

Chapter Two

Literature Review

2.1 Introduction

It is well known that Chomsky's (1981) Binding Theory (henceforth BT) has received much attention in theoretical linguistics, in part due to the consequences that BT brings to grammar as a whole, e.g. the notion of reconstruction and the postulation of PRO, and in part due to the cross-linguistic diversity of the referential possibilities of nominal expressions that have come to our attention. Among the various phenomena associated with BT, one of the most noticeable is known as long-distance reflexives (henceforth LDRs), which are reflexives with antecedents falling outside the governing category and apparently contradict the standard formulation of Principle A of BT. Hence revisions and attempts have been proposed to tackle LDR within the generative and other traditions, albeit to varying degrees of success. The point of departure common to them is Chomsky's (1981) formulation of Principle A:

- (1) An anaphor is bound in its governing category.
- (2) α is the governing category for β iff α is the minimal category containing β , a governor of β , and a SUBJECT accessible to β .

Based on this version of Principle A, many scholars either analyze LDRs in a way consistent with the current formulation by proposing LF-movement, thereby rendering long-distance binding into a sequence of local bindings (Huang and Tang (1991), Huang and Liu (2001), Cole and Sung (1994), Cole and Wang (1996), and Cole et al. (2001), among others) or reject the crucial ingredient characteristic of that approach, i.e. a strict c-command relation between an antecedent and a reflexive, and instead adopt alternative analyses couched in non-Chomskyan frameworks (Pollard and Xue (1998, 2001), Xue and Popowich (2001), Pan (2001, 2002)). Theoretical and

notational differences aside, these non-Chomskyan approaches also make different empirical predictions which their Chomskyan counterparts are said to fail to capture. Below I offer an assessment of the two types of current analysis of LDRs in Mandarin Chinese.

2.2 Movement analyses of Chinese *ziji*

In this section, I shall review proposals put forward by Huang and Tang (1991), Huang and Liu (2001), Cole and Sung (1994), and Cole et al. (2001). The hallmark of these analyses is that *ziji* is treated as involving LF-movement, thereby maintaining the locality restriction imposed on anaphors by the classical BT. What differs is the type of movement *ziji* undergoes. For Huang et al., the crucial syntactic operation is the adjunction of *ziji* to each IP, whereas for Cole et al., it is the movement of *ziji* as a head via intermediate landing sites to the INFL of each clause. It is at the IP-adjoined position and the INFL that *ziji* is subject to Binding Condition A (henceforth BCA) for Huang et al. and Cole et al. respectively.

2.2.1 Huang and Tang (1991)

Huang and Tang's (henceforth HT) approach to Chinese LDR involves IP-adjunction in conjunction with some auxiliary assumptions (to be stated shortly). One is to recognize that BT is responsible for two sets of nominal features—phi-features (including person, number, and in many languages, gender) and reference-index (R-index for short) at two levels. Their proposal draws its inspiration from the following contrast between (3), (4), and (5):

- (3) a. John_i knows that Bill_j likes pictures of himself_j.
- b. John_i knows that pictures of himself_{i/j}, Bill_j likes.

- (4) a. Zhangsan shuo Lisi zui xihuan taziji de shu.
Zhangsan say Lisi most like himself's book
 Zhangsan_i said Lisi_j likes himself's_j book most
- b. Zhangsan shuo taziji de shu, Lisi zui xihuan.
Zhangsan say himself's book, Lisi most like
 Zhangsan_i said that, himself's_{i/j} books, Lisi_j likes most
- (5) Zhangsan shuo Lisi chang piping ziji.
Zhangsan say Lisi often criticize self
 Zhangsan_i said Lisi_j often criticized self_{i/j}.

In (3b) and (4b), both *himself* and *taziji* can refer to the matrix subject and the embedded one, whereas in (3a) and (4a), they can only refer to the embedded one. In (5), *ziji* can refer either to the embedded one or the matrix one, in stark contrast to (3a). On the whole, *himself* and *taziji* pattern together, unlike *ziji*.

HT surmised that this difference in binding behavior is tied to their content of phi-features. Whereas *ziji* is unspecified for person and number, *taziji* and *himself* carry third person, singular features.

They also capitalized on the fact that *himself* can refer to *John* in (3b) as a corollary of topicalization, a syntactic movement that moves the reflexive to a position above the embedded IP, and therefore theorized that *ziji* in (5) moves to a similar position, IP, covertly at LF, in a fashion parallel to (3b). In this IP-adjoined position, *ziji* can form a new governing category in which it can find its antecedent.

What allows such a movement is postulated to have a bearing on the (non-)content of phi-features. The *ziji*-type reflexives have to satisfy BT twice to receive their phi-features and R(eference)-index at S-S and LF respectively, and the *taziji*-type reflexives, with inherent phi-features, need to satisfy BT only at S-S, in order to receive the R-index. In other words, there is no need for the compound reflexive *taziji* to undergo such an LF movement because at S-S, its R-index can be assigned.

In this approach, HT also attempted to account for the well-known blocking effects associated with *ziji*, as exemplified below:

(6) Ni shuo Zhangsan chang piping ziji.

You say Zhangsan often criticize self

You said that Zhangsan often criticized himself.

Since *ziji* gets its phi-features from *Zhangsan* at S-S, it has to undergo IP-adjunction to get its R-index at LF. At LF, however, its phi-features differ from those of the matrix subject, *ni*, and R-indexing is therefore impossible. The blocking effect in this case is thus explained. But consider the following slightly more complicated sentence:

(7) Zhangsan_i shuo wo_j juede Lisi_k zongshi piping ziji_{*i/*j/k}.

Zhangsan say I feel Lisi always criticize self

Zhangsan_i say I_j feel Lisi_k always criticized self _{*i/*j/k}.

If we apply the approach to (7), *ziji* will receive its phi-features from *Lisi* at S-S and then at LF adjoins to the lowest IP, where it should look for an R-index-bearing NP.³ Since it is incompatible with the intermediate subject *wo*, it cannot receive an R-index (because compatibility of phi-features is a prerequisite for a reflexive to be bound by an R-index-bearing antecedent). But that would not prevent it from adjoining further up to the intermediate IP, where it could receive an R-index from *Zhangsan*. But in fact such a prediction is not borne out: *ziji* cannot refer to *Zhangsan*. In view of this problem, HT proposed the following stipulation:

(8) An anaphoric φ -index (i.e. that received by inheritance under binding) can be retained only if it is directly bound.

³ *Ziji* can refer to *Lisi* if it stays where it is at LF.

In (7), once *ziji* adjoins to the lowest IP, it clashes with the intermediate subject *wo* with respect to phi-features and therefore cannot be directly bound by it. According to (8), its phi-features cannot be retained and it therefore cannot have a long-distance antecedent.

HT also incorporated Tang's (1989) notion of sub-command into their BT:

(9) β sub-commands α iff β is contained in an NP that c-commands α or that sub-commands α , and any argument containing β is in subject position.

This definition is needed to rule in the following binding relation between *ziji* and its antecedent:

(10) [Wo_i de jiaobao]_j hai-le ziji_{i/*j}.
My pride hurtPerf self
 My pride hurt self

They argued that since the c-commanding NP is inanimate and therefore ineligible as the antecedent but only *wo* can antecede *ziji*, this notion of sub-command is necessary.

In short, HT proposed a bi-level application of BT for Chinese reflexives to account for the observation that Chinese *taziji* is local and *ziji* can be long-distance bound. For the reflexives specified for phi-features, BT applies at S-S to determine their reference; for those unspecified for phi-features, BT applies at S-S and LF successive-cyclically to determine their phi-features and reference.

2.2.2 Problems with Huang and Tang (1991)

HT's approach is meant to capture blocking effects and to maintain the locality thesis of classical BT. However, as Pollard and Xue (1998) noted, objects, in addition to subjects, can induce blocking as well:

- (11) Zhangsan_i gaosu wo_j Lisi_k hen ziji_{i/*j/k}.
Zhangsan tell me Lisi hate self
 Zhangsan told me that Lisi hates self.

This is a crucial example against HT's treatment for blocking. Assuming that the embedded clause is on the same layer as *gaosu* and *wo*, the reflexive *ziji*, once adjoined to the lowest IP, need only receive an R-index from *Zhangsan*. Since it has received the phi-features, which are compatible with those of *Zhangsan*, from *Lisi* at S-S, nothing should prevent *ziji* from being bound to *Zhangsan*, and the resulting coindexation should be legitimate, contrary to fact. In other words, HT's approach to blocking is too weak. Another weakness lies in the stipulation (8), repeated below:

- (8) An anaphoric φ -index (i.e. that received by inheritance under binding) can be retained only if it is directly bound.

HT offered the following pair of sentences as independent evidence:

- (12) a. Zhangsan_i shuo ziji_{i/*j} de shu, Lisi_j zui xihuan.
Zhangsan say self's book, Lisi most like
 Zhangsan_i said that self's_{i/*j} book, Lisi_j likes most.
 b. Zhangsan_i shuo taziji_{i/j} de shu, Lisi_j zui xihuan.
Zhangsan say himself's book, Lisi most like
 Zhangsan_i said that himself's_{i/j} book, Lisi_j likes most.

(12a) shows that *ziji*, with its phi-features received at S-S from *Zhangsan*, can only be directly bound by it but is not directly bound by *Lisi* whereas (12b) indicates that *taziji*, with its inherent phi-features, can be bound either by *Zhangsan* or, via a chain or reconstruction, by *Lisi*. However, there is every reason to believe (11) is empirically incorrect. Consider the following:

- (13) Zhejian shi zhengming-le duiyu ziji_i-de cuo, Zhangsan_i sihao meiyou huiyi
This thing prove-Perf for self's mistake, Zhangsan little not-have remorse.
This incident proved that for self's mistake, Zhangsan didn't have the slightest remorse.

In (13), *ziji* receives its phi-features from *Zhangsan*, probably via a chain but the former is not directly bound by the latter. By (11), its phi-features could not be retained, and the sentence is predicted to be ungrammatical, contrary to fact.

Whatever the cause of the ungrammaticality (12a) on the intended reading, it cannot be due to (11).

Let us now examine another hallmark of HT's proposal, the distinction between phi-features and reference features (also known as R-index). It seems that this very distinction motivates the bi-level application of BT in Chinese; *ziji* needs to receive phi-features and R-index at S-S and LF respectively, so Binding Condition A applies twice, whereas *taziji* and the English reflexive *himself* only need to be subject to BCA at S-S to receive their R-index. This account predicts that reflexives with inherent phi-features cannot be bound cross-clausally. However, cross-linguistic research has falsified this prediction. For example, Cole et al. (1994) provided a counterexample from Italian:

- (14) Credo che [Mario_i sostenga che [tu abbia parlato di sé_i e della sua famiglia in
I believe that Mario claims that you spoke about self and about his family on
TV]].
TV.

The Italian reflexive *sé* is specified for phi-features, but long-distance is still possible across a clause whose subject contains incompatible phi-features. This is unexpected

given HT's analysis. O'Grady (1987) offered another counterexample from Korean:⁴

- (15) Bob-_i Harry-_{ka_j} John-_{uy_k} caki_{i/j/k}-eytayhan chayk-ul po-ass-ta-ko
Bob-Nom Harry-Nom John's self-about book saw
malha-yess-ta.
said
Bob_i said that Harry_j saw John's_k book about self_{i/j/k}.

Here, the Korean reflexive *caki* is inherently third person. Given HT's analysis, BT should apply to *caki* at S-S to fix its R-index and it should refer to *John* only.

However, it is feasible to have the higher subjects as its antecedents. There are also reflexives which don't have inherent phi-features and which however cannot undergo LF movement to refer to a cross-clausal antecedent in certain contexts (cf. Progovac (1992) for the Russian reflexive *svoj*).

An obvious counterexample from Chinese against HT's bi-level analysis is given below:

- (16) Wo_i renwei zhexie shi zhengming-le ziji_i dangshi zuo cuo le.
I think these thing prove-Perf self at-that- time do wrong PER.
I thought that these incidents proved that I did wrong at that time.

Their analysis requires *ziji* to be bound at S-S for phi-features before adjoining to the embedded IP to receive an R-index from *wo*. This cannot work, because at S-S the c-commanding NP in the local governing category would supply third person, plural features to *ziji*, which therefore cannot be bound by *wo*, due to a feature clash. In other words, HT's proposal predicts (16) to be ungrammatical, contrary to fact.

Finally, HT's inclusion of subcommand into grammar constitutes another

⁴ The Korean reflexive *caki* is considered a pronominal in Cole et al. (1990). But it is treated as an anaphor in O'Grady (1987) and Sohng (2004). There is supposed to be considerable idiolectal/dialectal variation with this form.

problem. Sub-command is treated as an alternative to c-command embodied in the classical BT. It applies when the c-commanding subject is inanimate. That the subject is inanimate is the conditioning factor for sub-command. Please see section 2.4 for detailed discussion. As we shall see, the same comments apply to Cole et al.'s Feature Percolation.

2.2.3 Huang and Liu (2001)

In view of the aforementioned observation that non-subjects can induce blocking, Huang and Liu (henceforth HL) offered a revised version of IP-adjunction analysis, exempting syntax from accounting for blocking effects and shifting the burden to pragmatics by employing Kuno's (1972) insights. This effectively means that a syntactic approach to blocking has been rejected. Also absent now is the bi-level application of BT sensitive to the content of phi-features and R-index. HL analyzed long-distance *ziji* as a reflex of the first person pronoun *wo* in the direct discourse representation. That is, an LDR is treated as involving an 'underlying' representation as follows:

(17) *Zhangsan_i manyuan Lisi chang piping ziji_i.*

Zhangsan_i complain Lisi often criticize self_i.

Zhangsan complained that Lisi often criticized self.

(18) *Zhangsan manyuan, "Lisi chang piping wo."*

Zhangsan complained, "Lisi often criticized me."

(18) is the direct discourse representation of (17). As a welcome consequence, this analysis captures the fact that the matrix subject *Zhangsan* is said to be aware, or disposed to say, that the person *Lisi* criticized was *Zhangsan* himself in that (18) contains *wo*. In contrast, *Zhangsan* would not necessarily be aware of this if we used *ta* 'he' instead of *ziji*:

(19) Zhangsan_i manyuan Lisi chang piping ta_i.

Zhangsan_i complained that Lisi often criticized him_i.

The referent of the matrix subject *Zhangsan* was not necessarily aware that he himself was the person who was often criticized by *Lisi*. A possible scenario is that *Zhangsan* lost his memory in a car accident and his family played a video tape recording what he and *Lisi* used to do. *Zhangsan*, having watched it, said that *Lisi* criticized a man a lot without realizing he was the man. However, we, as the external speaker of (19), know that *Zhangsan* was the man. HL, following Chierchia (1989), called (19) a *de re* reading, in contrast to (17), a *de se* reading.

HL argued that this pragmatic account can explain blocking effects in a way that avoids the problems that would arise with any syntactic account. Blocking is treated as a consequence of a perspective clash. Take (20) for example:

(20) a. Zhangsan juede wo zai piping ziji.

Zhangsan feel I at criticize self

Zhangsan feel that I am criticizing self.

b. Zhangsan juede, “wo zai piping wo.”

Zhangsan feel I at criticize me

Zhangsan feel, “I am criticizing me.”

In (20a), *ziji* can only refer to *wo* as a typical case of the blocking effect. In (20b), the direct discourse representation, *wo* in object position corresponds to *ziji*. As we can see, there are two instances of *wo* now, one referring to *Zhangsan* and the other to the external speaker. The hearer is therefore likely to get confused in this situation as to who *wo* refers to. The observed blocking effect then is the result of a perspective clash. Similarly, if *wo* were replaced by *ni* “you” in (20a), blocking would still occur because *ni* is anchored to the external speaker and *ziji*, once translated into *wo*, is

anchored to the internal speaker—still a perspective clash.

This pragmatic account also explains some cases of blocking that resist a syntactic analysis. For example, non-subject blocking as well as subject blocking is explained now.

(21) Zhangsan_i gaosu wo_j Lisi_k hen ziji_{i/*j/k}.

In other words, the pragmatic account covers more cases of blocking than a syntactic account and thus should be preferred. Number asymmetry also seems to be explained.

Consider (22):

(22) a. Lisi_i shuo tamen_j chang piping ziji_{i/j}.

Lisi say they often criticize self

Lisi_i said that they_j often criticized self_{i/j}.

b. Tamen_i shuo Lisi_j chang piping ziji_{i/*j}.

They_i said that Lisi_j often criticized self_j.

(22a) is acceptable with *ziji* referring to the matrix subject whereas (22b) is not. This follows naturally if we assume the following direct discourse representations:

(23) a. Lisi_i shuo, “tamen_j chang piping wo.”

b. Tamen_i shuo, “Lisi_j chang piping wo.”

It is obvious that long-distance binding in (22a) is grammatical because there is no perspective clash; *wo* can naturally refer to *Lisi*. This is not the case in (22b) because *wo* is inherently singular and incompatible with *tamen*, a plural pronoun, although there is no perspective clash involved here.

HL treated Chinese LDR as a logophor in that it, as they supposed, displays logophoric properties— it describes the consciousness, the source of speech, or the

physical location of the internal protagonist.⁵ They also recognized that not every instance of *ziji* is a logophor, and the dividing line between a non-logophoric reflexive and a logophor is the traditional notion of governing category. The reflexives that fall within the governing category do not display logophoricity effects. Consider the following:

(24) Zhangsan piping-le ziji-de pengyou.

Zhangsan criticize-Perf self's friend

Zhangsan criticized his own friend.

Zhangsan may or may not know that the person he criticized was his own friend. If (24) is embedded as a complement of a saying verb and long-distance binding is possible, then the matrix subject must be aware of who was criticized, i.e. he self-ascribes to himself the proposition expressed by the complement clause:

(25) Lisi_i shuo Zhangsan piping-le ziji_i-de pengyou.

Lisi say Zhangsan criticize-Perf self's friend

Lisi_i said Zhangsan criticized his_i own friend.

To bring this account in line with the formal semantic theory developed by Chierchia (1989), HL proposed adjoining a long-distance, or logophoric, *ziji* to IP, or as an alternative, moving *ziji* to the Spec of a CP-type functional category which takes an IP as its complement. Once *ziji* gets there, it can be bound by the long-distance antecedent. Such a landing site is termed [Spec, SourceP] to reflect that *ziji* refers to the source, which entails the consciousness of the internal protagonist (Sells 1987).

⁵ See Sells (1987) for detailed discussion of the three components of logophoricity. SOURCE represents the source of communication; SELF refers to the mental state or consciousness of the protagonist; and PIVOT is the spatio-physical location of the protagonist.

2.2.4 Problems with Huang and Liu (2001)

HL's proposal represents a considerable improvement over HT (1991) in that it has abandoned the empirically inadequate stipulations needed to account for blocking effects and the bi-level BT sensitive to the content of phi-features. It is now the task of pragmatics to explain blocking effects, with the consequence that successive-cyclic LF movement is unnecessary (see their endnote 27).⁶ However, the pragmatic account is far from problem-free. Recall that the analysis translates a long-distance *ziji* into *wo* in the direct discourse representation. Thus the following is grammatical because there is no perspective clash in the direct discourse representation (26b):

- (26) a. Lisi_i shuo tamen_j chang piping ziji_i. (=22a)
Lisi_i said that they_j often criticized self_i.
b. Lisi shuo, "tamen chang piping wo." (=23a)

However, to explain why *wo* would induce blocking in (27a), HL gives (27b) as its direct discourse representation:

- (27) a. Lisi_i shuo wo_j chang piping ziji_i.
Lisi said I often criticized self.
b. Lisi shuo, "wo chang piping wo."

It is claimed that once (27a) is translated into (27b), there are two occurrences of *wo*, one anchored to the internal speaker and the other to the external speaker. This would cause perceptual confusion. Hence the blocking effect. However, one cannot but wonder why the embedded subject in (27a) remains unchanged in (27b). In (27a), *wo* refers to the external speaker. There are two possible situations in which (27a) may be

⁶ It remains unknown why Huang and Liu explicitly stated that their analysis is not successive-cyclic on the ground that blocking is tackled by pragmatics in their approach (see their endnote 27 and the following discussion). Successive-cyclicity is supposed to be a general property of movement.

true: either *Lisi* talked to me and said that I often criticized myself, or he told someone else that I often criticized myself. In the first case, *wo* ‘I’ in (27a) should be translated into *ni* ‘you’ in the direct discourse representation. In the second case, it should be translated into *ta* ‘s/he’ or any other third-person NP. In neither case should *wo* remain unchanged. If so, this pragmatic account for blocking is based on erroneous translation of the blocking-inducing first and second person pronouns. Secondly, it fails to explain important dialectal/idiolectal variation; many speakers do not recognize a coreferential reading between *wo* and *ziji* in (28):

- (28) Wo_j juede ta_i dui $ziji_{*j/i}$ mei xinxin. (Battistella and Xu (1990))
I think he to self no confidence
 I think he has no confidence in himself

This is unexpected given the pragmatic account, since (29), the direct discourse representation of (28) is fully acceptable with no perspective clash involved:

- (29) Wo juede, “ ta dui wo mei xinxin.”

The following non-coreferential reading between *wo* and *ziji* is also unpredicted:

- (30) a. wo_i renwei $wo-men_j$ dui $ziji-de_{*i/j}$ zhengzhuang hai xuyao liaojie.
I think we to self's symptoms still need understand
 I think we still need to understand our symptoms.
 b. wo renwei, “ $wo-men_j$ dui $wo-de$ zhengzhuang hai xuyao liaojie”.

As in *Lisi_i shuo tamen_j chang piping ziji_i*, there is no perspective clash involved. The perspective is that of the internal speaker in (30). Nothing in this account should bar *ziji* from referring to *wo*; the non-coreferential reading is therefore left unexplained.

The other hallmark of HL’s analysis is the governing category as the dividing

line between anaphoric and logophoric *ziji*. The following example is argued to illustrate the point:

- (31) Zhangsan_i kuajiang-le changchang piping ziji_i de naxie ren.
Zhangsan praise-Perf often criticize self DE those people
Zhangsan praised those people who often criticize self.

HL argued that the sentence indicates that antecedent *Zhangsan* was aware that the person who was criticized was him. This appears to gain support from the following:

- (32) ?? Zhangsan_i kuajiang-le houlai sha si ziji_i de naxie ren.
Zhangsan praise-Perf later kill die self-DE those people.
Zhangsan praised those people who later killed self.

They claimed that (32) is not so acceptable because normally *Zhangsan* could not be aware of the event of those people killing him at the time he praised them. This, as they argued, is because an antecedent outside the governing category of *ziji* must self-ascribe the event. However, there is reason to believe that (31) does not necessarily have a *de se* reading. We may embed (31) in a context in which *Zhangsan* is unaware that the people who he helped often criticized him:

- (33) Zhangsan_i zai bu zhiqing de qingkuang xia kuajiang-le changchang piping ziji_i
Zhangsan at no know DE situation down praise-Perf often criticize self
de naxie ren. Ruguo ta zhidao tamen cengjing piping ziji, ta yiding buhui bang
DE those person. If he know they ever criticize self, he certainly will not help
tamen.
them
Zhangsan unknowingly helped those who often criticized self. If he had known that they criticized him before, he certainly would not have helped them.

As for (32), the unacceptability does not necessarily have to be attributed to the fact

that the referent of *Zhangsan* could not self-ascribe the event. Consider (34):

- (34) Dangshi Zhangsan_i jiandao-le yizhang rihou hui wei ziji_i dailai caifu de fapiao
Then Zhangsan pick-Perf one day-after will for self bring fortune-DE receipt.
At that time *Zhangsan* picked up a receipt that would later bring him a fortune.

In (34), the referent of *Zhangsan* was not necessarily aware that the receipt he picked up would bring him a fortune in the future. In other words, he could not self-ascribe the event. Nevertheless, (34) is acceptable. Whatever the cause of the ill-formedness of (32) must be something else.

Finally, like Huang and Tang (1991), Huang and Liu's (2001) approach says nothing about subject orientation.

- (35) Zhangsan_i gaosu Lisi_j Wangwu_k kanbuqi ziji_{i/*j/k}. (Battistella (1989))
Zhangsan tell Lisi Wangwu look-down-on self
Zhangsan told Lisi that Wangwu looked down on self.

If *ziji* adjoins the lowest IP, or moves to some Spec position, it is c-commanded by *Lisi* and *Zhangsan*. Both should be able to antecede *ziji*, contrary to the judgment.

2.2.5 Cole and Sung (1994) and Cole et al. (2001)

In this subsection, I shall examine the proposals presented by Cole and Sung (1994) and Cole et al. (2001).⁷ As with HT (1991) and HL (2001), their approach involves LF movement to account for the properties of Chinese *ziji*; however, what distinguishes their analysis from HT and HL is that the final landing site of *ziji* is

⁷ I review these proposals together within this subsection because their syntactic mechanisms for *ziji* are essentially the same. What differs between the earlier version, i.e. Cole and Sung (1994) and the more recent Cole et al. (2001) is the inclusion of a pragmatic component in the analysis of Chinese blocking facts in the latter. Related works include Cole et al. (1993), Cole and Wang (1996) and Li (1993).

INFL.⁸ The possibility of *ziji*, or other reflexives, to participate in long-distance binding is attributed to their morphological form: only morphologically simple reflexives such as *ziji* can move as a head successive-cyclically to INFL, whereas morphologically complex reflexives such as *ta-ziji* cannot. Hence the local nature of binding with *taziji* and the availability of *ziji* in long-distance binding. Long-distance binding is licensed by checking the Agr features on I with the Spec. If a clash of features occurs, then binding fails. Hence the typical blocking effect. Consider below how blocking is derived:

- (36) Zhangsan_i rewei wo_j zhidao Lisi_k taoyan ziji_{i*/*/k}.
Zhangsan think I know Lisi hates self.

On this account, long-distance binding is blocked because *ziji*, once moved to the intermediate INFL, fails in the checking process; since it carries third person singular features, it is incompatible with the intermediate first person subject.⁹ Hence the blocking effect.

Cole and Sung noted that blocking occurs only in languages with no AGR features. For example, Chinese and Korean display blocking and their AGR does not contain inherent phi-features.¹⁰ On the other hand, Italian has rich AGR and does not display blocking. This observation and animate sub-commanding antecedents motivate their Feature Percolation Principles (FPP), presented below as an auxiliary device for the head-movement analysis:

(37) Feature Percolation Principles:

⁸ To be precise, the landing site is Agr.

⁹ Note that the phi-features on *ziji* are freely generated here.

¹⁰ Note that only the Korean reflexive *casin* exhibits blocking; the Korean third person reflexive *caki* doesn't display phi-feature blocking.

- a. The features of the mother node and the features of the daughter nodes will be identical.
- b. If the features of the daughter nodes conflict, the mother node will have the features of the head node.

Consider the following Italian example in light of FPP:

(38) *La signora_i dice che io giaccia presso di sé_i.*

The woman says that I lie near self.

The woman orders that I lie near her.

If *sé* adjoins to the lowest INFL, the former will not match with the latter in features. However, according to (37b), if the features of the daughter nodes, i.e. INFL and *sé*, clash, the Infl will take the features of the head, i.e. first person singular, and check with the intermediate subject. This step violates no proposed principles; then *sé* moves up to the matrix INFL; again, it is the features of the head, not of *sé*, that check with the matrix subject. There is no violation whatsoever here. And the binding by *La signora* is thus predicted, with no blocking effects.

FPP is also responsible for binding by animate sub-commanding antecedents. According to Cole et al. (1993), an inanimate NP lacks the feature [antecede α], where α takes as its value the referential index of an animate NP. The [antecede α] of a sub-commanding animate NP will percolate to the higher inanimate NP which c-commands *ziji*. If [Spec, NP] and [N], both being the daughter nodes of an NP, are both animate, as in *Zhangsan_i de baba_j*, the [antecede *i*] conflicts with the [antecede *j*]. However, according to (37b), *baba*, as a head, will transfer its feature [antecede *j*] to the whole NP, the mother node. Thus it is predicted that only *Zhangsan_i de baba*, not *Zhangsan_i*, can bind *ziji*, as in (39):

(39) *Zhangsan_i de baba_j taoyan ziji_{*i/j}.*

Zhangsan's father hates himself.

Now let us examine the extended proposal made by Cole et al. (2001). Like HL (2001), they noted that subjects and non-subjects alike induce blocking—an observation that suggests that their head movement analysis is inadequate, as blocking is treated as a clash between the INFL, where *ziji* is adjoined, and the subject. Since the checking mechanism concerned does not take place between *ziji* and a verb, the analysis predicts that no blocking would arise when an intervening object carries different phi-features than the subject, as in (21), repeated below as (40):

(40) Zhangsan_i gaosu wo_j Lisi_k hen ziji_{i/*j/k}.
Zhangsan told me Lisi hated him.

Therefore, they included a pragmatic account based on HL's into their analysis. On the assumption that antecedents of LDR *ziji* can only be internal pivots (in the sense of Sells (1987)), they argued that (pragmatic) blocking occurs because a first or second person pronoun introduces the external speaker as the pivot, thus eliminating the possibility of any internal pivot and potential LD antecedent. This proposal also explains why *ziji* cannot, or is unlikely to, refer to *Zhangsan* in the following:

(41) Zhangsan_i renwei wode pengyou_j hai-le ziji_{i/j}.
Zhangsan think my friend hurt-Perf self
Zhangsan thought my friend hurt himself.

The blocking effect witnessed in (41) is unexpected given the head-movement analysis, in that the intermediate subject, *wode pengyou*, is third person singular and agrees with the matrix subject in phi features. However, the pragmatic account of blocking correctly predicts that *ziji* cannot take *Zhangsan* as its antecedent due to conflicting centers of deixis—that of *Zhangsan* and that of the external speaker.

Apart from the pragmatic approach to blocking, Cole et al. retained the grammatical approach to blocking in view of the typological observation that blocking occurs only in languages with no overt verb agreement, e.g. Chinese and Malayalam, as noted in Cole et al. (1993). The pragmatic approach obviously cannot explain this cross-linguistic pattern.¹¹ Secondly, they notice that the following sentences display different degrees of strength with respect to the blocking effect:

- (42) a. wo_i zhidao Wangwu_j hen ziji_{?i/j}.
 I know Wangwu hates self.
 b. Wangwu_i zhidao wo_j hen ziji_{*i/j}.
 Wangwu knows I hate self.
 c. Wangwu_i zhidao Lisi_j hen ziji_{i/j}.
 Wangwu knows Lisi hates self. .

Whereas reference of *ziji* to the first person matrix subject is somewhat bad in (42a), reference to the third person matrix subject is totally unacceptable in (42b). (42a) and (42c) would be wrongly predicted to be of equal acceptability under the pragmatic account, because neither involves a pivot clash. It therefore seems that a grammatical account is inevitable, as Cole et al. argued. (42a) is somewhat unacceptable because it violates grammatical conditions, although it doesn't violate any pragmatic ones. (42b) is completely unacceptable because it violates both pragmatic and grammatical conditions.

2.2.6 Problems with Cole and Sung (1994) and Cole et al. (2001)

It has been long noted since HT (1991) that the head movement analysis violates the Empty Category Principle (ECP), since *ziji* must move out of an island such as an adverbial clause or a relative clause to allow long-distance binding by a matrix subject

¹¹ However, this cross-linguistic pattern is questionable. See Chapter Four for discussion on the Japanese reflexive *zibun*.

under the analysis.

In response to this criticism, Cole and Sung (1994) claimed that the CP of the relative clause or the adverbial clause is L-marked only when the bare reflexive adjoins to a head. The resulting CP is therefore not a barrier. Hence no ECP effect. However, as Progovac (1993) noted, this move wrongly predicts that Wh-extraction should be possible, given that the CP, once *ziji* is adjoined to a head governing the CP (e.g. V) is no longer an island.

(43) *Xiaoming_i bu xihuan nage weisheme piping ziji_i de laoshi?

Xiaoming not like that why criticize self's teacher

Xiaoming does not like the teacher who criticizes self why?

(43) still exhibits the ECP effect, despite the supposed L-marking of the CP by the adjoining of *ziji* to the complementizer.¹²

¹² Li (1993) accounted for binding into islands. His approach is also a version of head movement analysis. However, he dissociated blocking from head movement so that he didn't address blocking effects. Furthermore, unlike Cole and Sung, he did not propose to eliminate the barrierhood of the CP by any means; instead, he proposed to delete the offending traces resulting from head movement of *ziji* so that the ECP applies vacuously to these instances of LDRs. Since the ECP is a representational constraint, once the intermediate traces have disappeared, no ECP effect results. This avoids the wrong prediction noted by Progovac. However, this approach has its own share of problems. For instance, as with other versions of head movement analysis, it predicts that only bare reflexives, not compound reflexives, can participate in long-distance binding (See(44) in the text). Secondly, in order to rule in and out some cases of binding into sentential adverbials (which the antecedent fails to c-command at S-S), he made use of reconstruction; this predicts that the adverbial that cannot reconstruct to a position c-commandable by an antecedent does not exhibit LDRs. A case in point is the sentential conditional clause headed by *ruguo* "if". However, this analysis would also predict that the adverbial clause headed by *jinguan* "despite the fact that" does not allow LDRs because it cannot reconstruct to a sufficiently low position in the matrix clause. This contradicts the fact:

(i) Jinguan Zhangsan zema ziji_i, Lisi_i haishi dai-zhe xiaorong.

Although Zhangsan scold self, Lisi still carry-Dur smile

Although Zhangsan scolded him, Lisi was still wearing a smile.

(ii) *Lisi [jinguan Zhangsan zema ziji] haishi dai-zhe xiaorong.

Secondly, the analysis is built on the belief that only monomorphemic reflexives can be long-distance bound. However, this is empirically incorrect, as witnessed by the following:

- (44) Zhangsan renwei zhexie qian hai-le taziji.
Zhangsan think these money harm-PERF himself.
Zhangsan thought this money harmed him.

In (44), *taziji* is a compound reflexive; it cannot be analyzed as an emphatic pronoun similar to English *he himself*. As Audrey Li noted¹³, a pronominal with the emphatic marker *ziji* cannot occur in object position, whereas there is no such restriction on names:

- (45) Lisi_i hai-le ta_j/Zhangsan-ziji_j/taziji_{i/*j}.
Lisi_i harmed him/Zhangsan himself/*him himself_i.

In other words, the sequence *taziji* in object position must be a reflexive.

Thirdly, since head movement analysis is in part to maintain the locality restriction on binding, it cannot accommodate the following instance of binding:

- (46) Wo_i renwei zhexie shu hai-le ziji_i.
I think these book harm self
I thought these books harmed me.

As long-distance binding is treated as a sequence of local bindings under the head movement analysis we have seen (recall that the grammatical component dealing with blocking is preserved in Cole et al (2001)), the full acceptability of (46) is

¹³ Her observation appeared in Cole and Sung (1994) as personal communication, although Liejiong Xu made the same point as early as 1986, according to Battistella and Xu (1990)'s article.

unexplained; suppose, as Cole and Sung (1994) did, that *ziji* has the first person singular features freely generated on it. It then moves to the local Infl, where it enters into Spec-head feature checking. At this step there should be a featural conflict, as the intermediate subject *zhexie shu* is third person plural as well as inanimate. However, the sentence is perfectly acceptable, contrary to the prediction.

Fourthly, Cole and Sung (1994) treated the object of psych-verbs¹⁴ as an LF subject, thereby accounting for the possibility of binding relation between the reflexive *ziji* and a superficial object.¹⁵ However, as the following sentence demonstrates, such coreferential relations are not limited to psych-verbs:

- (47) Zhangsan_i dui ziji_{i/j} mei xinxin (de shi) dui Wangwu_j zaocheng-le hen da de daji.
Zhangsan to self no confidence DE event to Wangwu cause-Perf very big DE
blow
 (The fact) that Zhangsan had no confidence in self caused a serious blow to Wangwu.

In Cole et al. (1994), the surface subject of psych-verbs are “reconstructed” to a VP-internal position sufficiently low to be c-commanded by the experiencer object, an LF subject in their terms. Even if we could adopt such a movement in (47), *Wangwu*, being inside a PP, still could not c-command *ziji*. Therefore this casts doubt on the motivation for treating the experiencer object of psych verbs as an LF subject.

Fifthly, feature percolation is retained throughout various versions of the head movement analysis. It has the effect of rendering binding by a sub-commanding animate NP into a case of local binding, as (10) illustrates, repeated below as (48):

- (48) Wo_i de jiaobao_j hai-le ziji_{i/*j}.
My pride hurt-Perf self

¹⁴ Psych verbs are exemplified by *shi...nanguo* “make...sad”.

¹⁵ I will discuss psych-sentences in more detail in section 3.4, Chapter Three.

My pride hurt me.

Before the problem is introduced, let it be noted that the antecedent of a locally bound reflexive does not have to be aware that the action that the utterance describes happened to him. In other words, he does not have to self-ascribe the event, as (49) shows:

- (49) Zhangsan hai-le ziji.
Zhangsan harm-Perf self
Zhangsan harmed himself.

Now let us examine an example from Teochew from Cole et al. (2001):¹⁶

- (50) Ah Meng_i gai chia_j hai-liao kaki_{*i/*j}
Ah Meng's car harmed self
Ah Meng's car harmed itsef/him.

If the FPP applies to (50), we would have a case of local binding—the subject bearing the feature [antecedent *i*] should be able to bind *kaki* as an eligible locally c-commanding antecedent. This prediction is not borne out. According to Cole et al. themselves, *kaki* requires additional requirements, i.e. a *de se* requirement.¹⁷ This is unexpected, as there is no *de se* or other discourse-pragmatic requirement on a locally bound reflexive. This suggests that FPP incorrectly assimilates (50) into local binding.

Now let us examine the way that blocking is treated. Recall that Cole et al. recognized grammatical as well as discourse blocking. Consider the following:

¹⁶ Cole et al. cited the example to show that the bare reflexive *kaki* in Teochew is subject to a *de se* requirement in a non-local environment. However, they fail to notice what consequence this example has on the FPP.

¹⁷ It is also probable that their claim that the infelicity of (50) is due to the absence of a *de se* requirement on the intended antecedent is incorrect. Consider the equivalent of *John's pride harmed self* in all Chinese dialects. Presumably, it would be perfectly grammatical, but the referent of *John* does not have to self-ascribe the event any more than does *Ah Meng* in (50).

(51) a. Wo_i renwei ni_j taoyan ziji_i.*_j.

I think you hate self

I thought you hated self.

b. Wo renwei, “ni taoyan wo”.

I thought, “you hate me”.

According to the grammatical account, *ziji*, with its first person singular features freely generated, would violate Spec-head agreement when it adjoins to the intermediate Infl. But in the direct discourse representation of (51a), there is no pivot clash, as the only pivot is the external speaker. We should therefore expect (51a) to only show reduced acceptability with a question mark. But this sentence is entirely unacceptable.

Finally, the head movement analysis incorrectly rules out the following sentence. Under the analysis, *ziji* must land at Infl to receive its reference. However, once it arrives at the matrix Infl, there is no appropriate c-commanding binder because *Zhangsan* is inside a PP. It is hard to see how the head movement analysis accounts for the acceptability. Note incidentally that the IP adjunction account cannot cope with (52), either because *Zhangsan*, residing in a PP, fails to c-command *ziji*.

(52) Zhe xiang Zhangsan_i zhengming-le zhexie yao dui ziji_i yidian yong ye meiyou.

This to Zhangsan prove-Perf these medicine to self at-all use not-have

This indicated to Zhangsan that this medicine was totally useless for him.

2.2.7 Interim Summary

Both the IP-adjunction analysis and the head-movement analysis started out as attempts to maintain the (local) classical Binding Theory and to account for certain phenomena previously thought to involve core grammar, e.g. blocking effects. They differ in that only the latter attempts to deal with subject orientation. What their more recent versions have in common is the transferal of part of the workload to pragmatics.

A purely pragmatic approach to blocking adopted by Huang and Liu (2001) seems insufficient, as it fails to consider significant cross-dialectal/idiolectal variation, for instance; a mixed approach along the lines of Cole et al. (2001) inherits some problems from the grammatical component. Equipped with the Spec-head checking mechanism as part of the BT, the head-movement approach manages to cling to what I call the strong locality thesis, with long-distance binding treated as a sequence of local bindings, whereas the IP-adunction analysis manifests a weaker version of the locality thesis by maintaining a local relation between an antecedent and a reflexive with functional projections such as SourceP, SelfP, and PivotP where *ziji* lands to enter into a c-command relation with the antecedent; the earlier HT (1991)'s successive-cyclic movement analysis has been explicitly abandoned and long-distance binding is therefore not a sequence of local bindings anymore in this approach. However, the success at sticking to the locality thesis, whether the strong or weak version, is achieved only at the cost of empirical coverage; for example, (52) remains recalcitrant to both of the refined proposals of the movement analyses we have examined.

2.3 Non-Movement Analyses of Chinese *ziji*

In this section, I will review proposals by Pollard and Xue (1998, 2001) and Pan (2001) and Hu and Pan (2002). What they have in common is the rejection of LF movement to account for the phenomena related to Chinese *ziji*. Pollard and Xue (henceforth PX) couched their analysis within the framework of Head-Driven Phrase Structure Grammar (HPSG) by treating c-command as irrelevant to binding and instead employing o-command (to be introduced below shortly). On the other hand, Hu and Pan employed an optimality-theoretic approach incorporating a variety of primitives from different linguistic components, such as tree configuration and

whether the verb is inherently non-reflexive, i.e. the verb whose two arguments are necessarily disjoint in reference. Both lines of inquiry represent a drastic departure from the Chomskyan BT.

2.3.1 Pollard and Xue (1998, 2001)

The subsection gives a sketch of the mechanisms that PX employed to characterize binding and coreference relations in Chinese and English.¹⁸ What most noticeably distinguishes it from the Chomskyan approaches is the inclusion of o-binding:

(53) O-Binding:

X (locally) o-binds Y iff X and Y are co-indexed and X (locally) o-commands Y; Y is (locally) o-free if it is not (locally) bound.

As we can see, o-binding crucially involves o-command, which is defined below:

(54) O-Command:

X o-commands Y just in case X is a less oblique co-argument of some Z that dominates Y. In case Z=Y, X is said to locally o-commands Y.

To understand o-command, it is necessary to list the obliqueness hierarchy:

(55) The Obliqueness Hierarchy:

SUBJECT < PRIMARY OBJECT < SECONDARY OBJECT < OTHER
COMPLEMENTS

Their version of Principle A for American English is stated as follows:

¹⁸ Note that binding refers to a coreference relation that stands in some syntactic configuration between an antecedent and a reflexive. Not all coreference relations involve binding.

(56) Principle A for American English:

An anaphor must be locally o-bound if it has a referential (=nonexpletive) local o-commander.

If an anaphor does not have a local o-commander, it is exempt from (56) and may have an antecedent subject to semantic, pragmatic and discourse constraints. This proposal is claimed to have an advantage over the classical BCA, in view of the following example:

(57) John's_i campaign requires that pictures of himself_i be placed all over town.

Because *himself* has no local o-commander in the local domain of the nominal predicate *pictures*, its antecedent need only obey semantic, pragmatic and discourse constraints. Under the classical BCA analysis, *himself*, without an accessible subject in the lower clause, must find its antecedent in the higher domain. However, it could not find a c-commanding antecedent there and is predicted to be ungrammatical, contrary to fact.

This formulation, however, cannot be applied to British/Literary English, where examples of the following kind abound:

- (58) a. (...) his_i wife was equally incredulous of her innocence and suspected himself_i, the pastor, to be the cause of her distress, (...).
b. But Rupert_i was not unduly worried about Peter's opinion of himself_i.

Nor can it apply to Chinese:

- (59) Zhangsan_i shuo Lisi taoyan ziji_i.
Zhangsan said Lisi disliked him.

In (58) and (59), the reflexive has a local o-commander, but is not locally o-bound—a fact that contradicts (56). Therefore PX puts forward the following principle, called Principle R, for British/Literary English:

(60) Principle R:

A reflexive must either be locally o-bound or interpreted in accordance with certain (English-specific) pragmatic/discourse constraints.

(60) differs from (56) in that the former does not require a reflexive to be *obligatorily* bound when it has a local o-commander, thereby capturing the facts in British/Literary English.

For Chinese, PX proposed the following principle, called Principle Z:

(61) *Ziji* must either be o-bound by a subject or interpreted in accordance with certain (Chinese-specific) pragmatic/discourse constraints.

(61) differs from (60) in that o-binding is restricted to the subject in Chinese, whereas there is no such restriction in English. Consider (62) as evidence:

(62) Zhangsan_i gei Lisi_j yi-zhang ziji-de_{i/*j} xiangpian.

Zhangsan give Lisi one-CL self's photo.

Zhangsan_i gave Lisi_j a photo of himself_i.

In (62), *ziji* can only refer to the subject as the antecedent, in contrast to (63) below in English. This conforms to the traditional observation about subject-orientation in Chinese.

(63) John_i gave Bill_j a picture of himself_{i/j}.

In (63), *himself* can refer to *John* or to *Bill*. Both o-command *himself* and can be

legitimate antecedents.

There are at least four cases where *ziji* can have an antecedent that does not obey the syntactic constraint of being o-bound by a subject. Firstly, for sentences involving psych-verbs, a non-subject NP can qualify as the antecedent only by obeying non-syntactic constraints under their analysis:

- (64) Zhangsan_i xiangxin ziji-de_{i/j} xiaohai mei de jiang de xiaoxi shi Lisi_j hen nanguo.
Zhangsan believe self's child not get prize DE news make Lisi very sad.
Zhangsan_i believed that the news of his_{i/j} child not getting a prize made Lisi_j very sad.

In (64), *ziji* can have either *Zhangsan* or *Lisi* as the antecedent. Under the current analysis, *Lisi* is a possible antecedent because it is a SELF, in Sells's (1987) taxonomy of logophoricity, although it is not an o-binder of *ziji*.¹⁹

Secondly, the syntactically non-obligatory nature of PX's approach also gains support from *ziji* with an antecedent in the universe of discourse:

- (65) Zheyang yilai nage xuesheng_i jiu bu shuohua-le, yanjing cong ziji_{i/j}-de shen-shang
Thus then that student then not speak-Perf, eye from self's body-on
yikai-le.
move-away-Perf
Then, that student stopped talking, and his eyes moved away from him.

Since the antecedent need not be in the same sentence as *ziji*, it is hard to see how an obligatory syntactic approach à la Chomsky (1986) can accommodate such cases. The reading of (65) where the antecedent does not refer to *nage xuesheng* is possible only when an entity is prominent in the discourse.

¹⁹ SELF refers to the entity whose consciousness or state of mind is being reported.

Thirdly, sub-commanding antecedent is also treated as licensed by pragmatic, discourse conditions. Consider the following:

- (66) a. Zhangsan_i-de baba_j de qian bei ziji_{*i/j}-de pengyou touzou-le.
Zhangsan's father's money BEI self's friend steal-Perf
 Zhangsan's_i father's_j money was stolen by his_{*i/j} friend.
- b. Zhangsan_i-de baba_j de qian bei ziji_i-de pengyou touzou-le. Mama-de shu ye
Zhangsan's father's money BEI self's friend steal-Perf. Mother's book also
 bei ziji_i-de pengyou touzou-le. Ta_i ji-de ku qilai.
BEI self's friend steal-Perf. He worry cry start.
 Zhangsan's_i father's_j money was stolen by his_i friend. His mother's book was
 also stolen by his friend. He was so worried that he started crying.

(66a) is provided by Tang (1989) as a case of subcommand. However, if it is embedded in a context like (66b), *Zhangsan* can be the antecedent. This suggests that a sub-commanding antecedent should not be analyzed as the result of a syntactic process along the lines of Cole et al. (1994) and Huang and Tang (1991). Rather, its antecedency should be obtained by pragmatic factors, such as topicality, as PX argued.

Moreover, PX's approach would treat as pragmatically licensed an instance of *ziji* contained in an adjunct that is not part of a complement. Consider the following:

- (67) Zhangsan_i shuo Wangwu_j bu hui qu, yinwei Lisi_k mei yaoqing ziji_{i/*j/k}.
Zhangsan say Wangwu not will go because Lisi not invite self.
 Zhangsan_i said that Wangwu_j would not go because Lisi_k did not invite
 him_{i/*j}/himself_k.

In (67), *Lisi* can antecede *ziji* because it is a local o-binding subject. So can *Zhangsan* because it is a subject of the clause taking a complement clause and ipso facto a less oblique coargument of the complement clause containing *ziji*. *Wangwu* cannot

antecede *ziji* because the former is not a less oblique coargument and o-commanding subject of the latter; *ziji* is contained in the adverbial clause. *Wangwu* can hardly rely on pragmatic factors here to obtain antecedency either, presumably because it is not prominent in discourse, according to PX. It is not a topic like *Zhangsan*. By contrast, the following sentence, being chopped off from (67), is acceptable if *ziji* refers to *Wangwu*, although o-binding does not hold here. This is possible when the speaker assumes *Wangwu*'s viewpoint:

- (68) Wangwu_j bu hui qu, yinwei Lisi_k mei yaoqing ziji_{j/k}.
Wangwu not will go, because Lisi not invite self
 Wangwu_j will not go, because Lisi_k didn't invite him_j/himself_k

Such examples illustrate the cases which PX treated as non-syntactic uses of *ziji*. If an NP as an antecedent satisfies the syntactic condition of being an o-commanding subject, it is free from the nonsyntactic conditions, and vice versa. An NP can still satisfy both types of conditions at the same time, as they are not exclusive of each other.

In short, the nonsyntactic conditions in PX's approach include logophoricity, and discourse prominence, which may manifest in a variety of ways such as topicality (as in (66b)), and contrastiveness.

2.3.2 Problems with Pollard and Xue (1998, 2001)

As PX's approach does not require a reflexive to stand in a c-command relation to the antecedent, it allows an antecedent *not* to c-command (or rather, o-command) a reflexive and is therefore free from some of the problems we have seen with movement analyses. However, as it employs Huang and Liu (2001)'s analysis to tackle blocking, it suffers from the same problems.

Besides, because syntactic binding is not obligatory in their approach, this raises the question whether the syntactic condition of their account, e.g. binding to an o-commanding subject, is falsifiable. No sentence in which the antecedent is a non-subject could be considered a counterexample, since any antecedent could always fulfill some non-syntactic condition. The question is how to falsify the syntactic requirement, when it is optional. If we want to falsify it, we have to look for correct sentences in which the antecedent is not an o-commanding subject and does not satisfy the non-syntactic requirement either. Only if such sentences exist can we falsify the proposed syntactic requirement. But this could be done only if we could independently verify what the non-syntactic factors for licensing long-distance reflexives are. But if we want to do this, we have to look for correct sentences with long-distance reflexives which do not satisfy the syntactic requirement to determine whether the non-syntactic requirements really hold. This entails that we know what the syntactic requirement is. This is a circular quest and unlikely to be successful.²⁰ Furthermore, Restricting syntactic binders to o-commanding subjects fails to explain the contrast between (67) and the following:

- (69) 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.

Speakers recognize a difference in acceptability between (67) and (69) if *ziji* refers to *Wangwu*. (69) is considerably better than (67) on the intended reading.²¹ But in neither sentences is *Wangwu* an o-binder.

²⁰ That said, to deal with (65) and (66), all syntactic accounts available have to assume that syntactic binding is optional.

²¹ Pollard and Xue (1998) claimed that in (69) it is more difficult to construe *Wangwu* than *Zhangsan* or *Lisi* as an antecedent. But the important contrast is that between (69) and (67) with respect to *Wangwu* as an antecedent.

Moreover, since they claim that syntactic binding is not obligatory, to treat sub-commanding antecedents in (66) as pragmatically licensed induces a conceptual conflict in their approach. If syntactic binding is optional, then nothing prevents us from treating binding to sub-commanding NPs as syntactically licensed. In fact, if one thinks of syntactic binding as reflecting preferable judgments, Tang's (1989) judgment on (66a) indicates that syntactic binding is at work. (66b) may well just illustrate that syntactic binding is optional and pragmatics influences our decision as to what can antecede *ziji*. It therefore seems that Pollard and Xue wanted to treat (66) as pragmatically licensed just because (66) cannot be coped with by o-binding, their syntactic mechanism.

2.3.3 Pan (2001) and Hu and Pan (2002)

In this subsection, I will review the proposals by Pan (2001) and Hu and Pan (2002; henceforth HP). The latter represents a revised version of the former and eliminates the separate treatments for local and long-distance binding.²² Unlike various analyses in the Chomskyan framework, both versions are characterized by the disuse of c-command as a strict requirement on the antecedent. The former version differs from latter by employing self-ascription in its condition on the antecedenthood of *ziji*. Self-ascription refers to the believer's ascription of a property to himself (in this case, it is equal to the *de se* belief), or the speaker's ascription of a property to a person who is not necessarily self-conscious.^{23, 24} The following is the theory for

²² For Haihua Pan's treatment of local binding, please refer to Pan (1995, 1997, 1998).

²³ For instance, in the case that the proposition "John thinks he is bleeding" is true, John does not necessarily know that he himself is the person who he thinks is bleeding; it could well be that he was kidnapped by some evil scientist and locally anesthetized and is looking at a monitor showing the part of his body on which the scientist is doing an experiment in a laboratory. In other words, there is nothing that makes it obligatory to think that John is self-conscious in the world where the proposition is true. Of course, John may be so, but this interpretation of the proposition is the result of the speaker's ascription of the property to John.

long-distance *ziji* proposed in Pan (2001):

(70) The Condition for Self-Ascription *Ziji*:

Ziji can be bound to the carrier of belief, the most prominent self-ascriber, in a linguistic domain γ iff there is no blocker in the believed proposition contained in γ .

(71) The Prominence Condition

α is the most prominent self-ascriber in γ iff there is no β in γ such that β appears higher in one of the following hierarchies than α .

- a. SUBJ > OBJ or OBLIQUE
- b. Dominating NPs > Dominated NPs

(72) Blocker:

α is a blocker for β if α is a self-ascriber such that (a) α precedes *ziji*; and (b) neither α nor the NP controlled by it is an argument of an irreflexive predicate containing *ziji*.

Note that the domain γ refers to the clause that contains at least one attitudinal (or propositional) verb, and one sentence may have more than one such domain, which embeds a proposition. The definition of blocker incorporates information about the semantics of verbs, i.e. a blocker (or the covert NP controlled by it) must not be an argument of an irreflexive predicate containing *ziji*. This is intended to capture the following sentence:

(73) Zongtong_i qing wo_j zuo zai ziji_{i/*j}-de shenbian.

President ask me sit at self's side

The president asked me to sit beside him.

Zuo zai X-de shenbian is an irreflexive predicate in the sense that its arguments cannot be coreferential in the nature of things. *Wo*, or the PRO controlled by it, cannot be a

²⁴ Self-ascribers are carriers of belief. They include (i) first/second person pronouns; and (ii) third-person NPs that are arguments of a propositional verb such as *shuo* “say” and *renwei* “think”. The former group are called obligatory self-ascribers and do not need to occur with any propositional verbs.

blocker, according to (72) and (70), thus predicting the binding possibility between *Zongtong* and *ziji*. Let us now illustrate the application of the theory to further data:

- (74) a. Zhangsan_i yiwei wo_j xihuan ziji_{*i/j}.
Zhangsan think I like self
 Zhangsan_i thinks I_j like him_{*i}/myself_j.
- b. Zhangsan_i juede wo_j zhidao Lisi_k xihuan ziji_{*i/j/k}.
Zhangsan feel I know Lisi like self.
 Zhangsan_i feels I_j know Lisi_k like him_{*i}/me_j/himself_k.

In (74a), the believed proposition is the embedded clause containing an obligatory self-ascriber *wo* which precedes *ziji* and which is not an argument of an irreflexive predicate. *Wo* is therefore a blocker and the coreferential reading between *Zhangsan* and *ziji* is impossible. In (74b), as in (74a), the believed proposition of the matrix clause is the embedded clause, which contains an obligatory self-ascriber that is not an argument of an irreflexive predicate. Hence the impossibility of *Zhangsan* binding *ziji*. However, note that *wo*, the subject of the intermediate clause, can antecede *ziji*. This is possible in the dialect investigated in Pan's work and predicted by the theory; the believed proposition of the intermediate clause is the lowest clause, which contains no self-ascriber. Therefore, *wo* can antecede *ziji*.

However, Pan's formulation leaves unexplained the cross-dialectal variation regarding the asymmetrical blocking. He predicts correctly that an intervening first/second person pronoun blocks binding of *ziji* by a structurally higher non-first/second NPs for all speakers. But his account cannot cope with the dialects/idiolects where an intervening third-person NP blocks the reference of *ziji* to the first person pronoun in subject position.²⁵

25 For instance, consider (i) below. As *Zhangsan* is not a blocker according to Pan's definition, *ziji* is supposed to be able to refer to *wo*. This is not true in many dialects/idiolects, though.
 (i) Wo renwei Zhangsan taoyan ziji.

On the basis of the cross-dialectal variation, Hu and Pan (2002) revised the analysis in Pan (2001) by incorporating insights in Xu (1993, 1994). The reworked version is one that involves syntactic as well as semantic information, reflecting the belief that the referential possibilities of *ziji* are determined by a number of factors from various components of language faculty. Antecedents and blockers for *ziji* are determined by an algorithm that crucially relies on the idea of prominence, which is manifested in the ranking of semantic as well as syntactic factors. Below are the ranking and Hu and Pan's Antecedent-Seeking Mechanism for the reflexive pronoun *ziji*:²⁶

(75) Prominence Ranking:

- [+prominent]NP [-prominent]NP
- A.a. [+subject, +agent]>>[+subject, -agent]²⁷
- b. [-subject, +agent]>>[-subject, -agent]
- c. [+subject, +agent]>>[-subject, +agent]
- d. [+subject, -agent]>>[-subject, -agent]
- B.a.[+dominating, +animate]>>[+dominating, -animate]
- b.[-dominating, +animate]>>[-dominating, -animate]
- c.[+dominating, +animate]>>[-dominating, +animate]
- d.[+dominating, -animate]>>[-dominating, -animate]
- e.[-dominating, +animate]>>[+dominating, -animate]
- C. Person Hierarchy: [+first/second person]>>[-first/second person]
- OR
- Locality Hierarchy:[+local]>>[-local]

Note that prominence computation always begins from (75A) and (75B). If two NPs

I think Zhangsan hate self
I think Zhangsan hates self.

26 As Hu and Pan (2002) is written in Chinese, their proposal is named originally only in Chinese as 反身代词的先行语寻找机制. The English label is my own translation.

27 The label *agent* includes experiencers in their approach.

are equally prominent as per (75A) and (75B), then (75C), an exclusively disjunctive condition, needs to be brought into the computation. The notion of locality is identical to Closeness Condition in Pan (1998), defined as follows:

(76) Locality Condition (Closeness Condition):

α is closer to X, the reflexive, than β 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 .

(77) Antecedent-Seeking Mechanism for the reflexive pronoun *ziji*:

a. 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=($\alpha_n, \dots, \alpha_{+1}, \alpha$), the reflexive *ziji* begins the search for the antecedent by comparing the prominence of α 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.

b. A reflexive searches for overt NPs as antecedents before it goes on to search for covert NPs as antecedents.

c. Once an NP is marked as [+prominent], its prominence feature remains.

d. A candidate is chosen as the antecedent if no other candidate competes with it.

HP defined the blocker as follows:

(78) Blocker:

A blocker is an intervening NP that is the most prominent in an obligatory self-ascribing domain containing a reflexive. An obligatory self-ascribing domain is the minimal complete functional complex that contains an obligatory self-ascriber, i.e. a minimal NP or IP.

To understand how this theory works, let us now apply it to the data below:

(79) a. Zhangsan_i yiwei ni_j xihuan ziji_{*i/j}.

Zhangsan think you like self

Zhangsan_i thinks you_j like him_{*i}/yourself_j.

b. Zhangsan_i shuo Lisi_j-de baogao_k hai-le ziji_{i/j/*k}.

Zhangsan say Lisi's report harm self

Zhangsan_i said Lisi_j's report_k harmed him_{i/j}/itself_{*k}.

- c. Zhangsan_i yiwei wo_j zhidao Lisi_k xihuan ziji_{*i/?j/k}.

Zhangsan think I know Lisi like self

Zhangsan_i thinks I_j know Lisi_k likes him_{*i}/me_{?j}/himself_k.

In (79a), the second person subject determines the embedded clause as the obligatory self-ascribing domain, where the most prominent NP is the second person pronoun *ni* and thus the blocker that prevents *Zhangsan* from binding *ziji*. In (79b), there is no obligatory self-ascriber and ipso facto no blocker. The sequence of NPs within XPs that c-command *ziji* includes *Zhangsan*, *Lisi*, and *baogao*. Prominence computation starts from *Baogao* and *Lisi*. As *Baogao* and *Lisi* are both [+subject, +agent] (note that *Lisi* is the subject of the NP and the person who made the report), (75B) is called upon to determine which NP is prominent.²⁸ According to (75Be), *Lisi* is marked as [+prominent] and is the antecedent. Next prominence computation proceeds onto *Zhangsan* and *Lisi*. According to (77c), *Lisi*'s prominence feature will remain throughout the competition, so we only have to calculate *Zhangsan*'s prominence. *Zhangsan* ties with *Lisi* because both are [+subject, +agent] and [-dominating, +animate] and none is [+local].²⁹ Both end up as legitimate antecedents. In (79c), the intermediate clause is the obligatory self-ascribing domain, where *wo* enters into prominence competition with *Lisi*. Both NPs, however, are equally prominent as per (75A, B). Therefore condition (75C) needs to apply here to determine which NP is

28 Questions can be raised about calling the inanimate NP *baogao* 'report' an agent. It is not clear whether Hu and Pan consider *baogao* to be an agent. Note that although agents are generally considered animate, animacy does not seem to be a necessary condition on agenthood. Saeed (2003) mentions the example "the storm destroyed the village", where the storm, an inanimate subject, can be treated as an agent. Furthermore, even if we treat *baogao* as [-agent], *Zhangsan* still outranks *baogao*, according to the Prominence Ranking.

29 This is because the path from *ziji* to *Lisi-de baogao*, the minimal maximal projection dominating *Lisi*, is not a proper subset of the path from *ziji* to the whole matrix clause, the minimal maximal projection dominating *Zhangsan*.

[+prominent]. Here lies the cause of the dialectal/idiolectal variation we have mentioned earlier; if a speaker views [\pm local] as the deciding factor for prominence, then *Lisi* wins the competition and acts as the blocker, preventing *wo* as well as the matrix subject from binding *ziji*. This is mostly the case of Taiwan Mandarin, where *wo* cannot bind *ziji* across an intervening third person NP. On the other hand, if a speaker views person hierarchy as relevant to prominence, then *wo* is the blocker, and nothing prevents it from binding *ziji* across a third person NP.³⁰ This is the case of the dialect discussed in Pan (2001).

2.3.4 Problems with Pan (2001) and Hu and Pan (2002)

Both accounts rely on the notion of self-ascription, with Pan employing it in the condition on antecedents of long-distance *ziji* and the condition on blockers, and HP utilizing this notion only in the condition on blockers. However, as we know, long-distance antecedents for *ziji* are not limited to self-ascribers. Consider the following sentence provided by Pollard and Xue (2001):

- (80) Zhangsan_i zai meiyou jian-dao-guo jiu-le ziji_i ming de nage ren.
Zhangsan again didn't see-Exp save-Perf self life DE that person
 Zhangsan_i has never again seen the person who saved his_i life.

There is no sense in which *Zhangsan* can be considered a self-ascriber; there is no propositional verb to license this interpretation and *Zhangsan* is not a first/second person pronoun either. Therefore, a binding account based on self-ascription cannot cover sentences like the above and is inadequate.³¹ HP seem correct in dispensing

30 The attentive reader will have probably noticed that one immediate problem for their account is that it incorrectly predicts that in the dialect Pan investigated, *Lisi* is not a legitimate antecedent, because it loses the competition to *wo*. We will come to this point shortly.

31 Actually, Pan (2001) recognized this example as in no way amenable to the self-ascription account

with the notion of self-ascriber in the characterization of the antecedent for long-distance *ziji*.³² However, their antecedent-seeking mechanism runs into difficulty with the most typical type of long-distance binding. Consider the following two sentences:

- (81) a. *wo_i zhidao Lisi_j xihuan ziji_{i/j}.*
I know Lisi like self
 I know Lisi likes me/himself.
- b. *Zhangsan_i zhidao Lisi_j xihuan ziji_{i/j}.*
Zhangsan know Lisi like self
 Zhangsan_i knows Lisi_j likes him_i/himself_j.

In (81a), we cannot determine which NP is prominent by (75A) and (75B). (75C) needs to apply. HP claimed that the dialectal variation with respect to first/second

and proposed to deal with it as a local reflexive, subject to his Anaphor Condition (see his endnote 13):

- i. Anaphor Condition
 - An α can be the antecedent of an anaphor X in a linguistic domain γ if
 - α is a noun phrase that does not dominate X ; and There is no closer blocker in γ .
 - ii. α is closer to X , the reflexive, than β iff the path from X to the minimal maximal projection dominating α is a subset of the path from X to the minimal maximal projection dominating β .
 - iii. β is a blocker for α if (a) β is not less prominent than α ; and
 - (b) β , if not dominating α , must be a subject.
 - iv. α is less prominent than β if it appears lower in the animacy hierarchy than β does.
- v. Animacy Hierarchy (Chou, 1992)
 [+human]> [+animate, -human]> [-animate]

However, as the reader can verify, even his Anaphor condition would predict (80) to be ill-formed with the intended coindexation. This is because the path from *ziji* to the minimal maximal projection dominating the potential blocker, the trace left by the moved subject in a relative construction, is a subset of the path from *ziji* to *Zhangsan*. This means that the (empty) subject is a blocker.

32 Note that although their condition on antecedenthood utilizes the notion of first/second person, *wo* and *ni* are not equal to self-ascribers; of course they are obligatory self-ascribers, but self-ascribers are not limited to *wo* and *ni*. Self-ascribers are carriers of belief. Recall that third person NPs can be self-ascribers if they are arguments of a propositional verb. However, their condition allows third person NPs to be antecedents, even when they are not arguments of a propositional verb. Therefore it can be said that the self-ascriber does not play a role in their condition on antecedenthood, if it is understood in a general way, as the carrier of belief.

person and third person is accounted for by the parameterization of (75C). Some speakers opt for first/second person as relevant to prominence, while others opt for [\pm local]. If first/second person is treated as relevant, then *wo* can be the antecedent. For those who reject coreference between *wo* and *ziji*, [\pm local] seems to be the key factor. However, this account actually precludes the possibility of local binding and long-distance binding in (81a) and (81b) respectively. If *wo* is marked as [+prominent] in (81a), then it is predicted that the local subject, *Lisi*, which has lost the competition to *wo*, cannot antecede *ziji*, contrary to fact.

Consider (81b) again. Other things being equal, the same speakers who reject coreference between *wo* and *ziji* by choosing [\pm local] as crucial to prominence in (81a) should also choose [\pm local] as relevant in (81b). If so, only *Lisi* could be the antecedent in (81b)— a conclusion that contradicts the fact. Note that (77d) apparently could predict long-distance binding in (81b) if we assumed that *Zhangsan* would compete further but could not find a competing candidate, thereby fulfilling (77d) and becoming the antecedent. However, this is not a right assumption, because it would allow *zhejiang shi* to be an antecedent in (82).³³

(82) *Zhejiang shi*_i *zhengming Zhangsan*_j *taoyan ziji*_{*i/j}.

This-Class incident prove Zhangsan hate self

This incident proved that Zhangsan hated himself.

Zhejiang shi, being [+subject, -agent] and [-dominating, -animate], would lose the competition to *Zhangsan*, being [+subject, +agent] and [-dominating, +animate]. If we assumed that *Zhejiang shi* would compete further but could not find a competing candidate, thus fulfilling (77d), we would wrongly allow *zhejiang shi* to be an

³³ One could resort to the independent requirement that long-distance *ziji* must have animate antecedents (see Chapter Three for discussion) and attribute the anomalous reading of (82) to the semantic clash between *ziji* and the inanimate NP *zhejiang shi*. However, this is a redundant and undesirable move, as the factor [\pm animate] is already employed in their approach.

antecedent. Returning to (81), it thus seems that HP's approach to asymmetrical blocking creates serious problems.

Furthermore, different degrees of the blocking effect are not captured by the account. Consider the following:

- (83) a. Zhangsan_i gaosu wo_j Lisi_k hen ziji_{?*i/k}.³⁴
Zhangsan tell me Lisi hate self
 Zhangsan_i told me_j Lisi_k hates him_{*i}/himself_k.
- b. Zhangsan_i dui wo_j shuo Lisi_k hen ziji_{?i/k}
Zhangsan to me say Lisi hate self
 Zhangsan said to me that Lisi hates self.

In (83a), the obligatory self-ascribing domain is the whole sentence. *Lisi* outdoes *wo* in prominence, and then *wo* competes with *Zhangsan* for prominence. The latter wins the match. Recall that once an NP is determined as an antecedent, its prominence feature remains. If so, *Lisi* is still prominent and does not enter prominence competition with *Zhangsan*, which is also prominent. As the blocker is the most prominent self-ascriber in the domain according to (78),³⁵ we would have two blockers, the local subject and the matrix subject, both of which are [+prominent]. Hu and Pan assume that this situation appears to explain the marginal acceptability of *Zhangsan* as an antecedent here in the dialect of Pan's investigation. (Note that (75C) does not apply here. This is because prominence computation takes place for a pair of NPs next to each other in an NP sequence, not three NPs at one time, although *Lisi* is

34 *Wo* in its matrix object position functions as a blocker and prevents *Zhangsan* from binding *ziji* in Huang and Liu (2001). It is given an asterisk there. On the other hand, in Pan (2001), such sentences are marked with a question mark. However, Huang and Liu admit that the blocking effect displayed here is not so strong as *wo* in the intermediate subject position. What matters seems to be the relative degrees of the blocking effect between (83a) and (83b); the asterisk or the question mark does not mean much here.

35 The qualification "the most prominent" in the formulation (78) is redundant, as [+prominent] comes only in two values, either plus or minus.

definitely more local to the reflexive than is *Zhangsan*.) The problem is that the same account says nothing about the difference between (83a) and (83b). It is easier for *ziji* to refer to *Zhangsan* in (83b) than in (83a).

To sum up, Pan (2001) and Hu and Pan (2002) did not impose a strict c-command relation between an antecedent and *ziji*, thereby avoiding some problems associated with the movement analyses. Cross-dialectal/idiolectal variation with respect to person asymmetry is treated within the approach as resulting from a parameterization of prominence rankings. However, one serious problem is that the most typical case of long-distance binding and local binding would be incorrectly ruled out.

2.4 Remarks on Feature Percolation and Sub-Command

In this section I shall examine Feature Percolation and sub-command as proposed by Cole et al. (1993) and Tang (1989) in some detail, as both play a major role in licensing antecedents not c-commanding *ziji* in Chomskyan approaches to long-distance anaphora in Chinese. Both theoretical devices crucially rely on the assumption that inanimate NPs cannot antecede *ziji*. Examples of the following kind are commonly cited to support this claim:

(84) **Yanjing dapo-le ziji* (Adapted from Huang and Tang (1991))
Eyeglasses break-Perf self
The eyeglasses broke themselves.

(84) seems to be prima facie evidence for requiring animacy on the antecedent of *ziji*. Its unacceptability, however, can be explained otherwise; it is probable that the external argument of the verb *dapo* is inherently an actor,³⁶ and world knowledge

³⁶ The label *actor* does not carry the presupposition of being animate in the way the label *agent* does.

precludes the possibility that an inanimate object could act upon itself. This account is to be distinguished from the assumption that *ziji* can only have an animate antecedent. This account predicts that the following sentence is acceptable:

- (85) Mei-ge gongyuan duo you ziji-de tese. (Tang (1989))
Every-Class park all have self's characteristics.
Every park has its own characteristics.

Rather than claiming that *meige gongyuan* is personified (and animate in a sense) and thus qualified as an antecedent, as Tang (1989) did, we believe that (85) is acceptable because *meige gongyuan*, the subject of a stative predicate, is not an agent here, i.e. it does not act upon itself, and thus does not contradict the aforementioned world knowledge and is an appropriate antecedent.³⁷ But being a non-agent is insufficient for an NP to antecede *ziji*, in view of the following example:

- (86) *Zheben shu_i dui ziji_i mei yong.
This-Class book to self no use
This book is useless to itself.

Zheben shu is the subject of the stative predicate *mei yong*, but still (86) is unacceptable. However, note that (87) below sounds as unacceptable as (86), even though it contains an animate antecedent for *ziji*.

See Saeed (2003).

³⁷ Pan (2001) also objects to the personification-based account of (85), and discusses the following example:

- (i) Na-pian wenzhang hai-le ziji.
That-Class article harm-Perf self
That article harmed itself.

(i) is unacceptable because according to Pan, *ziji* carries the role of experiencer assigned by the verb *hai-le*, and an experiencer must be animate. But *na-pian wenzhang*, to which *ziji* refers, is inanimate. In other words, 'the inanimate subject cannot be the antecedent because of the animacy feature *ziji* has that is determined by the experiencer role' (See his note 5). I consider my account more general and hence superior to his. If we applied his account to (84) in the text, we could not see why (84) is ill-formed; the object of *dapo* is a patient, which need not be animate, and the supposed antecedent, being inanimate, does not conflict with the patient, which is inanimate too.

(87) *Zhangsan_i dui ziji_i mei yong.
Zhangsan to self no use
Zhagsan is useless to himself.

Since (87) sounds infelicitous despite an animate antecedent, the unacceptability of (86) must be attributed to something other than the fact that *ziji* does not have an animate antecedent.^{38, 39} In other words, (84)-(87) show that it is not necessary to cling to the claim that *ziji* must have an animate antecedent, and the cases cited in favor of the claim can be accounted for otherwise.

Now that we have questioned the assumption underlying Feature Percolation and sub-command, consider the following examples:

(88) Zhangsan_i sheji-de zhezuo gongyuan_j you ziji_{i/j}-de tese.⁴⁰
Zhangsan design-DE this-CL park have self's characteristics
This park that Zhangsan designed has its/his own characteristics.

(88) is similar to (85) except that the former contains a relative clause with an animate subject inside. According to Feature Percolation and sub-command, with their assumption that inanimate NPs cannot antecede *ziji*, *Zhangsan* is the only antecedent, an incorrect prediction. More importantly, anticipating the discussion in Chapter Three, (88) also suggests that local binding and sub-commanding binding should be treated differently. If feature percolation cannot work, then there must be some way to make *Zhangsan* an antecedent. If feature percolation could work, we would still need separate treatments for *Zhangsan* and *Zhangsan sheji-de zhezuo gongyuan* to allow the latter as an antecedent.

³⁸ As we shall see later, however, long-distance antecedents for *ziji* must be animate. We are discussing local antecedents here. This is a point of divergence from the prior generative studies, which claim that *ziji* must have an animate antecedent, whether local or long-distance.

³⁹ It is possible that *dui...mei yong* is an irreflexive predicate.

⁴⁰ For some speakers, it is easier to construe *ziji* with *Zhangsan* if *tese* is replaced by *fengge* “style”.

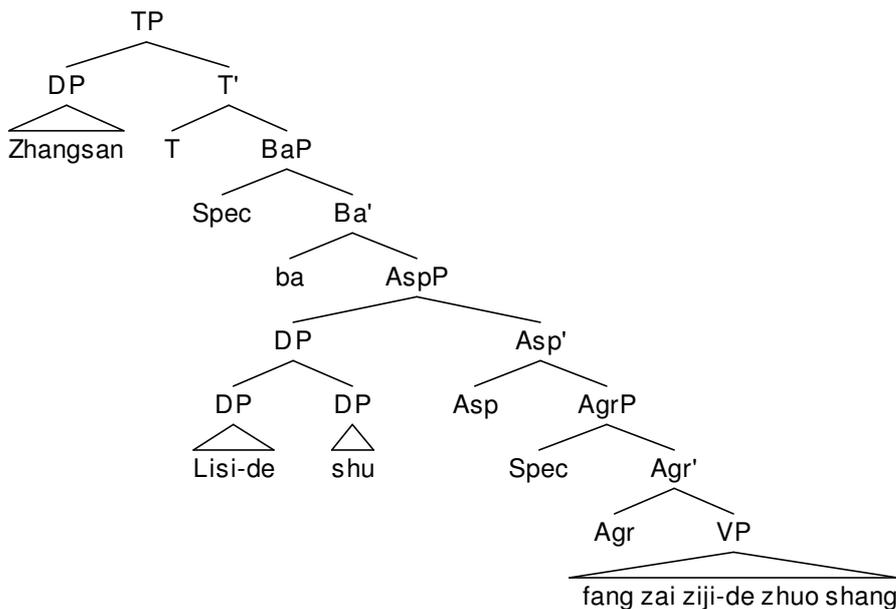
Now consider (89) and (90):

(89) Zhangsan_i ba Lisi_j-de shu fang zai ziji_{i/*j}-de zhuo-shang.

Zhangsan BA Lisi's book put on self's table-Loc.

Zhangsan put Lisi's book on his table.

(90)



Cole and Wang (1996) assumed that the *ba*-nominal resides in the Spec of a functional projection (AspP) which is the complement of *ba*. If so, *Lisi-de shu* necessarily c-commands *ziji*, and as per Feature Percolation, *Lisi-de shu* should carry the feature [+antecede *j*], where *j* is the index of *Lisi*. This means that *Lisi* would be predicted to bind *ziji*, contrary to fact. In addition, if [Spec, AspP] is considered a subject position,⁴¹ then (89) is also a problem for sub-command. Also note that Kayne's (1994) c-command would not work either, as it would allow *Lisi* to c-command, and thus bind, *ziji*.

⁴¹ This assumption is necessary for Cole et al., who claimed that *ziji* is subject-oriented. If the post-*ba* NP, which occupies [Spec, AspP], can bind *ziji*, it is no different from a subject as far as binding is concerned.

Next consider (91):

- (91) Zhangsan_i dui Lisi_j-de shu zuo-le yi-jian ziji_{i/*j} yiqian mei zuo-guo-de shi.
Zhangsan to Lisi's book do-Perf one-Class self before not do-Exp-DE thing
Zhangsan did to Lisi's book one thing that he had not done before.

One principle of Feature Percolation is that features cannot percolate out of lexical complements, with one major class of exceptions: the object of the prepositional phrase, as noted by Cole et al. (1993) among others in the following:

- (92) [For whom] did you buy the book?

If [+wh] is a prerequisite for Wh-movement, then (92) must have [+wh] percolated from *whom* to the PP. Pending an analysis of the PP, this observation contradicts Feature Percolation as applied to *ziji* in (91). If features can percolate up to the PP, then it is expected that *dui Lisi-de shu*, a PP which c-commands *ziji*, can take *Lisi*'s features and therefore bind *ziji*. However, this prediction is not borne out.⁴²

2.5 Conclusion

I have reviewed four major accounts of Chinese long-distance binding. Two of them, i.e. the head-movement (Cole and Sung (1994), Cole et al. (2001)) and the IP-adjunction (Huang and Tang (1991), Huang and Liu (2001)) analyses, are cast within the Chomskyan framework. As we have seen, the former incorrectly predicts subject-orientation to always occur, whereas the latter fails to predict subject orientation. Therefore neither can be taken as reliable approaches. Moreover, they involve use of theoretical devices that cause problems to other domains of grammar,

⁴² Of course, the problems discussed here make sense only if we analyze the *ba*-construction as Cole and Wang did. We will adopt a different analysis of the construction concerned in Chapter Three.

e.g. sub-command. Most importantly, they fail to address the cross-dialectal/idiolectal variation we have witnessed so far. On the other hand, Pollard and Xue's (1998, 2001) account is sketchy in nature. Problems arise for this approach largely because of lack of a detailed characterization of the interaction between various non-syntactic conditions and between syntactic and nonsyntactic ones. It is a catch-22 situation to independently verify the syntactic and nonsyntactic components of their theory. To determine which nonsyntactic factors are relevant to long-distance *ziji*, we must know in which environments *ziji* is not syntactically bound; this entails that we know in which environments it is syntactically bound. To determine which syntactic condition is relevant, we must ensure that the correct sentences we are examining do not involve nonsyntactic factors. This in turn means that we must know what the nonsyntactic factors are. In other words, this is a circular quest. As for Hu and Pan (2002), their approach is correct in *not* assuming a direct c-command configuration between an antecedent and *ziji*. It is a flexible approach hinging on the ranking of various prominence factors, even though the particular version we have reviewed is not problem-free. We have also examined some major accounts for blocking effects. The picture emerging from the foregoing discussion is that neither purely syntactic nor purely pragmatic accounts are satisfactory. Hu and Pan's account, by contrast, attribute blockerhood to prominence within a half syntactically defined domain. Despite some empirical difficulties it is facing, this approach seems to be on the right tack. In the following chapter, I shall follow its spirit and build a model for long-distance *ziji* that accounts for non-local anaphor resolution and attempt to address the problems noted in this chapter.