but also can interpret the unique intuitions of some native speakers who accept the possessor extraction out of the object position in Mandarin Chinese. Fourth, this analysis reveals that typologically, Mandarin Chinese makes more use of *pro* to be construed with its antecedent concerning possessor extraction in addition to movement such as topicalization and object preposing. This conforms to the fact that Mandarin Chinese is a radical *pro*-drop language with *pro* in the subject and possessor position (Neeleman and Szendrői 2007). On the other hand, this analysis still has to answer the following two questions: (i) What is the condition for having double objects? (ii) Why is contrastive focus

necessary in the construction? These will be left open for future research.

5. Conclusion

In this paper, the *pro* analysis along with multiple object analysis (Huang 1992, 1999) is used to explain the possessor extraction from the subject and object positions in a parallel way. The analysis not only simplifies the way to the treatment of these obscure possessor extraction data, but also in a sense reveals the prevalent uses of *pro*-drop parameter and multiple subject/object structure in this language.

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