# Chapter Three

## A Competition-Based Proposal for Chinese Non-Local Reflexivization

### 3.1 Introduction

In this chapter, I will lay out an approach to the Chinese LD reflexive *ziji* based on Hu and Pan's (2002) NP prominence theory, which in turn draws its inspiration from Xu's (1993, 1994). As Hu and Pan's approach has been introduced in detail in Chapter 2, the present chapter focuses on how the forthcoming theory differs from theirs. It will be demonstrated that five points of divergence are necessary as certain data suggest in section 3.2. One difference is the retention of an independent local binding component in the current proposal, whereas Hu and Pan's approach is an ambitious attempt at unifying local and long-distance binding, which runs into problems with the most typical instance (See Chapter 2 for an example and 3.2.).

A second difference concerns the eliminability of [+prominent]. Hu and Pan assume that once an NP is marked as [+prominent], the feature will not be removed even when an NP next to it ranks higher in terms of prominence. By contrast, the current approach assumes that an NP marked as [+prominent] can have this feature removed when it is less prominent than an NP next to it. It is also assumed here that [±dominating, ±animate] outranks [±subject].

A third difference, concomitant with the second one, relates to the necessity of certain prominence factors. [+first/second person] is eliminated from consideration because its sole purpose is to derive the asymmetrical blocking effect and nothing more. Further, while [±agent] and [±local] have a place in Hu and Pan's theory, in the current theory, their roles are called into question; it is found that if we allow [±dominating, ±animate] to outrank [±subject], we can do away with [±agent] and [±local], thereby considerably downsizing the inventory of prominence factors.

Fourthly, the candidate as defined in Hu and Pan's Antecedent-Seeking

Mechanism has to be refined in such a way that when the XP c-commanding *ziji* is a non-subject, the XP itself (when it is a nominal phrase) and the XP-internal NP c-commanding the head of the XP count as candidates. When the XP is a subject, both it and any subject NP within it are candidates.

A fifth difference lies in the order in which candidates compete for prominence. Hu and Pan adopt a strictly linear order, whereas I propose that after prominence competition has taken place among the various candidates within an NP which is itself a candidate, only the NP, not the leftmost candidate within it, goes on to compete with a structurally higher candidate on the left.

Section 3.3 examines the proposed mechanism against further data. I will argue that subject orientation and binding by sub-commanding NPs follow from the current account.

In section 3.4 I will examine some sentence types apparently imcompatible with the Antecedent-Seeking Mechanism, such as *ziji* in adverbial clauses adjoined to the matrix IP, psych-sentences, and *ba*/*bei* constructions. It will be shown that these cases can be handled if we adopt some assumptions, such as some functional phrases.

Section 3.5 is devoted to issues regarding the nature of the Antecedent-Seeking Mechanism. I will demonstrate that it is essentially a syntactic operation because it displays two parallels characteristic of syntactic operations, locality and upwardness.

Section 3.6 applies the Antecedent-Seeking Mechanism to Japanese and Korean. Some modifications will be shown to be necessary in the presence of some data.

Below these points will be fleshed out and accompanied by examples that justify the necessity of these differences.[43]

[43] Section 3.2 might read somewhat like a review of Hu and Pan's approach and thus might be incorporated in Chapter 2. However, new ideas have been discussed here, and the discussion would be impossible if the inadequacies of their proposal were not highlighted to illustrate the necessity of the modifications to be proposed below. For a complete review of Hu and Pan's approach, please refer back to the relevant sections in Chapter 2.

3.2 Modifications to Hu and Pan (2002)

As it is established in Hu and Pan (2002) that prominence plays a role in licensing certain NPs as binders, the question now is how to modify their proposal in such a way as to accommodate the facts reported in the literature.

Firstly, the current proposal assumes that sub-commanding binding should be treated separately from local binding, but on a par with long-distance binding. The assumption runs counter to the claim implicit in the previous Chomskyan analyses such as Huang and Tang (1991), Huang and Liu (2001), Sung and Cole (1994) et al. that sub-commanding binding by an animate NP is assimilated into local binding,[44] but gains support from the Singaporean Teochew example (1a) below in Cole et al. (2001) and Icelandic examples (1b-c) in Maling (1984):

(1) a. Ah Meng$_i$ gai chia$_j$ hai-liao kaki$_{*i/*j}$.
*Ah Meng's car harm-Perf self*
Ah Meng$_i$'s car$_j$ harmed *him/*itself.
b. Skoðun Siggu$_i$ er að sig$_i$ vanti hæfileika
*Opinion Sigga's is that self lacks-subj. talent*
Sigga's opinion is that she lacks talent.
c. Jón$_i$ segir að Ólafur$_j$ hafi ekki enn fundið vinnu, sem sér$_{i/j}$ líki.
*Jon says that Olaf has-subj. not yet found a-job, that self likes*
Jon says that Olaf has not yet found a job that self likes.

According to Cole et al., (1a) indicates that the subject *Ah Meng* is not a legitimate antecedent because certain logophoric requirements are lacking.[45] This suggests that

[44] They either adopted sub-commanding in the definition of c-command (cf. Huang and Tang (1991)) or resorted to feature percolation (cf. Sung and Cole (1994)) so that the sub-commanding animate antecedent in the same clause as *ziji* is treated like a local antecedent in the grammar.

[45] Although Cole et al. cited the example to illustrate the presence of logophoric requirements on sub-commanding antecedents in Teochew, they did not seem aware that this example (their (12a)) demonstrates that their feature percolation principle (FPP), whose function is to convert a sub-commanding NP into a local c-commanding antecedent here, stands at odds with the fact that local antecedents need no logophoric requirements, unlike LD and sub-commanding antecedents. Confusingly enough, they refer to the sub-commanding antecedent of (1) as an LD antecedent, although FPP seems to make it otherwise. Also recall that in Chapter Two I raised doubts about Cole et

both sub-commanding and LD antecedents need non-syntactic requirements (although these may differ for both cases) in the language and can be treated alike, whereas local binders require a separate treatment because they do not need to fulfill such requirements. (1b) and (1c) show that sub-commanding binding and long-distance binding are alike in that for most Icelandic speakers, both require the subjunctive tense as one licensing factor, in contrast to local binding (Maling, 1984).

Our assumption here also differs from that of Hu and Pan (2002), who treat binding, whether local, sub-commanding, or long-distance, in a uniform manner. One example against this claim is (81b) mentioned in Chapter 2, repeated below for ease of reference:

(2) Zhangsan$_i$ zhidao Lisi$_j$ xihuan ziji$_{i/j}$.
*Zhangsan know Lisi like self.*
Zhangsan$_i$ knows Lisi$_j$ likes him$_i$/himself$_j$.

As the reader can verify (see chapter 2), Hu and Pan's theory would incorrectly predict long-distance binding to be impossible in this sentence.[46] Of course, (2) does not definitively point to the separate treatments for local and non-local binding, as the problem might be [±local]; as will be shown below shortly, if we do away without it, *Zhangsan* and *Lisi* would be correctly predicted to antecede *ziji*. However, consider the following example, which demonstrates that Hu and Pan's uniform treatment for local and non-local binding is problematic, and this has nothing to do with [±local]:

(3) Zhangsan$_i$ renwei meige gongyuan$_j$ duo you ziji$_{i/j}$-de tese.

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al.'s claim that examples such as (1) are ungrammatical because of the absence of the SELF requirement on the intended antecedent. If this doubt is confirmed, then (1a) would not support my treating sub-commanding and local binding separately.

[46] Here I do not exclude the possibility that a uniform approach to binding could be achieved if Hu and Pan's proposal is modified in some way. The criticism discussed here applies only to their current formulation.

*Zhangsan think every park all have self's characteristics.*
Zhangsan$_i$ thinks every park$_j$ has his$_i$/its$_j$ own characteristics.

Note that both *Zhangsan* and *meige gongyuan* can be the antecedent.[47] If we apply Hu and Pan's prominence computation, we cannot predict this possibility. According to their definition of the agent, which includes the experiencer role, *Zhangsan* counts as an agent. It outranks *meige gongyuan* because the former is [+subject, +agent] and [-dominating, +animate] whereas the latter is [+subject, -agent] and [-dominating, -animate]. [±local] has no role to play here. This predicts *Zhangsan* to be the only antecedent, contrary to fact.

If we follow Tang (1989) and treat *meige gongyuan* as an instance of metaphorical extension (personification), as well as assuming that *meige gongyuan* is [+agent][48], then only *meige gongyuan* could be the antecedent because it is more prominent than *Zhangsan* after we invoke [±local]. If we assume *meige gongyuan* is [-agent] and keep rest of the above personification account, only *Zhangsan* could be the antecedent; *Meige gongyuan* would be [+subject, -agent] and [-dominating, +animate] and *Zhangsan* would be [+subject, +agent] and [-dominating, +animate]. In other words, there is no way Hu and Pan's theory could allow both *Zhangsan* and *meige gongyuan* to be legitimate antecedents. It seems that however Hu and Pan's account is applied, a separate treatment for local binding is useful in order to handle such data, contra their position.[49]

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[47] Tang (1989) first discussed the example and treated it as an instance of personification. Pan (2001) opposed such an account. Please refer to section 2.4, Chapter Two.

[48] Although we are not sure whether the subject of the predicate *you ziji-de tese* can be considered an experiencer and [+agent], we are showing Hu and Pan's formulation cannot deal with (3), no matter whether *meige gongyuan* is [+agent] or not.

[49] Concomitant with the first difference is our elimination of Hu and Pan's requirement that a reflexive searches for overt NPs as antecedents before it goes on to search for covert NPs as antecedents. This requirement is set up to deal with antecedent relations as in (i) and (ii):
(i) Laowang$_i$ bei ni$_j$ suo zai ziji$_{i/j}$-de wuzi-li.
*Laowang BEI you lock Pro at self's home-Loc*
Laowang was locked by you at self's home.
(ii) Zhangsan$_i$ bi Lisi$_j$ gei ziji$_{i/j}$ gua huzi.

Let us turn to our second assumption, viz. that an NP that is assigned [+prominent] during computation can have this feature removed at the end of computation, provided a more prominent NP occurs next to it. First consider the following:

(4) Lisi$_i$ dui Zhangsan$_j$ biaoming zheben shu$_k$ dui ziji$_{i/*j/*k}$ mei yong.
*Lisi to Zhangsan indicate this-CL book to self no use*
Lisi indicated to Zhangsan that this book was useless to him.

Recall that experiencers are treated as [+agent] in Hu and Pan's approach and *Zhangsan*, an experiencer, is thus [+agent]. Let *zheben shu* and *Zhangsan* in (4) enter into prominence competition. As the former is [+subject, -agent] and [-dominating, -animate] and the latter is [-subject, +agent] and [-dominating, +animate], *Zhangsan* outranks *zheben shu* in terms of prominence. Since in Hu and Pan's formulation an NP that is marked [+prominent] must retain this feature throughout the computation, *Zhangsan* is wrongly predicted to be able to antecede *ziji*, despite the presence of *Lisi*, a candidate that is supposed to outrank *Zhangsan*.[50] But so far we cannot definitively decide that the problem is the assumption that an NP marked as [+prominent] will retain this feature throughout the competition because Hu and Pan's approach relies heavily on whether a candidate has a particular value for a prominence factor. That is,

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*Zhangsan force Lisi for self shave beard*
Zhangsan forced Lisi to shave for him/himself.
In (i), on the assumption that [+subject] and [+agent] are equally prominent in their approach, as *ni* outranks *Laowang* because the former is [-subject, +agent], [+animate], and [+second person] and the latter is [+subject, -agent], [+animate], and [-second person], Hu and Pan account for the coreference between *Laowang* and *ziji* by postulating an empty local subject bearing the index of *Laowang* and then the letting the requirement do the work. I believe their postulation of an empty local subject here is an ad hoc decision to make (i) parallel to (ii), and I will therefore refrain from positing any empty subject and treat (i) as an instance of local binding. As for (ii), *Zhangsan* outranks *Lisi*, and the presence of Pro and that requirement save the coindexation between *Lisi* and *ziji*. But the relation between *Lisi* and *ziji* is an instance of local binding, and the requirement therefore has no place in my approach, which is devoted to non-local binding.

[50] It is still possible that *Zhangsan* could refer to *ziji*, but it would be an emphatic/contrastive use and fall outside the scope of the current inquiry.

perhaps by tinkering with the values of a certain prominence factor, we could avoid the problem noted above. Let us test whether this could be achieved by assuming *Zhangsan* to be [-agent]. If so, it would lose the competition to *zheben shu*. *Zhangsan*, being [-subject, -agent] and [-dominating, +animate], would tie with *zheben shu*, being [+subject, -agent] and [-dominating, -animate] if we did not take [±local] into consideration. Once we consider [±local], *zheben shu* would outrank *Zhangsan*, which would compete with *Lisi*, which would win the competition over *Zhangsan* as the antecedent. Everything seems right here, except that *zheben shu* is predicted to be an antecedent (a problem that has been discussed along with our first difference from Hu and Pan and is not our concern now). It seems that as long as we assumed *Zhangsan* to be [-agent], it would not be wrongly predicted to be [+prominent] and a legitimate antecedent. However, consider the following, which is almost identical to (4) except that the subject is an inanimate NP:

(5) $\text{Zhe}_i$ xiang $\text{Zhangsan}_j$ zhengming-le zheben $\text{shu}_k$ dui $\text{ziji}_{*i/j/*k}$ mei yong.[51]
*This to Zhangsan prove-Perf this-CL book to self no use*
This proved to Zhangsan that this book was useless to him.

If we assume that *Zhangsan* is [-agent] and additionally that *zhe* is [+agent][52], it would be predicted that both could antecede *zjji*. This is because *Zhangsan* would be [-subject, -agent] and [-dominating, +animate], *zhe* would be [+subject, +agent] and [-dominating, -animate] and neither is more local than the other, as there is no subset

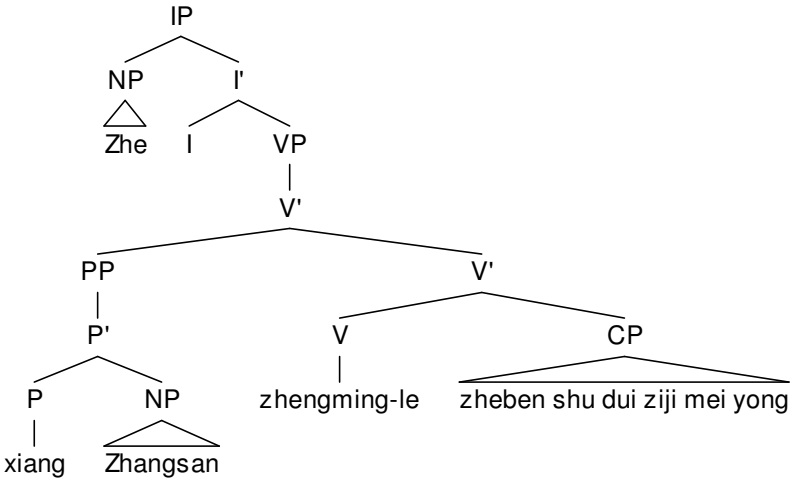
[51] Some people might feel that *ziji* strongly refers to a salient entity in the discourse, or the speaker. A variant of the NP accessibility hierarchy (subject> object> oblique> genitive NPs; note that I collapse primary and secondary objects into the category object for the present purpose) to be discussed in Chapter Four seems at work. I propose that the lower an NP marked as [+prominent] is placed in the hierarchy, the more likely it is to refer to a discoursally salient entity.

[52] Some linguists might require agents to be sentient and thus consider *zhe* to be [-agent]. Although the definition of agenthood is notoriously controversial and difficult to pin down (see Saeed 2003), our current criticism against Hu and Pan's approach does not crucially rest on it. As the reader can verify for himself, even if we assume *zhe* to be [-agent], the problem discussed in the text still exists. Thanks go to Hsieh Laoshi for bringing the issue on agenthood to my attention.

relationship between them. Consider (6) below: the path from *ziji* to the PP dominating *Zhangsan* is not a proper subset of the path from *ziji* to the matrix IP dominating *zhe*. This is a tied competition. In other words, Hu and Pan's formulation cannot rule out *zhe* as an antecedent in (5), if we assume that *Zhangsan* is [-agent]; if we assume *Zhangsan* is [+agent] instead, we will incorrectly predict it to be able to antecede *ziji* in (4).

The above discussion suggests that the culprit for the problems is not whether a certain NP should be marked [+agent]. Consider again (5) and its structure (6) with the tentative assumption that [±agent] is excluded from the prominence factors.

(6)




*Zheben shu*, being [+subject], [-dominating, -animate], and [+local], outranks *Zhangsan*, being [-subject], [-dominating, +animate], and [-local]. *Zhangsan* ties with *zhe*, being [+subject] and [-dominating, -animate]. As neither is more local than the other, [±local] does not apply here. This means that *Zhangsan* and *zhe* would be predicted to be legitimate antecedents. Obviously, the problems noted in the previous paragraphs cannot be solved by marking one NP as [+agent] and the other as [-agent], or by rejecting [±agent] altogether from consideration.

As it will be argued below, what is wrong is the assumption that once an NP is marked as [+prominent], it will be an available antecedent even when an NP next to it ranks higher in terms of prominence. Let us propose the following preliminary modifications to Hu and Pan's formulation:

(7) Prominence Elimination (Preliminary Version):
An NP marked as [+prominent] during the computation can have this feature eliminated, provided that there is a more prominent NP next to it.

(8) Prominence Hierarchy:
A. i. [+subject, +agent] > [+subject, -agent]
ii. [-subject, +agent] > [-subject, -agent]
iii. [+subject, +agent] > [-subject, +agent]
iv. [+subject, -agent] > [-subject, -agent]
B i. [-dominating, +animate] > [-dominating, -animate]
ii. [+dominating, +animate] > [-dominating, +animate]
iii. [+dominating, -animate] > [-dominating, -animate]
iv. [-dominating, +animate] > [+dominating, -animate]
B > A[53]
Given two candidates α and β, only β, not α, is marked as [+prominent] if α outranks β in terms of A but is outranked by β in terms of B.

Reconsider (4) and (5):

(4) $\text{Lisi}_i$ dui $\text{Zhangsan}_j$ biaoming zheben $\text{shu}_k$ dui $\text{ziji}_{i/*j/*k}$ mei yong.
*Lisi to Zhangsan indicate this-CL book to self no use*
Lisi indicated to Zhangsan that this book was useless to him.
(5) $\text{Zhe}_i$ xiang $\text{Zhangsan}_j$ zhengming-le zheben $\text{shu}_k$ dui $\text{ziji}_{*i/j/*k}$ mei yong.
*This to Zhangsan prove-Perf this-CL book to self no use*
This proved to Zhangsan that this book was useless to him.

[53] Such an outranking relation is already implicit in Pan (2001). He proposed that the antecedent of long-distance *ziji* must be a self-ascriber. When a matrix-clause subject is inanimate, then the matrix-clause object, if it happens to be an animate object of verbs such as *gaosu*, is the antecedent because it is the only self-ascriber. (inanimate NPs cannot be self-ascribers.) However, as long-distance antecedents need not be self-ascribers, his outranking relation, which relies on self-ascribers, needs to be rethought. (8) and the modification to it in the text represent such a revision.

In (4), assume for the sake of argument that *Zhangsan* is [-subject, +agent] and [-dominating, +animate]. According to (7) and (8), it outranks *zheben shu*, which is [+subject, -agent] and [-dominating, -animate], and is marked as [+prominent]. Now *Lisi*, being [+subject, +agent] and [-dominating, +animate], outranks *Zhangsan*, thereby depriving the latter of [+prominent]. Only *Lisi* can antecede *ziji* in a neutral context, as predicted. If we assumed that *Zhangsan* is [-subject, -agent], the result would still be the same, with *Lisi* being the only antecedent. Let us now turn to (5). As in (4), *Zhangsan* outranks *zheben shu*; but it also outranks the matrix subject *zhe*, which is [-dominating, -animate]. With (7) and (8) in place, we can successfully tackle cases which Hu and Pan's formulation cannot.

The third assumption of our current approach is facilitated by (7) and the dissociation of local binding from non-local binding in our approach. I propose that [±agent] and [±local] be excluded from the inventory of prominence factors. Therefore (8) can be simplified as follows:

(9) B>A
[±dominating, ±animate]> [±subject]
If A outranks B in terms of [±subject] but is outranked by B in terms of [±dominating, ±animate], only B, not A, is marked as [+prominent].

Consider the following:

(10) Zhejian shi$_i$ gaosu Lisi$_j$ zheben shu$_k$ hai-le ziji$_{*i/j/*k}$.
*This-CL thing tell Lisi this-CL book harm-Perf self*
This incident told Lisi that this book harmed him.

With (9), *zheben shu* would lose the competition to *Lisi* (the former would be [+subject] and [-dominating, -animate], whereas the latter would be [-subject] and

[-dominating, +animate]). *Zhejian shi*, being [+subject] and [-dominating, -animate] would also be outranked by *Lisi*. Contrast (10) with (11):

(11) Zhangsan$_i$ gaosu Lisi$_j$ zheben shu$_k$ hai-le ziji$_{i/*j/*k}$.
*Zhangsan tell Lisi this-CL book harm-Perf self*
Zhangsan$_i$ told Lisi that this book harmed him$_i$.

(7) and (9) predict *Zhangsan* to be the only antecedent because *Lisi*, although outranking *zheben shu*, is outranked by *Zhangsan*. *Zhangsan* and *Lisi* are both [-dominating, +animate], so the crucial factor for determining which is [+prominent] is [±subject]. *Zhangsan* outranks *Lisi* because it is a subject.

As for [±local], we have seen in Chapter 2 that it renders typical long-distance binding impossible. To illustrate why we can do without [±local] if we are equipped with (7) and (8), consider the following:

(12) Zhangsan$_i$ renwei Lisi$_j$ taoyan ziji$_{i/j}$.
*Zhangsan think Lisi hate self*
Zhangsan thinks Lisi hates him/himself.

As both *Lisi* and *Zhangsan* are [+subject] and [-dominating, +animate], they are qualified as antecedents of *ziji*. To bring in [±local], as in Hu and Pan's formulation, would make it impossible for *ziji* to refer to *Zhangsan* because *Lisi* would be [+local] and outrank *Zhangsan*.

The role of [+first/second person] is also suspect. In Chapter 2, we have seen that its purpose during prominence computation is only to derive the presence and absence of asymmetrical blocking in some dialects of Mandarin. Consider (13):

(13) Wo zhidao Lisi taoyan ziji.
*I know Lisi hate self*

I know Lisi hates me/himself.

As both *wo* and *Lisi* are [+subject, +agent] and [-dominating, +animate], we need to consider [±local] and/or [±first/second person] to determine which outranks which, according to Hu and Pan. Those native speakers who consider [±first/second person] would allow *ziji* to refer to *wo*, whereas those who consider [+local] would allow only *Lisi* as the antecedent. *Lisi*, the subject of the local clause, is correctly predicted to be the blocker which forbids *ziji* to refer to *wo* for the latter group of speakers. However, one immediate problem is that the former type of speaker would be incorrectly predicted to disallow *Lisi*, which loses the competition to *wo*, as an antecedent.[54] This inadequacy and the fact that [±first/second person] plays no role in determining other coreference relations during prominence competition (see below) cast doubts on the necessity of this prominence factor.

Also consider how *wo* competes against *zhejian shi* for prominence in (14a-b). Although we have eliminated [±agent] from the stock of prominence factors, let us tentatively keep it and the rest of Hu and Pan's account to see why [±first/second person] is useless. *Wo*, being [-subject, +agent] and [-dominating, +animate], necessarily outranks *zhejian shi*, being [+subject, -agent] and [-dominating, -animate] in (14a). [55, 56] Therefore the fact that *wo* can antecede *ziji* in (14) without invoking

[54] Incidentally, note that this result, while unfavorable to Hu and Pan's approach, supports our assertion that local and non-local binding should be handled differently. Because the former type of speaker is wrongly predicted to allow only *wo*, the winner of the competition, to antecede *ziji*, a mechanism devoted to local binding is needed to account for the binding relation between the local subject, *Lisi*, and *ziji*.

[55] Reference of *ziji* to *wo* in (14a-b) is presumably correct in the dialect that Pan (2001) investigated.

[56] Some people might consider *zhejian shi*, the subject of the predicate *gaosu*, an agent in (14a). Even if this is correct, all we need to make *wo* an antecedent is [±local]. *Zhejian shi*, being [+subject, +agent] and [-dominating, -animate] would tie with *wo*, [-subject, +agent] and [-dominating, +animate] if we did not consider [±local] or [±first/second person] under Hu and Pan's account. Consider [±local] first. The path from *ziji* to the matrix VP, the minimal maximal projection dominating *wo*, is a proper subset of the path from *ziji* to the minimal maximal projection dominating *zhejian shi*. This demonstrates that [±first/second person] is unnecessary. On the other hand, however, [±local] is also problematic as the foregoing text has shown. (14b) might suggest that [+first/second person] must be taken into account, because there is no proper subset relation between *zhejian shi* and *wo* here. Hence [±local] appears irrelevant, and the coreference between *wo* and *ziji* seems to hinge on [±first person]. However,

[±first/second person] adds to the claim that [±first/second person] is entirely unnecessary.

(14) a. Zhejian shi gaosu wo Lisi taoyan ziji.
*This-CL event tell I Lisi hate self*
This event told me that Lisi hated himself/me.
b. Zhejian shi dui wo zhengming-le Lisi taoyan ziji.
*This-CL event to me prove-Perf Lisi hate self*
This event proved to me that Lisi hated himself/me.

Let us now turn to how to select candidate NPs for prominence competition. According to Hu and Pan (2002), a candidate is an NP contained within an XP c-commanding *ziji*. This means that candidacy is not limited to NPs c-commanding *ziji*; genitive NPs within nominal phrases are also candidates, for example. As long as an NP falls within an XP c-commanding *ziji*, it is qualified for prominence competition. Candidates in their formulation would therefore include NPs in object position within an NP c-commanding *ziji*. However, such NPs do not seem to be candidates, even when they outrank their containing NPs. Consider the following:

(15) *Zheben hai-le Zhangsan$_i$-de shu benlai dui ziji$_i$ you yi.
*This-CL harm-Perf Zhangsan's book originally to self have benefit.*
This book that harmed Zhangsan could have benefited self.

According to the revisions we have made to Hu and Pan's account so far, *Zhangsan* is [+animate] and outranks *Zheben hai-le Zhangsan$_i$-de shu*, which is [-animate].

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consider the following:
(i) Zhejian shi dui Zhangsan zhengming-le Lisi taoyan ziji.
*This-CL event to Zhangsan prove-Perf Lisi hate self*
This event proved to Zhangsan that Lisi hated himself/him.

(i) differs from (14b) only in that the matrix object is a third person NP. As there is no proper subset relation between *zhejian shi* and *Zhangsan* either and [±first person] is irrelevant here, the reference of *ziji* to *Zhangsan* in (i) and to *wo* in (14b) has nothing to do with [±first person].

Nevertheless, the former is still not a legitimate antecedent. Indeed, (15) might be appropriate in intensification or contrastive contexts, but such uses of reflexives generally fall outside the realm of sentence grammar and instead require discourse-pragmatic conditions.[57] I assume, pace Hu and Pan, the following procedure for selecting candidate NPs:

(16) Candidate Selection Procedure A:
α is a candidate if it is any subject NP contained within an XP functioning as a subject and c-commanding *ziji*, and any argument containing α is a subject.

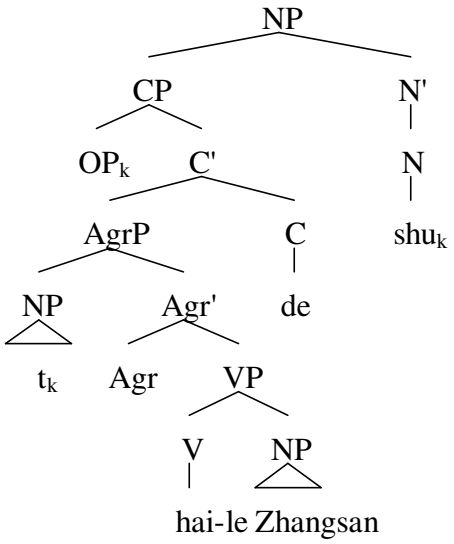
(16) means that when the XP c-commanding *ziji* is a subject NP, both it and the subject NPs it dominates, e.g. genitive NPs or the subject NPs of the relative clauses of the subject NP c-commanding *ziji*, are candidates, and the candidates cannot occur in object position. Consider the relevant structure represented in (17).[58] The fact that *Zhangsan* cannot be the antecedent in (15) follows from our new assumption (16) and (17), where *Zhangsan*, a non-subject, within the subject *Zheben hai-le Zhangsan$_i$-de shu*, is not a candidate and hence cannot enter into prominence competition with *Zheben hai-le Zhangsan$_i$-de shu*.[59]

(17)

[57] Another instance is provided by Xu (1994, p.118):
(i) Wo wen-guo ta$_i$ ji bian ziji$_i$-de mingzi.
*I ask-Exp he several times self's name*
I asked him his name several times.
*ziji* can refer to the matrix object *ta* here. However, in his endnote 5 Xu shows its special status by noting that some people read *ziji* as an emphatic reflexive. This suggests that such reflexives behave differently from non-emphatic, non-contrastive reflexives.

[58] Here I omit irrelevant projections such as Classifier Phrase and ignore the issues on the internal structure of nominal phrases. This decision is arbitrary, but nothing crucial hinges on it.

[59] The assumption presented here is a mere stipulation. It is unknown why subject-orientation seems necessary only within subject NPs; NPs in matrix-clause object position can be an antecedent to long-distance bound *ziji*, provided that it is prominent, as the current theory has shown. We leave this peculiar property of subject NPs for future research.




Note that (16) is similar to Tang's (1989) notion of sub-command, but their implications are different. Sub-command, or Feature Percolation is intended to maintain a c-command configuration between an antecedent and *ziji*. As Chapter 2 has shown, however, both devices rest on the assumption that inanimate NPs cannot antecede *ziji*. Pan (2001) has demonstrated that this claim is falsified in the presence of examples like *meige gongyuan dou you ziji-de tese*, alluded to earlier this section. Speakers of Mandarin Chinese typically do not regard the subject as personified in any way. On the empirical front, sub-command or feature percolation cannot explain the possibility of a PP-internal NP to antecede *ziji*, as it is not a subject and cannot fulfill the definition of sub-command or feature percolation. See Chapter 2 for fuller discussion.

(16) determines the set of candidates when the XP c-commanding *ziji* is a subject, but candidates occur elsewhere too. Below the other procedure for candidate selection is given:

(18) Candidate Selection Procedure B:

Of all the XPs c-commanding *ziji*, candidates can be (i) any NPs c-commanding

*ziji*; or (ii) any NPs c-commanding the head of the c-commanding XP when the XP is a non-NP.

The following examples show (18) is necessary:

(19) a. Zhangsan$_i$ zai Lisi$_j$-de jia-li tingshuo Wangwu taoyan ziji$_{i/*j}$.
*Zhangsan at Lisi's house hear Wangwu hate self*
Zhangsan heard in Lisi's house that Wangwu hated him.
b. Zhejian$_i$ shi xiang Zhangsan$_j$ zhengming-le Lisi$_k$ taoyan ziji$_{*i/j/k}$.
*This-CL thing to Zhangsan prove-Perf Lisi hate self*
This event proved to Zhangsan that Lisi hated him.
c. Wangwu$_i$ dui Zhangsan$_j$ biaoming Lisi$_k$ taoyan ziji$_{i/*j/k}$.
*Wangwu to Zhangsan indicate Lisi hate self*
Wangwu indicated to Zhangsan that Lisi hated him.

According to Hu and Pan's formulation, in (19a), *Lisi*, being [+subject, -agent][60] and [-dominating, +animate] outranks *Lisi-de jiali*, being [-subject, -agent] and [-dominating, -animate]. *Lisi* is therefore [+prominent]. Recall that Hu and Pan assume that once an NP is [+prominent], this feature will be retained throughout the computation. This means that *Lisi* can antecede *ziji*, contrary to fact. On the other hand, according to (7) and (9), *Lisi* would tie with *Zhangsan*, as both are [+subject] and [-dominating, +animate]. Once we consider (18), however, *Lisi* would not be a candidate, as it does not c-command the head of the PP, which is a non-NP and c-commands *ziji*. Therefore *Zhangsan* competes only with *Lisi-de jia*, not *Lisi*. As predicted, only *Zhangsan* can be the long-distance antecedent of *ziji*, because it is [+subject] and [-dominating, +animate] and outranks *Lisi-de jia*, which is [-subject] and [-dominating, -animate].

(18) is confirmed if we consider the contrast between (19b) and (19c), where *Zhangsan* c-commands the head of the PP c-commanding *ziji* and is therefore a

[60] Note that genitive NPs are considered subjects.

candidate that enters into prominence competition with *zhejian shi*. Being [-subject] and [-dominating, +animate], *Zhangsan* outranks *zhejian shi*, which is [+subject] and [-dominating, -animate] in (19b). It follows that only *Zhangsan* can long-distance antecede *ziji*. In (19c), *Zhangsan* loses the competition to *Wangwu*, which ends up as the only long-distance antecedent.

Let us now turn to the order in which candidates compete for prominence. Recall that Hu and Pan adopted a strictly linear procedure for prominence competition:

(20) A Linear Procedure for the Antecedent-Seeking Mechanism:[61]
If there is an NP within an XP so that the latter c-commands *ziji* and the former is a member along with other such NPs in the linear NP sequence, i.e. NP=($\alpha_n$,…,$\alpha_{+1}$, $\alpha$), the reflexive *ziji* begins the search for the antecedent by comparing the prominence of $\alpha$ and $\alpha_{+1}$ and coindexes the NP marked as [+prominent] before running the computation on $\alpha_{+1}$ and $\alpha_{+2}$ and coindexes the NP marked as [+prominent] and so on.

However, with (20) Hu and Pan's approach cannot work well if we try to deal with the following:

(21) Zhejian shi zhengming Zhangsan$_i$-de baba$_j$ zhidao Lisi$_k$ bu xihuan ziji$_{*i/j/k}$.
*This-CL event prove Zhangsan's father know Lisi not like self*
This event proved that Zhangsan$_i$'s father$_j$ knew that Lisi$_k$ didn't like him$_{*i/j}$/himself$_k$.

If we follow Hu and Pan's proposal as it is tentatively, *Lisi*, being [+subject, +agent][62] and [-dominating, +animate], ties with *Zhangsan-de baba*, being [+subject, +agent] and [-dominating, +animate]. *Lisi* and *Zhangsan-de baba* are marked as [+prominent]

[61] The label is my own invention, for ease of reference. (20) is one component of Hu and Pan's Antecedent-Seeking Mechanism, although they have not named it separately.
[62] Recall that agents include experiencers in their approach.

and correctly predicted to be antecedents of *ziji*. *Zhangsan-de baba*, being [+subject, +agent] and [+dominating, +animate], outranks *Zhangsan*, being [+subject, -agent] and [-dominating, +animate]. Now comes the problem for (20): nothing bars *Zhangsan* from entering into competition with *zhejian shi*. *Zhangsan*, being [+subject, -agent] and [-dominating, +animate] outranks *zhejian shi*, being [+subject, -agent] and [-dominating, -animate].[63] This means that *Zhangsan* is also predicted to be an antecedent, contrary to fact.

On the other hand, we can make correct predictions for sentences such as (21) if we reject the strictly linear view of competition order and instead adopt the following procedure:

(22) A Not Totally Linear Procedure for the Antecedent-Seeking Mechanism:
(Let (16) and (18) determine the set of candidates first.) After prominence competition has taken place among the various candidates within an NP which is itself a candidate, only the NP, not the leftmost candidate within it, goes on to compete with a candidate on its left. Computation proceeds linearly for candidates *not* embedded in an NP.

According to (22), after *Zhangsan* has lost the competition to *Zhangsan-de baba*, the whole NP, not *Zhangsan*, goes on to compete with the matrix subject *zhejian shi*. The fact that *Zhangsan* cannot antecede *ziji* falls out from (22).

In this section, I have shown that some changes are necessary for a competition-based approach to non-local binding à la Hu and Pan (2002). All these

[63] According to Hu and Pan's account, even if *zhejian shi* is treated as [+agent], *Zhangsan* would still incorrectly be predicted to be an antecedent. *Zhejian shi*, being [+subject, +agent] and [-dominating, -animate] would ultimately tie with *Zhangsan*, being [+subject, -agent] and [-dominating, +animate]. [±local] does not apply here, because there is no proper subset relation between their paths; the path from *ziji* to the minimal maximal projection dominating *Zhangsan* includes *Zhangsan-de baba*, but the path from *ziji* to the matrix IP, which dominates *zhejian shi*, does not pass through *Zhangsan-de baba*. Rather, it passes through the embedded IP. This means that both are predicted to be able to antecede *ziji*—still an incorrect result. This discussion is intended to prove beyond reasonable doubt that (20) cannot be correct. The same conclusion can be reached even if we assume *Zhangsan* to be [-subject], a possibility that one might entertain because Hu and Pan do not explicitly state whether genitive NPs are considered subjects in their approach. I shall leave it to the reader himself to verify this point.

have been justified by empirical data. In the next section, I shall piece together all the modifications I have made to their approach and test them against more data.

### 3.3 Evaluating the Current Algorithm for Non-Local Reference of *Ziji*

In section 3.2, I proposed some major changes to Hu and Pan's (2002) proposal, including (i) the separation of local binding from non-local binding; (ii) the eliminability of prominence; (iii) the rejection of [±agent], [±local] and [±first/second person] from the stock of prominence factors; (iv) the refined candidate selection procedures; and (v) a not totally linear order for prominence computation. Below I offer an integrated picture of the results of the preceding section. The reader is recommended to compare the following with Hu and Pan's (2002) original formulation.

(23) Antecedent-Seeking Mechanism:
In a candidate set ($\alpha_n$,…,$\alpha_{+1}$, $\alpha$) defined by (24), *ziji* finds as its antecedent any NP marked as [+prominent] according to (26) and (27).

(24) Candidate Selection Procedure:
Given an XP c-commanding *ziji*, a candidate can be
a. any NP c-commanding *ziji*;
b. any NP c-commanding the head of the XP when the latter is a non-NP;
c. any subject NP $\alpha$ contained within the XP $\beta$ which is a subject when any argument containing $\alpha$ is a subject.

(25) Prominence Hierarchy:
A. [+subject] > [-subject]
B i. [-dominating, +animate] > [-dominating, -animate]
ii. [+dominating, +animate] > [-dominating, +animate]
iii. [+dominating, -animate] > [-dominating, -animate][64]
iv. [-dominating, +animate] > [+dominating, -animate][65]

[64] Actually, we will demonstrate that Biii. is unnecessary in upcoming discussion.

B > A

Given two candidates α and β, only β, not α, is marked as [+prominent] if α outranks β in terms of A but is outranked by β in terms of B.

(26) Procedure for Prominence Competition

a. In a candidate set ($\alpha_n$,…,$\alpha_{+1}$, α), α and $\alpha_{+1}$ compete for prominence as per (25), before $\alpha_{+1}$ competes with $\alpha_{+2}$ in a linear fashion, until $\alpha_{n-1}$ has competed with $a_n$, except when (b) applies:

b. Given a candidate which itself dominates other candidates, only it goes on to compete with a candidate on its left, after prominence competition has taken place among the candidates it dominates.

c. When the competition is tied, both candidates are marked as [+prominent].

(27) Prominence Elimination:

A candidate marked as [+prominent] during the competition can have this feature eliminated, provided it is outranked by another candidate.

Having presented the algorithm in full, let us test the approach against some typical sentences. The most typical ones are those with animate subjects in both the local and the matrix clauses. Consider (28) and its structure in (29):

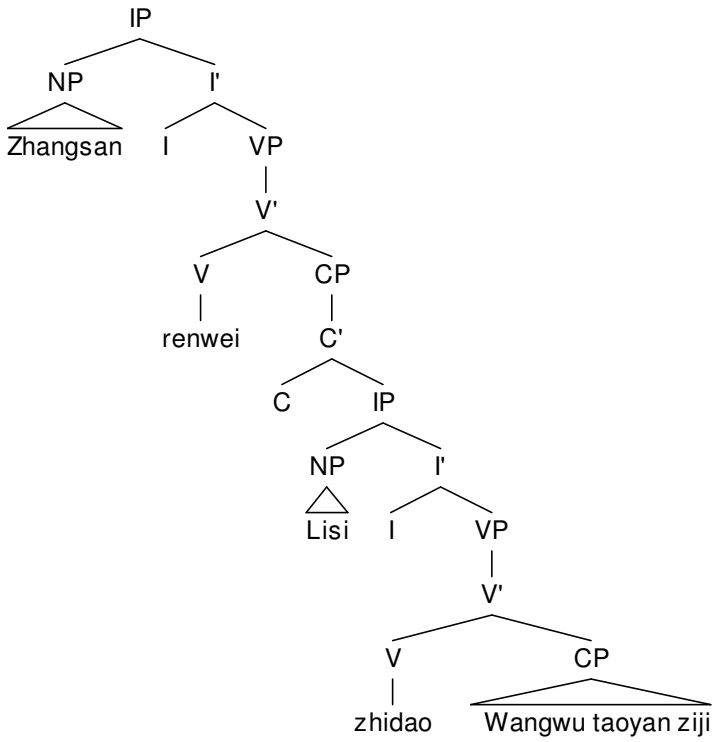
(28) Zhangsan$_i$ renwei Lisi$_j$ zhidao Wangwu$_k$ taoyan ziji$_{i/j/k}$.

*Zhangsan think Lisi know Wangwu hate self*

Zhangsan$_i$ thinks Lisi$_j$ knows Wangwu$_k$ hates him$_{i/j}$/himself$_k$.

(29)

[65] The notion of animacy will be elaborated by an animacy hierarchy later in this chapter.



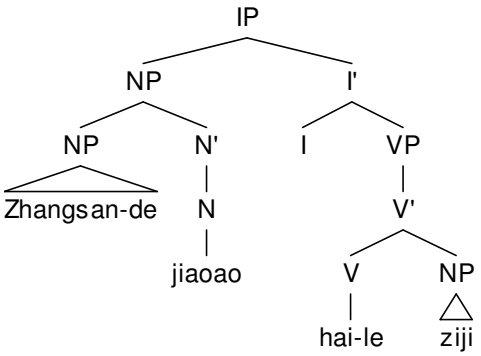

Following (24), we have three candidates—*Wangwu*, *Lisi*, and *Zhangsan*. Each is the subject of their respective clause, and each c-commands *ziji*. (23) requires us to look for *ziji*'s antecedents as per (26) and (27). Let *Wangwu* compete with *Lisi* first, and this is a tied competition: both are [+subject] and [-dominating, +animate] and therefore both are marked as [+prominent] and are legitimate antecedents. Now let *Lisi* compete with *Zhangsan*, and again they tie for the match, as both are marked as [+prominent] in the way *Wangwu* and *Lisi* are. The possibility of long-distance binding is therefore predicted. At this point we see no advantages of our approach over previous ones, as they can handle (28) as well.[66] However, consider (30), a sentence with a sub-commanding NP as the antecedent of *ziji*:

(30) Zhangsan$_i$-de jiaoao$_j$ hai-le ziji$_{i/*j}$ (Tang 1989)
*Zhangsan's pride hurt-Perf self*

[66] Of course, except for Hu and Pan (2002). I have demonstrated that their approach cannot predict the highest subject NP to be an antecedent in a long-distance context in Chapter 2 and section 3.1.

Zhangsan's pride hurt him.

(31)




According to (24c), there are two candidates, *Zhangsan* and *Zhangsan-de jiao*, as both are subjects; the former is a genitive NP and the subject of the containing NP, and the latter is the subject of the sentence. *Zhangsan* outranks *Zhangsan-de jiaoao*, because the former is [+subject] and [-dominating, +animate] and the latter is [+subject] and [+dominating, -animate]. *Zhangsan* is therefore predicted to be the antecedent. Next consider (32), with the containing NP being an animate NP. The only way in which (32) differs from (30) is that the subject of (32) is animate. *Zhangsan-de baba*, being [+subject] and [+dominating, +animate], outranks *Zhangsan*, being [+subject] and [-dominating, +animate], and is marked as [+prominent] and able to antecede *ziji*, a result consistent with fact.

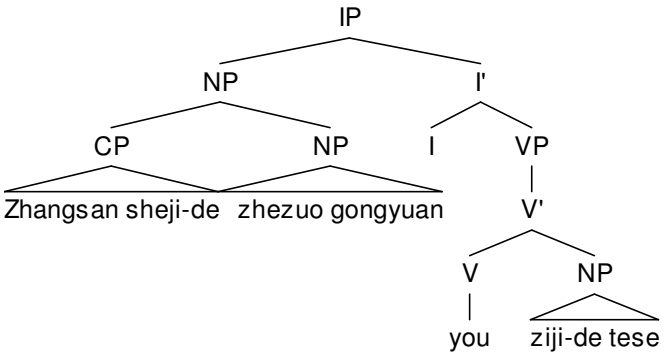
(32) Zhangsan$_i$-de baba$_j$ dui ziji$_{*i/j}$ mei xinxin. (Cole et al. 1993)
*Zhangsan's father to self no confidence*
Zhangsan's father has no confidence in himself.

Although Tang's (1989) notion of sub-command and Cole et al.'s (1993) feature percolation can account for the anaphoric relation, it is important to recall that they are based on the incorrect assumption that inanimate NPs cannot antecede *ziji*. Our

approach attributes the binding relation to the result of prominence competition and accounts for the following coreference relations, with our assumption that local binding and non-local binding are given separate treatments:

(33) Zhangsan$_i$ sheji-de zhezuo gongyuan$_j$ you ziji$_{i/j}$-de tese.
*Zhangsan design-DE this-CL park have self's feature*
The park that Zhangsan designed displays his/its own features.

(34)




According to the Candidate Selection Procedure, *Zhangsan sheji-de zhezuo gongyuan*, a subject c-commanding *ziji*, and *Zhangsan*, the subject of the relative clause contained by a subject, are candidates. *Zhangsan*, being [+subject] and [-dominating, +animate] competes with and outranks *Zhangsan sheji-de zhezuo gongyuan*, [+subject] and [+dominating, -animate]. It is predicted that only *Zhangsan* can antecede *ziji*, as in the analyses of Cole et al. (1993), Huang and Tang (1991), and Huang and Liu (2001). But as they assume that inanimate NPs cannot antecede *ziji*, they cannot explain why *ziji* can refer to *Zhangsan sheji-de zhezuo gongyuan*, an inanimate NP. On the other hand, since it is assumed in the current approach that inanimate NPs can antecede *ziji* and local and non-local binding should receive separate treatments, the coindexation in question is not ruled out as impossible; it is the task of local binding

to establish the coreference between *ziji* and *Zhangsan sheji-de zhezuo gongyuan*.

Let us now turn to a less typical case of long-distance binding, with an inanimate NP as the subject of an intermediate clause:

(35) a. Zhangsan$_i$ renwei zhejian shi$_j$ zhengming Lisi$_k$ taoyan ziji$_{i/*j/k}$.
*Zhangsan think this-CL event prove Lisi hate self*
Zhangsan thought that this event proved that Lisi hated him/himself.
b. Ni$_i$ shuo-guo naben shu$_j$ hai-le ziji$_{i/*j}$ ma? (Pan (2001))
*You say-Exp that-Cl book hurt-Perf self Q*
Did you say that that book hurt you?

In (35a), there are three candidates, *Lisi*, *zhejian shi*, and *Zhangsan*, each c-commanding *ziji*. They compete for prominence as per (26a). *Lisi*, being [+subject] and [-dominating, +animate] outranks *zhejian shi*, being [+subject] and [-dominating, -animate], which is outranked by *Zhangsan*, being [+subject] and [-dominating, +animate]. Both *Lisi* and *Zhangsan*, but not *zhejian shi*, are marked as [+prominent] and legitimate antecedents. Previous analyses, especially the head-movement account along the lines of Peter Cole et al., neglect such sentences and instead focus only on typical cases like (28), resulting in a binding theory that fails to account for (35b). This is so, because they aim at maintaining a strict local relation between the antecedent and the reflexive by movement to Agr or Infl and some feature checking mechanism, and they encounter intractable difficulty in dealing with sentences such as (35b), which has an inanimate intermediate subject that does not agree in phi-features with the subject of the higher clause. Blocking is predicted to be observed, contrary to fact. Also note that the strict locality thesis between the antecedent and the reflexive via LF head-movement construes long-distance binding as a sequence of local bindings, and this is fundamentally incompatible with (35b); *ziji*, once moved to the Infl or Agr of the intermediate clause, finds no local antecedent, which is an NP that

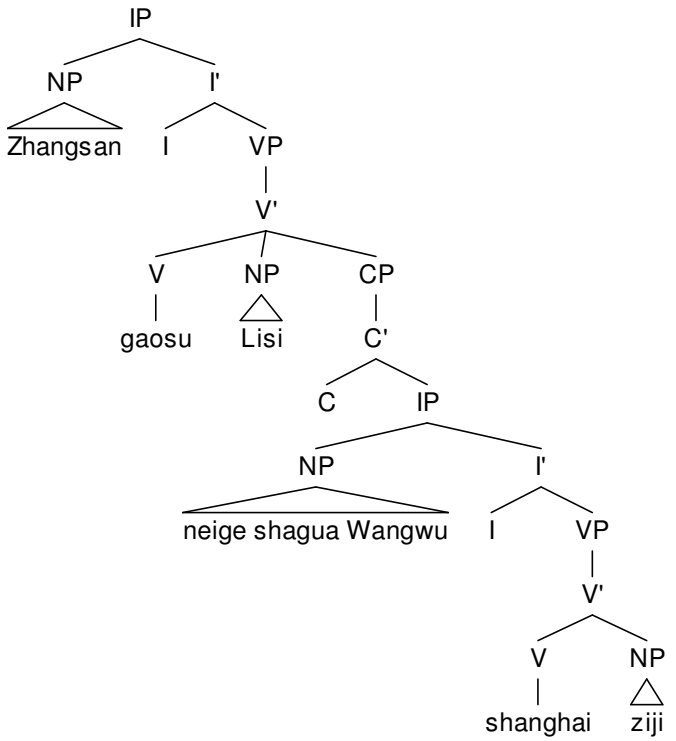
agrees with it with respect to phi-features under Cole et al.'s assumption.

Let us now turn our attention to a sentence with a matrix object as well as an embedded clause in which *ziji* is an argument. Consider (36) and its structure (37):

(36) Zhangsan$_i$ gaosu Lisi$_j$ nei ge shagua Wangwu$_k$ shanghai ziji$_{i/*j/k}$ (Cole et al. 2001)
*Zhangsan tell Lisi that CL fool Wangwu harm self*
Zhangsan told Lisi that that fool Wangwu harmed him/himself.

As there are three NPs c-commanding *ziji*, there are three candidates in (36). *Neige shagua Wangwu*, being [+subject] and [-dominating, +animate], outranks *Lisi*, being [-subject] and [-dominating, +animate]. Therefore the former is marked as [+prominent]. *Lisi* then goes on to compete with *Zhangsan*. As the latter is [+subject] and [-dominating, +animate], it outranks the latter, being [-subject] and [-dominating, +animate]. *Zhangsan*, not *Lisi*, is then correctly predicted to be the long-distance antecedent of *ziji*. Such sentences as (36), however, do not sufficiently demonstrate the superiority of the current account over others, as the head-movement analysis can make the same prediction regarding (36). Once *ziji* adjoins to the matrix Infl or Agr as a head, the only NP c-commanding it is the matrix subject, *Zhangsan*. Therefore *Zhangsan* is correctly predicted as the long-distance antecedent, as in our account.

(37)




However, consider (38), a sentence identical to (36) in structure:

(38) Zhejian $shi_i$ gaosu $Lisi_j$ $Wangwu_k$ taoyan $ziji_{*i/j/k}$.
*This-CL thing tell Lisi Wangwu hate self*
This event told Lisi that Wangwu hated him/himself.

As in (36), *Wangwu* outranks *Lisi*, but *Lisi* outranks *zhejian shi* and is marked as [+prominent] because *Lisi* is [-subject] and [-dominating, +animate] and *zhejian shi* is [+subject] and [-dominating, -animate]. Recall that our Prominence Hierarchy requires that [±dominating, ±animate] > [±subject], i.e. a candidate A outranks a candidate B if the former is outranked by the latter in terms of [±subject] but outranks the latter in terms of [±dominating, ±animate]. As a result, *Lisi* is correctly predicted as the long-distance antecedent of *ziji*. On the other hand, (38) is not amenable to the head-movement account, because the landing site of *ziji*, the matrix Agr, cannot be c-commanded by the object, *Lisi*. Also note that the IP adjunction analysis can allow

*Lisi* to antecede *ziji*, as *ziji* is c-commanded by *Lisi* when it adjoins to the lower IP. But the analysis cannot rule out *Lisi* in (36) as a binder, as *ziji* is c-commanded by *Lisi* as in (38). Thus, it seems that movement analyses are facing a dilemma: subject orientation of (36) has to be accounted for, but at the same time the non-subject antecedent of (38) should not be excluded. Only a competition-based approach seems able to handle both (36) and (38).

Next, consider the following sentence with a sub-commanding and a long-distance antecedent:

(39) Zhangsan$_i$ shuo Lisi$_j$-de baogao$_k$ hai-le ziji$_{i/j/*k}$ (Hu and Pan (2002))
*Zhangsan say Lisi's report harm-Perf self*
Zhangsan said Lisi's report harmed him.

There are three candidates, because both *Zhangsan* and *Lisi-de baogao* are NPs c-commanding *ziji*, and the latter is a subject which contains another candidate *Lisi*, the subject of the subject NP. Let *Lisi-de baogao* compete with *Lisi*. The latter, being [+subject] and [-dominating, +animate], outranks the former, being [+subject] and [+dominating, -animate]. *Lisi* is therefore predicted as an antecedent. Then *Lisi-de baogao*, not *Lisi*, competes with *Zhangsan*, according to (26b). As predicted, *Zhangsan* is a legitimate antecedent because it, being [+subject] and [-dominating, +animate] outranks *Lisi-de baogao*, being [+subject] and [-dominating, -animate].

In the above we have seen how the animate genitive NP contained inside a subject becomes [+prominent] and a legitimate antecedent by the mechanism I have proposed. Next we shall examine the case in which an animate subject is contained inside another animate subject. Consider the following:

(40) Zhangsan$_i$ shuo Lisi$_j$-de baba$_k$ hai-le ziji$_{i/*j/k}$

*Zhangsan say Lisi's father hate self*
Zhangsan said Lisi's father hated him/himself.

(40) contains three candidates—*Zhangsan*, *Lisi*, and *Lisi-de baba*. *Lisi-de baba*, being [+subject] and [+dominating, +animate], outranks *Lisi*, being [+subject] and [-dominating, +animate]. According to our procedure for prominence competition, *Lisi-de baba* goes on to compete with *Zhangsan*. Both are marked as [+prominent] because both are [+subject] and [-dominating, +animate]. It is therefore correctly predicted, as in all the analyses available, that *Zhangsan*, not *Lisi*, can be a non-local binder.

Next, let us consider a case in which a candidate contains three candidates (including itself). Our approach also handles it correctly.

(41) Zhang xiansheng$_i$-de baba$_j$-de yinmou$_k$ bei ziji$_{*i/j/*k}$-de pengyou shipo-le. (Hu and Pan (2002))
*Zhang Mr.'s father's plot BEI self's friend discover-Perf*
Mr.Zhang's father's plot was discovered by self's friend.

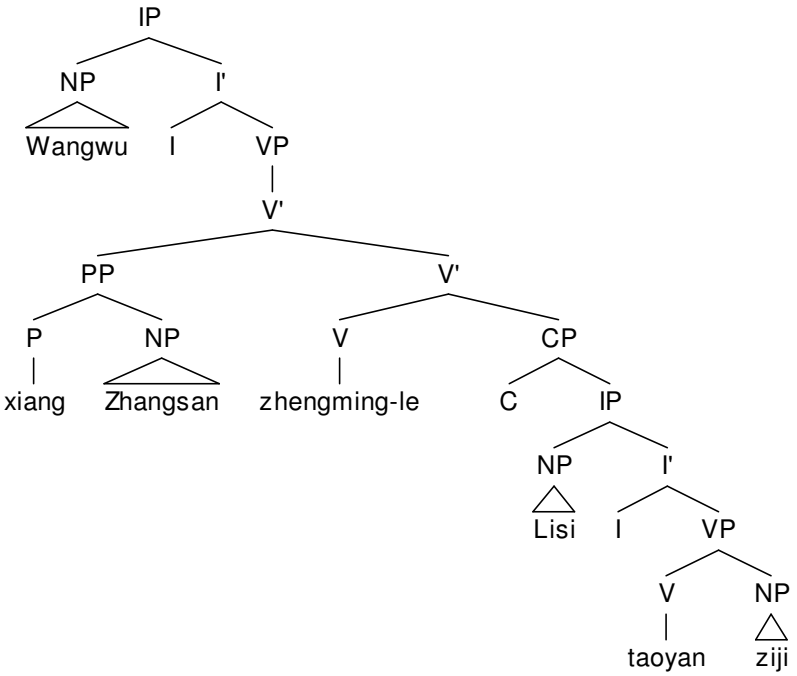
Let *Zhang xiansheng* compete with *Zhang xiansheng-de baba* first. The former, being [+subject] and [-dominating, +animate], is outranked by the latter, being [+subject] and [+dominating, +animate]. *Zhang xiansheng-de baba* is marked as [+prominent]. Then it competes with *Zhang xiansheng-de baba-de yinmou*, being [+subject] and [+dominating, -animate]. *Zhang xiansheng-de baba*, being [+subject] and [-dominating, +animate], outranks *Zhang xiansheng-de baba-de yinmou*, and is therefore marked as [+prominent] and a legitimate antecedent.[67]

[67] In this connection, compare (41) with the structurally identical example (66b) on p. 35. The latter allows the most embedded candidate to antecede *ziji*, whereas the former does not. Our approach cannot predict the coindexation in (66b). If we assume that syntactic binding reflects contextlessly preferable judgments, then we are not obliged to deal with (66b) because (66a), which is identical to (66b) except for lack of context, conforms to the preferable judgment predicted by our approach. Note that our treatment presupposes Pollard and Xue's (1998) thesis that syntactic binding is optional.

We will now consider a case in which a candidate is in a prepositional phrase. Consider the following contrast.

(42) a. Wangwu$_i$ xiang Zhangsan$_j$ zhengming-le Lisi$_k$ taoyan ziji$_{i/*j/k}$.
*Wangwu to Zhangsan prove-Perf Lisi hate self*
Wangwu proved to Zhangsan that Lisi hated him/himself.
b. Zhe$_i$ xiang Zhangsan$_j$ zhengming-le Lisi$_k$ taoyan ziji$_{*i/j/k}$.
*This to Zhangsan prove-Perf Lisi hate self*
This proved to Zhangsan that Lisi hated him/himself.

(43)




(42a) and (42b) share the same structure (43). Let us see how prominence competition results in different coindexation possibilities. Consider (42a) first. There are three candidates, *Lisi*, *Zhangsan*, and *Wangwu*. *Zhangsan* is a candidate because it fulfills (24b), i.e. it c-commands the head of a non-NP XP c-commanding *ziji*. Let *Lisi* compete with *Zhangsan* first. The former, being [+subject] and [-dominating, +animate], outranks the latter, being [-subject] and [-dominating, +animate]. *Lisi* is therefore [+prominent]. *Zhangsan* goes on to compete with *Wangwu*. The latter, being

[+subject] and [-dominating, +animate], outranks the latter, being [-subject] and [-dominating, +animate]. Therefore, *Wangwu*, not *Zhangsan*, is marked as [+prominent]. The binding possibilities are correctly predicted. Now consider (42b). Again, *Lisi* outranks *Zhangsan*. *Zhangsan* then competes with *zhe*. The former, being [-subject] and [-dominating, +animate], outranks the latter, being [+subject] and [-dominating, -animate]. Therefore, *Zhangsan* is marked as [+prominent] and correctly predicted to be an antecedent. As with (36) and (38), (42) demonstrates how subject orientation is derived; it is a consequence of prominence competition.

Next, consider the following case, which contains a prepositional phrase, but the "object" is not a candidate:

(44) Zhangsan$_i$ cong Lisi$_j$ nar tingshuo Mali$_k$ hen taoyan ziji$_{i/*j/k}$. (Cole et al. (2001))
*Zhangsan from Lisi there hear Mali very hate self*
Zhangsan heard from Lisi that Mary hated him/herself.

In contrast to (42), there are only two candidates—*Mali* and *Zhangsan*, both c-commanding *ziji*. *Lisi* is not a candidate, because it does not c-command *cong*, the head of the PP c-commanding *ziji*. Here I treat *nar* as a monosyllabic localizer like *shang*, *xia*, etc., heading its own projection LP (cf. Huang et al. (2004)), which itself is a complement to a preposition. If so, then *Lisi* is contained inside an LP and cannot c-command *cong*. Now let *Mali* compete with *Zhangsan*. Both are [+subject] and [-dominating, +animate], so both are [+prominent] and are legitimate antecedents. A similar situation holds in (45) below. Here *Lisi* is further contained than in (44); now it is dominated under the complement to the localizer *li*. Therefore it is not a candidate and does not participate in prominence competition.

(45) Zhangsan$_i$ zai Lisi$_j$-de jia-li tingshuo Mali$_k$ hen taoyan ziji$_{i/*j/k}$.

*Zhangsan at Lisi's home-inside hear Mali very hate self*
Zhangsan heard at Lisi's home that Mary hated him/herself.

Now consider an apparent problem for our approach. In (46) below, *Lisi* does not c-command the head of the PP c-commanding *ziji*, but somehow it is a legitimate antecedent.

(46) Zhejian $shi_i$ dui $Lisi_j$ laishuo zhengming-le $Wangwu_k$ taoyan $ziji_{*i/j/k}$.
*This-CL event to Lisi about prove-Perf Wangwu hate self*
This event proved, as far as Lisi was concerned, that Wangwu hated him/himself.

It appears that *Lisi* competes with *zhejian shi* and outranks the latter by way of being [-subject] and [-dominating, +animate]. However, pending an exact analysis, it is very likely that *laishuo* and *Lisi* form a phrasal constituent that is a complement to the preposition *dui*. If so, *Lisi* cannot c-command *dui*, and thus is not a candidate. How could it compete with *zhejian shi* and be marked as [+prominent]? I will argue below that it is actually not a candidate, and it is a discourse antecedent whose occurrence is licensed by the pragmatic requirement of being salient in the discourse (cf. Baker (1995)). Indeed, *dui…laishuo* is an expression whereby the speaker identifies with a third person NP and views things in his perspective.[68] But similar pragmatic, or rather logophoric, requirements are also argued to exist for Mandarin syntactically licensed long-distance antecedents (Cole et al. (2001); Pollard and Xue (2001)), so this is not a sufficient reason for treating *Lisi* as a discourse antecedent. It seems that we can only argue in a theory-internal manner. Compare (47) and (48). The only difference is the placement of *dui Lisi laishuo*.

[68] Note, incidentally, that Huang and Liu's (2001) functional phrases, e.g. a SELF phrase, cannot apply here and predict the grammaticality of (46). If we posit a SELF phrase above the lowest IP, the Spec of which hosts the reflexive, *Lisi* still would not be able to c-command *ziji*.

(47) Zhangsan$_i$ renwei zhejian shi$_j$ dui Lisi$_k$ laishuo zhengming-le Wangwu$_l$ taoyan ziji$_{i/*j/k/l}$.
*Zhangsan think this-CL event to Lisi about prove-Perf Wangwu hate self*
Zhangsan thought that this event, as far as Lisi was concerned, proved that Wangwu hated him/himself.

(48) Zhangsan$_i$ renwei dui Lisi$_k$ laishuo zhejian shi$_j$ zhengming-le Wangwu$_l$ taoyan ziji$_{i/*j/k/l}$.
*Zhangsan think to Lisi about this-CL event prove-Perf Wangwu hate self*
Zhangsan thought, as far as Lisi was concerned, that this event proved that Wangwu hated him/himself.

In both sentences, *ziji* can refer to *Lisi*. If *Lisi* were a candidate, we would expect it to be outranked by *Zhangsan* in (48), because the latter is [+subject] and [-dominating, +animate]. It therefore seems that *Lisi* does not really participate in prominence competition. Perhaps some speakers might feel such a coindexation is of reduced acceptability in (48), but the fact that it is still possible suggests the function of *dui…laishuo* is to empathize with a third person NP.

Next, let us consider a sentence with a locative phrase in subject position:

(49) Zhangsan$_i$ renwei $_{LP}$[Lisi$_j$-de zhuo shang] you yizhang ziji$_{i/j}$-de huaxiang.
*Zhangsan think Lisi's table on have one-CL self's picture*
Zhangsan thought there was a picture of self on Lisi's table.

Recall that a subject contained inside another subject is a candidate if any argument containing the former is a subject. The question is whether *Lisi* is a candidate. It has turned out that the answer hinges on how we analyze the localizer phrase. If *Lisi-de zhuo* is treated as the complement and the object argument to the localizer *shang*,[69] then *Lisi* would not be a subject NP and thus not a candidate.[70] If *Lisi-de zhuo* is

[69] Huang et al. (2004) consider localizers to be lexical heads.
[70] There are indeed speakers who question the acceptability of *ziji* referring to *Lisi*. For them, it is possible that *Lisi-de zhuo* is an argument to *shang*.

treated as the specifier of the localizer phrase headed by *shang*, then *Lisi* is a subject NP and thus a candidate. As a candidate, it competes with *Lisi-de zhuo* and outranks it. The coindexation we have witnessed supports the second treatment. *Lisi-de zhuo shang*, being [+subject] and [-dominating, -animate], loses the competition to *Zhangsan*, being [+subject] and [-dominating, +animate].[71] The latter is marked as [+prominent]. The binding possibilities are therefore expected. If we compare (49) with (50) below, we can see a contrast:

(50) Zhangsan$_i$ renwei zai Lisi$_j$-de zhuo shang you yizhang ziji$_{i/*j}$-de huaxiang.
*Zhangsan think on Lisi's table on have one-CL self's picture*
Zhangsan thought there was a picture of himself on Lisi's table.

There are two XPs c-commanding *ziji*— *Zhangsan* and *zai Lisi-de zhuo shang*. However, only *Zhangsan* and *Lisi-de zhuo shang* are candidates. *Lisi* is not one, because it does not c-command *zai*, the head of the PP. Therefore *Zhangsan*, being [+subject] and [-dominating, +animate], competes with *Lisi-de zhuo shang*, [-subject] and [-dominating, -animate], and ends up as the only antecedent.

Next, consider the following sentence, with a local inanimate subject and a long-distance sub-commanding antecedent:

(51) Zhangsan-de xin biaoshi neiben shu hai-le ziji. (Huang and Tang (1991))
*Zhangsan's letter indicate that-CL book hurt-Perf self*
Zhangsan's letter indicated that the book hurt him.

There are three candidates: *neiben shu*, *Zhangsan-de xin*, and *Zhangsan*. First, *neiben*

[71] We tentatively ignore the competition between *Lisi-de zhuo* and *Lisi-de zhuo shang*. The latter, being [+dominating], is supposed to outrank the former, other things being equal. Anticipating the upcoming discussion, however, competition is futile between two inanimate candidates and must be skipped, and neither is marked as [+prominent].

*shu* competes with *Zhangsan-de xin*. As both are [+subject] and [-dominating, -animate], both are marked as [+prominent]. However, *neiben shu*, in fact, cannot antecede *ziji*. But this is not a real problem for the analysis presented here, because in Chapter 2 we have argued that inanimate NPs cannot act upon themselves and this is the reason why the local clause is bad; the ill-formedness is not directly related to whether inanimate NPs can antecede *ziji* nor not. Next, *Zhangsan-de xin* competes with *Zhangsan*. As the latter is [+subject] and [-dominating, +animate], it outranks the former, being [+subject] and [+dominating, -animate]. *Zhangsan* ends up as [+prominent] and correctly antecedes *ziji*. Let us now consider examples similar to (51), albeit with a human local subject:

(52) Zhangsan$_i$-de xin shuo Mali$_j$ renwei ziji$_{i/j}$ shi wugude. (Cole et al. (2001))
*Zhangsan's letter say Mary think self be innocent*
Zhangsan's letter says that Mary thinks he/she is innocent.

(53) Zhangsan$_i$-de baogao biaoshi tamen$_j$ dui ziji$_{i/j}$ mei xinsin. (Huang and Liu (2001))
*Zhangsan's report indicate they to self no confidence*
Zhangsan's report indicates that they had no confidence in self.

There are three candidates for each sentence. The local subject, being [+subject] and [-dominating, +animate], outranks the matrix subject, being [+subject] and [-dominating, -animate]. The matrix subject is outranked by the genitive NP, because the former is [+subject] and [+dominating, -animate] and the latter is [+subject] and [-dominating, +animate].[72]

[72] It is interesting to note that C. –T. James Huang seems to have changed his judgment. In Huang and Tang (1991), such sentences were considered ungrammatical. Consider the following sentence taken from their article:
(i) Zhangsan$_i$-de xin biaoshi Lisi$_j$ hai-le ziji$_{*i/j}$.
*Zhangsan's letter indicate Lisi hurt-Perf ziji*
Zhangsan's letter indicates that Lisi hurt himself.
I speculate that such sentences with the intended coindexation are not ungrammatical, but only difficult to process for some poorly understood reasons. Xue et al. (1994) proposed that animacy blocking is at work here; *Lisi* blocks *Zhangsan* from binding *ziji*. This explanation is interesting, and some related yet elaborated account may explain the well-known blocking effect—a tack I will take in the following

Let us now consider a couple of apparent problems for our account regarding long-distance sub-commanding antecedents:

(54) Zhangsan$_i$ xie de naben shu tan de shi zhengming-le Lisi$_j$ taoyan ziji$_{?i/j}$.
*Zhangsan write DE that-CL book discuss DE thing prove-Perf Lisi hate self*
The matter that was mentioned in the book Zhangsan wrote proved that Lisi hated him/himself.

There are four candidates in this sentence, *Zhangsan*, *Zhangsan xie de naben shu*, *Zhangsan xie de naben shu tan de shi*, and *Lisi*. Let *Lisi* compete with *Zhangsan xie de naben shu tan de shi*. The former, being [+subject] and [-dominating, +animate], outranks the latter, being [+subject] and [-dominating, -animate]. *Zhangsan* competes with *Zhangsan xie de naben shu*. The former, being [+subject] and [-dominating, +animate], outranks the latter, being [+subject] and [+dominating, -animate]. *Zhangsan xie de naben shu* then competes with *Zhangsan xie de naben shu tan de shi*. The latter, being [+subject] and [+dominating, -animate], outranks the former, being [+subject] and [-dominating, -animate]. There are three prominent NPs here: *Zhangsan*, *Zhangsan xie de naben shu tan de shi*, and *Lisi*.[73] But *Zhangsan xie de naben shu tan de shi* cannot antecede *ziji*. It seems that long-distance antecedents must be animate, in contrast to local antecedents. And this probably follows from the requirement that long-distance antecedents are empathy foci, according to Kuno (1987) and Huang and Liu (2001). And we can empathize only with animate, especially human, beings. Inanimate NPs cannot be empathized with, and hence cannot long-distance bind *ziji*. Competition between two inanimate NPs is thus futile.

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chapter. But Xue et al.'s account cannot handle the judgments reported by Cole et al. (1994, 2001) on (52). I leave it to future research to work out an explanation why some speakers reject sentences like (i), whereas others accept them.

[73] As will be discussed later, competition is an upward operation like movement. Therefore, the order of competition should be that *Zhangsan* competes with *Zhangsan xie de naben shu* before *Zhangsan xie de naben shu* competes with *Zhangsan xie de naben shu tan de shi*.

I hereby propose that for any pair of candidates, at least one must be animate. If two candidates are both inanimate, competition is skipped and neither is marked as [+prominent]. With this modification in place, neither *Zhangsan xie de naben shu* nor *Zhangsan xie de naben shu tan de shi* would be marked as [+prominent], thereby yielding the correct result.

Another way to deal with (54), which I will argue against below, is to adopt a slightly reworked, a competition-based, version of Cole et al.'s (1993) Feature Percolation. Recall that they assumed that inanimate NPs don't have the feature [±antecede] and only animate NPs do, and animate NPs in subject position within a subject can percolate their referential ability, i.e. [+antecede] (along with their referential index as the value of [+antecede]) to their containing subject NP. But we have seen that inanimate NPs can antecede *ziji*. Therefore, their assumption cannot be correct. On the other hand, if we take feature percolation to be a competition procedure, we can get the desired result without clinging to the assumption. Suppose that the featural competition also takes place among candidates defined by our Candidate Selection procedure, and there are three candidates in *Zhangsan xie de naben shu tan de shi*. *Zhangsan*, being [-dominating, +animate], outranks *Zhangsan xie de naben shu*, being [+dominating, -animate][74] and transfers its [+animate] to the latter. We can label *Zhangsan* as [+prominent] to indicate that it is the winner in the match. *Zhangsan xie de naben shu* now carries the [+animate] of *Zhangsan* (along with its referential index as the value of the feature), and goes on to compete with *Zhangsan xie de naben shu tan de shi*. The latter, being [+dominating, -animate], is outranked by the former, being [-dominating, +animate]. *Zhangsan xie de naben shu tan de shi* therefore receives [+animate] from *Zhangsan xie de naben shu*. Within this rather long subject NP, the competition then produces actually only one

[74] As all three candidates are subjects, I will not mention [+subject] in the competition.

antecedent—*Zhangsan*. Although *Zhangsan xie de naben shu tan de shi* is also marked [+prominent], its [+animate] is ultimately taken from *Zhangsan*. This account allows us to do away with the need to speculate that some unknown mechanism needs to weed out *Zhangsan xie de naben shu tan de shi* as an antecedent, and therefore seems more attractive than the approach outlined in this chapter. However, this revised Feature Percolation cannot deal with the following:

(55) a. Nawei xiao pengyou$_i$-de banshang-de tongxue$_j$ kanbuqi ziji$_{?i/j}$.
*That-CL little friend's class-Loc's classmate look-down-on self*
The classmate in that little child's class looks down on self.
b. Nawei xiao pengyou$_i$-de tongxue$_j$ kanbuqi ziji$_{*i/j}$.
*That-CL little friend's classmate look-down-on self*
That little child's classmate looks down on self.

Note that although (55a) is not perfectly acceptable, it is better than (55b) on the intended reading. The revised Feature Percolation account, or the classical version, would predict that *nawei xiao pengyou* cannot be an antecedent in (55a-b), because the outmost subject containing it is animate itself and it dominates *nawei xiao pengyou*. This means that according to the Feature Percolation account, the [+animate] feature of *nawei xiao pengyou* could not be transferred to *Nawei xiao pengyou-de banshang-de tongxue*, and *ziji* could refer only to the latter in (55a), contrary to the judgment given. By contrast, the approach we are arguing for in this chapter would predict a difference between (55a) and (55b). In (55a), *Nawei xiao pengyou*, being [+subject] and [-dominating, +animate], outranks *Nawei xiao pengyou-de banshang*, being [+subject] and [+dominating, -animate]. *Nawei xiao pengyou* is marked as [+prominent]. *Nawei xiao pengyou-de banshang*, being [+subject] and [-dominating, +animate], then competes with *Nawei xiao pengyou-de banshang-de tongxue*, being [+subject] and [+dominating, +animate]. In the end, there are two NPs marked as

[+prominent], i.e. *nawei xiao pengyou* and *nawei xiao pengyou-de banshang-de tongxue*, consistent with the judgment. In (55b), *nawei xiao pengyou*, being [+subject] and [-dominating, +animate] loses the match to *nawei xiao pengyou-de tongxue*, being [+subject] and [+dominating, +animate]. Therefore, only the latter is marked as [+prominent]. Our account predicts a difference between (55a) and (55b) whereas the Feature Percolation account does not.

Now let us turn our attention to the fact that there is a lexical restriction on the types of NPs that can host sub-commanding antecedents. Huang and Liu (2001) mentioned the following example as evidence that sub-commanding binding should be counted as syntactic, local binding.

(56) Zhangsan$_i$-de shibai biaoshi tamen$_j$ dui ziji$_{*i/j}$ mei xinxin.
*Zhangsan's failure indicate they to self no confidence*
Zhangsan's failure indicates that they have no confidence in him.

Sub-commanding NPs, they believe, cannot long-distance bind *ziji*. But their claim runs into problems with (53), which they acknowledge is grammatical, and stands at odds with Cole et al.'s judgments. Huang and Liu claimed that (53) is grammatical because if *Zhangsan*'s report indicates something, *Zhangsan* indicates it, and there is no such implication in (56). In other words, they believe that sub-commanding NPs cannot long-distance bind *ziji* syntactically by nature; such long-distance binding is licensed only by pragmatics and/or lexical semantics. On this front, however, I side with Cole et al. and believe that the difference between (56) and (53) is a lexical-semantic issue which, however, does not definitively rule out the possibility that sub-commanding NPs can bind *ziji* long-distance. Consider the following pair of sentence:

(57) a. Zhangsan$_i$ de biaoqing gaosu wo$_j$ ziji$_{i/*j}$ shi wugude.[75] (Huang and Liu (2001))
*Zhangsan's expression tell me self is innocent*
Zhangsan's [facial] expression tells me that he is innocent.
b. Zhangsan$_i$ de shibai gaosu wo$_j$ ziji$_{*???i/j}$ bu gou nuli.
*Zhangsan's failure tell me self not enough hard-working.*
Zhangsan's failure told me that he was not hard-working enough.

Huang and Liu offered (57a) to illustrate that sub-commanding binding is syntactic, non-long-distance binding. In (57a), the GC for *ziji* is the whole sentence, and it is bound by the sub-commanding NP *Zhangsan* in the GC. However, (57b) also has the whole sentence as the GC for *ziji*, but binding by the sub-commanding NP *Zhangsan* is unacceptable. Again, the culprit is the semantics of *shibai*, but this shows that even local sub-commanding binding is subject to the same lexical-semantic requirement as (53). This means that the ground on which they distinguish syntactic, local sub-commanding binding from non-syntactic, long-distance sub-commanding binding does not seem firm enough. So, instead of treating (56) as syntactically ruled out and (53) as syntactically ruled out but lexical-semantically saved, I will treat (53) and (56) alike, and attribute the difference to lexical-semantic factors.

Next, consider an apparent problem for our approach:

(58) Zhangsan$_i$-de gou yao-le ziji$_i$. (Pan (1995); Pollard and Xue (2001))
*Zhangsan's dog bite-Perf self*
Zhangsan's dog bit him.

There are two candidates in (58). *Zhangsan* and *Zhangsan-de gou*. As the former is [+subject] and [-dominating, +animate] and the latter is [+subject] and [+dominating, +animate], only *Zhangsan-de gou* is supposed to be marked as [+prominent] and antecede *ziji*. However, at least for some people, it is possible for *ziji* to refer to

[75] Note that our approach predicts that *ziji* can refer to *wo*, and this is confirmed by many speakers. The judgment given in (57a), taken from Huang and Liu's article, might just reflect preferences.

*Zhangsan*. (58) is also problem for the Feature Percolation account. However, if we examine the relation of *Zhangsan* to *Zhangsan-de gou*, (58) reveals that our approach is on the right track. It is true that (58) constitutes a problem for our approach, only if we keep assuming a simple dichotomy between animate and inanimate NPs. However, if we look into the motivation for the distinction, we will realize that "humans view situations from the point of view of any human beings, and if there are none, of other living creatures" (Saeed (2003)). If so, we can propose the following animacy hierarchy:[76]

(59) Human animates > other animates > inanimates

And we can define [+animate] as follows:

(60) Given two candidates X and Y, X is marked as [+animate] iff it ranks higher than Y in the animacy hierarchy.

Now equipped with (59) and (60), we can explain why *ziji* can refer to *Zhangsan* in (58). *Zhangsan*, being [+subject] and [-dominating, +animate], outranks *Zhangsan-de gou*, being [+subject] and [+dominating, -animate]. Therefore *Zhangsan* is marked as [+prominent] and a possible antecedent. Of course, *Zhangsan-de gou* can antecede *ziji*, but this is the task of local binding, which is outside the scope of the current work.[77] Let us examine how (59) and (60) affect our Antecedent-Seeking Mechanism:

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[76] For a complete range of the animacy hierarchy, please refer to Croft (1990).

[77] Dr. Jen-I Li brought the following sentence to my attention

(i) Zhangsan$_i$-de gou$_j$ yishidao ziji$_{*i/j}$ yongyuan hui builiao jia.
*Zhangsan's dog sense self forever return not home*
Zhangsan's dog sensed that it could never go home.

According to our approach, only *Zhangsan* is marked as [+prominent]. *Zhangsan-de gou*, however, is the actual antecedent. (i) can be accounted for by the classical binding Princinple A, whereby the local governing category, which must contain an accessible subject, extends to the root clause in (i). *Zhangsan-gou* thus locally binds *ziji*.

(61) Zhezhi $gou_i$-de $zhuren_j$ yao-le $ziji_{*i/j}$.
*This-CL dog's owner bite-Perf self*
This dog's owner bit self.

*Zhezhi gou-de zhuren*, being [+subject] and [+dominating, +animate], outranks *zhezhi gou*, being [+subject] and [-dominating, -animate]. Therefore, only *zhezhi gou-de zhuren* is an antecedent.

Consider the following examples involving a non-human animate candidate:

(62) Zhezhi $gou_i$ ti $Zhangsan_j$ wangcheng-le Lisi xiang $ziji_{?*i/j}$ jiaodai de shi.
*This-CL dog on-behalf-of Zhangsan complete-Perf Lisi to self entrust DE thing*
This dog did on behalf of Zhangsan what Lisi entrusted to him.

There are three candidates in (62). *Lisi*, being [+subject] and [-dominating, +animate], outranks *Zhangsan*, being [-subject] and [-dominating, +animate]. *Zhangsan* then competes with *zhezhi gou*. The former, being [-subject] and [-dominating, +animate], outranks the latter, being [+subject] and [-dominating, -animate]. The binding possibilities are therefore correctly predicted.

Let us now consider a potential problem:

(63) $Zhangsan_i$-de $gou_j$ renwei $Lisi_k$ taoyan $ziji_{*i/j/k}$.
*Zhangsan's dog think Lisi hate self*
Zhangsan's dog thinks Lisi hates self.

*Zhangsan*, being [+subject] and [-dominating, +animate], outranks *Zhangsan-de gou*, being [+subject] and [+dominating, -animate]. It is predicted that *Zhangsan* can

antecede *ziji*, contrary to fact. I speculate that the problem is the verb *renwei*. It restricts the thinker to its external subject, which *Zhangsan* is not.[78] It is possible that the speaker of (63) is personifying *Zhangsan-de gou* and the thinkership of *Zhangsan-de gou* facilitates personficiation. If so, it comes as no surprise that personified *Zhangsan-de gou*, being [+subject] and [+dominating, +animate], would outrank *Zhangsan*, being [+subject] and [-dominating, +animate].[79]

To sum up, in this section we have seen how the current approach accounts for a variety of phenomena, such as subject orientation, sub-commanding binding, and the binding possibilities of the long-distance reflexive *ziji*. In the following section, we will see how our approach fits in with other well-known constructions related to Chinese reflexivization, i.e. the *Ba*/*Bei* constructions and psych-verbs.

### 3.4 Other Sentence Types

In the previous section I have examined the Antecedent-Seeking Mechanism against sentences where the candidate is overtly either an NP c-commanding *ziji*, or an NP c-commanding the head of the XP c-commanding *ziji*, or a subject NP contained inside another subject NP. This section is targeted at three sentence types—psych-sentence, adverbial clause, and *ba*/*bei* constructions. The first two present (superficial) problems for our approach because the antecedent is not overtly a

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[78] The fact that *Zhangsan*, marked as [+prominent], cannot antecede *ziji*, may be that the genitive NP is not logophoric, in the sense that it does not convey speech, thoughts, or feelings. Long-distance antecedents typically presuppose logophoricity (cf. Huang and Liu (2001), Pollard and Xue (2001), among others).

[79] It seems that personification is not as effective as real humanhood in turning a non-human NP into an LD antecedent. Consider the following contrast:

(i) Zhangsan-de gou renwei Lisi taoyan ziji.
*Zhangsan's dog think Lisi hate self*
Zhangsan's dog thinks Lisi hates self.

(ii) Zhangsan renwei Lisi taoyan ziji.
*Zhangsan think Lisi hate self*
Zhangsan thinks Lisi hates self.

Speakers typically feel that the possibility of *ziji* to be long-distance bound is greater in (ii) than in (i). After all, a personified dog is still not a human.

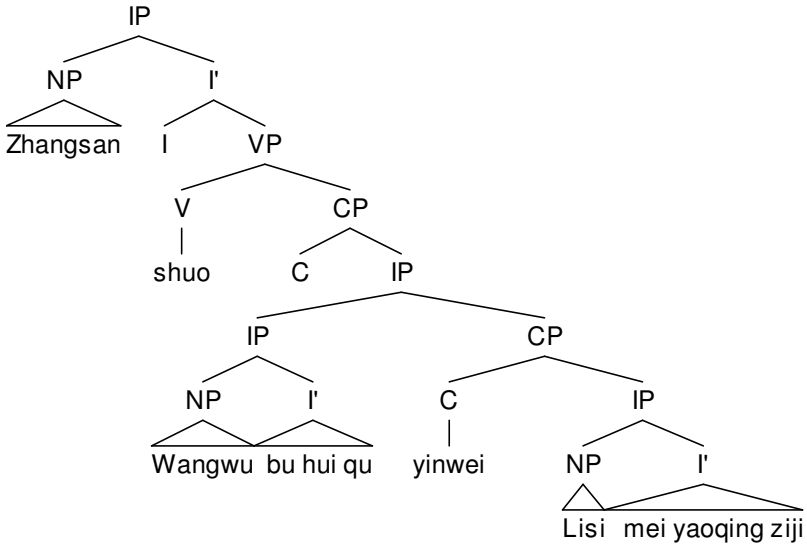
candidate. The third one can be accommodated within our approach if we take certain assumptions.

Let us begin by examining sentences with adverbial clauses containing *ziji*. Consider the following:

(64) Zhangsan$_i$ shuo Wangwu$_j$ bu hui qu, yinwei Lisi$_k$ mei yaoqing ziji$_{i/*j/k}$. (Pollard and Xue (1998))
*Zhangsan say Wangwu not will go, because Lisi not invite self*
Zhangsan says that Wangwu won't go because Lisi didn't invite him/himself.

(64) is not amenable to our approach if we interpret c-command as m-command and assume (65) as its structural representation. *Wangwu* is in the intermediate IP, to which an adverbial clause containing *ziji* is adjoined. As an NP c-commanding, or rather, m-commanding, *ziji*, it is supposed to be a candidate. Nevertheless, in the absence of special conditions such as emphasis, *Wangwu* in (65) cannot antecede *ziji*, even though it is equally prominent like the other two candidates, *Zhangsan* and *Lisi*. All three are [+subject] and [-dominating, +animate].

(65)



Note that if we want to maintain that *Wangwu* is indeed a candidate and marked as [+prominent], we have to attribute the anomaly to discourse-pragmatics. It could be that *Zhangsan*, an NP representing the speech of an individual, is more salient than *Wangwu*.

However, the contrast illustrated by (64) and (66) following shows that (64) on the intended reading is unacceptable because *Wangwu* fails to c-command *ziji* in an adverbial clause in the strict sense:

(66) Zhangsan$_i$ shuo Wangwu$_j$ yinwei Lisi$_k$ mei yaoqing ziji$_{i/j/k}$ er bu hui qu.
*Zhangsan say Wangwu because Lisi not invite self therefore not will go*
Zhangsan says that Wangwu, because Lisi didn't invite self, will not go.

If we place the adverbial clause immediately behind the intermediate subject *Wangwu*, the acceptability of the coreferential reading concerned greatly improves. Supposedly, (66) and (64) do not differ from each other in terms of pragmatic conditions. If so, the former suggests that a strict interpretation of c-command, i.e. one that relies on the first branching node, is necessary in order to capture the different degrees of acceptability between the two sentences.

The following also suggests that c-command, rather than m-command, is operative in Chinese anaphoric relations:

(67) Ruguo Zhangsan$_i$ mei qian, ta$_i$ hui dai zai jia-li.
*If Zhangsan no money, he will stay at home-Loc*
If Zhangsan has no money, he will stay at home.

On the assumption that the *ruguo* clause adjoins to the matrix IP just as a *yinwei* clause does, if the matrix subject could m-command the adverbial clause and

everything in it, then we should expect a Principle C violation, contrary to fact. But (67) is not conclusive evidence. Consider (68):

(68) $Ta_i$ bu hui qu, yinwei $Zhangsan_{*i}$ mei jie-dao yaoqing. (Pollard and Xue (1998))
*He not will go because Zhangsan not receive invitation*
He will not go because Zhangsan did not receive invitation.

Pollard and Xue argued that the apparent Principle C violation is due to *ta*'s c-commanding, or rather m-commanding, *Zhangsan*. If so, we should expect the same in (67). Note that it could be argued that the *ruguo* clause does not adjoin to IP, but to a higher projection, thereby precluding a Principle C violation in (67) and preserving m-command. This treatment, however, runs into difficulty in dealing with the following:

(69) a. *Ruguo $ta_i$ mei qian, $Zhangsan_i$ hui dai zai jia-li.
*If he no money, Zhangsan will stay at home-Loc*
If he has no money, Zhangsan will stay at home.
b. *Yinwei $ta_i$ mei jie-dao yaoqing, $Zhangsan_i$ yiding bu hui qu.
*because he not receive invitation, Zhangsan surely not will go*
Because he did not receive invitation, Zhangsan will not go.
c. Yinwei $Zhangsan_i$ mei jie-dao yaoqing, $ta_i$ yiding bu hui qu.
*because Zhangsan not receive invitation, he surely not will go*
Because Zhangsan did not receive invitation, he surely will not go.

A comparison of (68) and (69) shows that the anomaly of (68) cannot be due to *ta*'s m-commanding *Zhangsan* and the resulting Principle C violation, because such reasoning would equally rule out the grammatical (69c), where *ta* also m-commands *Zhangsan*. The ungrammaticality of (69b) would also remain unaccounted for; there is supposed to be no binding principle violation whatsoever, as *Zhangsan* is A-free and *ta* is A-bound outside its governing category, if m-command is adopted. Similarly, the

account based on m-command incorrectly predicts (69a) to be grammatical with no binding principle violations, whether we assume that the adverbial clause adjoins to IP or a higher projection such as CP. The contrast between the anomalous (69a-b) and (68) on the one hand and the acceptable (69c) and (67) on the other suggests that linear occurrence of a pronominal and an R-expression figures prominently.[80]

Returning to the discussion of (64), consider the following:

(70) Wangwu$_j$ bu hui qu, yinwei Lisi$_k$ mei yaoqing ziji$_{j/k}$. (Pollard and Xue (1998))
*Wangwu not will go, because Lisi not invite self*
Wangwu won't go because Lisi didn't invite him/himself.

(70) is only a segment of (64), but the coindexation between *Wangwu* and *ziji* is now acceptable. There are two ways to interpret the contrast between (64) and (70). One is to follow Pollard and Xue (1998), Huang and Liu (2001), et al. and assume that the coreferential relation concerned is licensed not by syntax but by pragmatics. The other is to assume that *Wangwu* in (64) satisfies the syntactic condition (m-command), but pragmatic factors filter it out, and *Wangwu*, in addition to m-commanding *ziji*, fulfils the pragmatic condition of being a topic in (70). Here, to keep the contrast between (64) and (66), I assume that the subject *Wangwu* in (64) does not c-command *ziji* in the adverbial clause, and the acceptability of (70) is licensed by pragmatics. Sells (1987) made the same decision and treated long-distance reflexives in adverbial clauses as licensed by logophoricity in Japanese. Before I leave this issue, note that

[80] Hsieh Laoshi alerted me to the phenomenon called backward pronominalization. It seems that a pronominal can refer to a following R-expression with more ease if the former is lower than the latter in the reduced NP accessibility hierarchy (subject> non-subject) than otherwise. Consider the following:
(i) Yinwei Zhangsan mei yaoqing ta$_i$, Lisi$_i$ yiding bu hui qu.
*Because Zhangsan not invite him, LIsi surely not will go*
Because Zhangsan did not invite him, Lisi definitely will not go.
This shows that linear order cannot be the sole factor at work; it interacts with the reduced NP accessibility hierarchy. Anyway, one solid fact exposed by the foregoing discussion in the text is that m-command, while ruling out the ill-formed (68), also rules out the well-formed (69c) and thus cannot be correct.

adverbial clauses behave like sentential complements:

(71) Wangwu$_j$ bu hui qu, yinwei wo$_k$ mei yaoqing ziji$_{*j/k}$.
*Wangwu not will go because I not invite self*
Wangwu will not go because I did not invite self.

(72) Wangwu$_i$ bu hui qu, yinwei Zhangsan$_j$ mei yaoqing nawei renshi ziji$_{i/j}$ de laoshi.
*Wangwu not will go because Zhangsan not invite that-CL know self DE teacher*
Wangwu will not go because Zhangsan did not invite the teacher who knows him.

(73) Wangwu$_j$ zhidao wo$_k$ mei yaoqing ziji$_{*j/k}$.[81]
*Wangwu know I not invite self*
Wangwu knows I did not invite self.

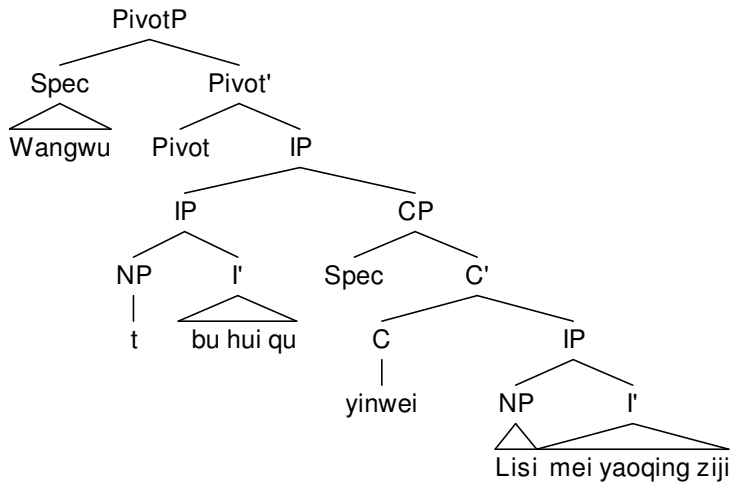
(74) Wangwu$_i$ renwei Zhangsan$_j$ mei yaoqing nawei renshi ziji$_{i/j}$ de laoshi.
*Wangwu think Zhangsan not invite that-CL know self DE teacher*
Wangwu thinks that Zhangsan did not invite the teacher who knows him.

(71)-(74) suggest that *ziji* in adverbial clauses should be treated like *ziji* in sentential complements, and thus a single structural relation, i.e. m-command, appears preferred. If so, how can we preserve the above similarity without losing the contrast between (64) and (66), where (strict) c-command makes a difference? The answer might be to follow Rizzi's (1997) Split CP hypothesis like Huang and Liu's (2001) work.[82] I propose the following for (70) and similar sentences:

(75)

[81] Some speakers feel that it is possible for *ziji* to refer to *Wangwu*, across *wo*. This is because *yaoqing* is an irreflexive predicate of which the external argument and the internal argument are usually not coreferential. Irreflexive predicates weaken the blocking effect (cf. Cole et al. (2001)).

[82] Huang and Liu posited Pivot Phrase and Source Phrase to reflect Sell's logophoricity. But rather than moving an antecedent, or an NP that the speaker identifies with, to the Spec of such phrases, they proposed that *ziji* move to that position. Contrary to their analysis, I propose that the antecedent move into the Spec position.



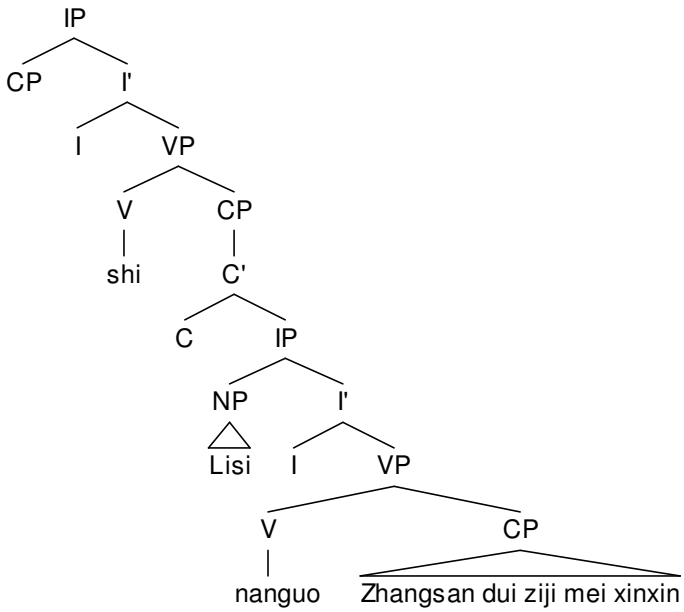

Here, *Wangwu* moves to [Spec, PivotP] and c-commands *ziji* and can be an antecedent. The relevant part in (64) cannot be assigned such a structure presumably because it is embedded in a phrase representing the speech of the matrix subject: As Pollard and Xue put it, Source of speech is much more salient than Pivot in the discourse, and the presence of Source implies that speakers generally identify with Source, not with Pivot. When Pivot cannot apply, some means must be available to turn *Wangwu* into a legitimate antecedent. Placing the adverbial clause immediately behind the intermediate subject is one such way. *Wangwu* would (strictly) c-command *ziji* in that configuration, as in (66).

Having examined *ziji* in adverbial clauses, let us turn to a psych-sentence:

(76) Zhangsan$_i$ dui ziji$_{i/j}$ mei xinxin shi Lisi$_j$ hen nanguo. (Cole and Sung (1994))
*Zhangsan to self no confidence make Lisi very sad*
That Zhangsan had no confidence in himself/him made Lisi very sad.

The pressing issue surrounding (76) is how to accommodate *Lisi* within our Antecedent-Seeking Mechanism. We may consider the following structure, postulated by Cole and Sung, where *Lisi* is considered a subject, and thus contained in an XP c-commanding *ziji*:

(77)




(77) shows two candidates—*Zhangsan* and *Lisi*. Let them enter into prominence competition. Both are marked as [+prominent] because both are [+subject] and [-dominating, +animate]. Having examined a typical psych-sentence, let us turn our attention to a relatively uncommon type:

(78) Zhangsan$_i$ dui ziji$_{i/j}$ mei xinxin dui Wangwu$_j$ zaocheng-le hen da de daji.
*Zhangsan to self no confidence to Wangwu cause-Perf very big DE blow*
That Zhangsan had no confidence in self caused a serious blow to Wangwu.

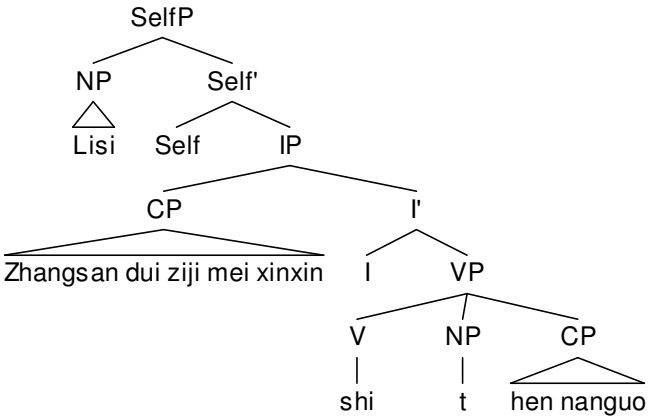
In contrast to (76), *Wangwu*, the object of the preposition *dui*, is not an underlying subject. It cannot be analyzed as having the structure like (76), as there is no causative verb. Even if *Zhangsan dui ziji mei xinxin* of (78) could reconstruct to a position as in (77), *Wangwu* still could not c-command *ziji*. Insofar as (76) and (78) display similar coreferential behavior, it is entirely possible that they should fall within the realm of pragmatics, following Pollard and Xue (1998, 2001). This is not an unreasonable

conclusion, because coindexation with an object in the matrix clause is not limited to the above sentence types:

(79) Zhangsan$_i$ tou-le ziji$_{???i/j}$-de qian de shishi ba Lisi$_j$ hai-can-le.
*Zhangsan steal-Perf self's money DE fact BA Lisi harm-miserable-Perf*
The fact that Zhangsan stole self's money harmed Lisi miserably.

(79) displays the same coreferential behavior as (76) and (78), but there is no possibility of assigning (79) a structure along the lines of (77). As the post-*ba* object is highly topical (see Bender (2000) and references cited therein), *Lisi* is likely to be able to antecede *ziji*. How can we represent these sentences so as to be accommodated within the Antecedent-Seeking Mechanism? A structure analogous to (75) can do the work. (80) shows that *Lisi* moves to a Spec position. If Spec is considered a subject position, then *Lisi* is now a subject. It is now a candidate and can enter into prominence competition with *Zhangsan*. As both are [+subject] and [-dominating, +animate], the competition is tied and both NPs can be long-distance antecedents for *ziji*. For (79), a similar projection, namely TopicP, can be assumed in addition to taking *ba* as a verb (see section 3.4). The same result as (80) displays obtains.[83]

(80)

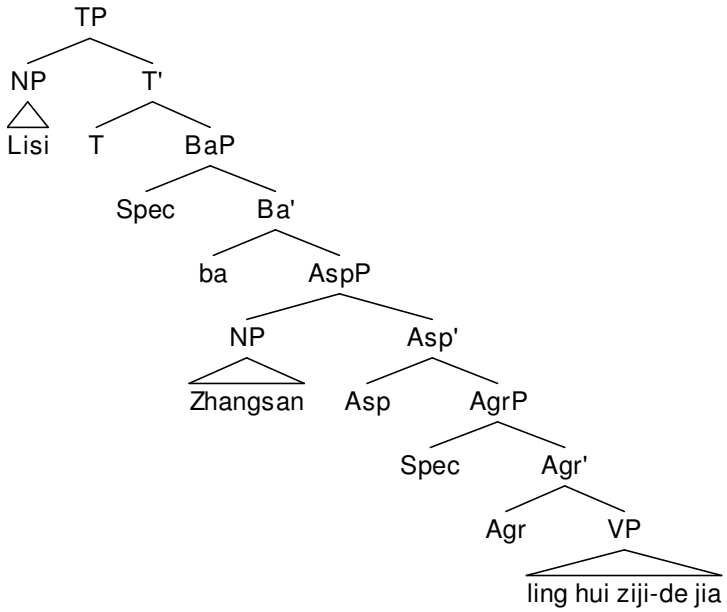



[83] Such movement has consequences for the blocking effect. See Chapter Four.

Having examined the two sentence types, let us shift our attention to the *ba*/*bei* constructions. The only attempt to square the constructions with binding facts so far known is Cole and Wang (1996). The sentences they considered are typically of the following kind:

(81) a. Lisi$_i$ ba Zhangsan$_j$ ling hui-le ziji$_{i/j}$-de jia. (Cole and Wang (1996))
*Lisi BA Zhangsan lead back-Perf self's home*
Lisi took Zhangsan back to his home.
b. Ta$_i$ bei Zhangsan$_j$ guan zai ziji$_{i/j}$-de cheli. (ibid.)
*He BEI Zhangsan shut in self's car-inside*
He was shut up by Zhangsan in his car.

(82)




They proposed structures like (82) to account for binding of *ziji* by the post-*ba* NP *Zhangsan*.[84] They rejected the traditional PP analysis of the *ba*-phrase, since it is incompatible with the head-movement account of *ziji*, according to which binding

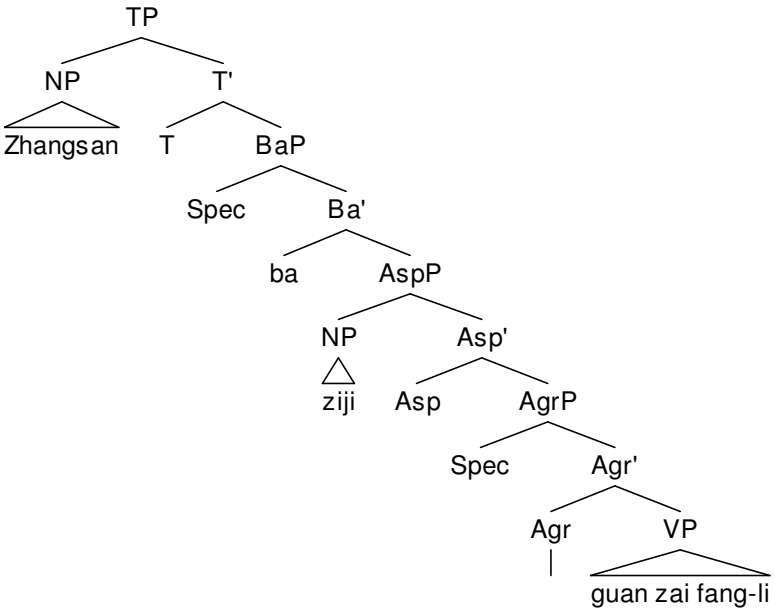
[84] They also posited a functional projection headed by *bei*. Since *ba* and *bei* phrases are treated similarly in their article, what I discuss in the text regarding *ba* also applies to *bei*.

takes place when *ziji* has adjoined to Agr. *Zhangsan* inside a PP could never bind *ziji*. The verbal analysis of the *ba*-phrase was not adopted because it is also incompatible with the head-movement account, since the verbal projection is lower than Agr, and the post-*ba Zhangsan* could not bind *ziji* either.

In this section, I will not offer a definitive analysis that could accommodate all the binding facts in relation to *ba*/*bei*, local and non-local, because I have limited my approach to non-local binding. But note that in addition to problems concerning long-distance binding that I will discuss shortly, the structure (82) runs up against the problem presented by the following example:

(83) Zhangsan$_i$ ba ziji$_i$ guan zai fang-li.
*Zhangsan BA self confine at room-Loc*
Zhangsan confined himself in the room.

(84)




Following (82), (83) would have the structure (84). Recall that *ziji* adjoins to Agr at LF according to Cole and Wang. However, this movement would induce an ECP violation because once *ziji* moves out of the *ba*-NP as a head down to Agr, its trace

cannot be properly governed. *Ziji* would land at Agr, which is lower than the trace, and could not antecedent-govern it. (83) would therefore be incorrectly ruled out. Now that I have demonstrated that the structure given in (82) is problematic even in dealing with local binding as in (83), let us examine the structure in relation to long-distance binding:

(85) Zhangsan$_i$ ba Lisi$_j$ jiao-gei-le nawei renshi ziji$_{i/*j}$-de laoshi.[85]
*Zhangsan BA Lisi turn-over-Perf that-CL know self's teacher.*
Zhangsan turned Lisi over to that teacher who knew him.

A structure along the lines of (82) would incorrectly allow *Lisi* to antecede *ziji*. As the *ba*-phrase is higher than the matrix Agr, *ziji* is supposed to be bindable by *Lisi* when it lands at matrix Agr. Contrary to this prediction, only the matrix subject *Zhangsan* can be the long-distance antecedent of *ziji*. Our Antecedent-Seeking Mechanism is incompatible with that structure as well. If *Lisi* occupied a Spec position, it would be a subject, and would tie with *Zhangsan* because both are [+subject] and [-dominating, +animate]. In other words, *Lisi* would be incorrectly predicted to antecede *ziji*. Given this fact, there is reason to suspect that the structure should be rejected.

Below I shall assume the findings of Bender (2000), who proposed a verbal analysis of the *ba*-phrase within the framework of Lexical-Functional Grammar. A structure like the following was proposed:[86, 87]

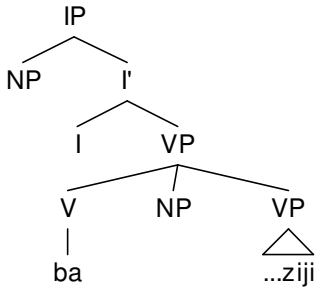
---

[85] Note that for some speakers, it seems less easy to construe *ziji* with the matrix subject in the following sentence, where *ziji* is a genitive NP. I will not discuss why *Zhangsan* is more readily taken as an antecedent in (85) than in (i):

(i) Zhangsan$_i$ ba Lisi$_j$ jiao-gei-le nawei liaojie ziji$_{i/*j}$-de yanjiou-de laoshi.
*Zhangsan BA Lisi turn-over-Perf that-CL understand self's research-DE teacher*
Zhangsan turned Lisi over to that teacher who understood self's research.

[86] Note that local binding involving *ba* such as (81a), Bender suggests, follows from postulating that the embedded VP hosts a TOPIC function that can be integrated by controlling the SUBJ function, and from assuming that cases like the embedded VP in (81a) involve an unmarked passive. Because the post-*ba* NP controls a SUBJ function in the absence of a retained object and the only argument function

(86)




In (86), both the matrix subject and post-*ba* NP are NPs c-commanding *ziji*, and therefore candidates. The post-*ba* NP will lose to the subject if both are animate, with the latter functioning as the long-distance antecedent of *ziji*. This is exactly the situation in (85). Now consider (87), which differs from (85) in that the former has an inanimate subject:

(87) Zheliang che$_i$ ba Zhangsan$_j$ zai-dao nawei renshi ziji$_{*i/j}$-de laoshi-de jia-li.
*This-CL car BA Zhangsan carry-arrive that-CL know self DE teacher's home-loc.*
The car took Zhangsan to the house of the teacher who knew him.

---

that the TOPIC function controls in an unmarked passive is the SUBJ function, *ziji* in (81a), she surmises, can refer to the *ba*-NP, just as it can refer to a subject as its antecedent. However, (85) shows that non-local *ziji* cannot have its antecedent determined by referring to functions. If the TOPIC function in the post-*ba* VP, an unmarkd passive, in (85) controls the SUBJ function, we would expect *Lisi* to antecede *ziji*. below. See more discussion in the text.

[87] Following Bender, I do not regard the object following a ditransitive verb such as *jiao-gei* as a retained object in (84). I define a retained object as an object in the embedded VP that cannot co-occur with the *ba*-NP in the *ba*-less construction. Consider the following:

(i) wo ba juzi bo-le pi. (Li and Thompson (1981))
*I BA orange peel-Perf skin*
I peeled the orange.

(ii) wo ba men shang-le suo. (ibid.)
*I BA door ascend-Perf lock*
I locked the door.

(iii) wo ba bilu sheng-le huo. (ibid.)
*I BA fireplace start-Perf fire*
I started a fire in the fireplace.

For these sentences, the post-*ba* NP and the object in the embedded VP cannot co-occur in the *ba*-less sentence. We cannot say **wo bo-le juzi pi* (Note that the intended reading is not to construe *juzi pi* as a compound), **wo shang-le men suo*, or **wo sheng-le bilu huo*. In contrast, as for the verb *jiao-gei*, we can say wo *jiao-gei ni zhexie shu* or *wo ba zhexie shu jiao-gei ni* "I handed these books to you".

In (87), *zheliang che* and *Zhangsan* are candidates. The latter, being [-subject] and [-dominating, +animate], outranks the former, being [+subject] and [-dominating, -animate]. Therefore, *Zhangsan* is chosen as the long-distance antecedent.

Having examined *ba*-sentences, let us see how the Antecedent-Seeking Mechanism deals with *bei*-sentences. Her (1989) proposed a verbal analysis for the *bei*-phrase.[88] A structure along the lines of (86) is useful for the characterization of *bei*-sentences in relation to non-local binding. Consider the following sentence:

(88) Zhangsan$_i$ bei Lisi$_j$ gaozhi Wangwu xiang mai ziji$_{i/*j}$-de fangzi.
*Zhangsan BEI Lisi inform Wangwu want buy self's house*
Zhangsan was informed by Lisi that Wangwu wanted to buy his house.

There are three candidates. Let *Wangwu* compete with *Lisi*. The former, being [+subject] and [-dominating, +animate], outranks the latter, being [-subject] and [-dominating, +animate]. *Lisi*, a matrix object, loses to *Zhangsan*, a subject. Therefore *Lisi* cannot antecede *ziji*. Now consider the following, with an inanimate matrix subject:

(89) Zheben shu$_i$ bei Zhangsan$_j$ songgei-le nawei renshi ziji$_{*i/j}$ DE laoshi.
*This-CL book BEI Zhangsan give-Perf that-CL know self DE teacher*
This book was given by Zhangsan to the teacher who knew him.

*Zhangsan*, being [-subject] and [-dominating, +animate], outranks *zheben shu*, being [+subject] and [-dominating, -animate]. *Zhangsan* therefore ends up as the long-distance antecedent for *ziji*.

We have seen how the verbal analysis of the *ba*/*bei* construction fits in with our

[88] His analysis is also cast within Lexical-Functioanl Grammar. The post-*bei* NP is analyzed as the object of the verb *bei*. The post-*bei* NP controls the SUBJ function in the f-structure of the embedded VP. Again, it seems that non-local, cross-clausal binding is insensitive to the SUBJ function.

Antecedent-Seeking Mechanism. However, we have not accounted for (81), repeated below as (90):

(90) a. Lisi$_i$ ba Zhangsan$_j$ ling hui-le ziji$_{i/j}$-de jia. (Cole and Wang (1996))
*Lisi BA Zhangsan lead back-Perf self's home*
Lisi took Zhangsan back to his home.
b. Ta$_i$ bei Zhangsan$_j$ guan zai ziji$_{i/j}$-de cheli. (ibid.)
*He BEI Zhangsan shut in self's car-inside*
He was shut up by Zhangsan in his car.

Although the thesis is not devoted to local binding,[89] it might be insightful to briefly examine the binding behavior in sentences such as (90). If *Lisi* and *Zhangsan* are candidates in (90a), we would predict that only *Lisi* can antecede *ziji*, contrary to fact. Within the LFG analysis, however, *Zhangsan* controls the SUBJ function in the embedded VP, an unmarked passive in Bender's analysis, and therefore binds *ziji* like a subject in the phrase structure tree. *Zhangsan* in (90b), too, controls the SUBJ function and thus can antecede *ziji* via this function. Both sentences reflect that local binding involves binding to the SUBJ function, as well as binding to a subject in the phrase structure tree. This stands in stark contrast to long-distance binding involving *ba*/*bei* sentences. In (85) and (88), for instance, the post-*ba*/*bei* NPs cannot antecede *ziji*, although they control the SUBJ function; *ziji* in long-distance contexts involving *ba*/*bei* sentences are sensitive to subjects in the phrase structure tree, not the SUBJ function in the functional structure. This contrast provides support for the well-received LFG wisdom that grammatical functions, e.g. subject, are not reducible to phrase-structural positions (or c-structure positions, in LFG terms), and our claim

[89] It might be useful to define local binding as in the classical Binding Principle A, whereby the governing category plays a crucial role for determining the domain where local binding applies. If so, the GC for *ziji* in (90) is the whole sentence, since it is the minimal complete functional complex containing an accessible subject, on the assumption that the accessible subject is a tree-configurational notion.

that local and non-local binding should receive different treatments. If the SUBJ function were given a corresponding position in the phrase structure tree, we could not explain why the post-*ba*/*bei* NPs cannot antecede *ziji* in a long-distance context. Treating local and non-local binding separately, i.e. by assuming that the XP following the *ba*/*bei*-NP is a VP and assuming that only local binding is sensitive to the SUBJ function, we can neatly characterize the contrast we have seen.

## 3.5 The Nature of Prominence Competition

In the previous sections, I demonstrated how the Antecedent-Seeking Mechanism accounts for the non-local anaphoric resolution of the Mandarin reflexive *ziji*. In this section I will discuss various aspects of it, including the procedure for prominence competition and the components of the prominence hierarchy.

### 3.5.1 The Procedure for Prominence Competition Revisited

Recall that competition proceeds according to (26) repeated below as (90):

(91) Procedure for Prominence Competition

a. In a candidate set ($\alpha_n$,…,$\alpha_{+1}$, $\alpha$), $\alpha$ and $\alpha_{+1}$ compete for prominence as per the Prominence Hierarchy (25), before $\alpha_{+1}$ competes with $\alpha_{+2}$ in a linear fashion, until $\alpha_{n-1}$ has competed with $a_n$, except when (b) applies:

b. Given a candidate which itself dominates other candidates, only it goes on to compete with a candidate on its left, after prominence competition has taken place among the candidates it dominates.

(91a) and (91b) each describe how competition proceeds for two types of relations a candidate can bear to another. The former requires that if two candidates stand in a dominance relation, only the dominating one competes with a candidate outside the NP where the dominance relation holds. The latter requires that if two candidates do

not stand in a dominance relation, they compete in a linear fashion. Both statements are empirically correct, but we might wonder what they have in common, and it is less than satisfactory that competition described by (91a) proceeds linearly, whereas competition involving dominance proceeds hierarchically. In the following, I shall argue that the commonality between (91a) and (91b) cannot be sufficiently captured by c-command alone, the structural relation employed in almost every Chomskyan theory of syntactic reflexivization. Rather, we can bring out their commonality only by utilizing the notion of path, along the lines of Pan (1998) and the notion of containment.[90] Let us consider the following example in relation to the competition procedure:

(92) Zhejian $shi_i$ biaoming $Zhangsan_j$ gaosu $Lisi_k$ $Wangwu_l$ taoyan $ziji_{*i/j/*k/l}$.
*This-CL event indicate Zhangsan tell Lisi Wangwu hate self*
This event indicated that Zhangsan told Lisi Wangwu hated him/himself.

Competition begins from *Wangwu* and *Lisi*. After that *Lisi* competes with *Zhangsan*, which in turn competes with *zhejian shi* according to (91a). The order of competition could not be otherwise. If *Lisi* directly competed with *zhejian shi*, the former, being [-subject] and [-dominating, +animate], would outrank the latter, being [+subject] and [-dominating, -animate] and incorrectly be predicted to be a legitimate antecedent. Therefore, some sense of locality between candidates is involved in the competition. It might appear from this example that c-command can characterize the order of competition, i.e. a candidate can compete only with another with no intervening c-commanding candidate. This sounds quite like Rizzi's (1986) condition on the binder, given below:

[90] Containment is employed in O'Grady (1987)'s treatment of Korean anaphora. A contains B if A dominates B or A is B.

(93) a. *x* is a binder of *y* iff, for *x*, *y*= a category, *x* and *y* are coindexed, and *x* c-commands *y*;
b. *x* is the local binder of *y* iff *x* is a binder of *y* and there is no *z* such that *z* is a binder of *y*, and *z* is not a binder of *x*.

A characterization of the order of prominence competition roughly along the lines of (93) means that *Lisi* cannot compete with *zhejian shi* because *Zhangsan*, which c-commands *Lisi* and which does not c-command *zhejian shi*, is the intervening candidate corresponding to *z* in (93b). Attractively simple as this characterization is, the following example indicates that it cannot be right:

(94) Zhangsan xiang Lisi zhengming Wangwu taoyan ziji.
*Zhangsan to Lisi prove Wangwu hate self*
Zhangsan proved to Lisi that Wangwu hated him/himself.

In (94), *Wangwu* competes with *Lisi*, which competes with *Zhangsan*. But *Lisi*, a candidate, does not c-command *Wangwu*.

Also note that a c-command-based characterization cannot capture the order of competition in the following:

(95) $\text{Zhangsan}_{i}$-de $\text{baba}_{j}$ dui $\text{ziji}_{*i/j}$ mei xinxin. (Cole et al. (1993))
*Zhangsan's father to self no confidence*
Zhangsan's father has no confidence in himself.

Both are *Zhangsan-de baba* and *Zhangsan* candidates, but they stand in a dominance relation; *Zhangsan-de baba* dominates *Zhangsan*. C-command simply does not apply in this case. To sum up the problem, c-command can only describe the order of competition for a subset of candidates which do not stand in a dominance relation.

And it is inapplicable to the characterization of the order of competition for candidates in a dominance relation.

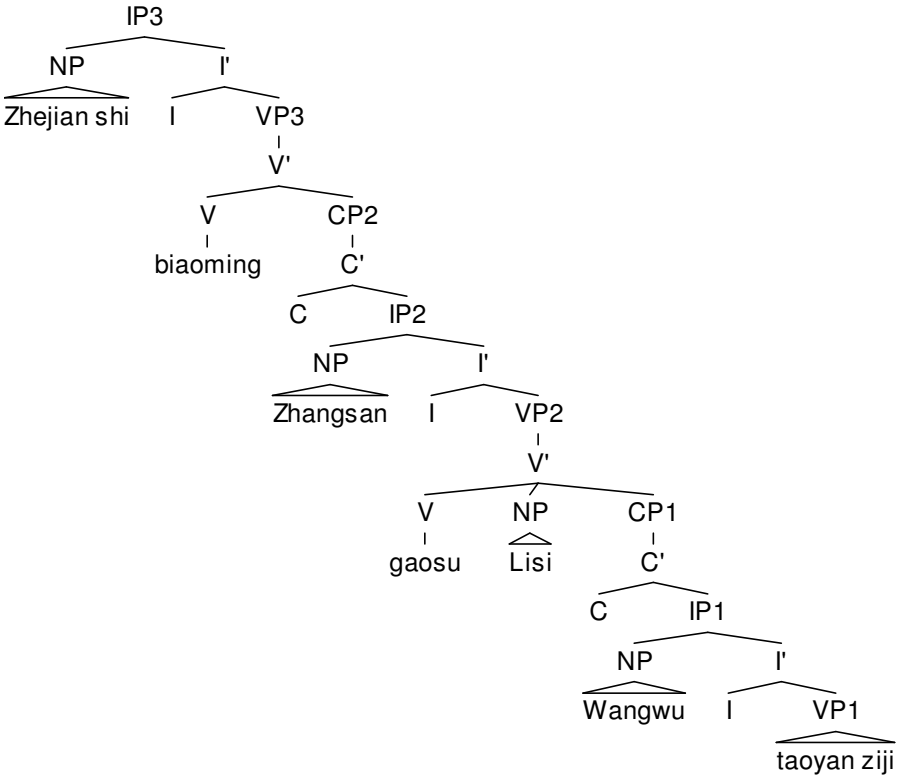
Let us now try a different tack and consider Pan (1998)'s notion of closeness and path.[91] His Closeness Condition is given below:

(96) α is closer to X, the reflexive, than β is iff the path from X to the minimal maximal projection dominating α is a proper subset of the path from X to the minimal maximal projection dominating β.

Consider (92) again and its phrase structure tree (97). Each candidate stands in a closeness relation to the other. *Wangwu* is closer to *ziji* than is *Lisi* because the path from *ziji* to the lowest IP dominating *Wangwu* is a proper subset of the path from *ziji* to the matrix VP dominating *Lisi*. *Wangwu*'s path is {VP1, IP1} and *Lisi*'s path is {VP1, IP1, CP1, VP2}. The former is a proper subset of the latter. *Lisi* is closer to *ziji* than *Zhangsan* because the latter's path is {VP1, IP1, CP1, VP2, IP2}. *Zhangsan* in turn is closer to *ziji* than *zhejian shi* because the latter's path is {VP1, IP1, CP1, VP2, IP2, CP2, VP3, IP3}.

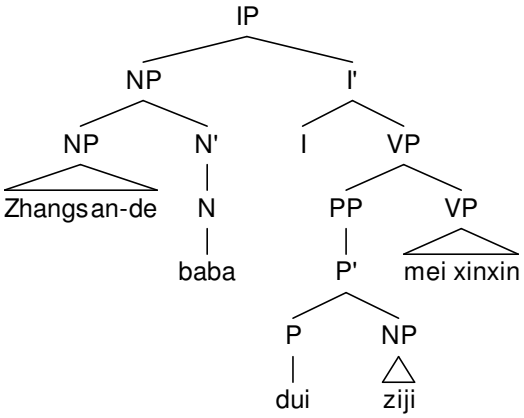
(97)

[91] Pan's closeness condition is intended as part and parcel of a mechanism for finding out antecedents for *taziji*, "him/herself".



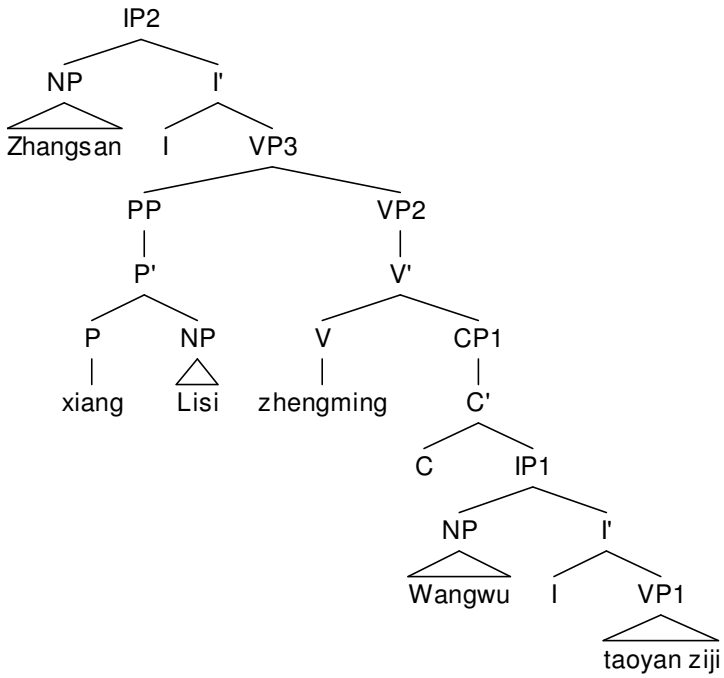

Moreover, consider (95) and its structure below. The path from *ziji* to the matrix IP dominating *Zhangsan-de baba* is {PP, VP, IP}, and is a proper subset of the path from *ziji* to the NP dominating *Zhangsan*, {PP, VP, IP, NP}. It therefore seems that (96) can do what (93) cannot do, as well as what it can do.

(98)




Now consider (94) and its structure below.

(99)




The path from *ziji* to the IP1 dominating *Wangwu* is a proper subset of the path from *ziji* to the PP dominating *Lisi*. The former path is {VP1, IP1} and the latter is {VP1, IP1, CP1, VP2, VP3, PP}. However, *Lisi*'s path is not a proper subset of *Zhangsan*'s path. The latter path is {VP1, IP1, CP1, VP2, VP3, IP2}. The Closeness Condition therefore cannot successfully characterize locality in prominence competition.

As I will argue below, however, the notion of path, the crucial ingredient of the Closeness Condition, is useful to the characterization of locality, if it is supplemented by the structural notions of containment, dominance, and c-command. I define locality as follows:

(100) Let A, B, and C be candidates for antecedenthood, A and B stand in a local relation iff:

(a) In case that A and B are not in a dominance relation, there is a path X such that X is the path from *ziji* to the minimal maximal projection which dominates the XP c-commanding *ziji* and containing A, and X is contained in

Y, such that Y is the path from *ziji* to the minimal maximal projection which dominates the XP c-commanding *ziji* and containing B, and there is no Z, such that Z is the path from *ziji* to the minimal maximal projection which dominates the XP c-commanding *ziji* and containing C, and Z is contained in Y, and X is contained in Z.[92]

(b) In case that A and B are in a dominance relation, there is a path X such that X is the path from *ziji* to the minimal maximal projection dominating A, and X is contained in Y, such that Y is the path from *ziji* to the minimal maximal projection dominating B, and there is no Z, such that Z is the path from *ziji* to the minimal maximal projection dominating C, and Z is contained in Y, and X is contained in Z.

(100a) captures how competition locally proceeds in (97) and (99). In (97), *Wangwu* and *Lisi* stand in a local relation, because the path from *ziji* to IP1, the minimal maximal projection which dominates the NP c-commanding *ziji* and containing *Wangwu*, is contained in the path from *ziji* to VP2, the minimal maximal projection which dominates the NP c-commanding *ziji* and containing *Lisi*. *Wangwu*'s path is {VP1, IP1} and *Lisi*'s path is {VP1, IP1, CP1, VP2}. *Lisi* and *Zhangsan* also stand in a local relation; *Zhangsan*'s path is {VP1, IP1, CP1, VP2, IP2}, which contains *Lisi*'s path. *Zhangsan* and *zhejian shi* stand in a local relation for the same reason: *zhejian shi*'s path is {VP1, IP1, CP1, VP2, IP2, CP2, VP3, IP3}, which contains *Zhangsan*'s path. Note that *Lisi* and *zhejian shi* do not stand in a local relation; there is the intervening path associated with *Zhangsan*. *Zhangsan*'s path is contained in *zhejian shi*'s path, and *Lisi*'s path is contained in *Zhangsan*'s path.

Likewise, in (99), *Wangwu* and *Lisi* stand in a local relation because *Wangwu*'s path, {VP1, IP1}, is contained in *Lisi*'s path, {VP1, IP1, CP1, VP2, VP3}. *Lisi* and

[92] Here two different yet similar notions of containment are used. One is for talking about the relation between one constituent and another, and the other for talking about the relation between paths. Just like the containment relation holding between constituents, a path A contains B if A includes B or A is identical to B.

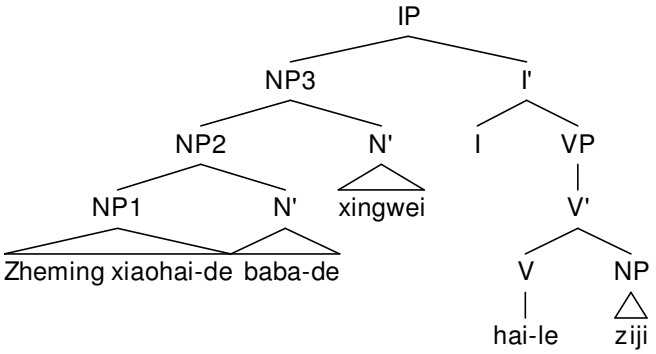
*Zhangsan* also stand in a local relation because *Lisi*'s path is contained in *Zhangsan*'s path, {VP1, IP1, CP1, VP2, VP3, IP2}.

Now let us turn to (100b) and sub-commanding candidates. Consider (98) again. The path from *ziji* to IP, the minimal maximal projection dominating *Zhangsan-de baba*, is contained in *Zhangsan*'s path. The former path is {PP, VP, IP} and the latter is {PP, VP, IP, NP}. *Zhangsan* and *Zhangsan-de baba* are therefore in a local relation.

Consider (101) below and its structure (102). *Zheming xiaohai-de baba-de xingwei* stands in a local relation to *zheming xiaohai-de baba*. The former candidate's path is {VP, IP}, which is contained in the latter candidate's path, {VP, IP, NP3}. *Zheming xiaohai-de baba* also stands in a local relation to *zheming xiaohai*, whose path is {VP, IP, NP3, NP2}. But note that *zheming xiaohai* and *zheming xiaohai-de baba-de xingwei* do not stand in a local relation; intervening between their paths is *zheming xiaohai-de baba*'s path. If *zheming xiaohai* competed with *zheming xiaohai-de baba-de xingwei*, the former, being [+subject] and [-dominating, +animate], would outrank the latter, being [+subject] and [+dominating, -animate], and be wrongly predicted to be a legitimate antecedent.

(101) Zheming xiaohai$_i$-de baba$_j$-de xingwei$_k$ hai-le ziji$_{*i/j/*k}$
*This-CL child's father's behavior hurt-Perf self*
This child's father's behavior hurt him.

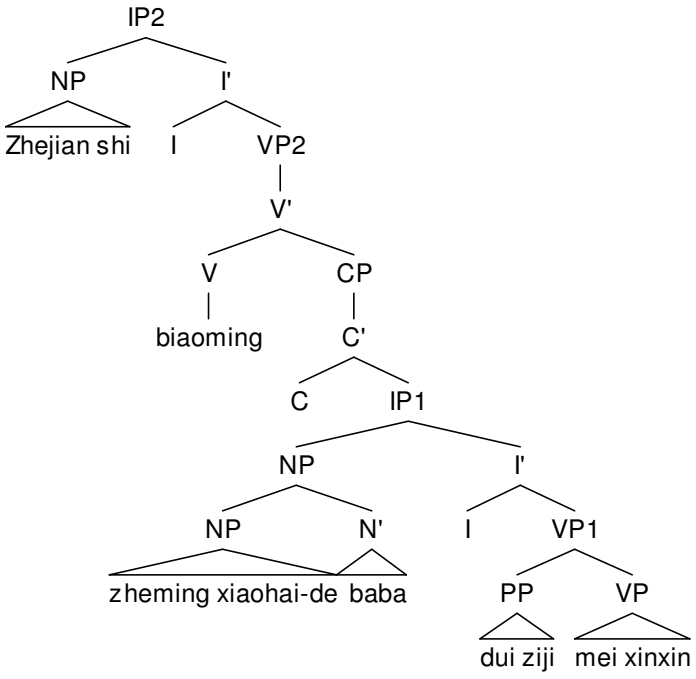
(102)



(100) also accounts for why competition cannot take place between a sub-commanding candidate and a candidate in the subject position of a higher clause. Consider the following. *Zheming xiaohai* cannot compete with *zhejian shi*. If they did, the former, being [+subject] and [-dominating, +animate], would outrank the latter, being [+subject] and [-dominating, -animate] and be incorrectly predicted to be an antecedent. This competition is barred by (100) because there is an intervening path associated with *zheming xiaohai-de baba*.

(103) Zhejian shi$_i$ biaoming zheming xiaohai$_j$-de baba$_k$ dui ziji$_{*i/*j/k}$ mei xinxin.
*This-CL event indicate this-CL child's father to self no confidence*
This event indicated that this child's father had no confidence in himself.

(104)




The above discussion has demonstrated that it is possible to bring out the commonality between (91a) and (91b), two seemingly different competition procedures. With (99), it is clear that the type of locality characteristic of prominence

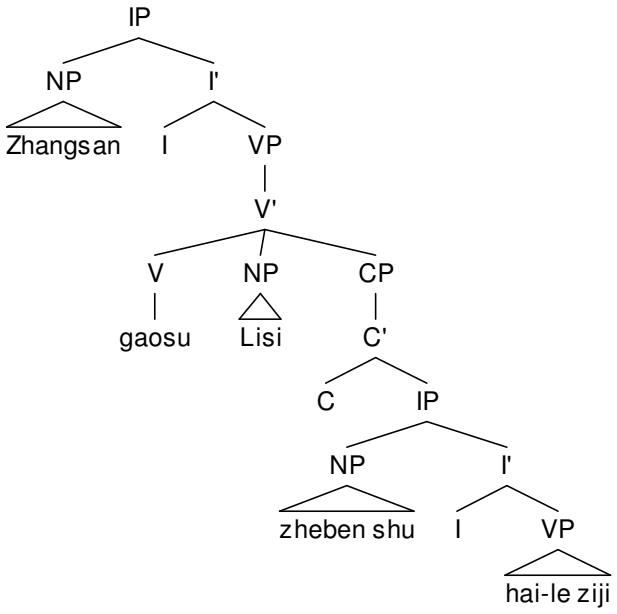
competition is explicit in the statement that "Z is contained in Y, and X is contained in Z". This is also what is common between (91a) and (91b). We can put forward the following thesis, which is implicit in (91) and facilitated by (100):

(105) Local Prominence Competition:
Candidates must compete locally.

The procedure for prominence competition now looks like a common syntactic operation in the Chomskyan syntactic theory, because syntactic operations, such as movement, are also characterized by some version of locality. This is an interesting parallel, and it is by no means the only one. Below we shall see that prominence competition proceeds in an upward manner, just like movement. Consider the following:

(106) Zhangsan$_i$ gaosu Lisi$_j$ zheben shu$_k$ hai-le ziji$_{i/*j/*k}$.
*Zhangsan tell Lisi this-CL book harm-Perf self*
Zhangsan told Lisi that this book harmed him.

(107)



There are three candidates, and each stands in a local relation to the other. However, competition cannot begin from *Zhangsan* and *Lisi*. *Zhangsan*, being [+subject] and [-dominating, +animate], would outrank *Lisi*, being [-subject] and [-dominating, +animate]. This result is right, though. However, if we continued the competition and had *Lisi* compete with *zheben shu*, the former would outrank the latter, being [+subject] and [-dominating, -animate]. That means that *Lisi* should be able to antecede *ziji*, contrary to fact. Obviously, downward competition would yield such undesirable results. The following thesis therefore suggests itself:

(108) Direction of Prominence Competition:
Candidates must compete upwardly.

To sum up the foregoing discussion, prominence competition is a local and upward operation. It is therefore best to be viewed as a syntactic operation.

3.5.2 Components of the Prominence Hierarchy

Recall the following prominence hierarchy as employed in the Antecedent-Seeking Mechanism:

(109) Prominence Hierarchy:
A. [+subject] > [-subject]
B i. [-dominating, +animate] > [-dominating, -animate]
ii. [+dominating, +animate] > [-dominating, +animate]
iii. [+dominating, -animate] > [-dominating, -animate]
iv. [-dominating, +animate] > [+dominating, -animate]
B > A
Given two candidates α and β, only β, not α, is marked as [+prominent] if α outranks β in terms of [±subject] but is outranked by β in terms of [±dominating,

±animate].

Animacy Hierarchy:
Human animates > other animates > inanimates
Given two candidates X and Y, X is marked as [+animate] iff it ranks higher than Y on the animacy hierarchy.

The inclusion of [±subject] in the prominence hierarchy is conceivable if the Antecedent-Seeking Mechanism is a syntactic operation. After all, the subject is a well-established syntactic notion. However, the presence of the animacy hierarchy in the prominence hierarchy might raise doubts on the syntactic status of prominence competition, or for that matter, the Antecedent-Seeking Mechanism. Animacy is intuitively a semantic notion. Wouldn't it weaken the thesis that prominence competition is a syntactic operation to bring animacy into the picture? My answer is in the negative. Typological studies have revealed that it is fairly common that grammatical phenomena make reference to some semantic notions. For example, in Quiché, number distinctions on verbs are possible only for animate subjects and objects (Mondloch (1978)). In Tangut, the transitive verb agrees not with the transitive subject, or the object, but with whichever ranks higher on the person hierarchy, part of the broader animacy hierarchy (DeLancey (1981)). In Navajo, the argument ranking higher on the animacy hierarchy precedes the lower-ranking argument in surface word order (Witherspoon (1977)).[93] If these morphological and syntactic phenomena lend ample credence to the role of animacy in the study of grammar, it comes as no surprise that prominence competition is viewed as a syntactic operation although it makes use of animacy.

## 3.6 Relevance of Prominence Competition to Other Languages

[93] The facts about these languages in relation to animacy are quoted from Croft (1990).

In the previous sections I examined the Antecedent-Seeking Mechanism only against Chinese data. In this section I wish to extend the scope of inquiry to Korean and Japanese—both are reported to display long-distance anaphora in the literature.

Let us first look at Japanese. Consider the following:

(110) John$_i$-ga Bill$_j$-ga Mike$_k$-ni zibun$_{i/j/*k}$-no koto-o hanasita to omotteiru. (Katada (1991))
*John-Nom Bill-Nom Mike-Dat self's matter-Acc told that think*
John thinks that Bill told Mike about self.

Let *Bill* compete with *John*. The former, being [+subject] and [-dominating, +animate], ties with the latter, being [+subject] and [-dominating, +animate]. Therefore both can antecede *zibun*, as predicted. This is the most typical instance of long-distance binding. Consider the following, which involves a matrix object:

(111) Takasi$_i$-wa Taroo$_j$-ni Yosiko$_k$-ga zibun$_{i/*j/k}$-o nikundeiru koto-o hanasita (Sells (1987))
*Takasi-Top Taroo-Dat Yosiko-Nom self-Acc hate Comp-Acc told*
Takasi told Taroo that Yosiko hated self.

There are three candidates. *Yosiko*, being [+subject] and [-dominating, +animate], outranks *Taro*, being [-subject] and [-dominating, +animate]. *Takasi*, being [+subject] and [-dominating, +animate], outranks *Taro*. *Takasi* is correctly predicted to be a long-distance antecedent of *zibun*.

Now consider candidates in PPs:

(112) Taroo$_i$-wa Takasi$_j$-kara Yosiko$_k$-ga zibun$_{i/j/k}$-o nikundeiru to kiita. (Sells (1987))
*Taroo-Top Takasi-from Yosiko-Nom self-Acc hate Comp heard*
Taroo heard from Takasi that Yosiko hated him.

*Takasi*, being [-subject] and [-dominating, +animate], should lose to *Taroo*, being [+subject] and [-dominating, +animate]. *Takasi* is predicted not to be a long-distance antecedent, contrary to fact. However, the following contrast suggests a way to accommodate the fact:

(113) a. Yamada$_i$-ga Hanako$_j$-ni zibun$_{i/j}$-no ie-ni kuruyoo tanomareta. (Sells (1987))
*Yamada-Nom Hanako-Dat self's house-to come-to was-asked.*
Yamada was asked by Hanako to come to her house.
b. *Taro$_i$-wa Hanako$_j$-ni zibun$_{i/*j}$-ga sekkei-si-ta ie-de at-ta. (Oshima (2004))
*Taro-Top Hanako-Dat self-Nom design-Past house-at met*
Taro met Hanako in the house he designed.

Sells (1987) noted that *Hanako* in sentences like (113a) and (113b) displays different binding behavior sensitive to logophoricity.[94] *Hanako* in (113a) is the agent of communication and thus the source of speech in Sells' terminology. Similarly, *Takasi* in (112) is a source of the information *Taroo* learned. If so, we can modify the prominence hierarchy to reflect *zibun*'s sensitivity to source:

(114) A Change to the Prominence Hierarchy for Japanese:
[+subject/source> -subject/source]

(114) assigns the same "weight" to the subject and the source. Let us run the competition in (112). *Yosiko*, being [+subject] and [-dominating, +animate], ties with *Takasi*, being [+source] and [-dominating, +animate]. *Takasi*, in turn, ties with *Taroo*, being [+subject] and [-dominating, +animate]. Therefore *Takasi* and *Taroo* are predicted to be legitimate long-distance antecedents for *zibun*. In (113a), *Hanako*,

[94] Sells did not give (113b), but some other sentence without involving a relative clause. I chose (113b) to make the contrast more noticeable.

being [+source] and [-dominating, +animate], ties with *Yamada*, being [+subject] and [-dominating, +animate]. Both are therefore able to antecede *zibun*. By contrast, in (113b), *Taro*, being [+subject] and [-dominating, +animate] outranks *Hanako*, being [-subject/source] and [-dominating, +animate]. Therefore only *Taro* can antecede *zibun*.

Next, consider *zibun* in adverbial clauses:

(115) a. Takasi$_i$-wa Yosiko-ga mizu-o zibun$_i$-no ue-ni kobosita node nurete-simatta. (Sells (1987))
*Takasi-Top Yosiko-Nom water-Acc self's on-Loc spilled because wet-got*
Takasi got wet because Yosiko spilled water on him.

b. *Takasi$_i$-wa Yosiko-ga mizu-o zibun$_i$-no ue-ni kobosita toki nurete-simatta. (ibid.)
*Takasi-Top Yosiko-Nom water-Acc self's on-Loc spilled when wet-got*
Takasi got wet when Yosiko spilled water on him.

*Takasi* in both sentences stand in the same configurational relation to *zibun*, but long-distance binding is possible only in (115a). The current Antecedent-Seeking Mechanism cannot account for the contrast because the difference between the two sentences lies only in the conjunction. Sells argued that "*node* implicates the external speaker and allows him to take the point of view of the matrix subject" (p.466). He further proposed that the referent of Japanese non-local *zibun* is a pivot. Even *zibun* bound to a source or self is still bound to a pivot because there is, as he argued, an implicational relation between the three logophoric conditions, and the pivot is the most basic of them. If he is right, then it is feasible to attribute the ungrammaticality of (115b) to a violation of the requirement of pivothood on non-local *zibun*.

Let us now turn to Korean, which displays long-distance as well as sub-commanding binding, as Chinese does:

(116) John$_i$-i Bob$_j$-i caki-lul$_{i/j}$ po-ass-ta-ko malha-yess-ta. (O'Grady (1987))
*John-Nom Bob-Nom self-Acc saw said*
John said that Bob saw self.

(117) a. John$_i$-uy kwake-ka caki-lul$_i$ koylophi-n-ta. (ibid.)
*John's past-Nom self-Acc ail*
John's past ails self.

b. John$_i$-uy chinkwu-ka$_j$ caki-lul$_j$ piphanha-yess-ta. (ibid.)
*John's friend-Nom self-Acc criticized*
John's friend criticized self.

As in Chinese and Japanese, long-distance binding by the matrix subject is grammatical in Korean. Sub-commanding binding also patterns similarly. In (117a), *John*, being [+subject] and [-dominating, +animate], outranks *John-uy kwake*, being [+subject] and [+dominating, -animate]. Therefore the former can antecede *caki*. In (117b), *John*, being [+subject] and [-dominating, +animate], is outranked by *John-uy chinkwu*, being [+subject] and [+dominating, +animate]. Only the latter is predicted to be the antecedent, as in Chinese.

Next, consider the following:

(118) Nay-ka Bob$_i$-eykey John$_j$-i caki-lul$_{i/j}$ coaha-n-ta-ko malha-yess-ta. (ibid.)
*I-Nom Bob-Dat John-Nom self-Acc liked said*
I said to Bob that John liked self.

If *Bob* competes with *nay*, the former is supposed to lose, because it is [-subject] and [-dominating, +animate] and *nay* is [+subject] and [-dominating, +animate]. However, note that *caki* is inherently third person and it naturally cannot refer to *nay*, a first person pronoun. *Bob* can be said to win by default because *nay* is an unqualified candidate.

Now consider the following:

(119) John$_i$-i Bob$_j$-eykey caki-ka$_{i/j}$ aphu-ta-ko malha-yess-ta. (ibid.)
*John-Nom Bob-Dat self-Nom sick said*
John said to Bob that self was sick.

(119) receives different judgments among native speakers of Korean. Some reject coreference between *Bob* and *caki* while others accept it (e.g. Sohng (2004)). We may follow O'Grady and treat [±argument] instead of [±subject] as relevant to Korean anaphora for some speakers. If so, it follows that *Bob* and *John*, both being [+argument] and [-dominating, +animate], can antecede *caki*.

To sum up, in this section we have tried to apply the Antecedent-Seeking Mechanism to Korean and Japanese. Some modifications to the mechanism are necessary to tackle some data. There are certainly sentences which require further changes to the approach.[95] I have proposed changes to the prominence hierarchy. Perhaps research into Japanese and Korean will reveal that changes to the candidate selection procedure are also necessary. I will leave such issues open for future research.

## 3.7 Summary

In section 3.2 I presented the revised version of the Antecedent-Seeking Mechanism incorporating a number of changes to Hu and Pan's (2002) approach.

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[95] One type of sentence unamenable to the mechanism along with the revised prominence factors is the following.

(i) Bobi-uy pang-eyse nay-ka Johnj-i caki-luli/j piphanha-yess-ta-ko malha-yess-ta. (ibid.)
*Bob's room-in I-Nom John-Nom self-Acc criticized said*
In Bob's room, I said that John criticized self.

Contra the judgment O'Grady gave, many native speakers reject such a coreferential relation. Among the few who accept it, they actually have in mind "In Bob's room, I said *to Bob* that John criticized self". One informant brought this point to my attention. Sohng (p.c.) agrees on it. There are other sentences which the current mechanism cannot handle. However, since they receive variable judgments among speakers, it is hard to see whether the mechanism in question can deal with them successfully, or whether some other mechanism, such as a pragmatics/discourse-based one, is responsible for their behavior.

These include a refined procedure for proving a set of candidates as input to the mechanism in question, the rejection of a unified approach to local and non-local binding, the simplification of the stock of prominence factors, and the elaboration of the procedure for prominence competition, etc. In 3.3 I tested the mechanism against the sentences discussed in the literature and showed that subject-orientation and its absence and binding by sub-commanding NPs follow from my account. I also demonstrated that an enriched animacy hierarchy can cover more sentences than the simple animaite/inanimate dichotomy Hu and Pan assumed. In 3.4 I examined other sentence types and suggested that the postulation of some functional projections such as Pivot Phrase might allow certain facts to be accommodated within the mechanism. I also argued against Cole and Wang's (1996) structure for the *ba*/*bei* constructions and instead adopted Bender's (2000) structure, which is fully compatible with the mechanism; by treating *ba* and *bei* as verbs, their parallel behavior to other verbs with respect to binding can be captured. I also suggested that the difference in binding behavior between the monoclausal and multiclausal *ba*/*bei* sentences can be described if we take the distinction between c-structure (or phrase structure) and f-structure in Lexical-Functional Grammar and assume that long-distance binding is sensitive only to c-structure. In 3.5 I demonstrated what the two sub-parts of the competition procedure have in common; their commonality cannot be captured by the structural condition of c-command alone. Rather, the notion of path and containment are also important. I also showed that prominence competition is a syntactic operation because it is local and upward like movement. Finally, in section 3.6 I briefly examined Japanese and Korean and suggested a few modifications to the mechanism, and suggested that further research is necessary if we want to adequately apply the mechanism to these languages.