Agreement Restrictions in Mandarin Long-distance Binding

by

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ABSTRACT

This thesis investigates the distribution of the Mandarin reflexive *ziji*. *Ziji* displays many interesting properties but its long-distance binding distribution has long been of interest to linguists. *Ziji* displays a blocking effect such that certain arrangements of person features prohibit long-distance binding. In this thesis I argue that the blocking effect pattern is the well-attested Person-Case Constraint (PCC). I argue that *ziji* is a SE anaphor that is syntactically bound through the agreement system and that the PCC blocking effect emerges when intervention effects disrupt the agreement system that mediates the binding relationship between an anaphor and its antecedent.

The conditions required for the syntactic binding of *ziji* can be explained in terms of an interaction between three processes. First, there is a condition on how the ϕ-features on C^0 can be valued. C^0 bears a [+participant] feature, which it seeks to value subject to CONTIGUOUS AGREE (Nevins, 2007). Second, there is a process of inheritance of the ϕ-features on C^0 by all lower instances of T^0, following and extending Chomsky (2005, 2008). Finally, there is a condition on the relation between the ϕ-features borne by a particular instance of T and those of its specifier, inspired by Béjar and Rezac's (2009) condition of *Match*. Because Mandarin T bears no overt agreement morphology, the ϕ-features inherited by T need not correspond to the ϕ-features of its specifier. However, when *ziji* is not syntactically bound as a SE anaphor it displays a different distribution and it can be used as a SELF anaphor and as a logophoric pronominal.

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ABBREVIATIONS

ACC	accusative case
ABS	absolutive case
ASP	aspect marker
AUX	auxiliary
BA	marker of the *ba* construction
BEI	passive marker *bei*
CFC	Complete Functional Complex
CL	classifier or clitic
DAT	dative case
DE	pre-nominal modification marker or postverbal resultative marker *de*
ERG	ergative case
GEN	genitive case
INT	intensifier
INF	infinitive
NOM	nominative case
PRF	perfective marker
Q	question particle
QR	Quantifier Raising
SUBJ	Subjunctive
TNS	tense
TOP	topic marker
COMP	complementizer

Chapter 1 - Literature Review: Binding

1.1 Lectures on Government and Binding (1981)

1.1.1 Anaphors

The Binding Conditions proposed in *Lectures on Government and Binding* (LGB) are well-known and so I will not outline them here in detail. Accordingly, Chomsky (1981) proposed that the proper licensing condition for an anaphor is that it must be bound in some local domain:

1) *Principle A*

   An anaphor must be bound in its Governing Category.

2) *Principle B*

   A pronoun must be free in its Governing Category.

The definition of governing category was given as follows (1981, p. 211):

3) *Governing category*

   β is a governing category for α iff β is the minimal category containing α, a governor of α, and a SUBJECT accessible to α. (Chomsky, 1981, p. 211)

The SUBJECT includes regular subjects and agreement in I^0. Agreement is the subject in a finite clause, regular subjects occur in infinitival clauses and in the specifier position of DPs. A is an accessible SUBJECT for B if the co-indexation of A and B does not violate any grammatical principles. One of the principles that should not be violated is the *i-within-i filter*: $*[_{Ai} \ldots B_i \ldots]$.

Principles A and B derive a strict complementarity between pronouns and anaphors because both conditions operate over the same locality domain; the governing category. Pronouns must be free in their governing category and anaphors must be bound in their governing category. Thus, LGB predicts that there should never be any overlapping distribution between pronouns and anaphors. Moreover, Binding Condition A does not leave any space for long-distance anaphors, that is, anaphors that are bound outside of their GC.

Both these predictions of LGB (complementary distribution of pronouns and anaphors, and no long-distance anaphors) were proved wrong cross-linguistically, and so constituted serious shortcomings of LGB, and following work, including by

Chomsky himself, attempted to formulate a binding theory that could handle these recalcitrant facts.

1.2 Knowledge of Language (1986)

In *Knowledge of Language* (1986, henceforth KOL) Chomsky acknowledged that although the distribution of anaphors and pronominals is close to complementary, there are important minimal pairs where the expected complementarity does not emerge:

4)

a. The children$_i$ heard stories about each other$_i$

b. The children$_i$ heard stories about them$_i$

5)

a. The children$_i$ like each other's friends$_i$

b. The children$_i$ like their friends$_i$

Contrary to LGB-based expectations, both the anaphor *each other* and the pronouns *them/their* can be bound by the *children* in (4) and (5) above. This is a violation of the expected complementary distribution between anaphors and pronouns.

Moreover, it turns out that there are anaphors that can be bound outside the domain as defined in (3):

6) The children$_i$ thought that [$_S$ [$_{NP}$ pictures of each other$_i$] were on sale]

7) The children$_i$ thought that [$_S$ [$_{NP}$ pictures of them$_i$] were on sale]

(Chomsky, 1986, p. 173)

In KOL (1986) Chomsky attempts to handle both the set of facts in (4,5) and (6,7) by revising the relevant domain in which Principles A and B operate.

Chomsky argued that the domain in which an anaphor must be bound and a pronoun must be free must be a Complete Functional Complex:

8) *Complete Functional Complex* (Chomsky, 1986, p. 169)

A CFC is a domain where "all grammatical functions compatible with its head are realized in it - the complements necessarily, by the projection principle, and the subject, which is optional unless it is required..."[1]

The binding domain was then formulated on the basis of (8) above, as follows:

9) *Local Domain* (Chomsky, 1986, p. 169)

The local domain for an anaphor or pronominal α is the least CFC containing a lexical governor of α - the minimal governing category of α (MGC(α))

Furthermore, he introduced the notion of Binding-theory Compatibility:

10) *Binding-theory Compatibility*

We say that the indexing I and the pair (α, β) are compatible with respect to the binding theory in the local domain β under the indexing I. (Chomsky, 1986, p. 171)

11) *Binding-theory Compatibility*

I is BT-Compatible with (α, β) if:
A. α is an anaphor and is bound in β under I.
B. α is a pronoun and is free in β under I.
C. α is an R-expression and is free in β under I.

Intuitively, anaphors *require* antecedents and thus their governing categories must include *possible* antecedents. An extension of the local domain is permitted up to the point where it can include a *possible* antecedent:

12)The children$_i$ thought that [$_S$ [$_{NP}$ pictures of each other$_i$] were on sale]

(12) is BT-compatible because the NP containing the anaphor lacks a subject, making the root sentence the minimal CFC. Chomsky (1986) observed that examples like (12) are sometimes called "long-distance binding" (p. 174). Chomsky also noted that long-distance binding is subject-oriented:

---

[1] This should be read as saying that a CFC is a projection in which all grammatical functions compatible with the head P and (by definition) an external subject are syntactically realized. Thus, verbs, nouns, and adjectives may form syntactic predicates because they license an external argument. Prepositions do not license an external argument and therefore may not form CFCs.

13) They$_i$ told us$_j$ that [[pictures of each other$_{i/*j}$] would be on sale]

(Chomsky, 1986, p. 174)

Such subject-orientation does not hold when the anaphor is bound locally in simple sentences:

14) They$_i$ told us$_j$ about each other$_{i/j}$

(Chomsky, 1986, p. 175)

In (14) both the internal and external arguments can bind *each other,* and we do not find the subject orientation that we see in (13) above. We have seen that CBT explains a large part of the distribution that we observe with anaphors and pronouns and that the CBT can accommodate long-distance binding. However, it was known (and as Chomsky acknowledged, see fn 29 KOL) that there were anaphoric forms that violated CBT as it is illustrated above. For example, it was known that that there were instances of long-distance reflexives that could be bound by an antecedent outside of their local binding domain.

1.2.1 The inadequacy of CBT

KOL improved on the empirical scope of LGB, but even with its new tools, KOL could not capture the distribution of *ziji* and anaphoric elements in other languages (as Chomsky himself acknowledged, see fn 29 KOL). For example, it was known that that there were instances of long-distance reflexives that could be bound by an antecedent outside of their local binding domain:

Mandarin

15) Zhangsan$_i$ zhidao Lisi$_j$ xihuan ziji$_{i/j}$/ta$_{i/*j}$
Zhangsan knows Lisi like self/him
'Zhangsan knows Lisi likes self'

Norwegian

16) Jon$_i$ hørte oss$_j$ snakke om seg$_{i/*j}$
Jon heard us talk about SE
'John heard us talk about self'

(Hellan, 1991, p. 30)

Icelandic

17) Anna$_i$ telur [þig hafa svikið sig$_i$]
John believes you.ACC have(INF) betrayed SE
'John said that Mary had made me wash self'

(Thráinsson, 1991, p. 51)

According to the BT-compatibility algorithm, binding by the matrix antecedent in the examples above should be impossible because the binding occurs *across* the minimal domain specified for the anaphor (the local clause).[2] According to BT-compatibility, the local clause is the binding domain for the anaphor because the local clause contains the *minimal* CFC containing the anaphor and a governor for the anaphor. Because BT-compatibility is satisfied in the local clause the binding domain cannot be extended to the matrix subject in the examples above. However, we can see that in all of the examples above it is possible to have the anaphor bound by the matrix subject. Clearly, CBT cannot capture the distribution that we see in (15), (16), and (17). The perplexing aspect of the examples in (15), (16), and (17) is that they are bound *outside* of their local domain. That is, the minimality feature of BT-compatibility is violated. Such anaphors are known as long-distance anaphors or long-distance reflexives.

1.3 The properties of long-distance anaphora

As *ziji,* the focus of this work, qualifies as a long distance anaphor, we will examine what the general properties of long-distance reflexives are, so that we can place *ziji* within a larger context.

The defining characteristic of long-distance anaphors is that they allow an antecedent outside of their binding domain.[3] Cross-linguistically, long-distance anaphors have a number of important properties. Koster and Reuland (1991) summarize these properties:

18)

a. Long-distance anaphors allow an antecedent outside their governing category. (see examples (15), (16), and (17) above)

b. The antecedents of Long-distance anaphors are subject to a more restrictive prominence condition than c-command. The most common requirement is that the antecedent must be a subject. This is called subject-orientation. (see example (16) above)

---

[2] Koster and Reuland (1991) refer to binding across a subject as *medium distance binding* (p. 8).

[3] It does not matter whether the binding domain is defined as in LGB or KOL. The fact that long-distance binding occurs *across* subjects means that the operation takes place beyond the minimal binding domains of both LGB and KOL.

c. Long-distance anaphors are always reflexives. Reciprocals cannot have antecedents beyond their local binding domain.

d. Beyond the local domain, there is no complementarity between pronouns and anaphors. (see (15) above)

1.4 Simplex and complex forms

Pica's (1985, 1987, 1991) early study of long-distance anaphors led him to observe that one conspicuous contrast between local and long-distance anaphoric forms occurs in their morphology. Simplex anaphors are mono-morphemic and complex anaphors are not mono-morphemic (sometimes known as Pica's Generalization). Faltz (1977) and Pica both argue that simplex anaphors *may* be bound by outside of their local domain, but complex anaphors are always restricted to their local domain. Thus, Faltz and Pica suggest that morphology correlates with binding phenomena in that complex anaphors are restricted to their local domain, whereas simplex anaphors may be bound by antecedents outside of their local domain. Below are some examples of simplex and complex anaphors:

Complex-local anaphors		Simplex anaphors	
English	*himself*	Latin	*se*
Dutch	*zichself*	Dutch	*zich*
Norwegian	*seg selv*	Italian	*sé*
Italian	*se stesso*	Norwegian	*seg*
Finnish	*hän itse*	Finnish	*itse*

Pica (1985, 1987, 1991) argues that the differences in local and non-local binding for complex anaphors and simplex anaphors are a consequence of their respective abilities to move at logical form. The central idea of Pica's analysis was that simplex reflexives move successive-cyclically from I^0 to I^0.

1.5 Anaphoric expressions

Pica's generalization was an important typological universal that correlated quite well with cross-linguistic binding phenomena. Reinhart and Reuland (1993) adopted and refined Pica's generalization for their influential *Reflexivity* paper. Crucially, Reinhart and Reuland incorporated Pica's generalization and they characterized the division of anaphoric expressions in the following manner:

> The standard division of lexical anaphoric expressions is into pronouns and anaphors. Anaphors fall into two types: those that are standardly referred to as long-distance anaphors such as (Dutch *zich*, Norwegian *seg*, Italian *sè*, etc.) and those that are viewed as local (English *himself*, Dutch *zichzelf*, Norwegian *seg selv*, etc.). As observed by Faltz (1977) and Pica (1985, 1987), when anaphors are complex expressions, they are universally local, whereas the long-distance type is universally simplex. We [Reinhart & Reuland] will refer to

the latter as *SE* (simplex expression) and to the former as *SELF anaphors*. (Reinhart and Reuland, 1993, p. 658)

1.5.1 SE anaphors and SELF anaphors

Reinhart and Reuland (1991, 1993) argue that there is a crucial distinction to be made between anaphors; namely the distinction between SELF anaphors and SE anaphors.[4] CBT assumes a strict dichotomy between anaphors and pronominals, but Reinhart and Reuland propose that there is an additional distinction between different kinds of anaphors, and that these different anaphoric forms and their distributions are governed by different syntactic operations. It is generally assumed that both SE anaphors and SELF anaphors are referentially dependent and that they have an intrinsic property that forces them to take a structural/syntactic antecedent, but Reinhart and Reuland argue that SE anaphors and SELF anaphors differ in their internal structure and that different operations allow them to obtain their reference. Binding is the operation that assigns the content to the anaphor for its referential interpretation. The contrast between SE anaphors and SELF anaphors is found in a typologically diverse range of languages such as Mandarin, Japanese, Dutch, Icelandic, amongst others. This diverse typological range suggests that the distinction is grounded in the properties of universal grammar and the study of anaphoric systems is of crucial importance.

Reuland (2011, developing Reinhart and Reuland, 1991, 1993) proposes an ambitious theory in which the distribution of SE anaphors is explained as a consequence of their ϕ-features and how their feature composition differs from full pronominals On the other hand, Reuland proposes that the distribution of SELF anaphors is to be explained entirely as a consequence of their ϕ-features and the contribution of the SELF morpheme. Reuland calls this the *Feature Determinacy Thesis* (FDT):

19) *Feature Determinacy Thesis*

> Syntactic binding of pronominal elements (including anaphors) in a particular environment is determined by their morphosyntactic features and the way these enter into the syntactic operations available in that environment. (Reuland, 2011, p. 22)

If the FDT is true this would mean that there is no dedicated binding theory. Rather, the various binding phenomena follow from the interaction of independent properties that are available in the grammar. What is important to us from now on

[4] In his survey of anaphoric systems in the world's languages, Faltz (1977) shows that complex reflexives are formed from independently existing morphemes. Complex reflexives are formed by adding morphemes such as body-part expressions, intensifiers, *et cetera*. Faltz also argues that complex reflexives take two forms: head reflexives and adjunct reflexives. Head reflexives are based on a nominal head with (usually) a pronominal specifier. Adjunct reflexives are a pronominal or SE anaphor that is marked with an adjunct morpheme for emphasis or focus.

is that *ziji* falls in the class of SE anaphors, since it has long-distance uses. However, we will see that it also retains properties of SELF anaphors.

1.5.1.1 SE anaphors

Reinhart and Reuland (1993, p. 659) and Reuland (2011) characterize SE anaphors as "essentially pronominal". This means that they should have the same distribution as full pronominals (in being subject to Principle B, for example), as well the structural identity that derives from of their structural position in D^0. However, Reuland also suggests that SE anaphors and full pronominals might have distinct properties because "we wish to understand the behavior of SE anaphors (and other simplex anaphors) in terms of their ϕ-features and in terms of how their feature composition differs from that of full pronominals" (2011, p. 22). Reuland (2011, p. 47) continues with this conception of SE anaphors and proposes the following definition:

20)

A SE anaphor is a nonclitic pronominal that is underspecified in ϕ-features.

SE anaphors must acquire ϕ-features in order to be interpreted, and the only way in which SE anaphors can acquire the necessary ϕ-features is to become associated with an element that carries ϕ-features. Thus, SE anaphors must enter an agreement relation with another DP in order to value their features. Consequently, many have argued that a SE anaphor must move to a source in order to gain the ϕ-features it requires. SE anaphors are analyzed as determiners, so SE anaphor movement must be analyzed as head movement. The set of available sources of ϕ-features is restricted because the SE anaphors can only move to another head position. Verbs and prepositions do not carry ϕ-features, and, as a head, SE anaphors cannot move to the head position of a c-commanding DP because the head of that DP does not c-command the SE anaphor. Thus, there is only one available position in the tree that contains ϕ-features and c-commands the SE anaphor: I^0. Therefore, Reinhart and Reuland (1991, 1993) argue that SE anaphors adjoin to I^0 at LF, where they inherit the subject's features:

21)

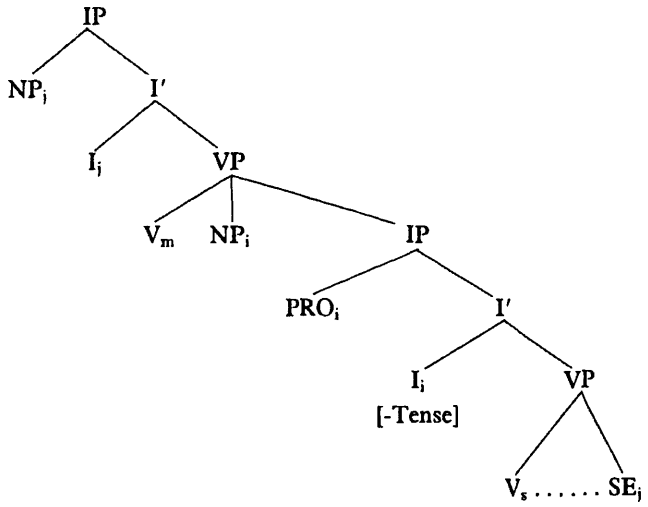
SE anaphors adjoin to I^0 at LF

I^0 is always coindexed with the subject and it is therefore for this reason that SE anaphors are subject-oriented. The trace of the SE anaphor inherits the features of the SE- I^0 complex and the base position can then function as an argument. Let us see how a derivation proceeds for the following sentence (this exposition taken from Reinhart and Reuland, 1991):

22)Jon$_i$ bad oss snakke om seg$_i$
Jon asked us to talk about SE
'Jon asked us to talk about SE'

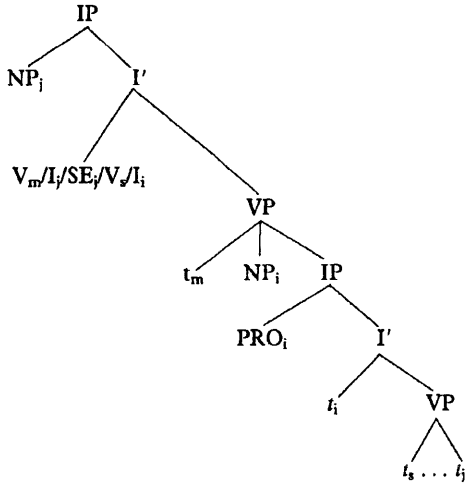
(Hellan, 1991, p. 30)

The SE anaphor starts in the object position of the embedded clause and must move to the matrix clause to acquire its features because the local clause is non-finite:
23)



The SE anaphor moves through the successive heads V_s-I_i-V_m-I_j until it reaches the matrix I^0:

24)



Once at the matrix I^0 the SE anaphor finds the matrix subject's ϕ-features. As such, the operations that allow SE anaphors to be bound out of their local clause will define the binding domain for SE anaphors. Reinhart and Reuland argue that

movement is used in the derivation above and therefore "[t]he full distribution of SE anaphors, then, falls under movement theory, rather than just plain binding theory" (1993, p. 660). Furthermore, Reinhart and Reuland argue that the constraints on movement mean that SE anaphors must be bound in a unique domain: "[i]n traditional terms, this binding [SE anaphor binding] obeys the Tensed-S Constraint; that is, it is impossible across tense" (1993, p. 660). The derivation above is a strictly syntactic phenomenon that makes no appeal to extra-linguistic considerations such as pragmatics or discourse conditions. Reinhart and Reuland (1991) argue that a SE anaphor needs to get ϕ-features for interpretation and the derivation above makes this possible in the syntax. Hence, it is the syntax that provides the interpretation of the SE anaphor. For Reinhart and Reuland, logophoric interpretation of SE anaphors is possible only if no relevant I^0 is available; only then can the SE anaphor look for a logophoric center. For a 1st person anaphor an appropriate center is always available (the source of the utterance), for 3rd person anaphors the context should provide an appropriate center. Hence, their distribution [3rd person SE anaphors] is more restricted (1991, p. 317). We will return to this point.

1.5.1.2 SELF anaphors

SELF anaphors are those complex anaphoric forms that *reflexivize* a predicate. SELF anaphors have an argument of the same predicate as their antecedent. That is, when a SELF anaphor is an argument of a predicate, the antecedent of that anaphor must also be an argument of that predicate; they must be co-arguments of the same predicate. Thus, reflexivization is an operation on argument structure.

1.6 Reflexivity

The crucial interpretive property that anaphora expresses is reflexivity, and reflexivity is a universal property of language:[5]

25)
Reflexivity definition

A predicate (formed of head P) is *reflexive* iff two of its coarguments are bound by the same λ-operator.[6]

---

[5] The following exposition uses Reuland (2011) to a large extent. However, it is important to note that Reuland's (2011) approach was largely established in Reinhart and Reuland (1991, 1993). Reuland's (2011) formalization is an extension of the approach established in Reinhart and Reuland (1991, 1993) and I will largely use the current formalization.

[6] This definition of reflexivity replaces the one proposed in Reinhart and Reuland (1993):

1) *Reflexivity definition in Reinhart and Reuland* (1993)
A predicate (formed of head P) is *reflexive* iff two of its coarguments are coindexed.

Binding by a λ-operator instead of indices is best understood in the following manner. Pronouns are variables. This means that until a pronoun is assigned a value, the predicate is an open property that requires saturation. There are two distinct ways to assign an interpretation to a variable: binding and co-valuation. Binding involves closing the open property by having the variable bound by the λ-operator. For example, in (26) we have a sentence with a pronoun. The pronoun is a free variable and this makes the embedded predicate an open property:

26)

a. Mary thinks that she is sick

b. Mary (λx (x thinks that y is sick)

When the pronoun is *bound* it is bound by the λ-operator that is created when the matrix subject moves to the subject position from the *v*P:

27)

a. Mary thinks that she is sick

b. Mary (λx (x thinks that x is sick)

Covaluation occurs when the pronoun/free variable receives its value from the discourse rather than binding:

28)

a. Mary thinks that she is sick

b. Mary (λx (x thinks that y is sick) & y = Mary

Thus, Reuland (adopting a perspective developed in Reinhart, 2006) proposes the following definition of A-binding:

29)

A-binding

α A-binds β iff α is the sister of a λ-predicate whose operator binds β

It is crucial to be clear about what properties constitute a predicate because a predicate is the linguistic object that the binding conditions apply to. Reinhart and Reuland (1993) propose that there is distinction between syntactic and semantic predicates. Reuland (2011, p. 82) defines syntactic and semantic predicates in the following way:

30)

Definition of a predicate

a. The *syntactic predicate* formed of (a head) P is P, all its syntactic arguments, and an external argument of P (subject).

The *syntactic arguments* of P are the projections assigned a θ-role or Case by P.

b. The *semantic predicate* formed of P is P and all its arguments at the level of logical syntax.[7]

The notion of a predicate is syntactic in nature. If we select {*Alice, watched, herself*} in the numeration we can form a syntactic predicate *Alice watched herself.* By contrast, *Alice, put, the bottle,* and *her* do not form a syntactic predicate in *Alice put the bottle behind her.* This is because *her* is an argument of *behind* (with *behind* assigning case and a θ-role to *her.* Thus, the predicate formed of *put* is not reflexive.[8] However, in a sentence like *Alice*$_i$ *depended on herself*$_i$ the predicate *is* reflexive because *on* does not assign case or a θ-role independently of the verb.

Reuland (2011, p. 82, also Reinhart and Reuland, 1993, p. 663) argues that reflexivity needs to be licensed and that this is done through reflexive marking:

31)

Definition of reflexive marking

A predicate (formed of P) is *reflexive marked* iff either (i) P is lexically reflexive or (ii) one of P's arguments is a SELF anaphor.[9]

---

[7] Reinhart and Reuland (1993, p. 678) has the same definition of syntactic predicate but they have a different definition of semantic predicate:

2)

The semantic predicate formed of P is P and all its arguments at the relevant semantic level.

[8] Of course, it is possible to say *Alice*$_i$ *put the book behind her*$_i$ and *Alice*$_i$ *put the book behind herself*$_i$. However, in these cases *put* is not a reflexive predicate.

[9] Reinhart & Reuland (1993) gives a more precise definition that is relativized to an index:

3)

a. a predicate is *i-reflexive* iff (at least) two of its arguments are *i-coindexed* (that is, are indexed *i*)

b. a predicate (formed of P) is *i-reflexive-marked* iff either P is lexically reflexive with respect to an i-indexed argument, or one of P's i-indexed arguments is a self anaphor.

Thus, the crucial feature of SELF anaphors is that they reflexivize predicates and the reflexive marking of a predicate by a SELF anaphor depends on the SELF anaphor being a syntactic argument of the predicate. For example, consider the contrast between (32) and (33) below:

32) *Alice$_i$ expected the Mad Hatter to invite herself$_i$ for a drink.

33) Alice$_i$ expected the king to invite everyone but herself$_i$ for a drink.

In (32) the predicate *invite* is reflexively marked by *herself*, but the predicate is not reflexive and this means that the sentence is ungrammatical. By contrast, in (33) *herself* does not reflexively mark the predicate *invite* so the sentence is grammatical. Reuland (2011, p. 83; also Reinhart and Reuland, 1993, p. 670-671) proposed two binding conditions in order to account for this argument structure analysis of local binding:

34)
Conditions

Condition A: A reflexive-marked syntactic predicate is reflexive.[10]

Condition B A reflexive semantic predicate is reflexive-marked.

1.6.1 Reflexive marking predicates

Predicates that are not lexically reflexive allow non-identical arguments on their theta-grid. However, such predicates can become reflexive if and only if they are morphologically marked as reflexive. That is, non-reflexive predicates can be turned into reflexive predicates by overtly marking them as reflexive. Reflexive marking is what SELF anaphors do. Thus, a SELF anaphor that occurs as an argument of a predicate reflexivizes that predicate. Reinhart and Reuland (1991, 1993) argue that a reflexive predicate denotes the following relation:

$\lambda x(P(..., x, ..., x, ...)$

This relation means that a predicate is reflexive if and only if two of its arguments are identical. When two or more arguments of a predicate are identical we have a reflexive predicate:

The condition is relativized to an index in order to block an anaphor indexed *j* from licensing co-indexation of two arguments indexed *i* that excludes the anaphor: *Max$_i$ showed myself$_j$ him$_i$.*

[10] Büring (2005) notes that this is not a condition on reflexives but a condition on predicates. That is, it prescribes a specific interpretation to a predicate when that predicate combines with a reflexive. If the reflexive does not combine with a predicate nothing happens.

35) John$_i$ criticized himself$_i$

36) John$_i$ likes him$_{*i/j}$

If we try to reflexivize using a pronoun as a bound variable the following occurs:

37) PF: John$_i$ likes him$_{*i/j}$ LF:John (λx(x likes x))

In (37) we would have a bound variable interpretation. However, because the co-arguments are identical we have a reflexive LF, but a predicate is reflexive only if it is reflexively marked. (37) contains no reflexive marking because the predicate is not intrinsically reflexive nor is there a SELF anaphor to mark the predicate as reflexive. Thus, (37)cannot be given a reflexive interpretation.

SE anaphors cannot reflexivize predicates thus we expect SE anaphors to have the same distribution as pronouns in the local clause. SE anaphors will be subject to the same interpretive mechanism as the pronoun in (38):

38)Jon$_i$	foraktet	seg selv$_i$/*seg$_i$/*ham$_i$	Danish
John	despises	himself/ SE /him	
39)Jon$_i$	veracht	zichself$_i$/*zich$_i$/*hem$_i$	Dutch
John	despises	himself/ SE /him	

(Reinhart and Reuland, 1991, p. 293)

Thus, because a pronoun or an SE anaphor cannot reflexivize a predicate a pronoun or a SE anaphor cannot be interpreted as identical with another argument of the predicate. This means that SE anaphors and SELF anaphors should be in complementary distribution only in reflexive contexts. Outside of locally reflexive contexts we predict that we should find that SELF anaphors and SE anaphors are not necessarily in complementary distribution.

1.7 The typology of anaphora

Our discussion leads to the following typology of pronominals, SELF anaphora, and SE anaphora (Reinhart and Reuland, 1993, p. 659):

40)

	SELF	SE	PRONOMINAL
Reflexivizing Function	+	-	-
Referential Independence	-	-	+

Although both SE and SELF anaphors are both referentially dependent they differ in their grammatical functions. SELF anaphors function as reflexivizers of a predicate

and are therefore limited to the domain of co-arguments because the semantics involves cobinding two arguments of a predicate. SE anaphors lack this reflexivizing function.

1.8 Binding Domains

Different domains allow long-distance binding of SE anaphors:[11]

Binding out of an NP with a subject

41) Jon$_i$ likte din artikkel om seg$_i$
Jon liked your article about self
John liked your article about self'

(Norwegian, Hellan, 1991:30)

Binding out of a small clause

42) Larsen$_i$ betragter Jorgen some farlig for sig$_i$
Larsen considers Jorgen as dangerous for self
Larsen considers Jorgen dangerous for self'

(Danish, Pica, 1986)

Binding out of an infinitival clause

43) Professor$_i$ poprosil assisstenta$_j$ PRO$_j$ čitat' svoj$_{i/j}$ doklad
Professor asked assistant read self's report
'The professor asked the assistant to read self's report'

(Russian, Progovac, 1993: 755)

Binding out of a subjunctive clause

44) On$_i$ souhaite toujours que les gens ne disent pas
One wishes always that the people NEG speak NEG

du mal de soi$_i$
of ill of self
'One always wishes that people do not slander oneself'

(French, Pica, 1991)

---

[11] Examples (41) – (47) are drawn from Y.-H. Huang (2000, p. 92)

Binding out of an indicative clause

45)Ali $_i$	berharap	Fatimah$_j$	akan	berkahwin	dengan	
Ali	hope	Fatimah	will	marry	with	
dirinya$_{i/j}$						
self						

'Ali hopes that Fatimah will marry self'

(Malay, Ngoh, 1991)

Binding across sentence boundaries into discourse

46)(Hann$_i$)	var	að	hugsa	um,	hvað	hún	yrði		
He	was	at	to-think	about,	what	she	would-be		
hissa,	þegar	hún	kæmi	á	fætur	næsta	morgun,		
surprised	when	she	would-come	to	feet	next	morning		
opnaði	dyrnar	og	sæi	sig$_i$	á	tröppunum;		hún	
would-open	doors	and	would-see	self	on	the	steps	she	
sæi	sig$_i$	ef	til	vill	ödungis		ekki	fyrst,	
would-see	self	if	PRT	wants	very/right		not	at first	
en	stigi		baraút	ofan	á	sig$_i$			
but	would-step		just-out	over	on	self			

"(He) was thinking about how surprised she would be when she got up the next morning, opened the door and saw self on the steps; she would see self perhaps not at first, but would just step out, on top of self..."

(Icelandic, Maling, 1984: 239. Gestur Palsson, *Tillhugalif*)

47) A: Nakwa Kambale yo u- li- a- ha
Q Kambale FOC SUBJ TNS TNS give

Arlette yo e-ki ri?
Arlette FOC PV potato

B: Iyehe, iyowenewene yo u- na li- a-
No herself FOC SUBJ TNS TNS TNS

ki-imaya
it-take

A: "Is it true that Kambale gave Arlette the potato?"

B: "No, it is herself that took it"

(KiNande, Authier, 1988)

Burzio (1996) argues that although cross-linguistically there is great variety in the binding domains that allow long-distance anaphora, there is nevertheless a striking pattern that emerges. Burzio argues:

> [t]here is ... one fact that seems invariant across languages .... [namely], that LDA ranks complement types in a consistent fashion. Roughly speaking, uninflected structures like small clauses rank at the bottom of the scale, in the sense that they inhibit LDA the least compared with other complements, while indicative clauses rank at the top, inhibiting it the most. Subjunctives and infinitives come in between, with the latter closer to small clauses. This cross-linguistically consistent ranking manifests itself by way of the implicational relations that hold among complement types, the possibility of LDA with a higher ranked complement (e.g. a subjunctive) always implying the same possibility with a lower ranked one. As a result of this, lower ranked complements will also permit LDA with greater cross-linguistic frequency than higher ranked ones. (Burzio, 1996, pp. 8-9)

For example, in the Icelandic examples below we can see that the reflexive can be bound by the matrix subject in all the environments (subjunctive, infinitive, small clause) up to the level of indicative:

48)

a. Jón_i upplysti hver hafði barið $*\text{sig}_i/\text{hann}_i$ *Indicative*
Jón revealed who had hit self/him
"Jón revealed who had hit self/him"

(Maling, 1984, cited in Burzio, 1996)

b. Jón$_i$ upplysti hver hefði barið sig$_i$/hann$_i$ *Subjunctive*
Jón revealed who had hit self/him
"Jón revealed who had hit self/him"

(Maling, 1984, cited in Burzio, 1996)

c. Jón$_i$ skipaði mér að raka sig$_i$/*hann$_i$ *Infinitive*
Jón ordered me that to-shave self/him
"Jón ordered me to shave self/him"

(Anderson, 1986, cited in Burzio, 1996)

d. Sálfæðingurinn$_i$ gerði Harald stoltan af sér/*honum *Small clause*
Psychiatrist made Harald proud of self/him
"The psychiatrist made Harald pround of him"

(Everaert, 1986, 301f, , cited in Burzio, 1996)

Burzio (1996, p. 13) uses the following table to illustrate the fact that the same pattern holds across a range of languages:

49)

α	Icelandic	Italian	Russian	Danish	Dutch
a. Indicative	*refl pron	*refl pron	*refl pron	*refl pron	*refl pron
b. Subjunctive	refl pron	??refl pron	*refl pron	N/A	N/A
c. AP-sc Infin.	refl *pron	refl pron	refl pron	refl pron	*refl pron
d. PP-sc NP/PVC		refl ??pron	refl *pron	refl *pron	refl pron

Burzio observes that the ranking in (49) illustrates that "for each language, there is a point ... above which the reflexive is consistently possible, while being consistently impossible below it" (1996, p. 14). Y.-H Huang (2000, p. 93, following Burzio) argues that the types of complement that allow long-distance anaphora can be expressed as an implicational universal and that such an implicational universal can be extended to discourse:

50) An implicational universal for long-distance anaphora complement types:

a. At the sentence level:

    i. NPs > small clauses > infinitivals > subjunctives > indicatives

b. At the discourse level:

    i. Discourse > different turns in conversation

c. Sentence and discourse

    i. Sentence > discourse

This universal says that if a language allows long-distance reflexivization out of one type of complement, then it will allow long-distance reflexivization out of every kind of complement that is higher in the hierarchy. For example, if a language allows long-distance reflexivization out of indicative clauses, then it will allow long-distance reflexivization out of subjunctives, infinitivals, small clauses, and NPs. For example, Russian allows long-distance binding out of infinitivals at most, and Italian allows long-distance binding up to subjunctives. The Icelandic examples given above in (48) illustrate how the SE anaphor *sig* can be bound out of complements up to – but not including - the level of indicatives.

Koster and Reuland (1991) propose a simpler typology than Burzio (1996). Koster and Reuland (1991) propose that there are two binding domains for long-distance anaphora and that each binding domain is demarcated by an opacity factor F. The opacity factor for the local domain is defined by an accessible subject, and the opacity factor for the long-distance domain is defined by the first finite INFL. Let us see how Koster and Reuland justify this simpler typology.

Koster and Reuland survey languages that contain long-distance anaphora and examine "the domains relevant for binding, the anaphors which can be bound in these domains, the prominence requirement to which they are sensitive, and whether they show complementarity with respect to pronominals" (1991, p. 11). An example from their survey is given below:

51)

Dutch[12]

Anaphor	Prominence factor of antecedent	Complementarity with respect to pronouns
Domain 1: first **(accessible) Subject**		
zichzelf 'himself'	c-command	yes
zich 'himself'	subject	yes/no
'mzelf 'him self'	c-command	yes
elkaar 'each other'	c-command	yes
Domain 2: first **finite Infl** beyond domain 1		
zich 'himself'	subject	no

Koster and Reuland (1991) differ with Burzio's characterization of Icelandic and Italian. Icelandic and Italian are crucial cases for Burzio's implicational universal because these languages allow binding out of subjunctives, but such a domain should not license LD-anaphora according to Koster and Reuland's opacity factor for Domain 2 reflexives. The difference between Koster and Reuland on the one hand, and Burzio on the other pertaining to binding out of subjunctive clauses is not relevant for us, as Mandarin lacks a subjunctive. What is more relevant is that all accounts agree that binding out of infinitives is possible, but out of indicatives it is not.

Mandarin freely allows binding of its SE anaphor out of all classes. At the same time, Mandarin makes no morphologically observable distinction between tensed and untensed clauses. Whether this picture is prima facie consistent with Burzio, Koster and Reuland or not depends on one's view of how long-distance binding should be expected to behave if the tensed/infinitival distinction does not apply. That is, in the Burzio, Koster and Reuland analysis of binding domains, should long-distance binding pattern with finite clauses or with infinitival clauses if there is no distinction between Tensed and Untensed clauses.

[12] *Zich* can be bound in Domain 1 when the verb is intrinsically reflexive. Within Domain 1, *zich* is not in complementary distribution with pronouns when it occurs in PPs but in other positions it is.

1.9 Exempt anaphora

The KOL revision of Principle A was more empirically adequate in that it allowed Principle A to accommodate some recalcitrant data. However, there were other instances of anaphora that could not be reconciled with earlier incarnations of Principle A (Ross, 1970; Cantrall, 1974; Kuno, 1987) and these examples remained beyond the scope of the tight formulation of Principle A as it was presented in KOL.[13]

Ross (1970) and Cantrall (1974) noted that 1st/2nd person reflexives can occur without an overt sentential antecedent and that this is a significant violation of Principle A:

52)

a. This paper was written by (Ann and) myself
b. Physicists like yourself are a godsend
c. A picture of myself would be nice on that wall

(Ross, 1970)

However, note that the following examples are ungrammatical:

53)

a. *She gave myself a dirty look
b. *The chairman invited myself for a drink

(Reinhart and Reuland, 1991, p. 312)

Reinhart and Reuland (1991) observe that "... precisely in the same environments allowing a first person reflexive to be free (or discourse bound), a third person reflexive can be long-distance bound, in apparent violation of condition A" (p. 312):[14]

54)

a. John said that the paper was written by (Ann and) himself

(Ross, 1970)

b. She felt that he was criticizing the room and herself

(Zribi-Hertz, 1989, p. 59)

---

[13] I will restrict this discussion of exempt anaphora to English because these examples suffice to show the inadequacy of Principle A as it occurs in KOL. The strict locality constraints on SELF anaphors means that in the KOL theory there can be no anaphoric binding across a subject, no anaphoric binding without a subject, and antecedents must c-command their associated anaphors.

[14] See also Kuno (1987) and Zribi-Hertz (1989)

Furthermore, those environments that block long-distance binding of 1st person reflexives (as in (53) above) also block long-distance binding of 3rd person reflexives:

55)

a. *Lucie boasted that the chairman invited herself for a drink
b. *She felt that he criticized herself

(Reinhart and Reuland, 1991, p. 312)

I will refer to the grammatical uses of SELF anaphora that are not regulated by Principle A as formulated in CBT as *exempt anaphora.* Exempt anaphora are not licensed by Principle A and therefore do not have to meet the structural conditions required by Principle A; namely, c-commanding antecedent, local antecedent, single (not split) antecedent. The absence of these structural requirements means that exempt anaphora behave quite differently to anaphora that are regulated by Principle A. Likewise, Reuland (2011, p. 88, drawing on Reinhart and Reuland, 1993) argues that anaphors that are exempt from the binding conditions are explained by Condition A: "[t]his condition [Condition A] expresses that the SELF anaphor obligatorily contributes reflexive marking only when it is the argument of a syntactic predicate" 2011, p. 88). It is the failure of Condition A to apply that allows exempt interpretation. Nevertheless, exempt anaphora are not unconstrained and arbitrary phenomena and we will see that they arise in well-defined structural contexts and that they have quite strict interpretive properties. As Büring observes: "exempt anaphora, too, impose requirements on their antecedent, which are stricter than, for example, non-reflexive pronouns" (2005, p. 225).[15]

Exempt anaphora is relevant for us, as *ziji* appears to belong to this class:

56)

a. Zhe-ge xiangfa, chu-le ziji$_i$, zhiyou san-ge
This-CL idea besides self only three-CL
ren zanchang
people agree
'As for this idea, besides myself, only three people agree'

b. Zhe-ge xiangfa, chu-le wo$_i$, zhiyou san-ge
This-CL idea besides I only three-CL
ren zanchang

[15] The exceptions to CBT showed its limitations but its explanatory coverage remains impressive. Although research has demonstrated many counterexamples that are resistant to the CBT approach its "core patterns have remained stable" (Reuland, 2011, p. 6), and in this spirit Reuland argues that CBT is *too bad to be true*, but *too good to be false.*

people agree
'As for this idea, besides me, only three people agree'

(Huang and Liu, 2001)

1.10 Licensing exemption

Reinhart and Reuland (1991, 1993; Reuland, 2011) propose that exempt anaphors are possible *iff the binding condition for anaphors does not apply.* That is, Reinhart and Reuland (1991, 1993; Reuland, 2011) propose that there are syntactic binding principles, but if the structural conditions for these principles are not met the anaphor can then be given an exempt interpretation. It is the exempt anaphors that have the properties of orientation towards a subject of consciousness, *et cetera.* Reinhart and Reuland (1991) call these exempt anaphors *logophoric.* Consider the acute contrasts below (examples from Reuland, 2011, p. 88):

57)

a. It angered him that ... she tried to attract a man like himself

b. *Mary tried to attract a man like himself

c. *It angered him that she tried to attract himself

58)

a. Max boasted that the queen invited Lucie and himself for a drink.

b. *Max boasted that the queen invited himself for a drink.

Reuland writes:

> To my knowledge not a single semantic or discourse reason has been offered for why we would find contrasts as in [(57) or (58)]. Note, however, that if an anaphor is exempt from a binding obligation it still can be bound, but once a binding obligation has been obviated other factors come into play and determine preferential binding patterns. Hence the favored binder may well turn out to be the local binder that is not obliged to bind. (Reuland, 2011, fn. 10, p. 354) [16]

Thus, Reuland (2011) concludes that a SELF anaphor can be a logophor iff it does not reflexive-mark a predicate. An anaphor does not reflexive mark a predicate when the anaphor is not an argument or it is an argument of a head that does not form a syntactic predicate. Cole, et al., (2001) note that reflexives in non-argument positions allow either a strict or sloppy interpretation in VP ellipsis and this

[16] Büring (2005) makes the same point: "these anaphors [exempt anaphors] are simply not subject to a structural Binding Condition at all: they do not need a binder with any domain; the positions they are in are *not* necessarily bound (though, of course, they can be...)" (p. 224).

suggests that the exempt reflexive is being used as a logophoric pronoun rather than a bound reflexive:

59)

a. Rupert$_i$ was not unduly worried about Peter's opinion of himself$_i$; nor was Fred$_j$

b. Nor was Fred unduly worried about Peter's opinion of Rupert (strict)

c. Nor was Fred unduly worried about Peter's opinion of Fred (sloppy)

(Cole, et al., 2001, p. xxi)

Pollard and Sag (1992) propose a similar hypothesis. They propose a syntactic condition for anaphors, and anaphors that do not meet this condition are exempt anaphors (the paraphrases below are from Büring, 2005, p. 223).

60)

a. *Binding Condition A*
A reflexive/reciprocal must be bound by a less oblique coargument, if there is one.[17]

b. *Exempt Anaphor Condition*
A reflexive/reciprocal that doesn't have a less oblique coargument must denote a designated participant.

It is important to note that under both Reinhart and Reuland's conception of exempt anaphora and Pollard and Sag's conception of exempt anaphora the exempt anaphora do not have to be interpreted according to structural principles. As Büring observes "... they don't obey any structural principles ... [t]hat is, the reflexive's antecedent doesn't need to c-command it, nor does it even have to be in the same clause" (2005, p. 224).[18]

---

[17] Pollard and Sag (1992, p. 266) invoke the traditional notion of relative obliqueness, which is simply a hierarchy of grammatical relations. The hierarchy they propose is:

4) SUBJECT < PRIMARY OBJECT < SECONDARY OBJECT < OTHER COMPLEMENTS

The fact that this scale only applies to coarguments restricts Binding Condition A to the local domain

[18] Büring warns that "... there is no comprehensive theory of what it takes to antecede an exempt anaphor, i.e. to be a 'designated participant' in the sense of [(60)b]" (2005, p. 225). Büring proposes that the following two conditions seem to cover the facts in the existing literature:

i) 1st and 2nd person exempt anaphors don't need linguistic antecedents at all (i.e. speaker and hearer are automatically designated participants.

1.10.1 What is logophoricity?

Although Reinhart and Reuland use the term *logophor* to refer to those reflexives that are exempt from Condition A, the term was originally used by Hagège (1974) to characterize a class of pronouns in languages from the Niger-Congo family that refer to the source of a discourse (Clements, 1975). Hagège argued that these pronouns "distinguish the individual to which they refer from the speaker himself who uses them, in ... 'indirect speech'" (Hagège, 1974, cited in Reuland, 2006, p. 3). However, it must be noted that "[t]hese pronouns bear no formal resemblance to reflexives, hence Hagège considers the term 'indirect reflexive' inappropriate" (Reuland, 2006, p. 3). Consider the Ewe example below that contains logophoric pronouns:

61)Tsali gblɔ na-e be ye-e dyi yè gake yè-kpe dyi
Tsali say to-PRON that PRON beget LOG but LOG be victor
'Tsali$_i$ told him$_j$ (i.e. his father) that he$_j$ begot him$_i$ but he$_i$ was the victor'

In the Ewe example above we can see that LOG is the gloss for the logophoric pronoun. Only the source of the discourse, *Tsali*, can be the antecedent of *yè*. Clements tells us that the clause containing the logophor need not be subjacent to the clause containing its antecedent; the logophoric pronoun can occur at any depth of embedding. Indeed, the antecedent need not be contained in the same sentence as the anaphor and the antecedent can be several sentences back

Modern syntactic literature considers both the exempt anaphors and source-of-discourse pronouns to be logophoric. Clements (1975, pp. 171-172) argues that cross-linguistically logophors have the following properties:

i) logophoric pronouns are restricted to reportive contexts transmitting the words or thoughts of an individual or individuals other than the speaker/narrator.

ii) the antecedent does not occur in the same reportive context as the logophoric pronoun.

iii) the antecedent designates the individual or individuals whose words or thoughts are transmitted in the reported context in which the logophoric pronoun occurs

Clements argues that, unlike binding theory, there are no universal syntactic conditions on logophoric pronouns such as subject orientation, *et cetera*. Rather, languages impose idiosyncratic conditions on logophors. For example, Ewe requires that clauses containing logophors be introduced with the complementizer *be*, Icelandic logophors must be contained within a subjunctive clause, *et cetera*.

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ii) Third person exempt anaphors need an antecedent (i.e. no one else is automatically a designated participant)

1.10.2 Logophoric interpretation

According to Reuland, "logophoric use" of anaphors means "being used as a pronominal (though with restricted possibilities of interpretation)" (Reuland, 2011, p. 169).[19] The principles that govern "[t]heir referential use falls primarily under discourse theory" (Reuland, 2006, p. 12). Sells (1987) proposes a logophoric constraint such that the antecedent of a logophoric reflexive must be the person from whose perspective the proposition is evaluated. The person chosen may be an individual who is associated with the perspectival role of SOURCE, SELF, or PIVOT. The SOURCE is the individual in a given situation who makes the report, the SELF represents the one whose mental state or 'mind' or consciousness is being reported, and the PIVOT is the one from whose standpoint the report is made. In short, the antecedent must be a perspective center:

SOURCE:	one who is the intentional agent in a communication
SELF:	one whose mental state or attitude the content of the proposition describes.
PIVOT:	one with respect to whose (space-time) location the content of the proposition is evaluated

Sells argues that SOURCE, SELF, and PIVOT define a range of options for cross-linguistic conditions on being an antecedent for a logophoric anaphor. Thus, SOURCE predicates such as *say* or *heard* can point towards the agent of communication. Sells' SOURCE is similar to the concept of logophor discussed by Hagège in relation to Ewe. That is, the SOURCE is the source of speech. SELF predicates pertain to psychological predicates such as *think, know,* or *believe*; SELF is the individual whose mental state the sentence describes. PIVOT is understood "as the locus to which deictic elements must refer" (Reuland, 2006, p. 10); it is the "center of deixis or perspective for the sentence (the reference point for indexicals)" (Cole, et al., 2006, p. 33). Huang and Liu (2001) argue that there is an implicational relationship between these discourse roles:

62) SOURCE $\subseteq$ SELF $\subseteq$ PIVOT

Thus, in some languages it is only verbs of saying (SOURCE) that will license logophoricity, while in others verbs of thinking (SELF) and verbs of saying (SOURCE) will license logophoricity. The discourse roles proposed by Sells provide the

[19] Reinhart and Reuland observe that there are two senses of the term "logophoric" in the literature. The first sense is the point-of-view discussed above (Clements, 1975). The second sense "is the use of discourse anaphors as focus, which has been labelled *emphatic* (Kuno, 1987; Zribi-Hertz, 1989)" (Reinhart and Reuland, 1993, p. 62). Reinhart and Reuland use the term *"logophor"* to refer to both uses

conditions that the antecedents must satisfy for the interpretation for logophoric anaphors.[20]

Sells' notion of logophor is an important theoretical approach because examples of reflexives that do not meet the classical binding conditions are easily found. For example:

Non-local antecedent

63)Max$_i$ boasted that the queen invited Lucie and himself$_i$ for a drink

(Reinhart and Reuland, 1993)

No c-command

64)In her$_i$ opinion, physicists like herself$_i$ are rare

(Kuno, 1987)

(63) and (64) demonstrate that reflexives can be interpreted as bound even when they do not meet the conditions required for the application of principle A. The reflexives in (63) and (64) above are homophonous with reflexives that occur in argument positions but they are not subject syntactic constraints. Rather, "... all that needs to be said about the logophoric use of anaphors is that it is possible as long as no binding rule is violated and an antecedent can be found" (Reinhart and Reuland, 1991, p. 316). According to Reinhart and Reuland (1991), both SELF anaphors and SE anaphors can be used logophorically. Anaphors can be used logophorically because both SELF anaphors and SE anaphors cannot refer independently. Reinhart and Reuland explain:

> SELF anaphors express a relation, or contain one unsaturated position. To be interpreted, the second argument of the relation must be found. When it cannot be found grammatically in the theta-grid the expression may still be rescued (from uninterpretability) if it is associated with an available center. Similarly, a SE anaphor needs to get ϕ-features for interpretation. If no relevant I is available, it can look for a center. For a first person anaphor an appropriate center is always available (the source of the utterance), for third person anaphors the context should provide an appropriate center. Hence, their distribution is more restricted. (1991, p. 317)

Reinhart and Reuland's analysis is important because it allows for the existence of both syntactic and logophoric reflexives.[21]

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[20] It must be remembered that there is a sharp distinction to be made between the syntactic conditions that license exempt anaphora and the interpretation of logophoric anaphora. The logophoric interpretation can arise only when the binding principles do not apply. That is, the logophoric conditions are necessary but not sufficient for long-distance interpretation.

1.10.2.1 *De Se* as diagnostic?

There is a further restriction that has been argued for by a number of researchers: a *de se* restriction. Following Chierchia (1989), Huang and Liu (2001; see also Cole, et al., 2001; Pan, 2001) argue that SOURCE, SELF, and PIVOT can be reduced to the notion of *de se*. That is, the antecedent of a logophor "must be aware that the sentence is a description of an event in which he himself or she herself is a protagonist (a *de se* restriction), or more precisely, that the individual actually ascribes, or is disposed to ascribe, to himself or herself the property denoted by the predicate containing the reflexive" (Cole, et al., 2006, p. 34). The canonical example of the *de se* restriction derives from Chierchia:[22]

65)

a. #Pavarotti$_i$ crede che i propri$_i$ pantaloni
Pavarotti believes that the SELF pants

siano in fiamme. Ma non si e' accorto
are in flame. but not realize

che i pantoloni sono i propri
that the pants are the own

---

[21] Reuland (2011) argues that an anaphor in NPs always allows the coreference and not only the bound variable interpretation (p. 90). That is, the pronominal nature of a logophor allows both coreference and bound variable interpretation. Thus, the example below is ambiguous (taken from Reuland, fn. 12 p. 355):

5) Only Lucie buys pictures of herself

There are two possible interpretations here:

i) Lucie buys pictures of Lucie and no-one else buys pictures of themselves (bound reading)

ii) Lucie is the only person who buys pictures of Lucie but perhaps buying pictures of oneself is true of everybody (coreferential reading)

[22] Chierchia (1989) argues that the *de se* restriction applies to long-distance anaphors quite generally, so it is not clear whether it can be used to distinguish between logophoric binding and long-distance binding of SE anaphors. Indeed, if we accept Reuland's characterization of SE anaphors as P(x,x) we expect identity between the anaphor and its antecedent; there can be no dissociation between the SE anaphor and its antecedent. Furthermore, Reuland (2006) argues that argumental 3rd person SE anaphors are properly 3rd person rather than being a non-person, and this is why these anaphors require a sentient antecedent.

b.	Pavarotti$_i$	crede	che	i	suoi$_i$		pantaloni
	Pavarotti	believes	that	the	his		pants
	siano	in	fiamme.	Ma	non	si	e' accorto
	are	in	flame.	but	not	realize	
	che	i	pantoloni	sono	i	propri	
	that	the	pants	are	the	own	

According to Chierchia (1989), (65)a is a contradiction because the use of a long-distance reflexive requires a *de se* interpretation; Pavarotti must realize that it is his own pants that are on fire. By contrast, there is no *de se* requirement on the bound use of the pronoun in (65)b; Pavarotti need not realize that he is the individual with fiery trousers. Huang and Liu argue that the *de se* restriction subsumes the various semantic notions of logophoricity. That is, notions such as SOURCE, SELF, and PIVOT are artifacts of the *de se* restriction.[23] However, Reuland questions the *de se* requirement on exempt anaphora because "... *being exempt* means *being in a syntactic environment that blocks the application of reflexive marking* and just that (Reuland, 2011, p. 92, italics in original). Reuland continues:

> As such the present analysis says nothing about the contrast between *de se* and *de re* interpretations ... , although it is to be expected that differences in feature specification or in the way a dependency is established will contribute to determining whether a *de se* interpretation is obligatory. (p. 92)

In later chapters we will see arguments that although *ziji* can be interpreted *de se*, a *de se* reading is not a necessary condition for *ziji*'s interpretation. This supports Reuland's speculation that the way that dependencies are established might be expected to make a contribution to interpretation, but this is a much weaker condition than requiring *de se* interpretation

1.11 Prioritizing Syntax

Reinhart and Reuland propose that a logophoric interpretation arises iff Condition A does not apply: "a SELF anaphor can be logophoric iff it does not reflexive-mark its syntactic predicate (otherwise Condition A rules it out). This is obtained when it is not an argument ... or when it is an argument of a head that does not form a syntactic predicate (since in this case there is no syntactic predicate that it could reflexive-mark" (Reinhart and Reuland, 1993, p. 682). Reuland (2001) argues that the obligation for an anaphor to be bound is a consequence of a general economy principle. Reuland argues that it is more economical to establish a dependency in the syntax than elsewhere and therefore a syntactic process takes precedence over

[23] Clements (1975) argued that the logophoric pronoun of Ewe - *yè* - was obligatorily interpreted *de se*. However, Pearson (2013, pp. 453-457) disputes this and argues that the pronoun need not be interpreted *de se*.

alternative ways of interpreting the anaphor.[24] Therefore, if syntactic binding is possible it will block the logophoric interpretation of the anaphor. If the syntactic process cannot apply the anaphor is exempt and it can only be interpreted logophorically. When the anaphor is interpreted logophorically the factors that are relevant for discourse based dependencies are in evidence. To illustrate how this analysis works, consider the minimal pair below:

66) Max_i boasted that the queen invited him_i/*himself_i for a drink.

67) Max_i boasted that the queen invited Lucie and him_i/himself_i for a drink.

In (66), *himself* receives a θ-role and structural Case from *invite*, making *himself* a syntactic argument of *invite*. This means that *the queen invited himself* is a syntactic predicate formed of *invite*. The SELF anaphor reflexive marks this predicate and Condition A then requires that the predicate *invite* be reflexive. However, there is a feature mismatch between *the queen* and *himself* and this means that the derivation crashes. By contrast, in (67) the internal argument of *invite* is [*Lucie and himself*], and therefore *himself* does *not* reflexively mark the predicate *invite,* because the anaphor is embedded inside the internal argument. Consequently, Condition A does not apply and there is no obligation to interpret the syntactic predicate *invite* reflexively. The non-complementarity between anaphors and pronouns in (67) shows that the obligation to mark reflexivity with a SELF anaphor is restricted to the arguments of predicates.[25] If the SELF anaphor is not in an argument position, the predicate does not have to be interpreted reflexively; the predicate *can* be interpreted reflexively, but does not have to be. Reuland argues that anaphors that do not occur in argument positions are *exempt* anaphors and "[e]xemption occurs in all contexts where *himself* is not an argument of a syntactic predicate" (2011, p. 89).

---

[24] Reuland (2011) argues that there is a general economy hierarchy in binding dependencies:

6) *Economy of Encoding*

Narrow syntax < logical syntax (C-I Interface) < discourse

If a dependency can be established at a particular level of the hierarchy this blocks the same dependency being established at a higher level of the hierarchy. Thus, because SE anaphors are underspecified for ϕ-features, the economy hierarchy predicts that they will enter an agreement relation if they can. If they cannot enter an agreement relation "nothing prevents them from being interpreted on the basis of the feature content they have" (Reuland, 2011, p. 65). For example, in Icelandic the subjunctive blocks chain formation between a SE anaphor and its antecedent and this allows an unbound, logophoric interpretation that is governed by discourse factors.

[25] Pollard and Sag (1992) also propose that "... Principle A appears to hold ... [when] the anaphor is in the same syntactic argument structure as its binder ... the coindexing requirement is indeed obligatory for coarguments ... "(p. 265).

1.12 SE anaphors and logophoricity

We have seen that SELF anaphors reflexively mark predicates and therefore are restricted to a local domain; namely the θ-grid of the relevant predicate. SELF anaphors that do not reflexively mark predicates are interpreted logophorically. However, SE anaphors do not reflexivize predicates and have a different internal structure to SELF anaphors so we might wonder what the logophoric distribution of SE anaphors is.

SE anaphors are not subject to Condition A and do not reflexively mark their predicate. Thus, we would not expect exemption from Condition A to license logophoric interpretation of SE anaphors because Condition A does not license SE anaphors in the first place. This means that we might find that SE anaphors in argument positions are able to be interpreted logophorically. Reinhart and Reuland argue that SELF anaphors are exempt when the syntactic condition of co-argumenthood fail to apply. Thus, with SE anaphors we would expect logophoric interpretation to be possible when the syntactic conditions governing their distribution fail to apply. Thus, for SE anaphors, we would expect logophoric interpretation to apply only when they cannot be associated with I^0. That is, with both SE anaphors and SELF anaphors logophoric interpretation occurs when the anaphor cannot be bound to its antecedent through the relevant syntactic process

Reinhart and Reuland (1993) argue that SE anaphors have a much freer logophoric distribution because, unlike SELF anaphors, they *can* occur in argument positions and still be interpreted logophorically. Reinhart and Reuland argue that:

> [t]he grammar only determines (independently) the conditions under which they can be associated with I, but no grammatical condition (analogous to [Condition] A) prevents them from being free in any specific domain. The only requirement is that as anaphoric (defective) expressions they must find an antecedent, which they can do logophorically. In other words, SE anaphors are subject only to Condition B, but, in languages which allow their logophoric use, there are no further syntactic restrictions on their occurrence as such. (1991, p. 315)

Syntactically bound SE anaphors obtain their ϕ-features from I^0 and thus we predict strong subject orientation for syntactically bound SE anaphors. Reinhart and Reuland suggest that perhaps there is no uniform interpretation of logophoric anaphors cross linguistically:

> Whether a language allows its anaphors to be used logophorically is still subject to variation. For example, the logophoric use of SELF anaphors in Hebrew is much more restricted than in English (if possible at all). Dutch allows only its SELF anaphors to be used logophorically, but not its SE anaphor *zich*, while in Scandinavian it is the SE anaphors which are used this way [logophorically]. We are not able, at present, to explain these variations. (Reinhart and Reuland, 1991, p. 316).

However, like SELF anaphors, SE anaphors are interpreted logophorically when the syntax cannot provide them with an interpretation. Reuland (2011) proposes the following rule:

68)Rule L: Logophoric Interpretation

> NP A can be used logophorically unless there is a B such that an A-CHAIN <B, A> can be formed.

That is, simplex anaphors – SE anaphors - can be interpreted as logophoric pronominals when they do not enter into chain formation by associating with I^0; they are free and can be interpreted as logophoric pronominals. Reuland (2001) argues that "[t]here is no intrinsic necessity for them [SE anaphors] to be syntactically bound, [but] [w]here anaphors must be bound, this is the result of an economy condition" (p. 363) that favors syntactic interpretation over logophoric interpretation. Reuland argues that 1st and 2nd person logophoric pronouns intrinsically reflect the orientation of an utterance, but 3rd person pronouns may reflect the intrinsic orientation of an utterance in the absence of features that are able to fix their reference independently (such as number). He concludes: "[t]hat is why pronouns that are impoverished in features [SE anaphors] are used logophorically just as first- and second-person pronouns. Logophoric use of third-person anaphors thus reflects their event orientation ... the logophoric use of 'indirect reflexives' can be considered a default interpretation" (Reuland, 2001, p. 364).

Reinhart and Reuland's (1991, 1993; also Reuland, 2011) principled division between syntactic SELF/SE anaphors and exempt anaphors offers great explanatory potential for *ziji*. *Ziji* has many distributional properties that have perplexed scholars and in the next chapter I will show how we can use Reinhart and Reuland's theoretical approach with explanatory breadth and cover many of the properties of *ziji*.

Chapter 2 – Literature review specific to *ziji*

2.1 Literature review

A number of analyses have been developed that claim to account for the distribution of the long-distance anaphor *ziji* in Mandarin. I will divide these analyses into formal analyses, logophoric, and non-uniform analyses.

2.1.1 Formal analyses of *ziji*

There are three formal approaches to long-distance binding of *ziji* that have been developed: parameterization of binding domains (Manzini and Wexler, 1987), reindexing (Tang, 1989), and movement approaches (for example Cole, et al., 1990).

2.1.1.1 Manzini and Wexler

Manzini and Wexler (1987) propose that the distribution of *ziji* can be explained by parameterizing the governing category (GC), as proposed in Chomsky (1980; 1981; 1982). Manzini and Wexler propose that the definition of governing category can be amended. That is, they parameterize the governing category through the use of an opacity factor. Informally, Manzini and Wexler propose that a governing category has five possible values. That is, γ is the minimal category that contains α, a governor of α, and a subject (first value), or an Infl (second value), or a Tense (third value), or a "referential" Tense (fourth value), or a "root tense" (fifth value).[1]

1)

γ is a governing category for α iff

γ is the minimal category containing α, a governor of α, and

a. can have a subject or, for α anaphoric, has a subject β, $\beta \neq \alpha$; or
b. has an Infl; or
c. has a Tense; or
d. has a "referential" Tense; or
e. has a "root" Tense;

if, for α anaphoric, the subject β', $\beta' \neq \alpha$, of γ, and of every category dominating α and not γ, is accessible to α. (Manzini and Wexler, 1987, pp. 422-423)

[1] A "referential" Tense is a Tense "... whose properties are inherently defined, as opposed to an "anaphoric" Tense, whose properties we [Manzini and Wexler] take to depend upon some superordinate Tense" (Manzini and Wexler, 1987, p. 417)

This means that the governing category is defined by some selected opacity factor and that the subjects and *intervening* subjects of γ must be accessible to α. We can summarize Manzini and Wexler's proposal in the following manner:

> **Condition A**
> An anaphor must be bound in its governing category.
>
> γ is a governing category for α if and only if γ is the minimal category containing α, a governor of α, and F (an opacity factor)

Manzini and Wexler also propose that particular anaphors may idiosyncratically differ in their opacity factor F *within* individual languages. Consequently, they propose the Lexical Parameterization Hypothesis:

2)

> *Lexical Parameterization Hypothesis*
>
> Values of a parameter are associated not with particular grammars but with particular lexical items.

Manzini and Wexler hypothesize that it is the tense of the matrix verb (the root tense) that determines the GC for *ziji*. Thus, the GC for *ziji* is the minimal category that contains *ziji* 'self', a governor of *ziji* 'self', and a root tense. Because the root tense is the opacity factor *ziji* 'self' can be bound by both the local and matrix subject in (3):

3) Zhangsan$_i$ renwei [Lisi$_j$ hen ziji$_{i/j}$]
Zhangsan think Lisi hate self
'Zhangsan thinks that Lisi hates self'

Although Manzini and Wexler's GC correctly predicts the binding possibilities in (3) above it does not explain the binding restriction in (4) below:

4) Zhangsan$_i$ renwei [wo$_j$ hen ziji$*_{i/j}$]
Zhangsan think I hate self
'Zhangsan thinks that I hate self'

In (4) the GC should be the root clause because the opacity factor is the root tense. However, in (4) we can see that *ziji* 'self' can only be bound in its local clause, contrary to Manzini and Wexler's proposed GC.

Although Manzini and Wexler's proposal is usually invoked out of historical significance it may yet capture something crucial about the nature of reflexive dependencies. Their characterization of the opacity factors governing the distribution of long-distance anaphors is a good observational approximation.

However, it does not explain what principles determine the set of possible values of the opacity factor F. Additionally, it treats all long-distance binding dependencies as uniform, when, as we shall see, there is a need to distinguish between various kinds of long-distance binding; namely, logophoric dependencies and structural dependencies. If the binding relation is mediated by an operation of such as AGREE, we might expect that the domains of agreement also define the GC of reflexives. Another limitation of Manzini and Wexler's approach is that it fails to account for why the governing category is parameterized for reflexives only. That is, why doesn't it also apply to Principle B and pronouns? The fact that the expansion is restricted to reflexives and this suggests that there is something specific to reflexives that allows them to be bound be long-distance antecedents.

2.1.1.2 Cyclical reindexing of *ziji*

Tang (1989) proposed that long-distance anaphora should be explained through a cyclical reindexing operation. Tang argued that long-distance *ziji* is not simply part of an expanded governing category but that the governing category expands cyclically through a process of reindexing.

Ziji is analysed as *pro-ziji*. The *pro* element in *pro-ziji* transfers its ϕ-features to *ziji*. Thus, the ϕ-features of *ziji* are fixed and cannot be altered in the course of the derivation. *Ziji* with its feature bundle is assigned the index of its local antecedent. In order for the indexing to be well-formed *ziji* and its antecedent must agree in ϕ-features. This indexing process then applies iteratively and cyclically. That is, once the indexing process applies locally it can be applied to the superordinate clause (but the ϕ-features of *ziji* never change; only the indexing changes). In this way, *ziji* can be assigned the referential index of an antecedent outside of the local clause. Because the ϕ-features of *ziji* do not change, *ziji* can never be assigned the referential index of an antecedent that differs to the local antecedent in ϕ-features. The consequence is that *ziji* must agree in ϕ-features with each potential subject in order to be bound outside of its local clause. If the features of the subjects do not agree a blocking effect is derived.[2]

Tang's analysis has the great advantage over Manzini and Wexler's in that it applies specifically to long-distance reflexives. Because *ziji* lacks ϕ-features it is subject to re-indexing. By contrast, *Ta-ziji* has ϕ-features and is not subject to re-indexing because it is assigned an index on the first (local) cycle.

The cyclic re-indexing analysis fails in a number of interesting ways. Firstly, from the perspective of contemporary syntactic theory it is an implausible operation in itself and Tang does not suggest an account of the mechanisms by which cyclic re-indexing might be derived. Secondly, it does not appear to derive the canonical

[2] Tang's proposal assumes that the blocking effect occurs whenever the subjects differ in person features. We will see that there is variation in the blocking effect.

blocking effect. That is, the features on the matrix subject do not have to agree with those of the local subject:

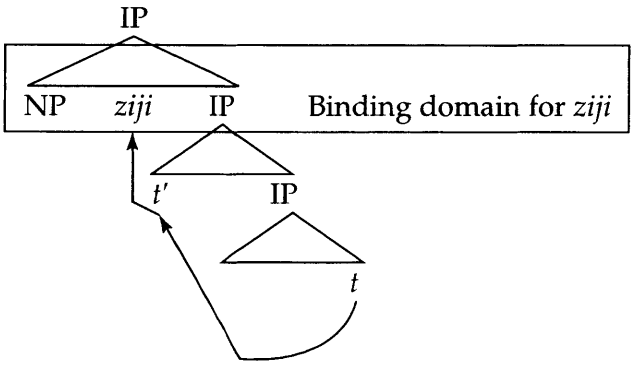
5) Wo_i renwei [$Lisi_j$ hen $ziji_{i/j}$]
I think Lisi hate self
'I thinks that Lisi hates self'

In (5) above, *pro-ziji* will be assigned 3rd person ϕ-features in the local clause and these features cannot be changed. If the ϕ-features on *pro-ziji* cannot be changed, we cannot explain why the matrix subject can bind *ziji* (assuming that the anaphor and its subject must agree in ϕ-features).

2.1.1.3 Movement analyses of *ziji*

One way of preserving the locality requirement of Principle A is through movement. A number of analyses have proposed covert movement of *ziji* such that it can move into the governing category of antecedents beyond its local clause. The movement analysis for long-distance reflexives was first suggested by Pica (1987), and was later developed by Battistella (1989), Huang and Tang (1991), Cole, et al., (1990) for Mandarin. The central hypothesis is that the long-distance reflexive moves successive-cyclically in LF:[3]

6)

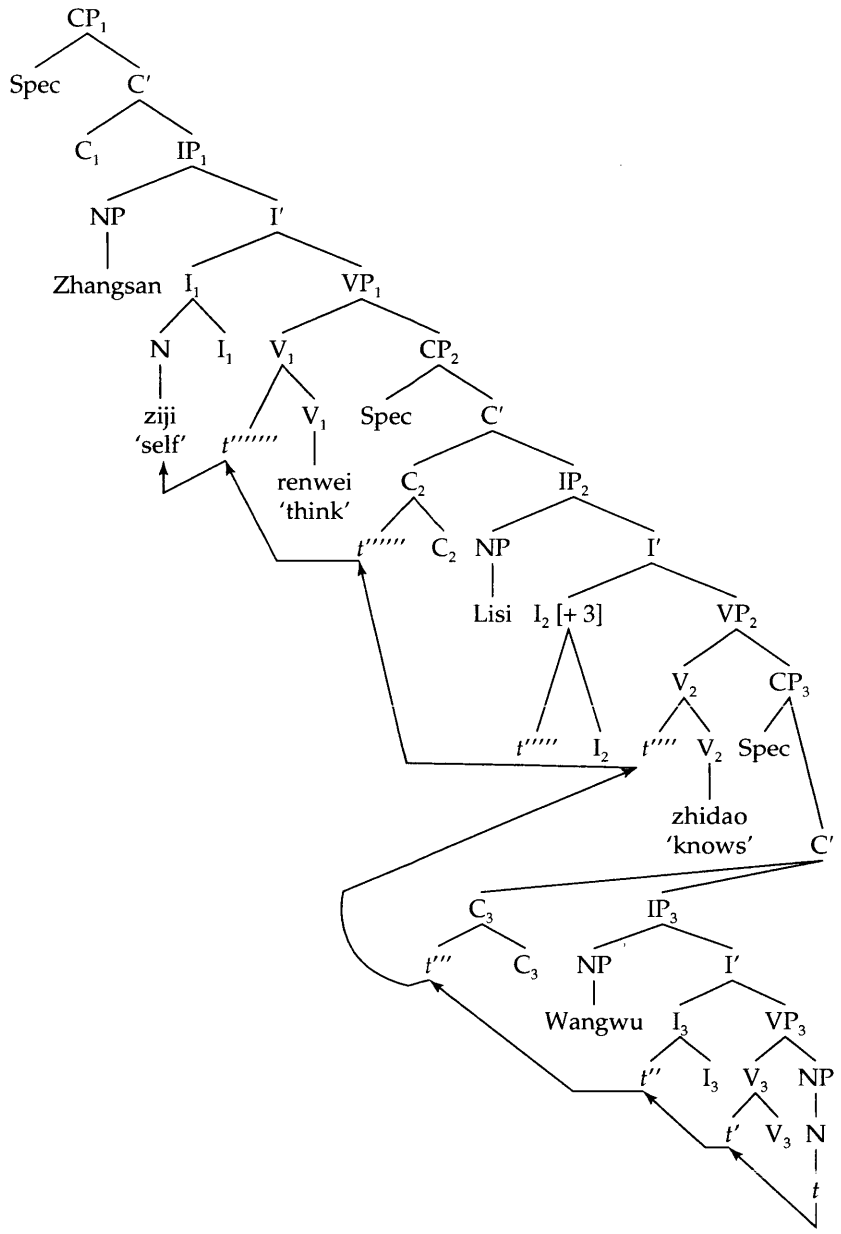


The movement proposal solves two of the problems that are apparent with the cyclic re-indexing proposal: the operation of re-indexing and the long-distance relationship between the anaphor and its antecedent. We know that covert movement takes place in the grammar, and for movement theories it is this covert movement operation that allows the reflexive to move into a local relationship with higher antecedents. Thus, the long-distance relationships that obtain between *ziji* and an antecedent is actually local at LF. The co-indexing occurs because once *ziji* moves to a higher governing category the conditions of Principle A apply and it must

[3] This diagram is taken from Cole, et al. (2006).

be co-indexed with the subject of the local governing category. Consistent with our understanding of movement operations two kinds of movement analyses have been proposed: head movement and XP movement. In head movement approaches the reflexive typically moves to INFL or AGR. Such analyses have been proposed by Pica (1987), Battistella (1989), and Cole, et al. (1990), amongst others. In the head movement analysis, *ziji* moves by head movement from its base position to higher clauses:[4]

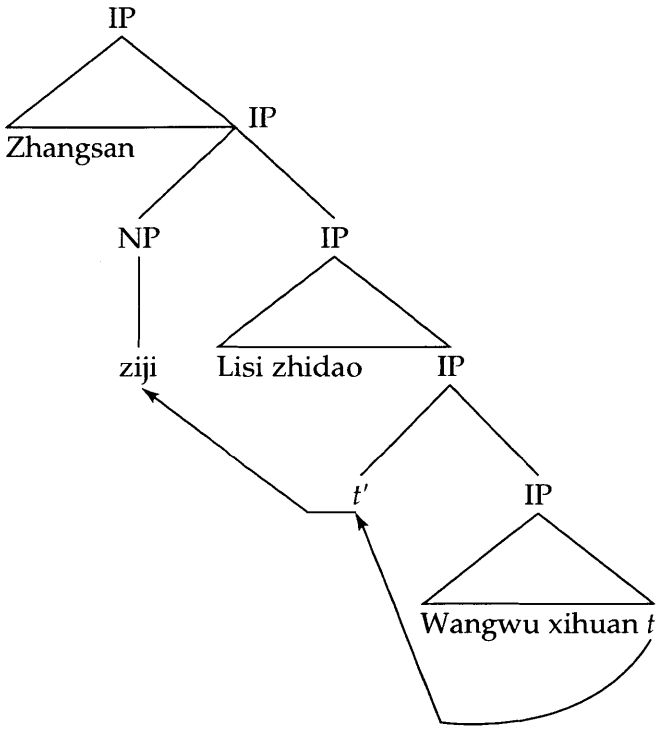
7)



[4] This diagram is taken from Cole, et al. (2006).

The alternative movement analysis involves successive adjunction of the reflexive XP to IP:[5]

8)



Thus, the head movement approach and the XP movement approach differ in two ways: the landing site of the reflexive and the type of movement that raises the anaphor into the superordinate clauses. In the head movement approach, the reflexive checks its features against I^0 and in the XP movement approach the reflexive moves into a local relationship with the subject. However, both movement approaches leave unexplained why the matrix subject cannot bind the reflexive in (9) below:

9) Zhangsan$_i$ gaosu wo$_j$ [Lisi$_k$ hen ziji $^{*i/*j/k}$]
Zhangsan told me Lisi hate self
'Zhangsan told me that Lisi hate self'

In (9) we see that the object prohibits the reflexive from being bound by the matrix subject. Without further assumptions about the nature of *ziji*'s movement we cannot explain why the object blocks a matrix antecedent in (9). I will discuss some further problems with existing movement analyses in Chapter 5.

[5] This diagram is taken from Cole, et al. (2006).

2.1.2 Logophoric analyses of *ziji*

In Mandarin we find syntactically unbound uses of *ziji* and this has lead some to propose that *ziji* is purely a pragmatically or discourse controlled anaphor. Consider the examples below:

10)Ziji shi xiangxiaren
Self is countryman
'I myself am a farmer'

11)Zhe wenzhang shi ziji he Ann he-xie-de
This article is self and Ann co-write-DE
'This paper is written by Ann and myself'

(Yu, 1992, p. 291)

12)

a. Zhe-ge xiangfa, chu-le ziji$_i$, zhiyou san-ge
This-CL idea besides self only three-CL
ren zanchang
people agree
'As for this idea, besides myself, only three people agree'

b. Zhe-ge xiangfa, chu-le wo$_i$, zhiyou san-ge
This-CL idea besides I only three-CL
ren zanchang
people agree
'As for this idea, besides me, only three people agree'

(Huang and Liu, 2001, p. 157, citing Yu, 1992)

In (10), (11) and (12)a there is no sentence internal antecedent available for *ziji*, and *ziji* is interpreted as referring to the speaker, because the speaker is the SOURCE in Sells' (1987) terms. We can see that the 1st person pronoun *wo* in (12)b has the same meaning as the anaphor in (12)a. (10), (11) and (12)a show that *ziji* can be used as an syntactically unbound reflexive. Accordingly, some researchers have argued for a purely logophoric analysis of *ziji.* Chen (1992), following Yoon (1989) argues that it is the notion of logophoricity that explains the distribution of *ziji*; that is *ziji* is purely a logophoric reflexive. Chen argues that "... the anaphoric interpretation of *ziji* is in the last analysis conditioned by discourse-pragmatic factors that defy characterization in purely structural terms, but lend themselves readily to a functional account" (1992). Chen's logophoric analysis is as follows.

Firstly, the antecedent of *ziji* must be the PIVOT and stand in high topicality.[6] Secondly, perspectival conflict prohibits long-distance binding across a 1st or 2nd person pronoun. 1st and 2nd person pronouns have an intrinsic perspectival orientation (the speaker and/or addressee) that is external to the sentence. An external perspective center prohibits a sentence internal perspective center from being a perspective center.[7]

13) Zhangsan$_i$ zhidao wo$_j$ [dui ziji$_{*i/j}$ meiyou xinxin]
Zhangsan know I to self have:not confidence
'Zhangsan knows I had no confidence in self'

(Chen, 1992)

In (13) *ziji* cannot be bound across the 1st person pronoun. Chen argues that "the blocking effect arises as a result of conflicting pivots when binding *ziji* and its antecedents operates across an intermediate antecedent of different person" (Chen, 1992). Chen argues that the external speaker cannot adopt the perspective of the matrix subject because *wo* is the external speaker and this makes *wo* the pivot of the sentence. For *Zhangsan* to be the antecedent, the speaker would have to adopt two perspective centers: *Zhangsan* and *wo*. This is impossible and leads to perspectival conflict. Perspectival conflict means that long-distance binding is not possible. Thus, there are two conditions for the binding of *ziji*:

i) The antecedent for a long-distance reflexive must be a perspective center.

ii) The presence of a 1st or 2nd person pronoun anywhere in the sentence constitutes a perspectival center and this blocks any other nominal in the sentence from being a perspectival center.

However, consider examples (14) and (15) below:

14) Lisi$_i$ song gei wo$_j$ yi-zhang ziji$_{i/*j}$ de xiangpian
Lisi give to me one-cl self DE picture
'Lisi gave me self's picture'

In (14) we can see that this environment is the local clause and that *wo* does not prevent the subject from being the antecedent. This suggests that the constraint on perspective conflict only occurs when *ziji* is bound out of its local clause; it is a constraint on long-distance interpretation. However, (15) shows that perspective conflict does not prohibit the binding of *ziji* beyond its local clause:[8]

---

[6] The pivot is the center of consciousness at which the proposition is evaluated. The topicality is determined by givenness-newness, perspective, and salience.

[7] We will see that Huang and Liu (2001) provide a similar analysis of this blocking effect. I will argue that Huang and Liu's analysis is inadequate and fails to explain some important data.

[8] Non-subject positions also generate perspective conflict.

15) Zhangsan$_i$ gaosu wo$_j$ [ziji$_{i/*j}$ mei bei dahui xuanshang]
Zhangsan tell me self haven't by conference select
'Zhangsan told me that self was not selected by the conference'

In (15) we can see that the intervening 1st person pronoun does not block binding by the matrix subject even though this internal argument presumably creates a perspective conflict. The 1st person pronoun does not induce a blocking effect in (15) even though we expect it to on Chen's analysis.

Chapter 3 - The distribution of *ziji*

3.1 Mandarin

Mandarin Chinese contains a simplex self morpheme – *ziji*. This self morpheme can be used on its own as a monomorphemic simplex reflexive. It can also be combined with pronominal forms to create bimorphemic complex reflexives: *ta-ziji* (him-self/her-self), *ni-ziji* (your-self), *tamen-ziji* (them-selves), *etc.* In this dissertation, I will focus on the monomorphemic form *ziji*. *Ziji* can be bound by 1st, 2nd, or 3rd person antecedent and be bound by both singular and plural antecedents.
Ziji can occur in many argument positions including direct object, indirect object, and oblique object, and NP subject:

1)

Direct Object

a. Lisi$_i$ zai zebei ziji$_i$
Lisi is blame self
'Lisi is blaming himself'

Indirect Object

b. Lisi$_i$ gei ziji$_i$ mai le yiyang liwu
Lisi for self buy ASP one-CL present
'Lisi bought a present for himself'

Oblique Object

c. Lisi$_i$ dui ziji$_i$ mei xinxin
Lisi to self no confidence
'Lisi has no confidence in himself'

Possessor of NP

d. Lisi$_i$ ai ziji$_i$ de taitai
Lisi love self de wife
'Lisi loves self's wife'

(Tang, 1989, p. 94)

Ziji can also be used as an intensifier:

2) Lisi$_i$ ziji$_i$ hui buyifu
Lisi INT will mend clothes
'Lisi will mend clothes by himself'

(Tang, 1989, p. 95)

Mandarin allows null subjects and the fact that *ziji* can be used as an intensifier and as an anaphor means that it is ambiguous between an anaphor and an intensifier when it is in an embedded subject position:[1]

3) Lisi$_i$ juede [ziji$_i$ hui ying]
Lisi think self will win
'Lisi thinks that he will win'
'Lisi thinks that he himself will win'

(Tang, 1989, p. 95)

When *ziji* is interpreted as an anaphor it simply occurs in the subject position and is bound by the matrix subject, but when *ziji* is an intensifier it is the null subject that is in the subject position and the anaphor is a preverbal adjunct:[2]

4)

a. Lisi$_i$ juede [ziji$_i$ hui ying]
Lisi think self will win
'Lisi thinks that he will win'

b. Lisi$_i$ juede [*e* ziji$_i$ hui ying]
Lisi think self will win
'Lisi thinks that he himself will win'

(Tang, 1989, p. 95)

Ziji in its anaphoric function can be bound by an animate antecedent:

5)

a. Wo$_i$ taoyan ziji$_i$
I dislike self
'I dislike myself'

b. Xiaomao$_i$ zai tian ziji de lian
Little cat is lick self DE face
'The kitten is licking self's face'

(Tang, 1989, p. 95)

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[1] This ambiguity only arises in *embedded* subject positions; it is not true in matrix subject positions. In the matrix position Tang argues that "*ziji* only has an intensifying use" (1989, p. 96):

1) Ziji mai cai
Self buy food
You/I buy food

[2] Tang notes that the intensifying use of *ziji* is more difficult to get in object position (Tang, p. 98)

Ziji cannot be bound by inanimate antecedents:[3]

6)

a. *Men$_i$ guanshang le ziji$_i$
Door close ASP self
'The door closed itself'

b. *Huo$_i$ ximie le ziji$_i$
Fire extinguish ASP self
'The fire extinguished itself'

(Tang, 1989, p. 95)

However, the intensifying use of *ziji* can be used as a preverbal adjunct to modify concrete or abstract inanimate nouns:

7)

a. Men ziji guanshang le
Door INT close ASP
'The door closed of itself'

b. Huo ziji ximie le
Fire INT extinguish ASP
'The fire went out of itself'

(Tang, 1989, p. 96)

In simple embedded structures, the complex form of the reflexive must be bound within the embedded clause:[4]

8) Zhangsan$_i$ renwei Lisi$_j$ hen taziji$_{*i/j}$
Zhangsan think Lisi hate PRO-self
'Zhangsan thinks Lisi hates *taziji*'

The simplex form of the self morpheme – *ziji* – can be bound by antecedents that are outside the anaphor's local domain. For example, in (9)a, *ziji* can be interpreted as being bound the matrix subject and the local subject:

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[3] Tang (1989) proposes that *ziji* is inherently [+animate] and this is why it must take an animate antecedent. This is consistent with Reuland's conception of SE anaphors as being pronouns that are deficient in one or more features.

[4] In the following glosses, I will not attempt to express the Mandarin interpretations in English glosses because such English glosses can be misleading. The Mandarin binding relations will be notated with indices on the Mandarin text and I will use the Mandarin morphemes in the gloss translation

9)

a. Lisi_i zhidao [Wangwu_j xihuan $\text{ziji}_{i/j}$]
Lisi know Wangwu like self
'Lisi knows Wangwu likes self'

b. Wangwu_i xihuan ziji_i
Wangwu like self
'Wangwu likes self'

According to Principle A and the notion of governing category, (9)a should not allow *ziji* to be bound by *Lisi* because the minimal domain containing A, a governor of A, and an accessible subject is the lowest clause. Thus, since all the relevant criteria are fulfilled, *ziji* should not be allowed to take an antecedent from outside this minimal domain - in direct contrast to the facts in (9)a. This means that *ziji* patterns as a long-distance anaphor. However, there is a significant aspect of *ziji*'s distribution that must be mentioned, namely, that *ziji* can be bound in the local clause in (9)b and (9)a, and this is an unusual distribution for a long-distance anaphor.

3.1.1 Anaphor or pronoun?

The fact that *ziji* can be bound by an antecedent beyond its local clause immediately raises the possibility that in its long-distance uses it is simply a pronoun. That is, it might be objected that in (9)a *ziji* is not a bound anaphor but rather a bound pronoun. However, although *ziji* can be bound outside of its local clause like a pronominal, its distribution differs from the distribution of pronouns in three crucial environments: cross-sentential antecedents, split antecedents, and VP ellipsis.[5] Bound anaphors typically manifest similar properties: they do not allow cross/extra-sentential antecedents; they do not allow split antecedents; and they require/prefer sloppy readings in VP ellipsis. On the other hand, pronouns can enter into both binding and coreference relations and therefore with pronouns split antecedents are allowed; cross-sentential antecedents are possible; and both strict and sloppy readings are readily available in VP ellipsis.[6]

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[5] Of course, we would expect that the c-command requirements would differ between pronouns and anaphors but I will delay this matter until section 2.2.1 because there is an important structural complication in regards to c-command in Mandarin anaphora.

[6] There is a fourth characteristic of anaphors as opposed to pronouns: c-command. Anaphors typically require c-commanding antecedents but pronouns do not. For the moment, I am ignoring this property because there is a particular structural configuration that allows non-c-commanding antecedents to bind *ziji*. We will see that these non-c-commanding antecedents are only possible under strict syntactic conditions and can be reconciled with the c-command requirement for anaphors. To embark on this discussion at this point would be premature.

3.1.1.1 Cross/extra-sentential antecedents

Principle B allows pronouns to be coindexed with DPs outside of the local clause, and Mandarin *ta* behaves as a standard pronoun in this regard:

10) Zhangsan$_i$ shuo Lisi$_j$ kanjian ta$_{i/*j/k}$ le
Zhangsan say Lisi see him SFP
Zhangsan said that Lisi saw him'

In (10) we see that the pronoun *ta* cannot be bound in the local clause but can be bound by the matrix subject or salient 3rd person. Thus, we might wonder if a non-locally bound *ziji* is simply a pronoun. However, consider the examples in (11) below:

11)

a. Zhangsan$_i$, Lisi$_j$ shuo Wangwu$_k$ kanbuqi ziji$_{*i/j/k}$
Zhangsan$_i$, Lisi say Wangwu look down upon self
'Zhangsan$_i$, Lisi says that Wangwu looks down upon *ziji*

b. Zhangsan$_i$ hen nan guo. Lisi$_j$ shuo Wangwu$_k$ kanbuqi ziji$_{*i/j/k}$
Zhangsan was sad. Lisi say Wangwu look-down self
'Zhangsan was sad. Lisi said that Wangwu looks down upon *ziji*'

In (11)a *Zhangsan* is a vocative and bears no theta-role, but its sentence initial position should prime the listener to the fact that somehow *Zhangsan* is a salient participant in the discourse context. As such, we would expect that a pronominal form could be used to refer to *Zhangsan.* If we assume that *ziji* is a pronominal in (11)a we would expect *Zhangsan* to be a possible antecedent, but *Zhangsan* is clearly not a possible antecedent for *ziji.* Thus, (11)a shows that *ziji* cannot take antecedents beyond the structural scope of the sentence and therefore cannot be a pronominal. Furthermore, in accordance with Principle B, a pronominal could not be co-referential with the subject in the lowest clause, but in (11)a *ziji* can be bound by the subject in its minimal governing category, therefore giving us more reason to reject it as a pronominal form. Similarly, (11)b shows that *ziji* can only take sentence internal antecedents in this construction.

3.1.1.2 Split antecedents

The binding relation occurs between an anaphor and another argument. This means that it is not possible for an anaphor to be bound by two grammatical arguments, thus prohibiting split antecedents. However, pronouns readily allow split antecedents:

12) Every girl$_i$ asked Bill$_j$ if they$_{i+j}$ could go out on a date

Everaert (1991) illustrates this contrast between pronouns and anaphors in Dutch. In the examples below we can see that it is possible for pronouns to take split antecedents:

13)

a. Jan$_i$ zag Karel$_j$ mij de slaven voor hem$_{i/j}$ bij elkaar
Jan saw Karel me the slaves for him together
laten drijven
make drive
'Jan saw that Karel made me drive together the slaves'

b. Jan$_i$ zag Karel$_j$ mij de slaven voor hen$_{i+j}$ bij elkaar
Jan saw Karel me the slaves for them together

laten drijven
make drive
'Jan saw that Karel made me drive together the slaves'

(Everaert, 1991, pp. 85-86)

However, the SE anaphor *zich* cannot be bound by split antecedents:

14)

a. Jan$_i$ zag Piet$_j$ de spullen naast zich$_{i/j}$ neerleggen
Jan saw Piet the gear next to SE put
'Jan saw Piet put the gear next to self'

b. *Jan$_i$ zag Piet$_j$ de spullen naast zich$_{i+j}$ neerleggen
Jan saw Piet the gear next to SE put
'Jan saw Piet put the gear next to self'

(Everaert, 1991, pp. 85-86)

The ungrammaticality of the split reading in (14)b shows that the SE anaphor *zich* cannot take split antecedents. Similarly, *ziji* does not allow split antecedents. In the example below, *ziji* can refer to *Zhangsan* or *Wangwu,* but not to both of them:

15)

a. *Zhangsan renwei Wangwu xihuan ziji$_{i+j}$
Zhangsan thinks Wangwu likes self
'Zhangsan thinks Wangwu likes self'

b. Zhangsan$_i$ he Lisi$_j$ renwei Wangwu$_k$ xihuan ziji $_{i/j/i+j/k}$
Zhangsan and Lisi think Wangwu likes self
'Zhangsan and Lisi think Wangwu likes self'

In (15)b we can see that the *ziji* can refer to the subject containing both conjuncts. As in the Dutch examples, the inability to be bound by split antecedents is consistent with *ziji* being an anaphor rather than a simple pronoun.[7]

3.1.1.3 VP Ellipsis

Anaphors require or strongly prefer sloppy readings under VP ellipsis because they are bound variables, whereas pronouns will generate both strict and sloppy readings under VP ellipsis because they can be interpreted as a constant or interpreted as a bound variable. In Mandarin, VP ellipsis only allows the sloppy reading, which confirms the anaphoric nature of *ziji*.[8]

16)Zhangsan$_i$ xihuan ziji$_i$; Lisi$_j$ ye yiyang
Zhangsan like self; Lisi also the same
'Zhangsan like self and Lisi like self' (cannot mean that *Lisi likes Zhangsan*)

(Cole, et al., 2001, p. 27)

Importantly, only the sloppy reading is also available for long-distance antecedents:

17)Zhangsan$_i$ shuo Lisi kuidai ziji$_i$; Wangwu$_i$ ye yiyang
Zhangsan say Lisi mistreat self Wangwu also the same
'Zhangsan says that Lisi mistreats Zhangsan; Wangwu also <says that Lisi mistreats Wangwu>'

(Cole, et al., 2001, p. 28)

Thus, *ziji* is understood as a bound variable, rather than as a pronoun that manifests both strict and sloppy interpretations in VP ellipsis. Cole, et al., (2001) note that in the *ye yiyang* construction the pronoun *ta* manifests the expected strict interpretation:

18)Zhangsan$_i$ shuo Lisi kuidai ta$_i$; Wangwu$_i$ ye yiyang
Zhangsan say Lisi mistreat him Wangwu also the same
'Zhangsan says that Lisi mistreats Zhangsan; Wangwu also <says that Lisi mistreats Zhangsan>'

(Cole, et al., 2001, p. 28)

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[7] Reuland (2011, p. 239) argues that this property is a consequence of the fact that a SE anaphor forms a chain with its antecedent. Reuland argues that chains are always uniquely headed and therefore do not allow split antecedents. He concludes that "the prohibition against split antecedents is a good diagnostic for particular types of anaphoric dependencies. Thus we can say that a particular element is *used as an anaphor* in a strict sense iff it is linked to its antecedent by a syntactic operation" (p. 239)

[8] Cole, et al. (2001) note that "... it is somewhat difficult [in Mandarin] to find a construction with the properties like those of English VP ellipsis. The use of *ye yiyang* 'also the same' seems to provide a similar test [to VP ellipsis]" (Cole, et al., 2001, p. 27).

3.1.1.4 *Ziji* is not *zibun*

In Japanese, *zibun* is commonly considered to be a logophor that takes the source of the speech act as its antecedent. In (19) *Takasi* is the most prominent DP as the topic but is also the source and therefore must be the antecedent.

19)Takasi$_i$ wa Taroo$_j$ ni [Yosiko ga *zibun*$_{i/*j}$ o nikundeiru koto] o hanasita
Takasi TOP Taroo DAT Yosiko NOM self ACC be-hating COMP ACC told
'Takasi told Taroo that Yosiko hated him (Takasi)'

However, in (20) *Taroo* is the topic DP but *Takasi* remains the antecedent because he is the source.

20)Taroo$_i$ wa Takasi$_j$ kara [Yosiko ga *zibun* $*_{i/j}$ o nikundeiru koto] kiita
Taroo TOP Takasi DAT Yosiko NOM self ACC be-hating COMP told
'Taroo heard from Takasi that Yosiko hated him (Takasi)'

(Sells, 1987, cited in Büring, 2005, p. 61)

Similarly, in (21) *Lisi* is the source and functions as a possible antecedent.

21)Lisi$_i$ gaosu Zhangsan$_j$ Wangwu$_k$ bu xihuan ziji$_{i/*j/k}$
Lisi told Zhangsan Wangwu not like self
'Lisi told Zhangsan that Wangwu does not like self'

However, unlike Japanese *zibun*, *ziji* does not appear to covary with the source of the utterance. When we move the source out of subject position it is not a possible antecedent for *ziji*.

22)Zhangsan$_i$ cong Lisi$_j$ chu tingshuo Wangwu$_k$ bu xihuan ziji$_{i/*j/k}$
Zhangsan from Lisi place hear Wangwu not like self
'Zhangsan heard from Lisi that Wangwu doesn't like self'

(Pollard and Xue, 2001, p. 330)

Büring (2005) argues that in the environment in (19) and (20), *zibun* is a particular kind of pronoun that orients itself towards the source of a speech act, and therefore the source of the embedded proposition - *Takasi* - is the antecedent of *zibun* in both (19) and (20).[9]

Although (21) and (22) show that *ziji* does not covary with the source of speech, *ziji* still might be a logophor, but one that is licensed by conditions different to those that license *zibun*. We know that anaphors can sometimes be logophors that orient

[9] Reuland (2001) argues that these logophoric pronouns are oriented towards the event denoted by the utterance. Thus, in the *zibun* example above it is oriented towards the agent of the speech act.

themselves towards prominent or particular semantic roles in the discourse or sentence (see Zribi-Hertz, 1989, for example), and we will see that *ziji* can be given a logophoric interpretation. However, in the constructions like those discussed by Büring in (19) and (20) above, *ziji* behaves like a subject-oriented anaphor and does not orient itself towards the source of the speech act. The fact that *ziji* can have long-distance antecedents is a curious phenomenon in Binding theory and quite different from languages, such as English, where anaphors must be interpreted according to strict locality constraints. The three diagnostics illustrated above (no inter-sentential antecedents, sloppy identity in VP ellipsis, no split antecedents) are evidence that *ziji* is an anaphor rather than a pronoun with superficial reflexive morphology.[10] However, given Reinhart and Reuland's (1991, 1993) distinction between SE anaphors and SELF anaphors, we will need to determine where *ziji* fits within this more nuanced typology.

3.2 *Ziji* as SE anaphor

I will argue that *ziji* manifests all of the properties of SE anaphors and that it therefore qualifies as a canonical SE anaphor. However, when the syntax does not establish the necessary conditions that enable SE anaphors to enter into syntactic dependencies, *ziji* is interpreted as a SELF anaphor locally or a logophor. This means that I will provide a non-uniform analysis of *ziji.* I will argue that when syntactic conditions are satisfied, *ziji* is a canonical SE anaphor of the sort first studied by Pica (1987). However, when the structural conditions for SE anaphors are not satisfied, *ziji* is interpreted using different mechanisms.[11] This is consistent with Reuland's (2001) argument that there is no absolute necessity for SE anaphors to be bound, just as there is no absolute necessity for pronominals to be bound. Rather, "[w]here anaphors must be bound, this is the result of an economy condition favoring operations applying within a module [in this case narrow syntax] over cross-modular operations" (Reuland, 2001, pp. 363-364). Thus, the interpretation of SE anaphors that do not enter into syntactic relations are default interpretations that will reflect event orientation (for 3rd person SE anaphors) or the utterance orientation (for SE anaphors impoverished in features). In the following sections I will take each of the known properties of SE anaphors, and see how they apply to *ziji.*

3.2.1 Monomorphemicity

Ziji is consistent with Pica's monomorphemic property of long-distance reflexives. Consider (0 below:

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[10] We will see that long-distance bound *ziji* differs from long-distance bound pronominals in interpretation. Namely, long-distance *ziji* has a *de se* requirement on interpretation that is absent from pronominals.

[11] Huang and Liu (2001) also argue for a non-uniform analysis of *ziji.* However, I will argue for a substantially different non-uniform theory.

23)Zhangsan$_i$ zhidao Wangwu$_i$ xihuan ziji$_{i/k}$
Zhangsan know Wangwu like self
'Zhangsan know that Wangwu likes self'

The monomorphemic *ziji* can be bound by the subject in both the local and matrix clauses. However, in Mandarin there is also a bi-morphemic phrasal reflexive *ta-ziji* (him/her-self) composed of a pronoun (either 1st /2nd/3rd person) and the reflexive *self* form that cannot take an antecedent outside of its root clause. In (12) below we can see that the phrasal form *ta-ziji* can only be bound by the subject in its local clause:

24)Zhangsan$_i$ zhidao Wangwu$_i$ xihuan taziji$_{*i/k}$
Zhangsan know Wangwu like PRO-self
'Zhangsan know that Wangwu likes self'

This suggests that phrasal constituents (*ta-ziji* being an XP) are more restricted in the antecedents that can bind them than heads (*ziji* being a head). This is a familiar pattern cross-linguistically. For example, in Italian the monomorphemic reflexive *se* can be bound by a long-distance antecedent but the strictly local reflexive *se stesso* consists of more than one morpheme:

25)

a. Credo [che Mario$_i$ sostenga [che tu abbia
I-believe that Mario claims that you have

parlato di se$_i$ e della sua famiglia in TV]]
spoken of self and of-the his family onTV
'I believe that Mario claims that you spoke about him and his family on TV'

b. *Gianni$_i$ pensava che quella casa appartenesse ancora
Gianni thought that that house belonged still

a se stesso$_i$
to self self
'Gianni thought that that house still belonged to him'

(Giorgi, 1984)

We see in (25)a that the monomorphemic reflexive *se* can be bound by a long-distance antecedent, but in (25)b the bimorphemic reflexive *se stesso* cannot be bound by a long-distance antecedent. However, there is one significant aspect of the Mandarin monomorphemic anaphor *ziji* that we see in (16) above: it can be bound locally. Recall that under Reinhart and Reuland's analysis SE anaphors are ϕ-deficient pronouns and do not reflexivize predicates. Thus, we expect Principle B to

apply, but it plainly does not apply in the example we see in (16). Compare this with the Dutch SE anaphor:

26)William bewondert zichzelf/*zich
William admires SESELF/SE

(Reuland, 2011, p. 100)

In (26) above we see that the monomorphemic anaphor *zich* cannot be bound by the local subject. This is the distribution we would expect if monomorphemic reflexives are in fact pronouns that lack ϕ-features. That is, if they are structurally pronouns, they should be subject to principle B, but in Mandarin they *do not* appear to be subject to principle B and this might cast doubt on any analysis that argues that they should be categorized as SE anaphors of the sort that we see in European languages. In Chapter 4 we will see that locally bound *ziji* has quite different properties to long-distance bound *ziji,* and that this is evidence that the two are homophonous lexical items that differ in their syntactic properties. I will delay discussion of this matter because we will need some other facts at our disposal before we can establish why *ziji* can be locally bound. For the moment, I note that locally bound monomorphemic long-distance reflexives are possible in other languages as well – Faroese, for example:

27)

a. Jógvan$_i$ sigur at Maria$_j$ elskar seg$_{i/*j}$
Jógvan says that Maria loves self
'John says that Maria loves self'

(Strahan, 2009)

b. Jógvan$_i$ bardi seg$_i$
Jógvan hit self
'Jógvan hit self'

(Barnes, 1986)

In (27)b we can see that the Faroese monomorphemic reflexive *seg* - which can take long-distance antecedents - taking the local subject as its antecedent. The predicate is not intrinsically reflexive and *seg* does not reflexivize the predicate so the sentence should be ungrammatical. Barnes (1986) notes that in such cases the simple reflexive is "inappropriate (unless it is heavily stressed, when it becomes the equivalent of the complex reflexive" (p. 99). Thus, in Faroese the long-distance anaphor can be used as a local reflexive but the usage is marked and requires heavy stress to mark this usage. Polish also offers evidence that reflexives can be ambiguous in nature. In Polish the reflexive form *siebe* can be a simple reflexive or a reciprocal locally:

28)Chłopcy$_i$ rozmawiali ze soba$_i$
Boys.NOM talked with self/each other
'The boys talked with themselves/each other'

(Reinders-Machowska, 1991, p. 139)

Additionally, the anaphor *siebie* can be bound by both the matrix subject and the subject of the object NP in the example below. However, the reciprocal reading is only available for the local NP subject:

29)Chłopcy czytali dziewcząt$_j$ wspomnienia o sobie
Boys$_i$ read of-girls$_j$ memories about self$_{i/j}$/each other$_{*i/j}$
'The boys read the girls' memories about self/each other'

(Reinders-Machowska, 1991, p. 147)

The Reinhart and Reuland division between SE anaphors and SELF anaphors leads us to expect that SE anaphors will respect Principle B because they are pronouns and it is surprising that *ziji* can always be bound locally in violation of Principle B. However, we also saw examples of locally bound SE anaphors in Faroese and Polish and this suggests that there is not an absolute prohibition against locally bound SE anaphors but in Faroese the SE anaphor must be stressed and in Polish the locally bound SE anaphor generates a reciprocal reading that only obtains locally.[12]

3.2.2 Subject orientation

Pica's second property of long-distance reflexives is that cross-linguistically they tend to be subject-oriented. *Ziji* also manifests this property. For example:

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[12] Tang argues that locally bound *ziji* contains an empty pronoun prefix (pro-*ziji*). She notes that in all locally bound instances of *ziji* it is optional to include a pronoun prefix (1989, pp. 97-98, following examples from Tang):

2) Wo hen (wo)-ziji
I hate (I)-self
'I hate myself'

This pronoun prefix is not simply a pronoun because the pronoun prefix must be bound by the subject where bare pronouns can get their reference from the context:

3)

a. Zhangsan$_i$ ai ta$_{i/j}$ de taitai
Zhangsan love he DE wife
'Zhangsan loves his wife'

b. Zhangsan$_i$ ai ta$_{i/*j}$-ziji de taitai
Zhangsan love he-self DE wife
'Zhangsan loves self' wife'

30)

a. Wo$_i$ gaosu Lisi$_j$ ziji$_{i/*j}$ de fensu
I tell Lisi self DE grade
'I told Lisi my own grade'

b. Wangwu$_i$ shuo Zhangsan$_j$ zengsong gei Lisi$_k$ yipian
Wangwu says Zhangsan give to Lisi one

guanyu ziji$_{i/j/*k}$ de wenzang
about self DE article
'Wangwu says Zhangsan gave an article about him/himself to Lisi'

(Cole, et al., 2001, p. xxxiii)

(30)b shows that *ziji* cannot refer to *Lisi* because *Lisi* is the post-verbal object of *zengsong* ('give'). *Ziji* can only have the matrix or embedded subject as its antecedent in (30)b. Thus, (30)b demonstrates that *ziji* displays the canonical subject-orientation of long-distance reflexives that Pica (1987) has argued for cross-linguistically. Additionally, *ziji* retains its subject orientation when it is bound locally.

31)

a. Zhangsan$_i$ song Lisi$_j$ yizhang ziji$_{i/*j}$ de xiangpian
Zhangsan give Lisi one-CL ziji DE picture
'Zhangsan gave Lisi a picture of himself'

b. Zhangsan$_i$ gaosu Lisi$_j$ ziji$_{i/*j}$ de fenshu
Zhangsan tell Lisi ziji DE grade
'Zhangsan told Lisi self's grade'

(Tang, 1989, p. 99)

Thus, we conclude that only subjects can be antecedents for *ziji.* We have seen that subject orientation for SE anaphors is a common typological property cross-linguistically and the LF movement of the SE anaphor to I^0/T^0 offers an analysis that explains why such a property might hold of SE anaphors. [13]

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[13] However, it is important to note that Mandarin has two constructions in which non-subject DPs *can* be antecedents for the anaphor. Firstly, a DP that follows the pre-verbal object marker BA *is* an accessible antecedent for *ziji* (see (4)below).

4) Lisi$_i$ ba Zhangsan$_j$ ling hui le ziji$_{i/j}$ de jia
Lisi BA Zhangsan lead back ASP self DE home
'Lisi took Zhangsan back to self's home'

In (4) the DP that follows the preverbal object marker BA *can* be *ziji's* antecedent. If *ziji* were restricted to subject antecedents *Zhangsan* would not be a possible antecedent in (4)– contrary to

3.2.3 *Ziji*'s domain

Pica's final property of LDRs was that they could only be bound out of specific domains and that the kind of domain that allow long-distance binding could vary cross-linguistically. For example, some languages only allowed binding out of infinitival clauses:

32)

a. Professor$_i$ poprosil assisstenta$_j$ PRO$_j$ čitat' svoj$_{i/j}$ doklad
Professor asked assistant read self's report
'The professor asked the assistant to read self's report'

(Russian, Progovac, 1993: 755)

b. Jón$_i$ skipaði mér að raka sig$_i$/*hann$_i$
Jón ordered me that to-shave self/him
'Jón ordered me to shave self/him'

(Icelandic, Anderson, 1986)

We have seen that *ziji* can be bound across clauses readily and such binding does not appear to be restricted to a particular kind of structural domain:

33) Lisi$_i$ zhidao Wangwu$_j$ xihuan ziji$_{i/j}$
Lisi know Wangwu like self
'Lisi knows Wangwu likes self'

Cross-clausal binding appears to have no upper limit beyond memory limitations:

34) Zhangsan$_i$ renwei Lisi$_j$ zhidao Wangwu$_k$ xihuan ziji$_{i/j/k}$
Zhangsan think Lisi know Wangwu like self
'Zhangsan thinks Lisi knows Wangwu likes self'

The fact that Mandarin long-distance reflexives are not limited to a particular domain might be considered inconsistent with Pica's third characteristic feature of long-distance reflexives. However, the lack of overt morphological agreement in

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fact. Secondly, a DP that follows the passive morpheme BEI is also an accessible antecedent for *ziji* (see example (5) below).

5) Ta$_i$ bei Zhangsan$_j$ guan zai ziji$_{i/j}$ de cheli
He BEI Zhangsan shut in self DE car-inside
'He was shut up by Zhangsan in self's car'

Accordingly, I will refer to these non-subject antecedents as BA/BEI nominals. Since the BA/BEI nominals are the only exceptions for the subject orientation of *ziji* I will not address them in this dissertation and instead concentrate on subject-oriented anaphors.

Mandarin and the lack of overt morphological agreement in infinitivals may be the very property that licenses long-distance reflexives. Koster and Reuland (1991) argue that infinitivals are domains that license long-distance binding and thus perhaps it is the lack of tense and agreement that licenses long-distance binding in Mandarin.

3.3 Subject orientation and sub-command

Subject orientation is a common feature of long-distance anaphors (Koster and Reuland, 1991). However, in Mandarin there is an unusual aspect of subject orientation in that *ziji* can be bound by the *specifier* of the local subject:

35)Zhangsan$_i$ de jiaoao hai-le ziji$_i$
Zhangsan's DE pride hurt-ASP self
'Zhangsan's arrogance harmed him'

(Tang, 1989, p. 100)

The complex reflexive can also be bound by the animate specifier of an inanimate DP:

36)Zhangsan$_i$ de jiaoao hai-le taziji$_i$
Zhangsan's DE pride hurt-ASP PRO-self
'Zhangsan's arrogance harmed him'

(Pan, 1997, p. 17)

That is, the usually strict condition for c-command in order for binding relationships to be established is relaxed in (35) above. In (35) above we can see that the specifier of the subject DP – *Zhangsan* - successfully binds *ziji* even though *Zhangsan* does not c-command *ziji*. Similarly, we find instances of non-commanding antecedents in English too:

37)

a. [[Every girl's]$_i$ father] thinks she$_i$'s a genius (Kayne, 1994)

b. [Someone [from every city]$_i$] loves it$_i$ (Hornstein, 1995)

c. [The owner of [every car in the street]$_i$] should move it$_i$ on Mondays

(Reuland, 1998)

Additionally, phenomena that normally require c-command like Negative Polarity Items can be licensed from the specifier position:

38)[[No-one's] ticket] will be worth anything if the manager decides to rest all the best players.

(Hicks, 2009, p. 87)

The ability of non-c-commanding DPs to function as antecedents for reflexives has been called 'sub-command' (Tang, 1989). Sub-command relaxes the c-command requirement between the reflexive and its antecedent by allowing the specifier of a c-commanding nominal to function as a possible antecedent when the head nominal is not animate.[14] That is, when the head of a DP is inanimate, an animate specifier of the inanimate DP can be the antecedent *ziji*. This is as we would expect, because *ziji* cannot be bound to non-animate DPs:

39)*Yanjing	diao-dao	dishang,	dapo-le	$ziji_i$
glasses	drop-to	floor	break-ASP	self

'The glasses dropped on the floor and broke self'

(Huang and Tang, 1991, p. 265)

However, when the NP complement of D^0 is animate the specifier cannot be the antecedent of the reflexive:

40)$Zhangsan_i$'s	de	$gege_j$	hai-le	$ziji_{*i/j}$
Zhangsan's	DE	brother	hurt-ASP	self

'Zhangsan's brother harmed self'

The contrast between (35) and (40) shows that it is the most prominent *animate* nominal in subject position that binds *ziji*. Furthermore, *ziji* will always be bound by the most prominent animate subject:

41)[[	$Zhangsan_i$	zuoshi	xiaoxin	de]	$taidu]_j$	jiu
	Zhangsan	do thing	careful	DE	attitude	save

le	$ziji_{i/*j}$	yiming
ASP	self	one life

'Zhangsan's cautious attitude saved self's life'

---

[14] Specifiers of specifiers can also be antecedents (Tang, 1989):

6)

a. Zhangsan de shu de feng mian hai-le Wangwu
Zhangsan DE book DE cover hurt-LE Wangwu
'Zhangsan's book's cover hurt Wangwu's feelings'

b. $Zhangsan_i$ de shu de feng mian hai-le $ziji_i$
Zhangsan DE book DE cover hurt-LE self
'Zhangsan's book's cover hurt self's feelings'

42)[[Zhangsan$_i$ tou dongxi de] shishi]$_j$ bei
Zhangsan steal things DE fact BEI

ziji$_{i/*j}$ de laoban faxian le
self DE boss discover PRF
'The fact that Zhangsan stole things was discovered by his boss'

43)[Zhangsan$_i$ nayang zuo]$_j$ dui ziji$_{i/*j}$ bu li
Zhangsan that way do to self not advantageous
'That Zhangsan behaved in such a manner did him no good'

(Tang, 1989, p. 100)

These facts show us that in order to explain the distribution of *ziji* as an anaphor we need to find a way of relaxing the c-command condition such that it will allow *ziji* to bound by the most prominent animate subject. Tang (1989) defines sub-command in the following manner:

44)

β sub-commands α iff

a. β c-commands α, or

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

Tang (1989) defines a potential binder in the following manner:

45)

A POTENTIAL BINDER for α is any NP which satisfies all conditions of being a binder of α except that it is not yet coindexed with α.

The definitions of sub-command and potential binder allow Tang to propose that the relevant version of principle A for ziji is the following:

46)

A reflexive α can be bound by β iff

a. β is coindexed with α, and

b. β sub-commands α, and

c. β is not contained in a potential binder of α

Tang's definition of sub-command manages to capture important facts about *ziji*'s distribution. For example, it restricts the antecedents of *ziji* to subject positions: [DP [DP]] and [DP[TP]], but these subject positions cannot be contained within a potential binder of *ziji*. Hence, the specifier position of a DP is a possible antecedent iff the containing DP cannot be an antecedent. However, the subject position of a TP is always a possible antecedent because a clause is not a possible antecedent:

47)[Wo_i ma ta_j] dui $ziji_{i/*j/*k}$ mei you haochu
I scold he to self not have advantage
'That I scolded him did me no good'

(Tang, 1989, p. 101)

Thus, (47) shows us that *ziji* can take a non-commanding subject as its antecedent but it cannot take a non-commanding object as its antecedent. Thus, arguments that contain a sub-commanding antecedent must be subjects themselves. Huang and Tang (1991) simplify Tang's initial formulation into the following sub-command condition:

48)

The sub-command condition

β sub-commands α iff β is contained in a DP that c-commands α or that sub-commands α, and any argument containing β is in subject position.

(Huang and Tang, 1991, p. 266)

Tang's sub-command condition is designed to capture the fact that the most prominent animate nominal in subject position functions as the antecedent for *ziji*. Thus, the traditional relation of c-command is relaxed so that Huang and Tang (1991) state principle A for *ziji* in the following manner:

49)

Principle A

A reflexive α make take an NP β as its antecedent iff:
β sub-commands α, and there is no NP γ, γ a potential binder for α, such that γ is closer to α than β is.

(Huang and Tang, 1991, p. 266)

Thus, a nominal that c-commands α is closer than a nominal that sub-commands α and a c-commanding or sub-commanding subject nominal in the minimal clause dominating α is closer than one outside the minimal clause. Of course, the formulation of Principle A given above cannot be the complete analysis because *ziji* can be bound long-distance *across* intervening subjects This revised version of

Principle A might be the structural condition for the local binding condition for *ziji* but it would explicitly prohibit long-distance binding.

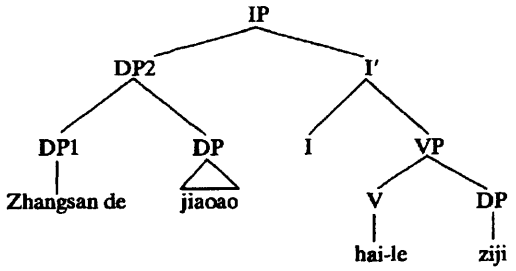
Huang and Liu (2001) provide a different account of why the structural relation of sub-command holds between *ziji* and the 'most prominent' animate nominal in subject position. They argue that under Kayne's (1994) conception of phrase structure there is no need to give an explicit definition of sub-command. Kayne argues that specifiers are introduced through adjunction and this means that sub-command is a simply a case of c-command. Kayne defines c-command in the following manner:

50)

> X c-commands Y iff X and Y are categories and X excludes Y and every category that dominates X dominates Y. (Kayne, 1994)

If we assume that specifiers are introduced through adjunction with the above definition of c-command then "any specifier of X c-commands everything that X c-commands" (Huang and Liu, 2001, p. 171). Thus, in the example given below both *Zhangsan* (DP1) and *Zhangsan de jiaoao* both c-command *ziji* and *ziji's* need for an animate antecedent means that it will take the most prominent animate NP as its antecedent.

51)



Thus, the structural conditions on binding appear to be relaxed such that the normally strict c-command condition for binding might have some well-defined exceptions in the case of *ziji.* However, it has been reported in the literature that the ability for sub-commanding antecedents looks like it is a phenomenon that is restricted to *ziji*'s local clause.

3.3.1 Long-distance binding and sub-command

The characteristic fact about *ziji* is that it can take long-distance antecedents. In (0 below both DPs in subject position are possible antecedents. The sentence is therefore ambiguous and the speaker/hearer has the option of construing either subject as the antecedent (there is no interpretation that allows *ziji* to be bound simultaneously by the local subject and the matrix subject).

52)Lisi$_i$ zhidao Wangwu$_j$ xihuan ziji$_{i/j}$
Lisi know Wangwu like self
'Lisi knows Wangwu likes self'

However, there is some dispute in the literature about whether sub-commanding nominals are available for long-distance antecedents. Cole, et al., (2001, p. 7) argue that sub-commanding antecedents *are* possible for anaphors that are bound beyond their local clause:

53)Zhangsan$_i$ de xin shuo Mali$_j$ renwei ziji$_{i/j}$ shi wugude
Zhangsan DE letter say Mary think self is innocent
'Zhangsan's letter says that Mary thinks self is innocent'

(Cole, et al., 2001, p. 7)

By contrast, Huang and Liu (2001, p. 170) argue that *ziji cannot* be bound by a sub-commanding antecedent that is outside of its local clause:

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

(Huang and Liu, 2001, p. 170)

Thus, for Huang and Liu (2001), there may be a contrast between long-distance binding and local binding, in that local binding always allows sub-commanding antecedents but for some speakers long-distance binding does not allow sub-commanding antecedents. Of course, animate nominals in subject position with animate specifiers that are beyond the local clause can bind the reflexive:

55)Zhangsan$_i$ de gege$_j$ renwei Lisi$_k$ hai-le ziji$*_{i/j/k}$
Zhangsan's DE brother think Lisi hurt-PRF self
'Zhangsan's brother think Lisi hurt self'

My own informants confirm the pattern found in Cole, et al., (2001, as exemplified in (53)), in that sub-commanding antecedents are potential antecedents if the sub-commanding nominal is [+animate] and the head of the nominal phrase is [-animate].

The fact that Mandarin allows sub-commanding antecedents is unusual because it means that "the c-command condition is relaxed just in case the antecedent is contained in an NP that is itself not a potential antecedent" (Tang, 1989, p. 101). Icelandic allows its long-distance reflexive to be bound by a non-commanding antecedent:

56)[NP Skoðun Jónsi] er [að sigi vanti hœfileika]
Opinion John's is that SIG-ACC lacks-SUBJ talents
'John's opinion is that he lacks talent'
(Maling, 1984, cited in Reuland, p. 343)

However, the pattern of binding that we see in the Icelandic pattern in (0 only occurs when the reflexive is contained in a subjunctive clause. When the reflexive is contained in an infinitive clause, binding by a sub-commanding antecedent is not possible:

57)*[NP Skoðun Jónsi]j virðist tj verai hœttuleg fyrir sigi
Opinion John's seems be.INF dangerous for self
'John's opinion is that he lacks talent'
(Reuland, 2001, p. 344)

Long-distance binding out of infinitives is possible when the c-command condition is obeyed:

58)Annai telur þig hafa svikið sigi
Anna believes you.ACC have.INF betrayed self
'Anna believes you to have betrayed her'
(Reuland, 2001, p. 344)

Reuland argues that (0 is *not* a case of anaphoric binding and that it is a case of logophoric binding. The Icelandic subjunctive licenses logophoric interpretation of *sig* and this means that *sig* is interpreted as a pronominal which does not require a c-commanding antecedent. By contrast, logophoric interpretation is not possible with the infinitive clause and thus c-command remains a requirement. I will delay discussion of these facts with regards to Mandarin while we accrue some further crucial aspects of *ziji*'s distribution.

3.4 Intervention effects

There is an intervention effect that we see in Mandarin is called *the Blocking Effect* because when it arises it blocks long-distance binding. Specifically, long-distance binding of *ziji* does not occur when there are specific combinations of person features on two or more DPs. I will concentrate on the blocking effect that arises from a person conflict on DPs. Additionally, I will focus initially on constructions in which *ziji* is bound from object position. There are two principled reasons for this: historical and theoretical. Much of the literature on the Mandarin blocking effect focuses on its manifestation when *ziji* occurs in object position. The second reason, the theoretical reason, is that perhaps it is not surprising to find discussion of *ziji* focusing on its distribution when it is object position, as this is the canonical position that we find reflexives cross-linguistically. By restricting ourselves to a limited distribution – object position - we can hope to eliminate the many confounds that could arise across a range of constructions. We have seen that anaphors can

behave as exempt anaphors (Pollard and Sag, 1992; Reinhart and Reuland, 1993) and by restricting ourselves to object positions we can hope to observe the distribution of *ziji* as a reflexive. Examining all the possible distributions of *ziji* would raise the spectre of many potential confounds that could arise across different constructions. After we have considered the distribution of the blocking effect with *ziji* in object position, we will turn to other constructions and be better placed to understand *ziji*'s distribution in such constructions.

3.4.1 A note on judgments

The blocking effect has been discussed extensively in the literature. However, historically, there has not been a consensus on its precise characterization. Huang (1982) discussed *ziji* only as a local anaphor. Y.-H. Huang (1984) first observed that only the monomorphemic reflexive *ziji* could be bound outside of its local domain. Y.-H. Huang (1984) also first observed that only subjects could bind *ziji* and that long-distance binding may be blocked by certain local potential antecedents with ϕ-features distinct from those of the remote antecedent. Thus, the blocking effect generalization that emerged was that long-distance binding was possible only if the long-distance antecedent agreed with all local and intermediate potential antecedents. Battistella and Xu (1990, p. 211) formulated the descriptive generalization of the blocking effect:

59)
Long-distance binding of *ziji* is possible only in case all c-commanding subjects agree in person

This generalization was the initial statement of the blocking effect. Tang (1989), Huang and Tang (1991), and Pollard and Xue (2001) accept the characterization that the blocking effect arises when there is simply a difference in person features. However, several other aspects of the blocking effect soon emerged in the literature. Xue, et al (1994) noticed that the blocking effect could also be induced by non-subjects and was not restricted to potential antecedents. Additionally, Y.-H. Huang (1994) and Pan (1995, 1997) noticed that there was a version of the blocking effect that manifested a crucial asymmetry. In this asymmetry, a 3rd person subject over a 2nd person subject generates the blocking effect, but a 2nd person subject over a 3rd person subject *does not* generate the blocking effect. In this thesis I will focus on the asymmetrical relationship blocking effect between person features as the core fact because it accords with the judgments I have obtained from my informants and this pattern is well attested in the contemporary literature. The history of the blocking effect shows that it has not been a consistent phenomenon in the literature. Its characterization has been changed and refined as more has been learnt about it. The dialectal variation that has emerged is an interesting phenomenon in itself and worthy of further study.[15] As I proceed in this dissertation, I will acknowledge any

[15] F. -X Li (1990) reports a different pattern of blocking judgments to Pan (1997). See Chapter 4 for a discussion of F. -X Li's data and an analysis of Pan's (1997) data.

differences between the judgments that I use as evidence and different judgments reported in the literature.

3.4.2 Subject intervention

(60)a shows that in an embedded construction with two 3rd person subjects it is possible to have *ziji* bound by both the matrix and the local subject. In (60)b – (60)g we can see the possible arrangements for embedded constructions with subjects that differ in person.[16] In (60)b we can see that the local subject and the matrix subject differ in person but long-distance binding is still possible. Thus, a difference in person features does not block the establishment of the long-distance binding relationship. Similarly, (60)c - (60)e all differ in person features and yet they are all constructions that license long-distance binding of *ziji*.

60)

a. Zhangsan$_i$ zhidao Lisi$_j$ bu xihuan ziji$_{i/j}$ ✓3>✓3
Zhangsan know Lisi not like self
'Zhangsan knows that Lisi did not like self'

b. Wo$_i$ zhidao Lisi$_j$ bu xihuan ziji$_{i/j}$ ✓1>✓3
I know Lisi not like self
'I know that Lisi did not like self'

c. Wo$_i$ zhidao ni$_j$ bu xihuan ziji$_{i/j}$ ✓1>✓2
I know you$_i$ not like self
'I know that you did not like self'

d. Ni$_i$ zhidao wo$_j$ bu xihuan ziji$_{i/j}$ ✓2>✓1
You know I$_i$ not like self
'You know that I did not like self'

e. Ni$_i$ zhidao Lisi$_j$ bu xihuan ziji$_{i/j}$ ✓2>✓3
You know Lisi$_i$ not like self
'You know that I did not like self'

f. Lisi$_i$ zhidao wo$_j$ bu xihuan ziji$_{i/j}$ ✗3>✓1
Lisi know I$_i$ not like self
'Lisi knows that I did not like self'

g. Lisi$_i$ zhidao ni$_j$ bu xihuan ziji$_{i/j}$ ✗3>✓2
Lisi know you$_i$ not like self
'Lisi knows that you did not like self'

---

[16] I have avoided constructions with 2>2 or 1>1 because 1st and 2nd person pronouns don't typically differ in reference within a sentence and thus may give an illusion of syntactic binding when it is not present. Of course, constructions with more than one 3rd person subject do not raise such a problem.

However, consider (60)f - (60)g. In these examples, we can see that *ziji* cannot be bound by the matrix subject. This is surprising because a difference in person features is not sufficient to block long-distance binding as we can see from (60)b - (60)e. Furthermore, it is not simply the co-occurrence of 3rd and 2nd or 3rd and 1st person features that stop long-distance binding because these combinations occur in (60)e and (60)b, respectively. Rather, it is the *structural configuration* in which these person features occur. The data in (60)a - 60)g above suggest that when a 3rd person subject c-commands a 2nd or 3rd person subject, then long-distance binding is not licensed and *ziji* can only be bound locally. Figure 1 below summarizes the configurations in which long-distance binding is or is not allowed.

61)

HIGHEST SUBJECT PERSON	LOWEST SUBJECT PERSON	*ZIJI* LDR
1	3	✓
1	2	✓
2	1	✓
2	3	✓
3	1	×
3	2	×

Figure 1 - Interference pattern for the blocking effect

The fact that DPs in a 3 > 1/2 configuration do not license long-distance binding is what the *blocking effect* will refer to henceforth in this dissertation and it is an unexpected result. If *ziji* can be bound by long-distance antecedents in (60)a - (60)e, why can't it be bound by the long-distance antecedents in (60)f - (60)g? Early analyses of the blocking effect (Tang, 1989; Huang and Tang, 1991; Xue, et al.,1994) proposed that long-distance binding of *ziji* was only possible when the intervening subjects agreed in person-features, otherwise long-distance binding was blocked. Thus, we would expect that a 1>3 configuration would generate the blocking effect just as a 3>1 configuration would generate the blocking effect. That is, we would expect the blocking effect to be a symmetrical relation. However, closer examination of the blocking effect showed that for many speakers it is *not* symmetrical. (60)b above shows that an intervening third-person subject does not block a first-person matrix subject from binding *ziji*. In contrast, (60)f shows that an intervening first-person subject *does* block the matrix subject from binding *ziji*. Thus, there is a version of the blocking effect is not symmetrical and it is person features in a particular structural relation that co-vary with binding possibilities. If the blocking effect were the result of subjects simply failing to agree in person the blocking should be symmetrical, but this is not supported by the data in (60)a - (60)g. Pan (1995, 1997, 2001) noticed the asymmetry of the blocking effect in regards to person and provided the following data:[17]

[17] This data appears with the numbers (6) - (8) in Pan (2001, p. 283)

62)

a. Wo$_i$ zhidao Lisi$_j$ bu xihuan ziji$_{?i/j}$ 1>3
I know Lisi not like self
'I knew that Lisi did not like *ziji*'

b. Ni$_i$ xiang mei xiang guo Lisi$_j$ conglau jiu mei
You think not think Guo Lisi never conj not

xihuan guo ziji$_{?i/j}$? 2>3
like Guo self
'Have you ever thought about the idea that Lisi never liked *ziji*'

c. Wo$_i$ yizhi yiwei Zhangsan$_j$ xihuan ziji$_{i/j}$ keshio wo cuo
I so-far think Zhangsan like self but I wrong

le 1>3
PRT
'I always thought that Zhangsan liked me/himself, but I was wrong'

63)

a. Wo$_i$ bu xihuan Lisi$_j$ guan ziji$_{i/j}$ de shi 1>3
I not like Lisi interfere self DE matter
'I don't like Lisi interfering in my business'

b. Ni$_i$ xihuan Lisi$_j$ guan ziji$_{i/j}$ de shi ma? 2>3
You like Lisi guan self DE matter Q
'Do you like Lisi interfering in your own business?'

c. Lisi$_i$ bu xihuan wo/ni$_j$ guan ziji$_{*i/j}$ de shi *3>1/2
Lisi not like I/you interfere self DE matter
'Lisi does not like me/you interfering in my/your business'

d. Lisi$_i$ xihuan Zhangsan$_j$ guan ziji$_{i/j}$ de shi 3>3
Lisi like Zhangsan interfere self DE matter
'Does Lisi like Zhangsan interfering in his (own) business?'

64)

a. Dangshi wo$_i$ pa Lisi$_j$ zai lai zhao ziji$_{i/j}$ 1>3
Then I afraid Lisi again come find self

de mafan, jiu gei-le ta 100 kuai qian
DE trouble conj give-asp him 100 cl money
'At that time I was afraid that Lisi would come to cause trouble for me again, so I gave him 100 dollars'

b. Dangshi ni$_i$ pa Lisi$_j$ zai lai zhao ziji$_{i/j}$ 2>3
Then you afraid Lisi again come find self

de mafan, jiu gei-le ta 100 kuai qian
DE trouble conj give-asp him 100 cl money
'At that time you were afraid that Lisi would come to cause trouble for me again, so I gave him 100 dollars'

c. Dangshi Lisi$_i$ pa wo$_j$ zai lai zhao ziji$*_{i/j}$ 3>1
Then Lisi afraid I again come find self

de mafan, jiu gei-le ta 100 kuai qian
DE trouble conj give-asp him 100 cl money
'At that time Lisi was afraid that I would come to cause trouble for me again, so I gave him 100 dollars'

From the data above, Pan (2001) concludes that the blocking effect is not symmetrical and that "the correct generalization for the blocking effect is that only intervening first/second-person pronouns induce the blocking effect, while third-person NPs do not necessarily do so..." (p. 285). In Pan's examples above, blocking effects arise whenever a 1st/2nd person pronoun intervenes between *ziji* and the matrix subject. That is, in (62) – (0 *every* instance of an intervening 1st/2nd -person pronoun induces the blocking effect. Hence, we might expect Pan to conclude that intervention by a 1st/2nd person pronoun is a *sufficient* condition for the blocking effect, but instead Pan proposes that 1st/2nd features are only a *necessary* condition. Thus, the data do not support the generalization. In Pan's examples there is a crucial piece of data missing to confirm that 1st/2nd person features are indeed necessary rather than sufficient. Consider (60)c and (60)d repeated below:[18]

[18] Pan (1997) marks 1 > 2 and 2 >1 as blocking long-distance binding. However, Pan (2001) accepts that "... first person pronouns can bind *ziji* with a second-person pronoun [but] only if *ziji* is contrastive" (p. 309). We will return to this pattern in Chapter 4.

65)

a. Wo_i zhidao ni_j bu xihuan $ziji_{i/j}$ ✓1>✓2
I know you not like self
'I knew that you did not like self'

b. Ni_i zhidao wo_j bu xihuan $ziji_{i/j}$ ✓2>✓1
You know I_i not like self
'You knew that I did not like self'

(60)c and (60)d show that intervening 1st / 2nd – person DPs do not necessarily generate the blocking effect. Thus, while it *is* true that it is only intervening 1st/2nd – person pronouns that induce the blocking effect (a necessary condition), it is not true that 1st/2nd – pronouns *must* induce the blocking effect (a sufficient condition). In (62) – (0 every instance of an intervening pronoun induces the blocking effect, it is only examples (60)c and (60)d that demonstrate that an intervening 1st/2nd - person pronouns need not necessarily induce the blocking effect. Pan's generalization is correct but the data he provides (in 2001) do not support the generalization. The generalization is that the blocking effect occurs iff a 1st/2nd person subject is c-commanded by a 3rd person DP (see (60)f, (60)g for example).

Recall that VP ellipsis is a good diagnostic to distinguish between pronouns and anaphors, with anaphors at least strongly preferring the sloppy reading and pronouns allowing both the strict and sloppy readings. We saw that *ziji* behaves as an anaphor on a number of diagnostics and thus we would expect it to behave as an anaphor even when the blocking effect arises. Anaphors (at least) favour a sloppy reading in VP ellipsis because they generate parallel logical forms – as illustrated in (66)a, whereas the strict reading is generated when the variable receives its value from the assignment function – as illustrated in (66)b:

66)John criticized himself and Bill did too

a. Sloppy reading
$\lambda x.$[x criticized x](John) & $\lambda y.$[y criticized y](Bill)

b. Strict reading
$\lambda x.$[John criticized x_i & Bill criticized x_i] $g[x_i - John]$

Thus, anaphoric *ziji* in VP ellipsis constructions should have restricted interpretation when the blocking effect arises in the first conjunct. That is, a sentence with a blocking configuration will have the following form:

67)

a. Lisi$_i$ zhidao wo$_j$ bu xihuan ziji$_{*i/j}$ ×3>✓1
Lisi know I not like self
'Lisi knows that I don't like self'

Lisi knows λx. [x not like x](I)

Thus, the parallelism requirement predicts that the second conjunct will have the same logical form as (0 even thought there is no blocking configuration. That is, the parallelism requirement will generate only local binding even though there is no blocking configuration

68)

a. Zhangsan$_i$ zhidao Lisi$_j$ bu xihuan ziji$_{*i/j}$
Zhangsan know Lisi$_i$ not like self
'Zhangsan knows that Lisi doesn't like self'

Zhangsan knows λx. [x not like x](Lisi)

In the examples below we can see that this is exactly what we find. In (69) two logical forms are possible because there is no blocking effect. Thus, LF_1 generates local binding and LF_2 generates long-distance binding.

69)Zhangsan$_i$ shuo Lisi changchang kuidai ziji$_{i/j}$;
Zhangsan said Lisi always mistreat ziji;

Mary$_i$ shuo John$_j$ yi yiyang *ziji* = John, *ziji* = Mary
Mary said John also the same

LF_1

Zhangsan said λx. [x always mistreat x](Lisi)
&
Mary said λx. [x always mistreat x](John)

LF_2

λx. [x said Lisi always mistreat x](Zhangsan)
&
λx. [x said John always mistreat x](Mary)

However, when a blocking configuration arises in the first conjunct this restricts the binding relations that are generated in the second conjunct because of the

parallelism requirement, even though second conjunct has no blocking configuration:

70) Zhangsan$_i$ shuo ni$_j$ changchang kuidai ziji$_{*i/j}$;
Zhangsan said you always mistreat ziji;

Mary$_i$ shuo John$_j$ yi yiyang *ziji* = John, *ziji* ≠ Mary
Mary said John also the same

LF_1

Zhangsan said λx. [x always mistreat x](you)
&
Mary said λx. [x always mistreat x](John)

Thus, although the elided clause is a simple 3 > 3 configuration that allows long-distance binding, the LF parallelism requirements blocks the matrix subject from binding the anaphor. When there is no blocking effect in the first conjunct both subjects in the elided clause are possible antecedents:[19]

71) Wo$_i$ shuo Lisi changchang kuidai ziji$_{i/j}$;
I said Lisi always mistreat ziji;

Mary$_i$ shuo John$_j$ yi yiyang *ziji* = John, *ziji* = Mary
Mary said John also the same

LF_1

I said λx. [x always mistreat x](Lisi)
&
Mary said λx. [x always mistreat x](John)

LF_2

λx. [x said Lisi always mistreat x](I)
&
λx. [x said John always mistreat x](Mary)

---

[19] I have found that placing the blocking effect in the elided clause is a very difficult task for my informants. I speculate that this is a performance difficulty.
7) Zhangsan$_i$ shuo Lisi changchang kuidai ziji
Zhangsan said Lisi always mistreat ziji;

Wangwu$_i$ shuo ni$_j$ yi yiyang
Wangwu said ni also the same

The VP ellipsis facts with the blocking effect is good evidence that *ziji* is an anaphor and that it remains an anaphor when the blocking effect is present.

3.4.3 Intervention effects and sub-command

We have seen that sub-commanding DPs can bind *ziji*:

72) Zhangsan$_i$ de jiaoao hai-le ziji$_{i/*j}$
Zhangsan's DE pride hurt- ASP self
'Zhangsan's arrogance harmed him'

73) Zhangsan$_i$ de gege hai-le ziji$_{*i/j}$
Zhangsan's DE brother hurt- ASP self
'Zhangsan's brother harmed him'

(Tang, 1989)

To capture the binding contrast between (72) and (73) above Tang (1989) proposed the structural relation of *sub-command.* Sub-command relaxes the traditional relation of c-command by allowing specifiers of XPs to c-command constituents that the XP c-commands. Recall that Tang defines sub-command in the following manner:

74)

The sub-command condition

β sub-commands α if and only if β is contained in a DP that c-commands α or that sub-commands α, and any argument containing β is in subject position. (Huang and Tang, 1991, p. 266)

Tang's sub-command condition is designed to capture the fact that the most prominent animate nominal in subject position functions as the antecedent for *ziji*. Thus, the traditional relation of c-command is relaxed so that Huang and Tang (1991) state principle A for *ziji* in the following manner:

75)

A reflexive α may take an NP β as its antecedent iff:

1) β sub-commands α, and there is no NP γ, γ a potential binder for α, such that γ is closer to α than β is. (Huang and Tang, 1991, p. 266)

Thus, a nominal that c-commands α is closer than a nominal that sub-commands α and a c-commanding or sub-commanding subject nominal in the minimal clause dominating α is closer than one outside the minimal clause. Given that

subcommanding antecedents are possible for *ziji,* it is perhaps not surprising that subcommanding antecedents will also generate the blocking effect

76)Zhangsan$_i$	zhidao	wo/ni$_j$	de	baogao	hai-le	ziji$_{*i/j}$
Zhangsan	know	my/your	DE	report	hurt-PRF	self

'Zhangsan knew that my/your report hurt self'

(Pan, 2001, p. 284)

In (0 we can see that the local 1st/2nd person possessor blocks *ziji* from being bound by the matrix subject. For those informants that allow long-distance sub-commanding antecedents, (77) below shows that sub-commanding matrix subject DPs that differ in person features to the local subject also allow long-distance binding.

77)Ni$_i$	de	xin	biaoshi	Lisi$_j$	hai-le	ziji$_{i/j}$
You	DE	letter	indicate	Lisi	hurt-ASP	self

'Your letter indicates that Lisi hurt self'

Perhaps the most interesting example of the sub-command examples can be seen in 78) below:

78)Zhangsan$_i$	shuo	wo$_j$	de	gege$_k$	hai-le	ziji$_{i/*j/k}$
Zhangsan	say	I	DE	brother	hurt-ASP	self

'Zhangsan said that my brother hurt self'

In (78) we can see that long-distance binding is possible in this configuration. This is surprising because the specifier of the subject DP in the minimal clause that contains *ziji* is a 1st person DP. We have seen that when the matrix subject and the local subject are in a 3 > 1 configuration, the anaphor typically cannot be bound by the matrix subject. However, in (78) we can see that the occurrence of 1st person ϕ-features within the local subject DP is not sufficient to block the 3rd person matrix subject DP from binding the anaphor. The fact that the matrix subject can bind the anaphor in (78) suggests that the subject in *ziji*'s local clause is a 3rd person DP because the 3>3 configuration would allow long-distance binding. This is puzzling because we have seen the sub-commanding antecedents are potential binders for *ziji* and that sub-commanding antecedents can generate the blocking effect. But, in (78) the sub-commanding DP ('*wo*') is neither potential antecedent, nor does it generate the blocking effect. We must conclude that the features of '*wo*' in (78) above are invisible for the derivation. The reason that the sub-commanding DP is invisible is that there is a 'more prominent' animate nominal contained within the subject DP, namely the 3rd person '*gege*' in complement position. That is, the subject DP appears to bear the 3rd person ϕ-features of '*gege*' rather than the 1st person ϕ-features of '*wo*'.

3.5 Blocking and the Person-Case Constraint (PCC)

The intervention pattern that we see in Figure 1 above may look familiar (Figure 1 repeated below)

79)

INDIRECT OBJECT	DIRECT OBJECT	WEAK PCC
1	3	✓
1	2	✓
2	1	✓
2	3	✓
3	1	*
3	2	*

Figure 2 - Interference pattern for PCC

HIGHEST SUBJECT PERSON	LOWEST SUBJECT PERSON	*ZIJI* LDR
1	3	✓
1	2	✓
2	1	✓
2	3	✓
3	1	*
3	2	*

Figure 1 (repeated) - Interference pattern for *ziji*

The combinations of person features that allow or disallow long-distance binding are the configurations of grammatical and ungrammatical person features that we see in the well-documented Person-Case Constraint (PCC). The PCC is an agreement restriction that constrains the possible combinations of person features within constructions that involve phonologically weak elements such as clitic clusters. The fact that the interference pattern we see in the blocking effect duplicates the pattern found in the PCC is surprising. However, a number of researchers (Boeckx, 2000; Béjar & Rezac, 2003) have pointed out that "there are interesting correlations between the Person-Case Constraint in ditransitives and agreement restrictions attested in other syntactic contexts in different languages" (Anagnostopoulou, 2005, p. 200). Therefore, the fact that the blocking effect patterns with the Person-Case Constraint might not be as exotic as it first appears. The PCC effect has been observed in environments with phonologically weak linguistic objects such as clitics, agreement markers, or weak pronouns. Let us examine the PCC

3.6 The PCC

Perlmutter (1971) observed that there were restrictions on the combination of person features that could occur in clitic clusters.[20] Specifically, he observed that in a combination of a dative and an accusative clitic, the accusative clitic must be 3rd person. This constraint is known as the **me lui/l-Il Constraint,* or *Person-Case Constraint (PCC)* and it initiated a great deal of research into the nature of the restriction and its most obvious environment: the ditransitive construction. The constraint was first observed as a restriction on combinations of clitics. However, Bonet (1991, 1994) showed that it affected phonologically weak elements quite generally. Furthermore, Bonet observed that there were different two major varieties of the PCC: the strong PCC and the weak PCC. These different forms of the

[20] The observation dates back at least to Meyer-Lübke (1899) who documented it in Romance

restriction disallowed differing combinations of phonologically weak elements, but they have both come to be accepted as varieties of the same phenomenon.[21] The PCC applies to a typologically diverse range of unrelated languages. Bonet discusses Arabic, Greek, Romance, Basque, Georgian, Swiss German (see Haspelmath, 2004 for a comprehensive list of languages). Bonet argues that the constraint is universal but Ormazabal and Romero (2001) and Haspelmath (2001) argue that the PCC is not, in fact, universal.[22] The strong PCC, as formulated in Bonet (1991, 1994), is stated the following way:[23]

80)

Person-Case Constraint (Strong Version)

Context:	Ditransitives with phonologically weak direct and indirect objects.
Observation:	If a direct object and an indirect object co-occur, the direct object must be 3rd person.

Thus, in the strong PCC there is a prohibition on 1st/2nd person direct objects in the presence of weak indirect objects, regardless of whether the indirect object is 1st, 2nd, or 3rd person. The Greek examples in (0 show that accusative clitics are restricted in the presence of an indirect object genitive clitic:

---

[21] Recent research has revealed a third variety: the ultrastrong PCC. The ultrastrong PCC allows the 1-IO 2-DO combination but disallows the 2-IO 1-IO combination (see Nevins, 2007).

[22] There has been some discussion about the universal nature of the PCC and the weak elements it applies to. It has been uncontroversial that the PCC is applicable to clitics and agreement markers in many languages but there has been discussion about its applicability to weak pronouns. For example, Haspelmath (2004) and Cardianaletti (1999) argued that the PCC was not operative in Dutch and Swiss German for weak pronouns, but more recently, Anagnostopoulou (2008) argues that a variety of the PCC *does* emerge in Dutch and German for weak pronouns but only in restricted environments. See Haspelmath (2004) for a list of languages which manifest the PCC

[23] Bonet focused on the strong PCC and many other researchers have also focused on this version of the PCC (Boeckx, 2000; Anagnostopoulou, 2005; Ormazabal and Romero, 2007; Béjar and Rezac, 2003, Haspelmath, 2004; Adger and Harbour, 2007). Bonet (1991) initially disregarded the Weak PCC pattern as rare and subject to idiolectal variation, but it has gained acceptance as a real phenomenon (see Murasugi, 1994; Bianchi, 2006; Haspelmath, 2004; Nicol, 2005; Anagnostopoulou, 2005; Nevins, 2007; Riedel, 2009). The Weak PCC pattern emerges in languages such as Catalan, Italian, German, and Sambaa.

81)

a. Tha mu to stilune
FUT CL-GEN.1SG CL-ACC.3SG.NEUT send-3PL
'They will send it to me'

b. Tha su ton stilune
FUT CL-GEN.2SG CL-ACC.3SG.NEUT send-3PL
'They will send it to you'

c. *Tha tu me stilune
FUT CL-GEN.3SG.NEUT CL-ACC.1SG send-3PL
'They will send me to him'

d. *Tha mu se stilune
FUT CL-GEN.1sg CL-ACC.2SG send-3PL
'They will send you to him'

(Greek, Anagnostopoulou, 2003, p. 252)

The weak PCC is formulated in the following way:

82)

Person-Case Constraint (Weak Version)

Context: Ditransitives with phonologically weak direct and indirect objects.

Observation: If a direct object and an indirect object co-occur, if there is a 3rd person in the combination it must be the direct object that is 3rd person.

Thus, in the weak PCC there is no absolute prohibition against 1st and 2nd person direct objects. Rather, there is an absolute prohibition against a 3rd person indirect object *co-occurring* with a 1st or 2nd person direct object. A 1st or 2nd person direct object can co-occur with a 1st or 2nd person indirect object. That is, the weak PCC will readily tolerate combinations of 1st and 2nd person direct and indirect objects:

83)

Spanish

a. Te me presentas
DO-2SG IO-1SG presented-2SG
'You presented yourself to me'

b. ?Te me presentó
DO-2SG IO-1SG presented-3SG
'He presented yourself to me'

Italian

c. Mi ti presentano
DO-1SG IO-2SG introduce.3PL
'They introduce me to you'

d. Mi ti presento
DO-1SG IO-2SG introduce.1SG
'I introduce myself to you'

(Nicol, 2005)

Catalan

e. Te m' he venut el mercader més important
You-DO me-IO has sold the merchant most important
'The most important merchant has sold you to me'

f. Vi ci manderà
2-PL-IO 1PL-DO send-FUT-3SG
'S/he will send us to you(pl)'

(Bonet, 1994, p. 41)

However, these languages do not allow a 1st or 2nd person direct object clitic in the presence of a 3rd person indirect object clitic:

84)

Spanish

a. *Me le recomendaron
DO-1SG IO-3SG recommended-3PL
'They recommended me to him/her'

Italian

b. *Mi gli ha presentata Giovanni
DO-1SG IO-3SG has presented.FEM Giovanni
'Giovanni introduced me-fem to him'

Catalan

c. *A en Josep, me li va recomanar la Mireia
To the Josep, DO-1sg IO-3SG recommended. 3SG the Mireia
'She (Mireia) recommended me to him (Josep)'

(Bonet, 1991, p. 178, p. 183)

Bonet (1991, 1994) observes that the PCC has the following properties:

i) The PCC affects phonologically weak elements like clitics, agreement affixes, and weak pronouns when they occur in clusters

ii) The PCC only affects *combinations* of weak elements. That is, there is nothing intrinsically wrong with particular weak elements. Rather, it is the combination of weak elements that gives rise to PCC effects. Similarly, the constraint is obviated if one of the elements is strong. Thus, if a strong pronoun is used the constraint does not apply.

iii) The PCC affects combinations in which the accusative clitic is *reflexive*.

iv) The PCC is limited to environments with an external argument. Thus, the constraint does not apply to passive or unaccusative constructions and combinations of a dative with a 1st or 2nd person nominative or absolutive argument are grammatical.

In the next section, we will illustrate each of these properties.

3.6.1 Clitics, agreement markers, and weak pronouns

Let us look at the three kinds of weak elements to which the PCC applies: clitics, agreement markers, and weak pronouns. The Catalan example in (85) illustrates the basic ungrammatical combination of a 3rd person dative clitic with a 1st person accusative clitic:

85)*Me	li	ha	recommanat	la	senyora	B.
CL-ACC.1SG	cl-DAT.3SG	has	recommended	the	Mrs	B

'Mrs Bofill has recommended me to him/her'

(Catalan, Anagnostopoulou, 2003)

The second kind of weak elements in which we see the PCC apply is illustrated below with agreement markers in Basque:

86)

a. Zuk etsaiari misila saldu d-∅-I-o-zu
You-ERG enemy-DAT missile-ABS sell PRES-3ABS-AUX-3DAT-2ERG
'You sold the missile to the enemy'

b. *Zuk etsaiari ni saldu na-I-o-zu
You-ERG enemy-DAT me-ABS sell 1ABS-AUX-3DAT-2ERG
'You sold the me to the enemy'

(Basque, Ormazabal and Romero, 2001)

In (86)a we see that the combination of a 3rd person dative agreement marker and a 3rd person absolutive agreement marker is grammatical. However, in (86)b we see that the co-occurrence of 3rd person dative and 1st person absolutive agreement markers is ungrammatical.

The final weak element that the PCC applies to is weak pronouns. In the Swiss German examples (87) below we can see that the PCC configurations of weak pronouns is ungrammatical:

87)

a. D' Maria zeigt mir en
The Maria shows to-me him
'Mary shows him to me'

b. *D' Maria zeigt em mich
The Maria shows to-him me
'Mary shows me to him'

(Swiss German, Anagnostopoulou, 2003, p. 252)

3.6.2 Combinations

The PCC only applies to combinations of the weak elements. For example, if one of the pronouns is strong the constraint does not apply:
88)

a. Tha tu stilune esena
FUT CL-GEN.3SG.MASC/NEUT send-3PL you-ACC
'They will send you to him'

b. Paul me présentera à lui
Paul CL-ACC.1SG introduce-FUT to him
'They will send you to him'

(Greek, Anagnostopoulou, 2003, p. 253)

The examples in (88) show that the accusative does not have to be 3rd person when the other internal argument is a strong pronoun. In figure 3 below we can see the possible clitic combinations for both the strong and weak PCC.

89)

	STRONG PCC			WEAK PCC		
	DATIVE	ACC		DATIVE	ACC	
i	1	3	✓	1	3	✓
ii	1	2	×	1	2	✓
iii	2	1	×	2	1	✓
iv	2	3	✓	2	3	✓
v	3	1	×	3	1	×
vi	3	2	×	3	2	×

Figure 3 Summary of the configurations of person features in the PCC.

3.6.3 Reflexive Clitics

The PCC as formulated by Bonet states that if there is an accusative weak element it must be 3rd person. Thus, reflexive clitics are also disallowed:

90)*Elle se lui est donnée entièrement
She REFL him-DAT is given-FEM entirely
'She gave herself to him entirely'

(French, Kayne, 1975, cited in Anagnostopoulou, 2003)

3.6.4 External argument necessary

Finally, the PCC only arises in constructions that have an external argument. Unaccusatives and passives with a combination of dative argument with a 1st or 2nd person nominative /absolutive argument are grammatical. Consider the example below:

91)Tu irtha
CL-GEN.3SG came.1SG
'I came to him'

(Greek, Anagnostopoulou, 2003)

In (91) above the 1st person nominative / subject agreement marker co-occurs with the genitive clitic where we might have expected the 3rd person agreement marker to surface. Similarly, in (92) below we can see that the auxiliary complex contains a 2nd person absolutive agreement marker in the presence of a dative agreement marker.

92) Hi niri ettori h-atzai-t
You-ABS me-DAT arrived 2ABS-AUX-1DAT
'You came to me'

(Basque, Anagnostopoulou, 2003)

In summary, there is a robust distributional restriction on weak indirect and direct objects such that the accusative object must be third person when it occurs in combination with an indirect object.

3.7 Beyond the ditransitive: Person Restrictions on nominative objects in Icelandic

In the exposition above we have seen the PCC apply to the internal arguments of a ditransitive construction. However, Sigurðsson (1992, 1996, 2000, 2008; see also Taraldsen, 1994, 1995) showed that Icelandic exhibits a Person Restriction on nominative objects. The Person Restriction is formulated in the following manner:

93)

The Person Restriction on (agreeing) Nominative Objects
In the presence of a dative subject, the agreeing nominative object has to be 3rd person.

That is, in constructions with a nominative object the presence of a quirky dative subject restricts nominative objects to 3rd person. This restriction looks similar to the Strong PCC and Anagnostopoulou (2005) argues that this is because the properties that derive the strong PCC are also operative in the Person Restriction in Icelandic. Anagnostopoulou's unified explanation of the strong PCC with the Person restriction in Icelandic will be an important demonstration for the current study because it shows that although PCC phenomena have mostly been observed when weak elements are clustered together it is possible for the PCC patterns to emerge across clauses.

3.7.1 The Person Restriction on nominative objects in Icelandic

In Icelandic, there is a person restriction on nominative objects in the presence of a dative subject (Taraldsen, 1994, 1995; Sigurðsson, 1996, 2000). Anagnostopoulou (2003) argues that this person restriction in Icelandic is the same person restriction that we see in the PCC contexts discussed above, and that the Icelandic manifestation derives from the same grammatical operations that derive the PCC in ditransitive contexts.[24] Anagnostopoulou (2003, p. 255) formulates the Icelandic person restriction in the following way:

[24] Sigurðsson and Holmberg (2008) argue that this person restriction and the PCC are unrelated but "they do not discuss why they think this is the case, due to space limitations" (Anagnostopoulou, 2015, p. 8, fn. 6).

94)

The Person Restriction on Nominative Objects

Context: Clauses in which the nominative object agrees with the verb.

Observation: In the presence of a dative subject, the (agreeing) nominative object has to be 3rd person.

The Person Restriction is found in Icelandic only and Anagnostopoulou (2003) argues that the Person Restriction has the following properties:[25]

i) The constraint is attested in constructions with a dative subject and a nominative object.

ii) The constraint only arises where the verb agrees with the object. Absence of verbal agreement leads to obviation of the constraint.

iii) Nominative reflexives are not possible in the context of a dative subject.

iv) The person restriction is limited to constructions without an external argument.

3.7.1.1 The Monoclausal Person Restriction

In the examples in (95) we see grammatical agreement of the verb with the nominative object in the presence of a dative subject:

95)

a.	Okkur	líkaði	hann	(verb: 3SG object: 3SG)
	us.PL.DAT	liked.3SG	he. NOM	
b.	Okkur	líkuðu	þau	(verb: 3PL object: 3PL)
	me.DAT	liked.3PL	they. NOM	

(Alessandro, et al., 2008, pp. 5-6)

However, when the nominative object is 1st or 2nd person, agreement is not possible in the presence of a quirky dative subject. Agreement between the verb and the nominative object is only grammatical when the nominative object is 3rd person. Agreement with 1st and 2nd person nominatives it not grammatical:

---

[25] Although the Icelandic facts will be presented here Sigurðsson and Holmberg (2008) observed that "DAT-NOM constructions where NOM is the sole, unrestricted agreement controller are cross linguistically common, found in German, Russian, Romance varieties, South-Asian languages, Hungarian, etc" (p. 253). However, the person restriction does not hold in these languages.

96)

a.	*Ykkur	líkaði	ég	(verb: 1/3SG object: 1SG)
	You.PL.DAT	liked.1/3SG	I.NOM	
b.	*Þér	líkuðum	við	(verb: 1PL object: 1PL)
	You.SG.DAT	liked.1PL	we.NOM	
c.	*Okkur	líkaðir	þú	(verb: 2SG object: 2SG)
	us.DAT	liked.2SG	you. SGNOM	
d.	*Mér	líkuðuð	þið	(verb: 2PL object: 2PL)
	me.DAT	liked.2PL	you. PL.NOM	

(Alessandro, et al., 2008, pp. 5-6)

This constraint on the features of the nominative argument is known as the Person Restriction:

97)

In DAT-NOM constructions, *only 3rd person* NOM may control agreement.

Icelandic "observes the Person Restriction in both active and passive constructions" (Sigurðsson and Holmberg, 2008, p. 254):

				ACTIVE
a.	*Honum	likum	við	*1PL AGR
	Him.DAT	like.1PL	we.NOM	
b.	*Honum	likið	þið	*2PL AGR
	Him.DAT	like.2PL	you.NOM.PL	
c.	Honum	lika	þeir	✓3PL AGR
	Him.DAT	like.3PL	they.NOM	
	'He likes them'			

					Passive
d.	*Henni	vorum	sýndir	við	*1PL AGR
	Her.DAT	were.1PL	shown	we.NOM	
e.	*Henni	voruð	sýndir	þið	*2PL AGR
	Her.DAT	were.2PL	shown	you.NOM.PL	
f.	Henni	voru	sýndir	þeir	✓3PL AGR
	Her.DAT	were.3PL	shown	they.NOM	
	'They were shown to her'				

(Sigurðsson and Holmberg, 2008, p. 254)

(98) below is another example of the restriction in a passive sentence taken from Anagnostopoulou (2003):

98)

a.	Henni	leiddust	þeir
	She-DAT	was-bored-by-3PL	they-NOM
	'She was bored by them'		
b.	*Henni	leiddumst	við
	She-DAT	was-bored-by-1PL	us-NOM
	'She was bored by us'		

(Anagnostopoulou, 2003, p. 256)

In (98)a above, the passive has a 3rd person nominative object and the sentence is grammatical. However, if we change the nominative object to 1st person the sentence is ungrammatical, as in (98)b.

Sigurðsson and Holmberg (2008) argue that in the monoclausal construction "probing NOM is the only option, hence we expect default of non-agreeing 3SG to be degraded" (p. 255):[26]

[26] Sigurðsson and Holmberg (2008) give these judgments from the dialect that they call 'Icelandic A'. Icelandic B and C differ minimally from Icelandic A. Icelandic B allows both 3sg and 3pl agreement with the 3pl nom object. Icelandic C prefers 3sg agreement with the 3pl nom object. The Person Restriction holds across all three dialects of Icelandic

99)

a.	*Honum	mundi hafa	likað	við	*3SG VERB – 1PL NOM
b.	*Honum	mundi hafa	likað	þið	*3SG VERB – 2PL NOM
c.	?Honum	mundi hafa	likað	þeir	?3SG VERB – 3PL NOM
	"Him	would have	liked	we/you/they"	

Some scholars (Sigurðsson, 1996; Taraldsen, 1995) have argued that the agreement that *is* obtained with the nominative object in the presence of a dative subject is only *partial* agreement and that if the nominative object is 1st or 2nd person, only number agreement obtains - person agreement being impossible for 1st and 2nd person objects. Thus, "agreement with NOM objects, unlike with NOM subjects, is restricted to number agreement; for many speakers first and second person NOM objects are not possible, and for those who get them, third person agreement is preferred" (Schütze, 1993, p. 352).

100)

a.	*Henni	leiðumst	við
	Her.DAT.3SG	bored.1PL	we.NOM.1PL
	'She was bored with us'		
b.	*?Henni	leiddust	við
	Her.DAT.3SG	bored.3PL	we.NOM.1PL
	'She was bored with us'		
c.	??Henni	leiddist	við
	Her.DAT.3SG	bored.3SG	we.NOM.1PL
	'She was bored with us'		
d.	Henni	leiddust/leiddist	þeir
	Her.DAT.3SG	bored.3PL/3SG	they.NOM.3PL
	'She was bored with them'		

(Taraldsen, 1995, p. 309; p. 307)

Similarly, Sigurðsson and Holmberg (2008) argue that this kind of "half-agreement" is "slightly better than fully, unambiguously person agreeing forms" (p. 270), but "it is nonetheless quite awkward and clearly worse than default 3sg" (p. 269):[27]

[27] Sigurðsson and Holmberg (2008) observe that syncretism between 2-3pl verb forms leads to acceptability with 2pl nominative objects. Sigurðsson and Holmberg argue that the verb "can be interpreted *as agreeing with the 2P.PL.NOM, without unambiguously agreeing with it in person*" (2008, p. 270, italics in original).

101) Henni ?mundi/?*mundu/*munðuð hafa leiðst þið
Her.DATwould.3SG/3PL/2PL have found-boring you.NOM.PL
'She would have found you boring'

(Sigurðsson and Holmberg, 2008, p. 269)

Ditransitives make an interesting construction because they naturally include dative arguments in their argument structure. Active ditransitives do not have a person restriction on accusative theme DPs:

102) Ég gaf honum þig í jólagjöf
I-NOM gave him-DAT you-ACC as Christmas-gift
'I gave you to him as a Christmas present'

However, when a dative is promoted to the subject position, the theme receives structural nominative case and an internal nominative theme DP is subject to the person restriction:[28]

103) *Honum varst gefinn þú
Him-DAT was given you-NOM
'You were given him'

(Anagnostopoulou, 2003, p. 259)

104)

a. Þú sýndir þeim mig
you.SG.NOM showed them.DAT me.ACC

b. *Þeim var sýndur ég
them.DAT was.1/3SG shown.MASC.SG I.NOM

c. *Þeim var sýndur ég
them.DAT was.1/3SG shown.NEUT.SG I.NOM

d. Ég var sýndur þeim
I.NOM was.1/3SG shown.MASC.SG them.DAT

(Alessandro, et al., 2008, p. 6)

Sigurðsson concludes that "[a]greement with nominative objects (in the 3rd person) is clearly the standard strategy in the active voice. Moreover, it is the only strategy

[28] DAT and GEN are always preserved under passivization. ACC on a monotransitive or ditransitive object changes to NOM and must trigger agreement. (Schütze, 1993, p. 360)

in DAT-NOM passives" (1996, p. 23). However, Anagnostopoulou (2003, following Sigurðsson, 1996) argues that the Person Restriction can be obviated in monoclausal environments when the verbal agreement is homophonous with 3sg (default) agreement. That is, the Person Restriction on nominative objects does not hold when the verb does not agree with the nominative object. She cites the contrasts below:

105)

				VERB AGREEMENT	NOM PERSON
a.	??Henni	likaði	ég	1/3sg	1sg
	Her-DAT	liked	I-NOM		
b.	*Henni	likaðir	þú	2sg	2sg
c.	*Henni	likaðum	við	1pl	1pl
d.	*Henni	likaðuð	þið	2pl	2pl

106)

				VERB AGREEMENT	NOM PERSON
a.	?Henni	leiddist	ég	1/2/3sg	1sg
	Her-DAT	bored	I-NOM		
b.	?Henni	leiddist	þú	1/2/3sg	2sg
c.	*Henni	leiddumst	við	1pl	1pl
d.	*Henni	leiddust	þið	2/3pl	2pl

Following Sigurðsson (1996), Anagnostopoulou (2003) argues that many speakers tolerate 1st and 2nd person nominative objects when the agreement on the verb is homophonous with the default 3rd person singular morpheme. This is taken as an indication that the verb *has not* agreed and this leads to the person restriction on nominative objects being lifted. Whatever the facts may be with the syncretisms found in the paradigms of *líka* 'like' and *leiðast*, the Person Restriction prohibits 1st and 2nd person nominative objects in the presence of a dative subject. Sigurðsson (1996) argues that the correct generalization is:

107)

+Person [1st/2nd] nominative NPs are blocked from object positions[29]

3.7.2 Cross-clausal Person Restriction

The restriction on nominative DPs also occurs in the construction that Sigurðsson (1996) calls the *Dative and Nominative with Infinitive*.[30] Importantly, in this construction the person restriction on nominative DPs holds cross-clausally:

---

[29] However, in light of the data in (34) and (35) he suggests that the generalization might be that objects are blocked from controlling +Person agreement (as opposed to number).

[30] Also called the *dativus/nominativus cum infinitivo* (D/NcI) construction (see Sigurðsson, 1989, 1996)

108)

a. Mér þóttu/þótti þær vera duglegar
Me-DAT thought-3PL/DFT they-NOM be industrious
'I thought they were industrious'

b. Mér virtust/virtist þær vinaa vel
Me-DAT seemed-3PL/DFT they-NOM work well
'They seemed to me to work well'

(Anagnostopoulou, 2003, p.57)

We can see that in (0 the matrix verb *optionally* agrees with the nominative argument of the embedded infinitival in number. If the matrix verb does not agree with the lower nominative argument it surfaces with the default singular. Importantly, in the dative and nominative with infinitive the embedded nominative DP must be 3rd person if the matrix verb agrees with the nominative argument:

109)

a. Mér höfðu fundist þæ vera gáfaðar
Me-DAT had.3PLfound they-NOM be intelligent
'I had found them intelligent'

b. *Þeim höfum alltaf fundist við vinna vel
Them-DAT have-1PL always found we-NOM work well
'They have always thought that we work well'

(Sigurðsson, 1996, p. 256)

In (109)a a 3rd person nominative occurs with a 3rd person dative and the sentence is grammatical. However, in (109)b the 1st person nominative with a dative matrix subject is ungrammatical. Thus, we see that in dative and nominative with infinitive constructions the nominative subject of the embedded infinitive clause must be 3rd person. When the matrix verb does not agree with the embedded nominative argument the constraint does not apply and the nominative argument is free to bear any person feature:

110)

a. Þeim hefur alltaf fundist við vinna vel
Them-DAT have-3SG always found we-NOM work well
'They have always thought that we work well'

b. *Þeim höfum alltaf fundist við vinna vel
Them-DAT have-1PL always found we-NOM work well
'They have always thought that we work well'

(Sigurðsson, 1996, p. 256)

Thus, the generalization for this construction is the following:

111)

> In clauses in which the nominative object agrees with the verb, the presence of a dative subject, the (agreeing) nominative object has to be 3rd person. (Anagnostopoulou, 2003, p. 255)

Like the accusative clitic reflexives in PCC ditransitives, it is not possible to have a nominative reflexive below a quirky dative subject in the dative and nominative with infinitive construction:

112)

a. *Maríu fannst sig vera gáfuð
Me-DAT thought-3SG sig-NOM be gifted-NOM
'Mary thought she was gifted'

a. Maria taldi sig vera gáfaða
Me-NOM believed-3SG sig-ACC be gifted-ACC
'Mary believed she was gifted'

(Taraldsen, 1994, p. 48)

We see in the dative and nominative with infinitive construction that the person restriction on nominative arguments only holds when the verb agrees with the nominative argument. Thus, in monoclausal with the verbs *líka* 'like' and *leiðast*, and biclausal environments "the person restriction is cancelled when the nominative does not enter agreement with the verb" (p. 258).

Anagnostopoulou makes a compelling case that the Person Restriction in Icelandic and the strong PCC are manifestations of the same phenomenon. Thus, we would expect their derivations to share crucial properties. Anagnostopoulou's argument is an important one for us because it is a demonstration that the operations that apply to clitic clusters can also be applied cross-clausally. This is precisely what we see in Mandarin long-distance anaphora: the emergence of a PCC effect cross-clausally. Thus, not only does Mandarin display the attested weak PCC pattern, it also replicates the fact that the PCC effect can emerge, as in Icelandic, cross-clausally.

3.8 Anagnostopoulou's derivation of the PCC

Anagnostopoulou (2003, 2005) argues that both the strong and the weak PCC arise when two objects enter into an agree relation with a single probe. However, the strong PCC and the weak PCC reflect different checking conditions. The strong PCC is a consequence of *cyclic agree* and the weak PCC is a consequence of *MULTIPLE AGREE.*

3.8.1 Deriving the Strong PCC

Anagnostopoulou argues that datives have person features and number features. However, datives are defective in the sense that their number feature is inaccessible to the higher probe, and this leaves the probe's number feature unvalued. Since the probe's number feature is unvalued it can probe again and agree with a lower accusative argument. Anagnostopoulou also proposes that dative arguments and accusative arguments differ in their specification for 3rd person. Following Adger and Harbour (2007), Anagnostopoulou argues that 3rd person datives are marked as [-person] featurally because "3rd person dative/indirect objects are understood as animate/affected, they encode point of view, properties encoded through person features" (2008). The intuition is that even when dative arguments are 3rd person they must be specified for person, and therefore they are specified as [-person]. On the other hand, 3rd person accusative/direct objects simply lack a specification for person (see Bonet, 1991).[31] This system can be summarized in the form below:

113)

1,2 ACC=	+person, number	1,2 DAT= +person (inaccessible number)
3 ACC =	number, (no person)	3 DAT = - person (inaccessible number)

In the strong PCC, the ϕ-features of the probe are checked cyclically. The higher dative argument checks the person feature of the probe (remembering that person will *always* be checked on the probe because datives are always specified for person) and the dative argument moves into the specifier of the probe. After checking the person feature there is only a number feature left. If the accusative argument is 3rd person (no person) the derivation converges. If the accusative argument is [+person] the derivation crashes.[32] 3rd person direct objects are the only arguments that will match a bare number feature on the probe, once the probe's person feature has been checked. If agree takes place between the probe and the accusative, the accusative moves to the specifier by "tucking in" (Richards, 1997).[33]

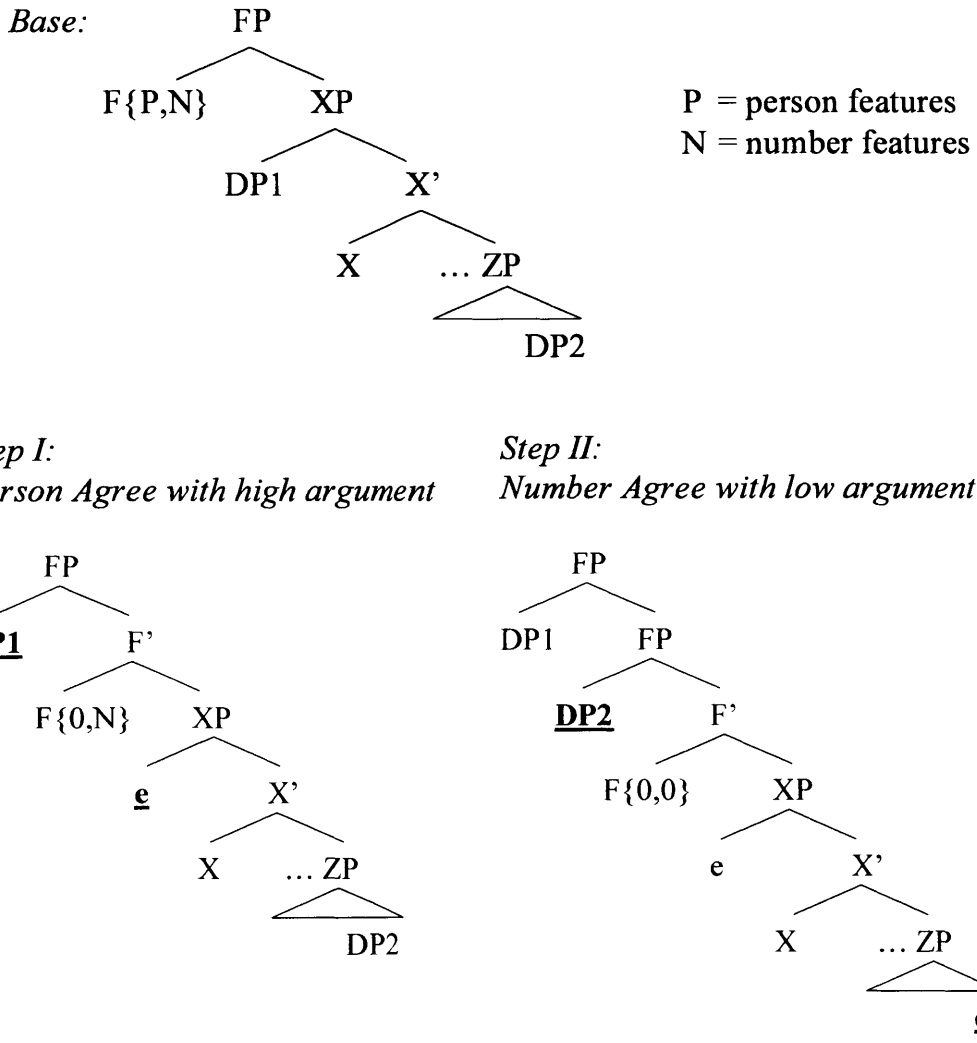
---

[31] Nevins (2007) argues that all 3rd person arguments are specified [-person]. We will see Nevins argument in due course

[32] Anagnostopoulou argues that the derivation crashes because accusative arguments must check their complete set of ϕ-features. Following Chomsky (2000, 2001) she argues that this is because accusative arguments check their case through complete ϕ-feature checking. If the 1st/2nd person features are not checked the accusative case is also unchecked.

[33] Béjar and Rezac (2003) develop a similar account of the strong PCC. In Béjar and Rezac's derivation the person feature of the probe *matches* the person feature of the dative DP. However, the dative cannot *value* the person feature on the probe because the dative lacks structural Case and therefore is not active. This means that the person feature on the probe is unvalued and it gets a default value as a result. The dative DP then moves and allows the number feature of the probe to agree with the lower accusative argument. This number agreement is only possible when the accusative DP is 3rd person due to the person licensing condition

114)



3.8.2 Deriving the Weak PCC

In the weak PCC, Anagnostopoulou argues that the person features on the probe are allowed to enter *MULTIPLE AGREE* with the two objects. That is, both the direct and indirect objects can check their person features against the probe.[34] This is why the weak PCC pattern occurs in clitic *clusters*. MULTIPLE AGREE is subject to a condition:

[34] The probe is simply specified for [+/-person].

115)

A condition on MULTIPLE AGREE

MULTIPLE AGREE can take place only under non-conflicting feature specifications of the agreeing elements.

Thus, for the weak PCC two arguments that bear the same specification for person will enter into a MULTIPLE AGREE relation with the probe. However, two arguments that differ in the specification for person will not enter a MULTIPLE AGREE relation with the probe. As with the strong PCC, 3rd person datives are specified for person ([-person]) and 3rd person accusatives lack person. Let us look at the possible combinations:

116)

a. 1st/2nd IO > 1st/2nd DO

b. 1st/2nd/3rd IO > 3rd DO

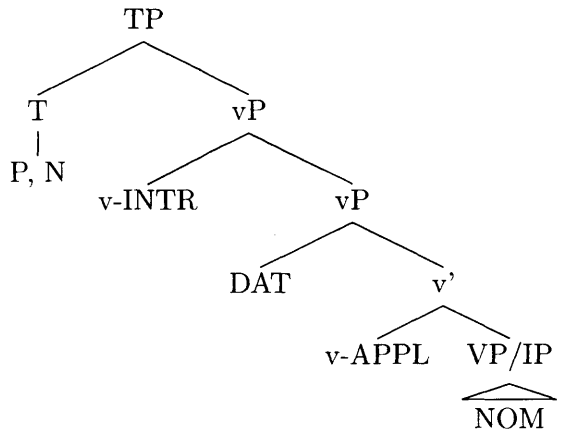
c. *3rd IO > 1st/2nd DO

The combinations in (116)a are acceptable because they can check their [+person] feature against the probe using the MULTIPLE AGREE operation. In (116)b the indirect objects agrees with the probe in person and then the direct object agrees in number (remembering that for Anagnostopoulou the direct object lacks a person feature). Thus, (116)b is not an instantiation of MULTIPLE AGREE; it is an instantiation of cyclic agree. There is no violation of the condition on MULTIPLE AGREE however because the direct object lacks a person specification. However, (116)c *does* violate the condition on MULTIPLE AGREE. The indirect object is specified as [-person] but the direct object is [+person]. Anagnostopoulou argues that the condition on MULTIPLE AGREE derives from the fact that checking is linked to valuation; two DPs that differ in feature specification will lead to a contradiction on the ϕ-features of the probe.

3.8.3 Applying the PCC derivation to Icelandic

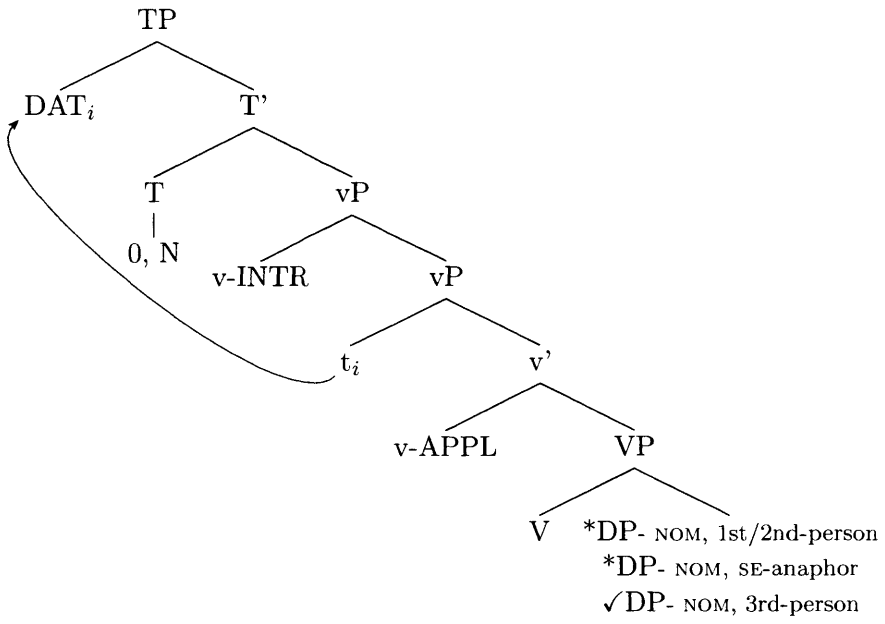
Anagnostopoulou (2003) argues that in Icelandic quirky subject constructions (both monoclausal and biclausal) the dative is introduced by an applicative head and the nominative is introduced lower. In the dative and nominative with infinitive the lower argument is introduced in the infinitival IP and in passive and unaccusative monoclausal constructions the lower argument is in the VP. Anagnostopoulou argues that intransitive v^0 lacks a specifier and it is ϕ-inactive. However, the higher T^0 is ϕ-active and merges with the *v*P:

117)



The dative checks the person feature of the T^0 probe and moves into spec, TP. Then the lower nominative argument agrees with the number feature on T^0:

118)



In (118) we see that it is only the nominative 3rd person DP that can be licensed once the dative raises to spec TP.

To summarize: we have seen that the blocking effect in the binding of *ziji* looks similar to the environments that pattern with the weak PCC. We have also seen that Icelandic shows us that the PCC can obtain cross-clausally. Anagnostopoulou's analysis of both the weak PCC and the strong PCC depends on the assumption that 3rd person direct objects lack a person feature whereas, 3rd person indirect objects

are marked for person. Similarly, her application of the PCC derivation to the Icelandic Person Restriction depends on the assumption that higher subjects will be marked for person but lower subjects will not be marked for person. If we tried to apply this derivation to Mandarin we would have to assume that the higher subject in a 3 > 1/2 configuration had a person feature, however, in a 1/2 > 3 configuration we would have to assume that the lower subject lacked a person feature. But this asymmetry between person features according whether a subject higher lower than another DP is not well-motivated because both DPs are in subject position and therefore we might expect 3rd person to have the same property in both subject positions. Next I will outline the analysis of the PCC that I will frame my proposal in, as it is the one that best fits the distribution of *ziji*. The analysis is Nevins's (2007) CONTIGUOUS AGREE which is discussed in the next section.

3.9 CONTIGUOUS AGREE

Nevins (2007) argues that the PCC derives from properties different to those proposed by Anagnostopoulou (2005). Nevins also argues that the PCC is the result of two DPs agreeing with a single probing head; that is as an instance of MULTIPLE AGREE. However, Nevins does not stipulate that particular 3rd person DPs lack or possess person features due to their structural position, as Anagnostopoulou (2003, 2005) must. Instead, Nevins argues that the PCC derives from the featural properties of the probe *and* a representational constraint on the chain that is formed between probe and the goals in its domain when the probe searches its domain. In this way Nevins argues that all versions of the PCC can be explained by the same syntactic mechanism. Nevins argues that the variation that we see in the PCC is a consequence of the fact that values that the probe can search for are relativized. That is, probes can be restricted in their ability to access all values of a feature. Nevins states the relativization of the probe's search in the following way:

119)

> *For a feature* F, *a search may be relativized to a domain which includes* ***all*** *values of F, only the* ***contrastive*** *values of F, or only the* ***marked*** *values of F.* (Nevins, 2007, p. 290)
>
> ***All*** values of F are simply both the [+/-] values of F and the probe will search for both values.
>
> The ***marked*** value of [Author] is [+Author] and the ***marked*** value of [participant] is [+participant]
>
> (Nevins, 2007, p. 289):

120)

a. + is the marked value of [Participant]

b. + is the marked value of [Author]

Contrastiveness is defined in the following manner:

121)

a. A pronoun S with specification αF is *contrastive* for F if there is another pronoun S' in the inventory that is featurally identical to S, except that it is -αF.

b. An instance of the feature F is contrastive within a set of other features s if both values of F may occur in S

For example, [+/-Author] is not contrastive with the feature [-Participant] because there is no [-Participant, +Author]. It is possible to have a [-Participant, -Author] feature, but not [-Participant, +Author]. Hence, both values of [Author] do not occur in the set of [-Participant] features - violating (121)b above - and showing that [+/-Author] is not contrastive in the set of [-Participant] features. On the other hand, [+Participant] can contain both values of [+/-Author]: [+Participant, -Author]; [+Participant, +Author]. This means that [+/-Author] is contrastive for [+Participant].

Nevins argues that PCC effects arise when there are two pronouns or clitics within the same agreement domain of a single probing head. This is, therefore, a manifestation of the MULTIPLE AGREE operation proposed by Chomsky (2001) and extended by Hiraiwa (2005). Hiraiwa defines MULTIPLE AGREE in the following manner:

122)

MULTIPLE AGREE (multiple feature checking) with a single probe is a single simultaneous operation: AGREE applies to all the matched goals at the same time derivational point derivationally simultaneously. (Hiraiwa, 2005, p. 38)

In MULTIPLE AGREE single probe has the ability to agree with multiple goals in its c-command domain (see Figure 4 below).[35]

123)

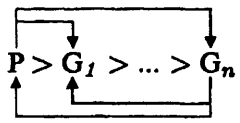


Figure 4
Probe (P) agreeing with multiple goals (G_1 ... G_n). Taken from Hiraiwa (2005, p. 38).

[35] Hiraiwa's original conception of MULTIPLE AGREE was that the operation was allowed as long as there were no *conflicting* feature values between two goals that agreed with a single probe. Nevins proposal refines what kind of features count as *conflicting* features, such that simple distinctness between feature values is not a sufficient condition for feature conflict.

There are two characteristic features of the MULTIPLE AGREE operation: multiplicity and simultaneity. Simultaneity is defined as a principle such that "operations apply simultaneously at a probe level" (Hiraiwa, 2005, p. 39). Thus, "the probe P searches for and locates multiple goals in parallel computation: namely, P matches G_1 and P matches G_2 virtually at the same time" (Hiraiwa, 2005, p. 39). Hiraiwa argues that locality can be relativized to derivational simultaneity and this means that multiple goals that agree with a single probe are considered to be equally local to that probe. In Figure 5 below both *y* and *z* are equidistant from *x*. MULTIPLE AGREE therefore creates a "derivational equidistance effect" (Hiraiwa, 2005, p. 38).

124)

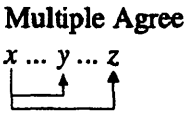


Figure 5
MULTIPLE AGREE of the probe x with the goals y and z. Because both y and z agree with x they are equidistant from x.

However, MULTIPLE AGREE does not always succeed and this means that the equidistance effect does not always hold. Hiraiwa argues that valuation by multiple goals is subject to a "feature non-conflict condition" (2005, p. 39-40). This means that intervening goals may block the application of MULTIPLE AGREE (see Figure 6 below).

125)

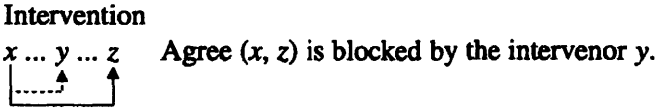


Figure 6
MULTIPLE AGREE blocked by the intervenor y.

Nevins (2007) articulates the intervention conditions under which the MULTIPLE AGREE operation fails to apply and argues that MULTIPLE AGREE is therefore subject to two representational constraints: CONTIGUOUS AGREE and MATCHED VALUES

126)

Contiguous Agree (CA): For a relativization R of a feature F on a probe P, and $x \in$ Domain (R(F)), $\neg\exists y$, such that $y > x$ and $p > y$ and $y \notin$ Domain (R(F)).
'There can be no interveners between P and x that are not in the domain of relativization'

Matched Values (MV): For a relativization R of a feature F, $\exists\alpha$, $\alpha \in \{+, -\}$, $\forall x$, $x \in$ Domain(R(F)), val (x,F) = α.
'All elements within the domain of relativization must contain the same value'

Nevins' CONTIGUOUS AGREE can generate the PCC effects that we have seen by restricting the manner in which multiple goals can agree with a single probe.

3.9.1 Deriving the Strong PCC with CONTIGUOUS AGREE

In deriving the Strong PCC with CONTIGUOUS AGREE, Nevins proposes that the probe is looking for *contrastive* values of [Author]. This means that any DP that cannot bear *contrasting* features of [Author] will be an intervener. That is, any DP that cannot be both [+Author] and [-Author] will not be in the domain of relativization of the probe and will therefore be an intervener. [Author] is only contrastive for [+Participant] DPs and this means that only 3rd person DPs will violated the CONTIGUOUS AGREE condition:

127)

Strong PCC
Probe relativized to search for contrastive [Author]

			CA	MV
OK	1	3		
*	1	2		*
*	2	1		*
OK	2	3		
*	3	1	*	
*	3	2	*	

The table in (127) above illustrates how CONTIGUOUS AGREE and MATCHED VALUES applies to generate the Strong PCC. We can see that when the probe is relativized to search for the contrastive values of [Author], it is intervening 3rd person DPs that violate CONTIGUOUS AGREE. However, the combinations of 1 > 2 and 2 > 1 *do not* violate CONTIGUOUS AGREE because 1st person and 2nd person are in the domain of the relativization of the probe. Hence Nevins' argues that MATCHED VALUES also applies in the Strong PCC cases and it is this condition that prohibits 1 > 2 and 2 > 1 combinations.

3.9.2 Deriving the Weak PCC with CONTIGUOUS AGREE

Using Nevins' system we can derive the weak PCC (with clitics) by proposing that the DPs occur within the domain of a higher probe that must agree with both of the goals – subject to CONTIGUOUS AGREE. Nevins's system works in the following manner. The probe is relativized to search for marked values of [participant], i.e., the positive values of participant. A convergent derivation requires that there cannot be any unmarked values of participant (negative values of participant) between the probe and a [+participant] goal in the probe's domain. A [-participant] goal that occurs between a [+participant] probe and [+participant] goal would violate the CONTIGUOUS AGREE condition above and cause the derivation to crash. Thus, relativizing the probe

to [+participant] and making the MULTIPLE AGREE operation subject to CONTIGUOUS AGREE creates the following possibilities for clitic ordering:

Nevins argues that the relativization of the probe and CONTIGUOUS AGREE can derive the various PCC effects. In order to derive the weak PCC we must establish the following two conditions:

> i) The probe is relativized to search for [+participant]
>
> ii) A convergent derivation will occur when there are no unmarked values of [participant] that intervene between the probe and the featural specification that it is looking for. That is, there can be no [-participant] DPs that occur between the probe and a [+participant] DP.

In Figure 7 below a probe relativized to [+participant] will generate the weak PCC by satisfying CONTIGUOUS AGREE in the first four rows. However, in the final two rows the probe cannot agree with the lower DP because of the intervening [-participant] DP.

128)

PROBE	DATIVE	ACCUSATIVE	CONTIGUOUS AGREE
[+participant]	1	3	✓
[+participant]	1	2	✓
[+participant]	2	1	✓
[+participant]	2	3	✓
[+participant]	3	1	×
[+participant]	3	2	×

Figure 7 – Intervention pattern under CONTIGUOUS AGREE with probe looking for [+participant]

Nevins' derivation of the Weak PCC makes no use of the Matched Values condition; it is only the CONTIGUOUS AGREE that applies when the probe is searching for marked values:

129)

Weak PCC

Probe relativized to search for [+Participant][36]

			CA	MV
OK	1	3		
OK	1	2		
OK	2	1		
OK	2	3		
*	3	1	*	
*	3	2	*	

Notice that in this system there is nothing in Nevins' conception of CONTIGUOUS AGREE prohibiting the presence of a [-participant] DP that is c-commanded by a [+participant] DP; the violation of CONTIGUOUS AGREE occurs when a [-participant] DP c-commands a [+participant] DP. Additionally, although Nevins does not note the fact, if a probe does not find a goal with which to agree the derivation does not crash (as Preminger (2014) has pointed out). Thus, if a probe is relativized to search for [+participant], two 3rd person DPs do not violate CONTIGUOUS AGREE since there is no [+participant] contiguity to be violated. Although a 3>3 configuration means that the probe does not check the probe's [+participant] feature this does not make the derivation crash. An extension to this idea is that when person features are in a 1/2 > 3 configuration, the lower DP can still form part of the agreement chain that licenses long-distance binding and does not cause the derivation to crash. Convergent derivations are not the result of intrinsic feature matrices on individual probes/goals and the affinities/mismatches between them. Rather, it is the intervention condition that causes a chain to crash.

In the tree below we can see the process applied to clitic ordering. If the clitic undergoes object shift into the domain of the T^0 probe there are now two goals within the domain of T^0: the subject and object clitic, and T^0 can only agree with both of these goals subject to CONTIGUOUS AGREE. If the T^0 probe is relativized to [+participant] and the highest DP is [-participant] this DP intervenes between the probe and the lower [+participant] DP and this configuration therefore violates CONTIGUOUS AGREE.

[36] Contiguous Agree is CA. Matched Values is MV

130)

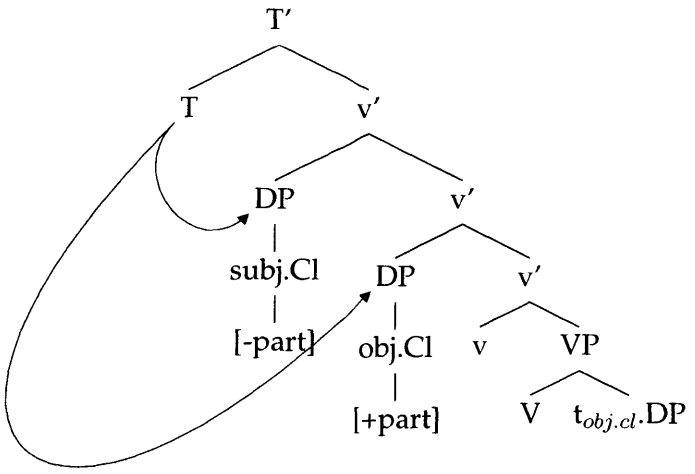


Figure 8 - Failure of CONTIGUOUS AGREE by intervention of [-participant]

131)

HIGHEST SUBJECT PERSON	LOWEST SUBJECT PERSON	*ZIJI* LDR
1	3	✓
1	2	✓
2	1	✓
2	3	✓
3	1	*
3	2	*

Figure 1 (repeated) - Binding possibilities for bi-clausal structures

Recall that the blocking effect for *ziji* manifests the weak PCC pattern illustrated in (131) above. Let us note that Nevins' CONTIGUOUS AGREE operation manages to derive the weak PCC pattern and therefore we might hope that it can be used to derive the fact that the blocking effect manifests the weak PCC pattern. We will see in Chapter 4 that CONTIGUOUS AGREE can be used to derive the blocking effect in Mandarin but let us now look at the blocking effect for tri-clausal sentences

3.10 Tri-clausal sentences and the Blocking effect

The PCC is a constraint that affects the combination of two clitics, agreement markers, or weak pronouns. We have seen that the Mandarin blocking effect also manifests the weak PCC. However, it is well known that the blocking effect is not limited to biclausal sentences. Therefore, if we assume that the blocking effect in bi-clausal sentences is a consequence of the same mechanism that the Mandarin blocking effect in tri-clausal sentences, Mandarin offers us the chance to see how the PCC behaves in contexts with more than two DPs.[37] Consider (132) below:

[37] Pan (1997) offers a different pattern of judgments in the tri-clausal sentences such as (135) above. In sentences with subjects bearing 3 > 1/2 > 3 person features, Pan reports that binding by the intermediate subject is possible. However, in footnote 14 he notes that "... some speakers may find

132) Zhangsan$_i$ renwei Lisi$_j$ zhidao Wangwu$_k$ xihuan ziji$_{i/j/k}$ ✓3 > ✓3 > ✓3
Zhangsan think Lisi know Wangwu like self
'Zhangsan thinks Lisi knows Wangwu likes self'

In (132) *ziji* can be bound by all three subjects. In contrast, consider (133) below. In (133) it is only the local subject that can bind *ziji*:

133) Zhangsan$_i$ renwei wo$_j$ zhidao Lisi$_k$ xihuan ziji $_{*i/*j/k}$ ×3 > ×1 > ✓3
Zhangsan think I know Lisi like self
'Zhangsan thinks Lisi knows Wangwu likes self'

This is surprising because we have seen that configurations with 1>3 license the long-distance binding of *ziji*. This is repeated in (134) below.

134) Wo$_j$ zhidao Lisi$_k$ xihuan ziji$_{i/j}$ ✓1 > ✓3
I know Lisi like self
'I know Wangwu likes self'

This same blocking phenomenon can be seen in (135) and (136) below:

135) Zhangsan$_i$ renwei wo$_j$ zhidao ni$_k$ xihuan ziji$_{i/j/k}$ ×3 > ×1 >✓ 2
Zhangsan think I know you like self
'Zhangsan thinks I knows you like self'

136) Zhangsan$_i$ renwei ni$_j$ zhidao wo$_k$ xihuan ziji$_{i/j/k}$ ×3 > ×2 > ✓1
Zhangsan think you know I like self
'Zhangsan thinks you know I like self'

We have seen that subjects in a 1 > 2, 2 > 1, and 1 > 3 configuration allow long-distance binding of *ziji* by the matrix subject. However, in (135), (136), and (133) only the local subject can bind *ziji*. This is a baffling pattern. A configuration like 1 > 3 allows long-distance binding, and this would lead us to expect that embedding it under another 3rd person DP would preserve the binding possibilities of the 1 > 3 pattern. However, we get the opposite effect. That is, it appears that it is the 3rd person matrix subject that blocks *ziji* from taking more local antecedents that are possible when they are not embedded under a 3rd person DP. That is, the binding possibilities of the lower subjects appear to co-vary with the person properties of a higher subject. This means that some property of the syntax must be able to 'see' the person features on the matrix subject. A probe above the matrix subject would have the matrix subject and all other subjects in its domain and could therefore account for the fact that the binding possibilities of *ziji* co-vary with the person features of

---

the *j* reading [the intermediate subject] marginal" (Pan, 1997. P. 48). My informants found the intermediate subject to be an inaccessible antecedent. Cole et al., (2001, p. 34) also mark the intermediate subject as 'bad' in a 3 > 1 > 3 configuration.

matrix subjects. These facts also tell us that we can't have a probe in each clause, because we need the probe to 'see' the person features on the matrix subject, and this suggests that the agreement relation that is generating the PCC effect originates in the matrix clause. Additional support for this suggestion can be seen in (137) and (138), which allow binding by the intermediate subject when the matrix subject is not 3rd person.[38]

137) Wo_i renwei ni_j zhidao $Wangwu_k$ xihuan $ziji_{?i/j/k}$?1 > ✓2 > ✓3
I think you know Wangwu like self
'I think you know Wangwu likes self'

138) Ni_i renwei wo_j zhidao $Wangwu_k$ xihuan $ziji_{?i/j/k}$?2 > ✓1 > ✓3
You think I know Wangwu like self
'You think I know Wangwu likes self'

In (139) and (140) the local subject and the intermediate subject stand in a PCC configuration and therefore we would not expect long-distance binding to be possible and this is consistent with the available interpretations.

139) Wo_i renwei $Zhangsan_j$ zhidao ni_k xihuan $ziji_{*i/*j/k}$ ×1 > ×3 > ✓2
I think Zhangsan know you like self
'I think Zhangsan knows you like self'

140) Ni_i renwei $Zhangsan_j$ zhidao wo_k xihuan $ziji_{*i/*j/k}$ ×2 > ×3 > ✓1
You think Zhangsan know I like self
'You think Zhangsan knows I like self'

141)

	MATRIX SUBJECT PERSON (i)	INTERMEDIATE SUBJECT PERSON (j)	LOCAL SUBJECT PERSON (k)	BINDING OPTIONS
i	3	1	2	*i/*j/k
ii	3	2	1	*i/*j/k
iii	2	3	1	*i/*j/k
iv	1	3	2	*i/*j/k
v	2	1	3	?i/j/k
vi	1	2	3	?i/j/k

Figure 9 - Binding possibilities for *ziji* with three subjects that vary in person features.

[38] Binding by the matrix subject is extremely difficult for informants and I get variable results from the same informants hence the '?'. Nevertheless, the fact that the intermediate subject can bind the reflexive suggests that the difficulty of having the matrix subject bind the anaphor is a problem of performance. Pan (1997, pp. 30-31) marks tri-clausal sentences with 2/1 > 3 > 3 – as in (144) and (145) below – as showing no blocking effect, consistent with the judgments reported here.

In figure 9 above the binding possibilities for tri-clausal sentences are listed. There are two major points of interest in the table above. As noted, in examples (i) and (ii) the intermediate subject cannot function as an antecedent for the anaphor. However, because 1>2 and 2>3 are configurations that allow long-distance binding we would expect the intermediate clause to be a possible antecedent. A different problem can be seen in (iii) and (iv). In both of these examples the intermediate subject and the local subject are in the forbidden PCC configuration and thus we would not expect the intermediate subject to bind the anaphor. However, in (iii) the matrix subject and the local subject are 2>1 and in (iv) the matrix and local subjects are 1>2 which are not violations of the PCC. Thus, we might expect binding by the matrix subject but we do not find binding by the matrix subject. This suggests that it is not possible for the binding operation to ignore the featural properties of the intermediate subject and restrict itself to the checking of the person features on the matrix subject and the local subject. Some further combinations with three subjects are listed below.

142) Zhangsan$_i$ renwei Lisi$_j$ zhidao ni$_k$ xihuan ziji$_{*i/*j/k}$ ×3 > ×3 > ✓2
Zhangsan think Lisi know you like self
'Zhangsan thinks Lisi knows you like self'

143) Zhangsan$_i$ renwei Lisi$_j$ zhidao wo$_k$ xihuan ziji$_{*i/*j/k}$ ×3 > ×3 > ✓1
Zhangsan think Lisi know I like self
'Zhangsan thinks Lisi knows you like self'

144) Wo$_i$ renwei Lisi$_j$ zhidao Wangwu$_k$ xihuan ziji$_{?i/j/k}$?1 > ✓3 > ✓3
I think Lisi know Wangwu like self
'I think Lisi knows Wangwu likes self'

145) Ni$_i$ renwei Lisi$_j$ zhidao Wangwu$_k$ xihuan ziji$_{?i/j/k}$?2 > ✓3 > ✓3
You think Lisi know Wangwu like self
'I think Lisi knows Wangwu likes self'

146) Zhangsan$_i$ renwei ni$_j$ zhidao Wangwu$_k$ xihuan ziji$_{*i/*j/k}$ ×3 > ×2 > ✓3
Zhangsan think you know Wangwu like self
'Zhangsan thinks you know Wangwu likes self'

147) Zhangsan$_i$ renwei wo$_j$ zhidao Wangwu$_k$ xihuan ziji$_{*i/*j/k}$ ×3 > ×1 > ✓3
Zhangsan think I know Wangwu like self
'Zhangsan thinks I know Wangwu likes self'

148) Wo$_i$ renwei Lisi$_j$ zhidao wo$_k$ xihuan ziji$_{?i/*j/k}$?1 > ×3 > ✓1
I think Lisi know I like self
'I think Lisi knows I like self'

149) Wo_i renwei ni_j zhidao wo_k xihuan $ziji_{?i/j/k}$?1 > ✓2 > ✓1
I think you know I like self
'I think Lisi knows I like self'

In the examples in (142) – (0 above we can see that whenever a 3rd person subject is above a 1st/2nd person subject long-distance binding is not possible. We have also seen that *ziji* is a subject-oriented reflexive and therefore DPs that are not in subject position are not potential binders for *ziji*. We can see the subject orientation in (150) below:

150) $Wangwu_i$ shuo $Zhangsan_j$ zensong gei $Lisi_k$ yipian
Wangwu says Zhangsan give to Lisi one

guanyu $ziji_{i/j/*k}$ de wenzang
about self DE article
'Wangwu says Zhangsan gave an article about him/himself to Lisi'

(150)shows that *ziji* cannot refer to *Lisi* because *Lisi* is the post-verbal object of *zengsong* ('give'). *Ziji* can only have the matrix or embedded subject as its antecedent in (150).

Thus, it appears that the potential antecedents for *ziji* must be c-commanding or sub-commanding animate subjects. Therefore, we might expect that the blocking effect would be restricted to potential antecedents for *ziji*. However, this is not the case. Consider (151) below:

151) $Zhangsan_i$ zhidao $Lisi_j$ gao-su-guo ni_k youguan $ziji_{*i/j/*k}$
Zhangsan know Lisi tell-Guo you about self

de gongzuo
DE work
'Zhangsan knew that Lisi told you about his/*your work'

(cited in Pan, 2001, p. 281)

In (151) the 2nd person object of *tell* prevents the matrix subject from binding *ziji*, even though this 2nd person object is not a potential antecedent for *ziji*. Likewise, the blocking effect can be induced by 1st or 2nd person pronouns in an adjunct:

152)

a. $Zhangsan_i$ shuo $Lisi_j$ gen ni_k tan-guo $ziji_{*i/j/*k}$
Zhangsan say Lisi with you talk-Guo self

de shi
DE business
'Zhangsan said that Lisi talked about his/*your business with you'

b. Zhangsan$_i$ renwei Lisi$_j$ cong wo$_k$ nar tingshuo-le
Zhangsan think Lisi from I there-hear-say-PRF

ziji$_{*i/j/*k}$ de fenshu
self DE score
'Zhangsan thinks Lisi heard from me his/*my score'

(cited in Pan, 2001, p. 281)

Thus, although the 1st and 2nd person pronouns in the adjuncts in (152) neither c-command or sub-command *ziji* they can still block the matrix subject from functioning as an antecedent for *ziji*. In (153) below we can see that a 2nd person direct object blocks the matrix subject from binding *ziji*.

153) Zhangsan$_i$ zhidao Lisi$_j$ gao-su-guo ni$_k$ youguan ziji $_{*i/j/*k}$ de gongzuo
Zhangsan know Lisi tell you about self DE work
'Zhangsan knew that Lisi told you about self's work'

(Pan, 2001, p. 281)

In (153) above because *Lisi* and *ni* stand in a 3>2 PCC relation.[39] In contrast, (154) shows that both the matrix subject and the intermediate subject are both available for binding when the direct object is 3rd person.

154) Wo$_i$ renwei ni$_j$ gausu Zhangsan$_k$ guanyu ziji$_{i/j/*k}$
I think you told Zhangsan about self

de shi
DE
'I think you told Zhangsan about self'

We have seen that *ziji* is a subject-oriented reflexive and therefore DPs that are not in subject position are not potential binders for *ziji*. We can see the subject orientation in (155) below:

155) Wangwu$_i$ shuo Zhangsan$_j$ zensong gei Lisi$_k$ yipian
Wangwu says Zhangsan give to Lisi one

---

[39] The example below shows that this construction allows long-distance binding:

8) Zhangsan$_i$ zhidao Lisi$_j$ gao-su-guo Wangwu$_k$ youguan ziji $_{i/j/*k}$
Zhangsan know Lisi tell Wangwu about self

de gongzuo
DE work
'Zhangsan knew that Lisi told Wangwu about self's work'

guanyu ziji$_{i/j/*k}$ de wenzang
about self DE article
'Wangwu says Zhangsan gave an article about him/himself to Lisi'

(Cole, et al., 2006, p. 40)

(155)shows that *ziji* cannot refer to *Lisi* because *Lisi* is the post-verbal object of *zengson* ('give'). *Ziji* can only have the matrix or embedded subject as its antecedent in (155).

Thus, it appears that the potential antecedents for *ziji* must be c-commanding or sub-commanding animate subjects. Therefore, we might expect that the blocking effect would be restricted to potential antecedents for *ziji.* However, this is not the case. Consider (156) below (repeated from (153)):

156) Zhangsan$_i$ zhidao Lisi$_j$ gao-su-guo ni$_k$ youguan ziji $*_{i/j/*k}$
Zhangsan know Lisi tell-Guo you about self

de gongzuo
DE work
'Zhangsan knew that Lisi told you about his/*your work'

(cited in Pan, 2001, p. 281)

In (156) the 2nd person object of *tell* prevents the matrix subject from binding *ziji,* even though this second-person object is not a potential antecedent for *ziji.* Likewise, the blocking effect can be induced by 1st or 2nd pronouns in an adjunct:

157)

a. Zhangsan$_i$ shuo Lisi$_j$ gen ni$_k$ tan-guo ziji$_{*i/j/*k}$
Zhangsan say Lisi with you talk-Guo self

de shi
DE business
'Zhangsan said that Lisi talked about his/*your business with you'

b. Zhangsan$_i$ renwei Lisi$_j$ cong wo$_k$ nar tingshuo-le
Zhangsan think Lisi from I there-hear-say-Perf

ziji$_{*i/j/*k}$ de fenshu
self DE score
'Zhangsan thinks Lisi heard from me his/*my score'

(cited in Pan, 2001, p. 281)

Thus, although the 1st and 2nd person pronouns in the adjuncts neither c-command or sub-command *ziji,* they can still block the matrix subject from functioning as an antecedent for *ziji*. The fact that non-subjects can block the long-distance binding relation is similar to the fact that that superordinate subjects can block more local binding relationships. Non-subject blocking and superordinate subject blocking both disrupt binding relations for DPs *other than themselves*, and this suggests that the blocking effect is a consequence of some relation other than the *direct* binding relation between an anaphor and its antecedent.

Importantly, not all 1st/2nd person nominals that fail to sub-command/c-command *ziji* generate the blocking effect. Consider (158) – (161) below:

158) Na-ge zhu zai wo_i jia de $xuesheng_j$ zhidao $Zhangsan_k$
That-CL stay at my house DE student knows Zhangsan

xihuan $ziji_{*i/j/k}$
likes self
'The student who is staying at my house knows that Zhangsan likes self'

159) $Zhangsan_i$ zhidao na-ge zhu zai wo_j jia de $xuesheng_k$
Zhangsan knows that-CL stay at my house DE student

xihuan $ziji_{i/*j/k}$
likes self
'Zhangsan knows that the student who is staying at my house likes self'

160) Wo_i kandao de na-ge ren_j zhidao $Zhangsan_k$ xihuan $ziji_{*i/j/k}$
I saw DE that-CL person knows Zhangsan likes self
'The person that I saw knows Zhangsan likes self'

161) $Zhangsan_i$ zhidao wo_j kandao de na-ge ren_k xihuan $ziji_{i/*j/k}$
Zhangsan knows I saw DE that-CL person likes self
'Zhangsan knows that the person that I saw likes self'

In the examples above we can see that when a 1st or 2nd person DP is embedded inside a relative clause that is headed by a possible antecedent for *ziji* and therefore should not generate the blocking effect because the possible antecedents all agree in person features. This prediction is borne out in examples (158) – (161) above since they all allow binding by the matrix subject.

3.11 Number blocking

Tang (1989) observed that blocking also occurred with number. She noted that a plural local antecedent does not block a singular long-distance antecedent but a singular local antecedent blocks a long-distance plural antecedent:

162)

a. Zhangsan$_i$ shuo tamen$_j$ piping-le ziji$_{i/j}$
Zhangsan say they criticize-perf self
'Zhangsan say they criticize self'

b. Tamen$_i$ shuo Zhangsan$_j$ piping-le ziji$_{*i/j}$
They say Zhangsan criticize-perf self
'They said that Zhangsan criticized self'

(Tang, 1989)

However, Huang (2001) points out that this blocking effect can be eliminated "[i]f the plural remote antecedent is followed by *dou* 'all' and hence interpreted distributively (and singularly)..." (p. 10):

163) Tamen$_i$ dou shuo Zhangsan$_j$ piping-le ziji$_{i/j}$
They all say Zhangsan criticize-perf self
'They all said that Zhangsan criticized self'

(Huang, 2001, p. 10)

Thus, Huang argues that the apparent number blocking identified by Tang (1989) in (162)b is not blocking based on grammatical features: "[r]ather than a generalization about blocking, the real generalization seems to be that a plural NP simply cannot serve as the long-distance antecedent of *ziji* unless it is overtly marked to be distributive" (Huang, 2001, p. 10). Huang observes that when both the matrix and embedded subjects are plural we do not expect any blocking effect to occur due to a difference in number features, but without the distributive marker the matrix subject cannot bind the embedded anaphor:

164) Tamen$_i$ shuo tamen$_j$ chang piping-le ziji$_{*i/j}$ ($i \neq j$)
They say they often criticize-PERF self
'They said that they criticized self'

(Huang, 2001, p. 10)

However, if the plural matrix subject is marked for distributivity by *dou*, it can bind the embedded anaphor:

165) Tamen$_i$ dou shuo tamen$_j$ chang piping-le ziji$_{i/j}$ ($i \neq j$)
They all say they often criticize-PERF self
'They all said that they criticized self'

(Huang, 2001, p. 10)

Huang argues plural subjects are normally interpreted collectively in Mandarin and that reflexive predicates denote atomic events attributable only to singular individuals. Local *ziji* creates a reflexive predicate in its local clause by reflexive marking the predicate and that this forces a distributive interpretation on the local

subject. However, *ziji* cannot reflexive mark a long-distance antecedent and thus the long-distance antecedent must bear the distributive marker *dou* 'all' in order for binding to occur. Thus, the number blocking effect is of a different provenance to the person blocking effect.

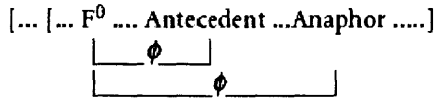
Chapter 4 – My Analysis

4.1 My analysis

We have now seen certain known and previously unknown properties of *ziji*. We also saw, in Chapter 2, a short overview of some previous analyses and their shortcomings. For the interested reader, Chapter 5 goes into these and other analyses in more detail, as well as their inadequacies. In this chapter, I put forth my own proposal.

We saw in Chapter 3 that the blocking effect emerges as the weak PCC pattern. This suggests that binding is related to agreement because the PCC is usually explained as a consequence of the operation AGREE (see Anagnostopoulou, 2005; Nevins, 2007; but see Haspelmath, 2004 for an alternative perspective). As such, the emergence of the PCC in binding would support contemporary theories of binding that attempt to reduce binding phenomena to the properties of agreement. That is, binding phenomena are seen as a consequence of the properties of the AGREE operation, the featural structure of lexical items, and the relations between lexical items in the syntax. Of course, the success of any explanation of binding theory in terms of AGREE will be dependent on how we conceive of the operation AGREE and the specific theory of binding that implements AGREE. Some recent theories that seek to reduce binding to AGREE include Heinat (2005), Rooryck and Vanden Wyngaerd (2011), Reuland (2011), and Hicks (2009).[1] However, all of these theories differ significantly in how they use AGREE to create the link between an anaphor and its antecedent. The Mandarin data that we have seen in this dissertation support Reuland's (2011) conception of how binding can be reduced to AGREE. Briefly, the key theoretical difference between Reuland's AGREE-based binding and the other approaches to AGREE-based binding is that the binding relation between an anaphor and its antecedent is *indirect*. That is, the binding relation is mediated by a functional head above the antecedent and the anaphor:[2]

1)



[1] Drummond, Kush, and Hornstein (2011) argue for a movement-based approach to minimalist construal in binding. In Chapter 5 we will see that any approach based solely on movement faces difficult obstacles in explaining the Mandarin blocking effect, so I will defer discussion of this issue. The diagram in (1) is from Drummond, et al. (2011).

[2] Noam Chomsky (p.c.) informs me that Ken Hale thought that binding was mediated by a functional head and "... Ken Hale was usually right about things".

We have seen that in Mandarin, binding patterns co-vary with the person features on matrix subjects and a structure such as the one modelled in (1) above can explain why such an unusual phenomenon might occur in language. Namely, because the functional head mediates the syntactic relationship between the anaphor and its antecedent it might be possible to create intervention conditions between the functional head and the antecedent and anaphor that it would normally bind.

4.1.1 Early AGREE

Chomsky's initial model of AGREE assumed that it was a relation that held between an unvalued feature (a probe) and a valued feature (a goal):

2)

AGREE (Chomsky, 2000; 2001)

i) An unvalued feature F on a head scans its c-command domain for another instance of F with which to agree.

ii) If the goal has a value, its value is assigned as the value of the probe.

In the strict understanding of this model AGREE is established iff the feature on the goal has a value. If the feature on the goal has no value AGREE does not apply. That is, AGREE between an unvalued probe and an unvalued goal is vacuous or impossible (see Frampton, and Gutman, 2000).[3] In this early model of AGREE, the motivation for AGREE is the need to delete uninterpretable features on a head.

However, Pesetsky and Torrego (2004) argue that the relation between probe and a goal results in the features of the goal being *shared* between the probe and the goal. That is, the same features spread across two distinct syntactic positions: "[a]greement is a valuation process that applies to two *distinct* instances of a given feature" (Pesetsky and Torrego, 2004, p. 3, italics added). In this model, once two instances of a feature F_1 and F_2 are related by AGREE the syntax cannot inspect the derivation and see in which direction the valuation occurred because F_1 and F_2 are now *shared* between two locations. We might conceive of this feature sharing as a chain or link between the two features, but it is important to understand that the link does not relate *different* features. Rather, the link symbolizes the occurrence of the same feature in two difference structural positions. Thus, Pesetsky and Torrego propose the following definition of AGREE:

[3] The probe can also have an EPP property that moves the goal to the probing head or to a projection of the probing head. Thus, AGREE can be seen as a condition for movement.

3)

AGREE (feature sharing version)

i) an unvalued feature F (a probe) on a head H at a syntactic location α (F_α) scans its c-command domain for another instance of F (a goal) at a location β (F_β) with which to agree.

ii) Replace F_α with F_β so that the same feature is present in both locations.

Under the feature sharing conception of AGREE, when the goal is valued for F and the goal is accessible to the probe *u*F, the feature F is now *shared* between the probe and the goal. Furthermore, the shared F feature on the probe may now be a goal for probes merged later in the derivation. If the feature values are *shared* as a consequence of AGREE across different structural positions a *link* is established between the two positions. The AGREE operation therefore takes two occurrences of a feature and creates a single occurence. However, crucially Pesetsky and Torrego argue contra Chomsky that the process of valuation *can* apply vacuously. This means that when the derivation includes two unvalued occurrences of F they actually become linked:[4]

4)

$$\ldots F_\alpha [\,] \ldots F_\beta [\,] \ldots \quad \Rightarrow \quad \ldots F_\alpha [\,\mathrm{unv}_i\,] \ldots F_\beta [\,\mathrm{unv}_i\,] \ldots$$

The way to understand this representation is that on the left-hand side of the arrow there are two unvalued *occurrences* of F. After AGREE applies vacuously there is *only one occurrence* of F but two instances of F. Instances are just different structural positions of the same feature. One crucial aspect of Pesetsky and Torrego's system is that they argue that "[i]f a later operation of AGREE applies between one of the instances of unvalued F ... and a distinct *valued* occurrence of F at location γ, the result will be a valued feature F present at three locations" (p. 5). That is there is a single occurrence of F and three instances of F:

5)

$$\ldots F_\alpha [\,] \ldots F_\beta [\,] \ldots \Rightarrow \ldots F_\alpha [\,\mathrm{unv}_i\,] \ldots F_\beta [\,\mathrm{unv}_i\,] \ldots \Rightarrow \ldots F_\alpha [\,3\,] \ldots F_\beta [\,3\,] \ldots F_\gamma \mathit{val}\,[3]$$

This operation values F at both locations α and β but the final result is that the feature is shared at three locations. Under Chomsky's 1995 conception of AGREE,

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[4] In Pesetsky and Torrego's system unvalued features are notated as empty brackets: F[ ]. Valued features are notated as F *val* [ ]. I will use the notation ... F_α [unv_i] ... F_β[unv_i] ... to indicate that AGREE has applied vacuously with the subscripts marking the fact that the feature now has a single occurrence.

AGREE is always an operation that holds between a valued feature and an unvalued feature. Under Pesetsky and Torrego's conception AGREE can hold vacuously between two *unvalued* features. When two matching features are in a configuration that licenses agreement the AGREE operation applies and establishes a link between the two features *even though they are unvalued.* Thus, valuation is not necessary for the operation of AGREE. For example, if α has an unvalued number feature (α*u*Num) and β has an unvalued number feature (β*u*Num) and β is accessible to α then α can be linked with β *even though neither* α *nor* β *has a valued number feature:*

6)

Probe		Goal
α	✓Vacuous AGREE	β
[*u*Num]	⟶	[*u*Num]

Once AGREE is established between two features the features are unified so that they are understood as being the same feature.

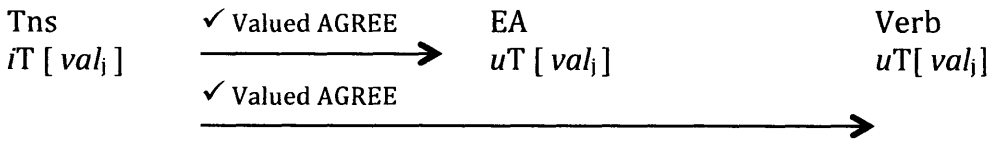
Let us illustrate Pesetsky and Torrego's conception of AGREE. Pesetsky and Torrego argue that T^0 is Tns and that Tns possesses a *u*T [ ] feature that it is looking to value. Tns can only value the T-feature from the finite verb and it acquires this value through an agreement operation; the unvalued T-feature of Tns is the probe that scans its c-command domain for a value. This value will be found on the finite verb. Structural Case on the subject is *u*T [ ] as well. *u*T [ ] on Tns probes its c-command domain and finds the subject DP in spec *v*P intervening between the probe and the finite verb. The T-feature on Tns probes and finds the subject and AGREE applies vacuously between Tns and the subject because the subject DP has an unvalued, uninterpretable T-feature: *u*T [ ]. Because AGREE has taken place there are two instances of the same T-feature, albeit unvalued. This means that Tns and the DP subject are *linked.* However, the unvalued T-feature needs a value and continues to probe. The further probing allows it to AGREE with the finite verb. Because the unvalued T-feature has two instances both instances are valued by the T-feature on the finite verb. Thus, both the T-features on Tns and the subject *share* the same feature. The *u*T on the subject (structural case) is now valued and the *i*T on Tns is valued:

7)

Step 1 – Merge *i*T [ ] on Tns. *i*T [ ] probes and finds *u*T [ ] on the external argument (EA):

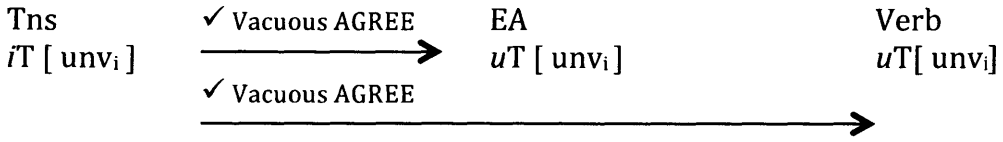
Tns	✓ Vacuous AGREE	EA
*i*T [unv_i]	⟶	*u*T [unv_i]

Step 2 – *i*T [ ] on Tns probes again . *i*T [ ] probes and finds *i*T [*val*] verb:



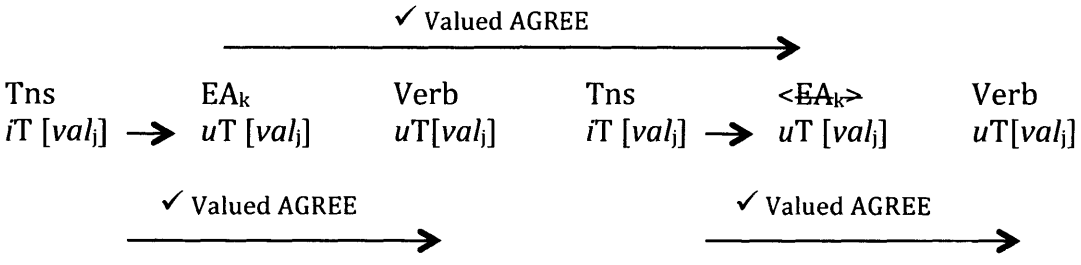
AGREE between the *i*T [ ] on Tns and *u*T [ ] leaves the T-feature unvalued leaving the T-feature free to probe again. When the T-feature does get valued by the finite verb the T-feature is interpreted as tense on Tns and gives the subject its structural case. If there was no value for the T-feature on the verb the T-probe would not be valued and the subject would not receive structural case:

8)



Nevertheless, the operation AGREE still applies in such configurations; it just applies vacuously. In such a configuration AGREE establishes a link between Tns-EA-Verb. The feature sharing in this configuration is vacuous but operates in the same manner as it would were there a realized value shared across the Tns-EA-Verb complex. Now, if the subject were to move into a higher clause that contained a finite verb the feature sharing operation would apply in the higher clause *and the lower clause.* Thus, in a raising construction the movement of the EA into a higher clause allows the EA to be probed by a higher T-feature that has agreed with the matrix verb. Consequently, not only is the raised subject's *u*T (case) valued but the lower Tns-EA-Verb complex is also valued:

9)

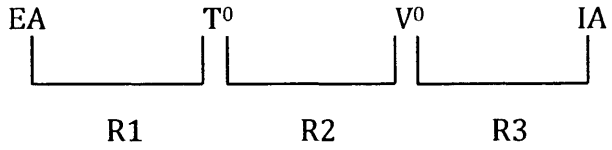


Thus, the semantic dependence of tense in the embedded infinitival clause is a consequence of the lower T-feature inheriting the value of the T-feature in the finite matrix verb. Because it is the matrix T-feature that is inherited by the lower clause there is nothing prohibiting the lower verb from agreeing in ϕ-features with the

logical subject – as noted by Iatridou (1993) and Alexiadou and Anagnostopoulou (1999). Notice that it remains true that uninterpretable features must enter into an AGREE relation with an interpretable counterpart.

4.2 Reuland's implementation

Reuland accepts Pesetsky and Torrego's proposal for AGREE and adapts it to construct an AGREE-based theory of binding. Thus, Reuland aims to establish reflexive dependencies derivationally using independently motivated morphosyntactic operations. It is assumed that the relevant operations for the interpretative dependencies will be the features available in the syntax and the AGREE operation that relates these features. Reuland's implementation of feature sharing has a clear intuition. Reuland (2011, p. 146) argues that there are independent syntactic dependencies that allow the anaphor to enter into a mediated relationship with the external argument:

10) 

In (10) above we can see that the EA is related to the IA but this relationship is mediated by T^0 and V^0. Reuland argues that the R1, R2, and R3 dependencies are independently required dependencies: R1 is subject-verb agreement, R2 is the verb-tense dependency, and R3 is the structural case dependency that is established between a verb and its object.[5] If the IA is defective, the dependency complex in (10) yields a composite dependency between the EA and the IA.[6] The composite dependency that is established results in feature sharing between the EA and IA and this "carries over as an interpretive dependency and the C-I interface" (Reuland, 2011, p. 146).

(10) above creates what Reuland refers to as a *chain*. A chain is given the following definition:

[5] In current thinking, the case dependency is between v^0 and the internal argument. Reuland's illustration in (10) of the dependencies that mediate binding abstracts away from this conception of case assignment. However, in Reuland 2011 (p. 177) he does argue that the relation is actually between T^0 and v^0 and that the relation is established through a tense feature. We will see this implementation starting in (0 below.

[6] I assume that this is driven by the unvalued features on the IA. That is, the need to close the open property on the verb and the IA.

11)

General condition on A-chains

A maximal A-chain (α_1, ... , α_n) contains exactly one link - α_1 – which is both +R and marked for structural case.

The +R property is defined as in (12) below:

12)

An NP is +R iff it carries a full specification for ϕ-features.

The general condition on A-chains will ensure that it is only the head of the chain that will be specified for ϕ-features. Thus, a reflexive cannot head a chain because it lacks a full specification for ϕ-features. Crucially, Reuland argues that structural case is also a necessary condition for chain formation between DPs:

> chain formation requires more than just "coindexing" in a local configuration. Bearing structural case is ... what appears to force the foot to enter the chain. My [Reuland] view is that this happens since the structural Case enables the verbal system to enter the chain formation process, and mediate establishing a chain ... It is the structural Case that establishes the relation. (Reuland, 2011, p. 116)

Reuland (2011) develops an analysis in which he argues that AGREE is the operation that derives anaphoric dependencies. Reuland argues that SE anaphors are underspecified for ϕ-features and pronouns are fully specified for ϕ-features. Reuland proposes the following structure:

13)

$[T_{u\phi} \quad [SE_{u\phi} \quad [EA_{val\phi} \; [V^*_{u\phi} \quad [\,V \quad (SE_{u\phi}) \quad]\,]\,]\,]\,]$

In this structure, every instance of ϕ-features is linked by a series of successive steps in the operation of AGREE. The external argument provides the valuation and interpretable ϕ-features. AGREE copies the ϕ-features of the external argument and uses these features to value the unvalued but interpretable ϕ-features of the SE anaphor. The structure that we see in (13) is the end of the derivational process. Let us see how Reuland (2011) derives this structure.

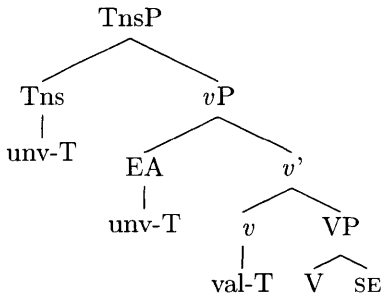
Reuland adopts Pesetsky and Torrego's (2004) proposal that interpretable features can be unvalued.[7] Furthermore, Pesetsky and Torrego argue that when AGREE

[7] Pesetsky and Torrego (2004) argue that unvalued features can be either interpretable or uninterpretable. This is a marked departure from Chomsky (2000, 2001). Chomsky proposed that there was a link between a feature's being unvalued and its being uninterpretable. Pesetsky and Torrego sever that link and propose that a feature can be unvalued yet interpretable. Reuland argues that SE anaphors are an entity of this kind. They enter the derivation with unvalued features but acquire features in the course of the derivation and the interpretation of these features results in

applies it establishes a syntactic link between the probe and the goal. This syntactic link is a single feature that is spread over two positions. That is, there is a single feature that is shared across two locations, hence feature sharing.

The derivation proceeds as follows.[8] Case is an uninterpretable [unv-T] feature which enters the derivation unvalued. The unvalued but interpretable tense feature [unv-T] on the Tns head probes the external argument. However, the external argument bears unvalued [unv-T], and this means that the external argument cannot value the probing feature [unv-T] feature on the Tns head:

14)



The Tns probe does not value its [unv-T] feature when it probes the external argument but the probing establishes a syntactic link between the Tns head and the external argument; AGREE applies vacuously. Tns probes again and finds the valued (but uninterpretable) [val-T] feature on *v*. AGREE applies between the [unv-T] feature on Tns and the [val-T] feature on *v*. Because of the previously established link between Tns and the external argument, valuation of [unv-T] on Tns also values [unv-T] on the external argument;

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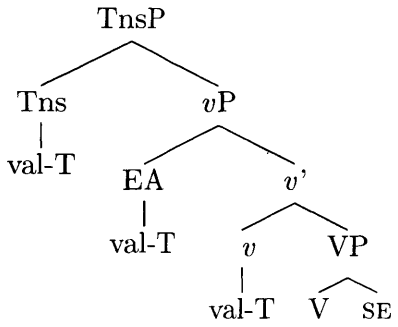
binding. Pesetsky and Torrego also propose that valued features can either be interpretable or uninterpretable.

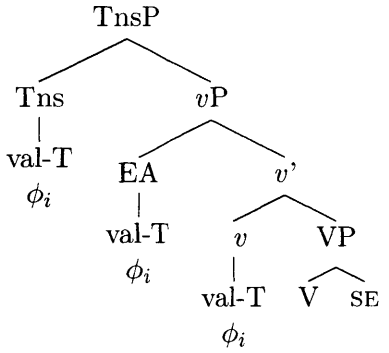
[8] I will preface unvalued features with 'unv' and valued features with 'val'.

15)



This sequence of operations derives the fact that there is now a [T] dependency between Tns-EA-*v*.[9] Crucially, Reuland argues that this [T] dependency extends to a ϕ-feature dependency:[10]

16)



Thus, there is now a Tns-EA-*v* ϕ-feature dependency. Next we turn to the problem of how to link the SE anaphor to the Tns-EA-*v* complex. Reuland proposes that the SE anaphor has unvalued ϕ-features. In the derivation above the SE anaphor is not probed by Tns and appears to have no way of obtaining its ϕ-features. Reuland argues that v^0 has an EPP feature that moves the SE anaphor to the edge of the *v*P:[11]

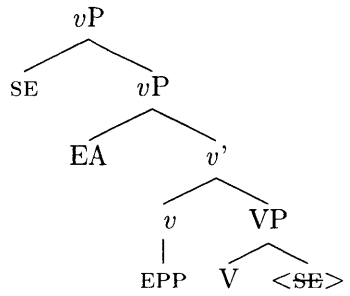
---

[9] Note that the relationship is established with v^0 rather than with V^0.

[10] Reuland doesn't explain what it means to 'extend' a [T] dependency to a ϕ-feature dependency. However, for approaches in which multiple probes on a single head are sometimes required to AGREE with the same Goal see Pesetsky and Torrego (2001), Kotek (2014), van Urk (2015), van Urk and Richards (2015), Richards (to appear), and references cited therein.

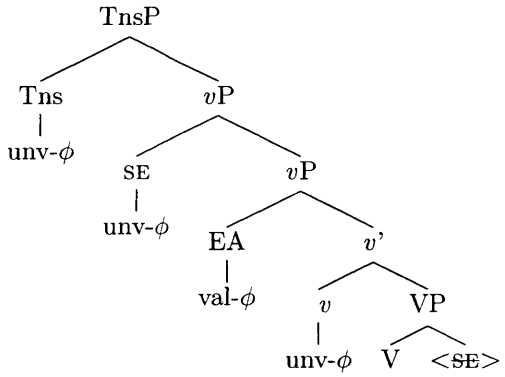
[11] I assume that the second specifier is above the subject.

17)



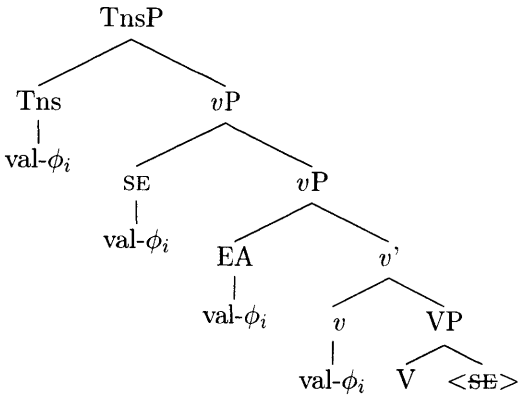
Now, when the [unv-ϕ] on Tns probes, it will first probe the SE anaphor. However, because the SE anaphor's ϕ-feature is unvalued the probe cannot agree with the SE anaphor and will consequently probe further. Nevertheless, Tns does establish a link with the SE anaphor, albeit vacuously:

18)



Once the [unv-ϕ] on Tns finds the [val-ϕ] on the external argument AGREE applies. Because of the link between Tns and the SE anaphor the [unv-ϕ] on the SE anaphor is also valued. Additionally, the previously established [T] feature dependency between Tns-EA-*v* means that the ϕ-features on v^0 also get valued:

19)



This derivation works well enough. However, there is some uncertainty about its precise characterization. In Reuland's (2011) presentation, he first discusses the establishment of the [T] feature dependency and then outlines the ϕ-feature dependency. I don't know if this is the manner in which the derivation is presumed to proceed or simply for ease of exposition in outlining some intricate derivational steps. Hence, I will simply note that having the SE anaphor move after the [T] dependency is established is quite unexpected. If v^0 contains an EPP feature we would expect it to move the SE anaphor immediately upon merger instead of waiting for the [T] complex to be established. Furthermore, if this EPP feature did trigger movement, we might reasonably expect the SE anaphor to occur below the subject rather than above, because the subject has not been merged yet.[12] Nevertheless, the movement of the SE anaphor is a crucial step in Reuland's above derivation because it links the SE anaphor with the source of ϕ-features; the Tns-EA-*v* complex. However, it is a brute force solution to stipulate an EPP feature on v^0. At any rate, we can dispense with the EPP movement and preserve the core of Reuland's derivation. Let us simply assume along with current practice that v^0 assigns accusative case to the object and has unvalued ϕ-features. When v^0 is merged, its unvalued ϕ-features probe the SE anaphor but these ϕ-features cannot be valued by the SE anaphor. Nevertheless, a link is established between v^0 and the SE anaphor object. Once the Tns-EA-*v* complex is formed it acquires ϕ-features. This means that v^0 has ϕ-features which it can then pass on to the SE anaphor it is linked with.[13]

---

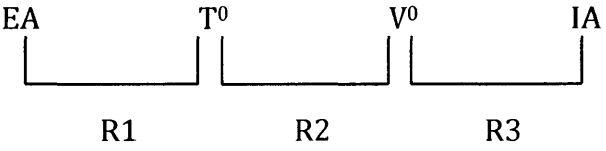
[12] We might stipulate that it has to move above the subject so that it can enter a ϕ-feature sharing dependency between Tns and the external argument. See Doggett (2004) and McGinnis (1998) for arguments that a post-verbal DP can raise into the specifier position of the *v*P via an EPP feature.

[13] Reuland (2011) also argues that movement of the SE anaphor is not required in his derivation:

> ... it is no longer necessary [to] assume covert movement of SE along with the verb if it is the Case-checking relation between SE and the verbal system itself that determines the dependency between the two. It suffices that it is encoded on the verb or its functional structure that checking has taken place, and that this information is preserved when the verb moves, or, more generally, when it enters a dependency with a c-commanding head. So,

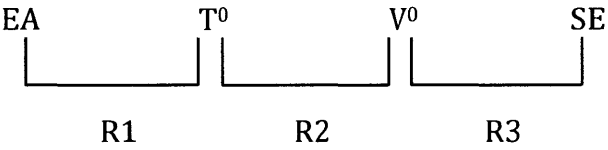
The important part in the Reuland derivation is that the ϕ-feature dependency is parasitic on the case dependency. The syntactic relationships between positions are first established through the system of structural case and then 'extended' to the ϕ-features and this sharing of ϕ-features is interpreted as binding. Thus, the derivation above demonstrates how we can generate a connection between the external argument and an anaphor in object position through subject-verb agreement (R1), verb-tense dependency (R2), and the structural case dependency that is established between a verb and its object (R3):

20)



Reuland argues that the R1, R2, and R3 dependencies are independently required dependencies and if the IA is defective, the dependency complex in (20) yields a composite dependency between the EA and the IA. The composite dependency that is established results in feature sharing between the EA and IA and this "carries over as an interpretive dependency and the C-I interface" (Reuland, 2011, p. 146). Reuland argues that these are the dependencies that give rise to the feature-sharing relation between the external argument and the anaphor:

21)



Reuland argues that in this approach it is the feature specifications that determine what elements can be linked up into a chain.[14]

---

chain formation is a by-product of independently existing dependencies, and anaphor binding results from this chain formation. (Reuland, 2011, p. 303).

[14] When *ziji* is in indirect object position it displays the blocking effect:

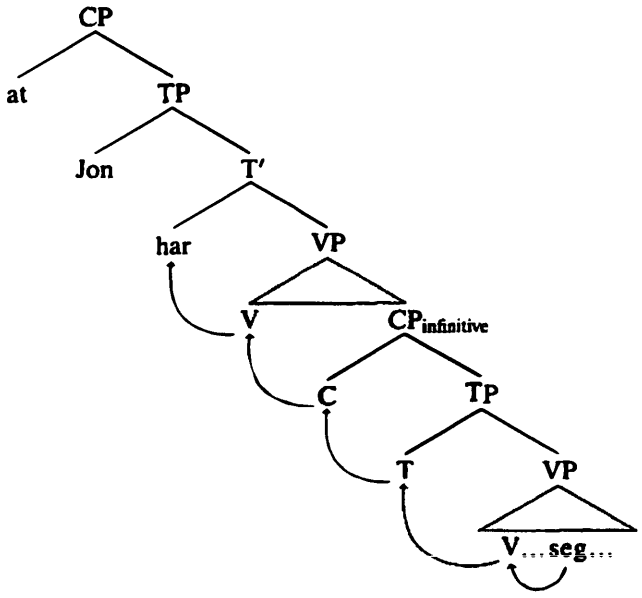
1)

a.	Zhangsan$_i$	zhidao	wo$_j$	song-gei-le	ziji*$_{i/j}$	yi	ben	shu
	Zhangsan	know	I	gave-PRF	self	one	CL	book
	'Zhangsan knows I gave self one book'							
b.	Wo$_i$	zhidao	Zhangsan$_j$	song-gei-le	ziji$_{i/j}$	yi	ben	shu
	I	know	Zhangsan	gave-PRF	self	one	CL	book
	'I know Zhangsan gave self one book'							

The fact that *ziji* manifests the blocking effect is evidence that the indirect object is a position which allows syntactic binding.

However, this leaves a conspicuous problem; how does the mechanism in (21) allow long-distance binding *across* the local external argument? (21) illustrates the chain that is formed between SE and the external argument, but this chain in (21) does not extend above the local subject. However, if long-distance binding is to occur through chain formation, the chain will have to extend *beyond* the local subject. Reuland suggests that cross-clausal relationships *can* be established, and that they are established through C-T dependencies because "[w]e know independently from the work on tense interpretation that T is dependent on C or a c-commanding higher T, and that C's are also dependent on c-commanding higher C's" (Reuland, 2011, p. 303). Reuland argues that the chain formation mechanism in (21) can be extended such that the embedded SE anaphor and the matrix T^0 can form a chain:

22)



Reuland illustrates this long-distance chain formation with an example from Norwegian. Consider the sentences below in which the anaphor is bound by the matrix subject:

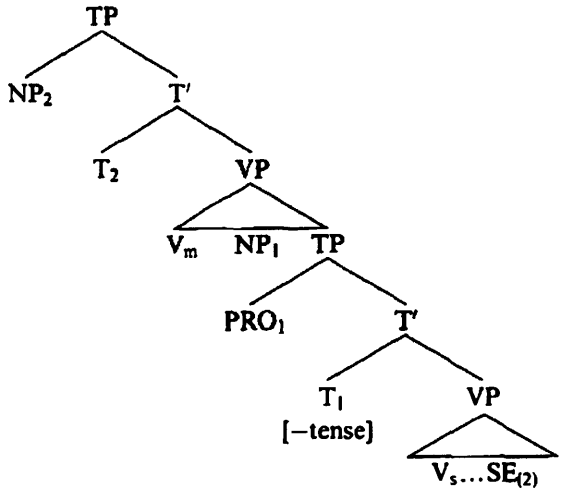
23) Jon$_i$	bad	oss	snakke	om	seg$_{i/*j}$
Jon	asked	us$_j$	talk	about	SE
'John asked us (to) talk about self'					

24) Jon$_i$	bad	oss	forsøke	å	få	deg	til	å	snakke
Jon	askedus		(to) try	to	get	you	to	to	talk
pent	om	seg$_{i/*j}$							
nicely	about	SE							

'John asked us to try to get you to talk nicely about self'

In Reinhart and Reuland (1991) binding by a long-distance antecedent was achieved through LF domain extension that was achieved through massive pied-piping. SE first adjoins to its governing verb, then the V_2-SE_2 complex moves to T forming $SE_2/V_2/T_1$. $SE_2/V_2/T_1$ then moves up to V_m before $SE_2/V_2/T_1/V_m$ finally reaches T_2. It is here at T_2 that the SE anaphor can acquire its features:

25)



Reuland notes that this derivation is questionable on Minimalist grounds because "... triggering such generalized verb raising requires an interpretation-driven distribution of attracting features, which is problematic" (2011, p. 300). That is, the anaphor is moving in order to get its features valued rather than in response to a probe; "[t]he general line that SE anaphors move in order to get their ϕ-features is problematic from a minimalist perspective, in so far as it is based on self-serving movement of the anaphor that is not triggered by an independent requirement on feature checking" (2011, p. 302). Nevertheless, Reuland argues that "... from this conception it is a small step towards an implementation in the feature checking/valuation approach ... [illustrated in (21) above]"(2011, p. 300).

Reuland argues that the difference between finite clauses and non-finite clauses has to do with whether or not ϕ-features are introduced into the clause at T^0. In a finite clause the ϕ-features on T^0 are valued syntactically through Merge; "... when the local finite T^0 is merged to the structure containing the V-SE chain, the chain is extended and SE is immediately valued" (Reuland, 2011, p. 307).[15] By contrast, non-

[15] Reuland does not make it explicit here but recall that when T^0 is merged it is the [tense] feature that probes first. The [tense] feature on T^0 will probe the EA and find an unvalued tense feature and this establishes a link between the T^0 and the EA. T^0 then probes again and find the tense feature on the verb. The tense value on the T^0-EA-V complex then extends to a ϕ-feature dependency. The ϕ-

finite T^0 is not specified for ϕ-features, and therefore when the T-V-SE chain is formed it does not immediately lead to the valuation of SE. Reuland proposes that finiteness is represented as a functional head in the C-system (following Rizzi, 1997; Bianchi, 2000, 2001) and that this functional head Fin^0 is +fin in finite clauses (Fin^{+fin}) and -fin in non-finite clauses (Fin^{-fin}). Fin^{-fin} is the head that mediates the control of PRO. Reuland argues for the following two assumptions:

i) in non-finite clauses the C-system contains Fin^{-fin}, and minimally one other member – let's call it C^T.

ii) Fin^{-fin} and C^T are equidistant with respect to the T-system below and with respect to the V-system in the matrix clause.

Reuland argues that the T^0-V-SE complex can be linked to either C^T or Fin^{-fin}: "... economy entails no preference for which member of the C-system it is linked to. Specifically, both Fin^{-fin} and C^T are admissible as targets" (Reuland, 2011, p. 309). If the T^0-V-SE chain is linked to Fin^{-fin} we will have binding once the controller is merged. However, if the C^T is taken as a target for the T^0-V-SE chain "... the chain can be continued upward via the next higher V ..., it can link to [the higher] T, and so on. For any subsequent infinitival clause the same reasoning applies, and there is no limit to the number of times that extension can take place" (Reuland, 2011, p. 309). Consider the example from Norwegian:

26)[$_0$	Jon$_i$	bad	oss	[$_1$	forsøke		[$_2$	å	få	deg
	Jon	asked	us		(to) try			for	get	you

[$_3$	til	å	snakke	pent	om	seg$_{i/*j}$]]]]
	to	to	talk	nicely	about	SE

'John asked us to try to get you to talk nicely about self'

According to Reuland's analysis (26) will have the following structure:

27)

[$_{S0}$ C^0/$Fin^{+fin}{}_0$ Jon T^0 V^0[$_{S1}$ C^1/$Fin^{-fin}{}_1$ PRO_1 T^1 V^1[$_{S2}$ C^2/$Fin^{-fin}{}_2$ PRO_2 T^2 V^2[$_{S3}$ C^3/$Fin^{-fin}{}_3$ PRO_3 T^3 V^3 SE]]]]

The T^3-V^3-SE chain forms independently but this complex can now link to either C^3 or $Fin^{-fin}{}_3$. If the T^3-V^3-SE is linked to $Fin^{-fin}{}_3$ it will be bound by the controller of PRO_3 when the controller is merged. However, C^3 does not transmit control and if the T^3 V^3 SE is linked to C^3 SE will not be valued after the controller is merged. If C^3 is the target of the T^3-V^3-SE chain, the chain is unvalued and "the chain can be continued upward via the next higher V (V^2), it can link to T^2, and so on" (Reuland, 2011, p. 309). This is what allows skipping a matching controller. If the chain reaches T^0 the

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feature dependency on T^0-EA-V is linked to the ϕ-feature V-SE dependency and SE receives/checks its features from the external argument.

chain will acquire the ϕ-features of the matrix subject and long-distance binding will result. This works well enough, but it is unclear how to implement it in simple non-control structures. The derivation is designed for control structures because it is only the control structures that have the equidistant C/Fin^{-fin} nodes that generate the optionality in the derivation. In Mandarin we have this optionality but there are pronounced subjects rather than control subjects. It is not clear how Reuland's derivation in (27) would apply.[16]

4.3 The analysis

We have seen that long-distance binding raises numerous theoretical problems. The significant fact about long-distance binding is that the relationship between a long-distance reflexive and its antecedent is an unbounded dependency. In itself this is not a problem because we know that the grammar can produce unbounded dependencies. However, the Mandarin blocking effect shows us that the standard mechanism, namely movement, is an inadequate theoretical approach that cannot explain the pattern that we have seen. Nevertheless, I would like to argue that we can adopt and adapt some existing ideas from the scholarly literature and produce an analysis that will provide an elegant explanation of the blocking effect and long-distance binding in Mandarin. The alchemical mixture we need is the architectural perspective of Reinhart and Reuland (1993; and Reuland 2011), the AGREE mechanism of Nevins (2007), together with an approach developed from Progovac (1992, 1993) and Reuland (2011).

4.3.1 A lost gem: Ljiljana Progovac

Progovac published two papers in rapid succession (1992, 1993) in which she outlined a proposal for the analysis of long-distance reflexives. The proposal is very much influenced by Borer (1989). Progovac's analysis is often cited but rarely discussed. I believe her proposal is the best Minimalist analysis available. Progovac begins by acknowledging Chomsky's (1981) version of Principle A: an anaphor must be bound in its governing category, the domain includes the anaphor, the governor of the anaphor, and a SUBJECT. That is, the governing category for an anaphor is defined as the smallest maximal projection containing the anaphor, the governor of the anaphor and a subject for the anaphor. The choice of SUBJECT is given in (0 below:

---

[16] Reuland does not offer his sample derivation as complete theory. In this section of his book he says that the derivation is a "... sketch [of] how a syntactic dependency between [a] SE anaphor and its antecedent involving the mechanism of [(21) - chain formation] can be established". Furthermore, Reuland notes that his derivation does not discuss "... the precise specification of the triggers" (Reuland, 2011, p. 304).

28)

Possible SUBJECTs for reflexives are [NP, IP], [NP, NP], or AGR

However, Progovac also reminds us that "[i]n order to keep the binding theory universal, some explanation must be sought for long-distance dependencies between morphologically simple (X^0) reflexives and their antecedents" (1992, p. 671). Progovac provides a canonical example of long-distance bound *ziji*:

29) $Zhangsan_i$ renwei $Lisi_j$ zhidao $Wangwu_k$ xihuan $ziji_{i/j/k}$ ✓3 > ✓3 > ✓3
Zhangsan think Lisi know Wangwu like self
'Zhangsan thinks Lisi know Wangwu likes self'

Thus, in (29) above what we see is that the reflexive is bound across two potential [NP, IP] structures, in direct violation of Principle A. Progovac observes that the significant fact about this construction is that *ziji* can be bound outside the governing category as it is defined in Chomsky (1981) and that "[m]ost of the accounts [of (29)] rest on the assumption that long-distance reflexives are subject to an invisible movement in LF, either by adjunction to heads (see Pica, 1987; Cole, et al, 1990), or by IP-adjunction (see Huang and Tang (1989))" (Progovac, 1992, p. 671). Progovac observes that the main concern for movement analyses is the fact that no movement constraints such as subjacency are obeyed in the construal of long-distance reflexives. Additionally, Progovac notes that the categories in (0 do not form a natural class. Specifically, XPs move to XPs so that XP positions are potential antecedent governors and X^0s move to other X^0 categories so that potential antecedent governors for X^0 categories are other X^0 categories. Instead, Progovac argues for an approach that does not utilize movement.

Progovac begins her account by noting that it is only X^0 reflexives that can be bound long-distance (citing, Yang, 1983 and Pica, 1987). Progovac hypothesizes that an X^0 reflexive must be bound to an X^0 antecedent, and that the only available c-commanding antecedent that is an X^0 category is AGR.[17] Given the grouping of unnatural classes in (0 above, Progovac proposes that [NP, IP] / [NP, NP] is a natural class belonging to XP and AGR is a separate natural class belonging to X^0. She proposes the following condition in which she relativizes the notion of subject:

30)

> If R is an X^0 (monomorphemic) reflexive, then its SUBJECTs are X^0 categories only (i.e. AGR); if R is an X^{max} (morphologically complex) reflexive, its SUBJECTs are X^{max} specifiers, therefore [NP, IP] and [NP, NP]

By relativizing the notion of subject in this manner this move "... not only renders the set of SUBJECTs a natural class, but also captures without stipulation the

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[17] Progovac (1992) asserts that AGR is the only salient X^0 head that contains the relevant pronominal features. On Progovac's account it is not immediately clear why the anaphor requires pronominal features.

differences between simple and complex reflexives.." (Progovac, 1993, p. 756). If an X^0 reflexive must be bound to AGR, AGR will define the class of subjects available for the anaphor:

31)

AGR is the only SUBJECT for X^0 reflexives.

This would explain why X^0 reflexives can be bound across [NP, IP]/[NP, NP]. Namely, X^0 reflexives do no recognize XP as their subjects. Thus, Progovac proposes the following conditions:

32)

a. A reflexive must be bound in the domain D containing R, a governor for R, and a SUBJECT.

b. If R is an X^0 (monomorphemic) reflexive, then its SUBJECTs are X^0 categories only, that is, AGR (as the only salient (c-commanding) head).

c. If R is an X^{max} (morphologically complex) reflexive, its SUBJECTs are X^{max} specifiers, therefore [NP, IP] and [NP, NP].

That is, there is a general requirement on reflexives that they have a binder of the same phrasal (XP or X^0) type; SUBJECTs are relativized to the phrasal type of the reflexive in question.

Progovac argues that if overt AGR is absent from the local clause that contains an X^0 reflexive, the reflexive will be bound by the closest AGR that contains agreement. This will result in a long-distance binding. Infinitival clauses and languages without morphological agreement lack overt AGR, and this is why we see long-distance binding out of infinitival clauses cross-linguistically and in languages that lack morphological agreement such as Mandarin. Progovac argues that Principle A is respected because the anaphor does not cross the local X^0. The local X^0 still binds the anaphor but the anaphor will be coreferential with the DP with which AGR is coindexed.

Progovac argues that we should assume that Mandarin has syntactic AGR, "but that its morphological emptiness makes it anaphoric, or dependent on coindexation with higher AGR. ... If AGR is bound to a higher AGR, the SUBJECT is now the whole AGR chain, and the domain extends up to the head of the chain" (1992, p. 673). Thus, through simple transitivity a simplex reflexive can become bound to the subject of a higher clause.[18]

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[18] Reinhart and Reuland (1991) adopt Borer's proposal: "[w]ith Borer (1989) we assume that both infinitival and finite Infl are associated with Agr, which is anaphoric in the former case. Anaphoric

Progovac argues that two facts about Mandarin long-distance anaphors support such an analysis: subject-orientation and the blocking effect. The subject orientation is a clear derivational consequence of Progovac's analysis. If subjects are co-indexed with AGR, then we expect to see an X^0 element that is also coindexed with AGR to also be bound by the subject through simple transitivity.

33)Zhangsan$_i$ AGR_2 shuo [Lisi AGR_1 chang piping ziji$_i$]
Zhangsan say Lisi often criticize self]
'Zhangsan said Lisi often criticize self'

In the example in (33) above Progovac argues for the following analysis. AGR_1 is the SUBJECT and binder for the X^0 reflexive *ziji*. If the local AGR_1 is bound to the next higher AGR_2, by transitivity, the reflexive will also be bound to AGR_2, and coindexed with both of the subjects. This means that the "... anaphoric AGR may or may not depend on a higher c-commanding AGR for its content (cf. controlled and arbitrary PRO), as suggested by Jim Huang" (Progovac, 1993, p. 758).[19] The syntactic mechanism by which binding occurs is through feature sharing. Progovac explains:

> We are dealing here with binding by AGR, which can involve feature indexing, but not coreference indexing, since AGR is not a referential entity. By convention, AGR is coindexed to its SUBJECT (see Chomsky, 1981), but this coindexation only involves sharing of features, and it would be counterintuitive to speak of a coreference relation between AGR and its subject, since AGR cannot be directly referential. Since *Zhangsan* and *Lisi* in [(33)] are coindexed only by transitivity, that is, by coindexing their AGRs, this process might involve feature indexing too, rather than direct coreference indexing. (Progovac, 1993, p. 759)

That is, Progovac argues that the coindexing between AGRs is allowed because the formal features of the matrix AGR are shared with the embedded AGR; there are not two separate instances of formal features on the two AGR nodes. Thus, the anaphoric features shared across the AGR nodes do not indicate coreference in any way, because AGR does not refer. Progovac continues and argues that "[t]his then explains, why, in case AGRs are coindexed, subjects must be feature compatible, but no more than that" (1993, p. 759). However, this analysis can also help to explain the pattern we see in the blocking effect.[20] Let us consider two examples. In (34) the embedded AGR_1 cannot be bound to AGR_2 owing to the conflict in features: AGR_2 is 3rd person and AGR_1 is 1st person. This means that *ziji* is only bound to the local AGR_1 with the consequence that only local binding is available.

34)Zhangsan$_i$ AGR_2 renwei[wo AGR_1 hai-le ziji$_i$]

Agr bears ϕ-features just like finite Agr, hence, it is equally suitable as a 'host' supplying these ϕ-features to the SE-anaphor" (p. 302)

[19] Progovac argues that the *I* index on *Lisi* in example (34) above is a feature index and does not signal coreference between *Zhangsan* and *Lisi*.

[20] Progovac is using the blocking effect as first characterized by Tang (1989). That is, the blocking effect occurs when the subjects differ in person features.

Zhangsan think I hurt-ASP self]
'Zhangsan think I often criticize self'

35) Zhangsan$_i$ AGR$_3$ shuo [wo$_j$ AGR$_2$ zhidao [Lisi$_k$ AGR$_1$ chang piping ziji$_{*i/*j/k}$]]
Zhangsan said I know Lisi often criticize self
'Zhangsan said I know Lisi often criticize self'

We can see in (35) that long-distance binding is also blocked. Progovac argues that "...if the long-distance effect is made possible by an AGR-chain formation process, then the presence of AGR$_2$ with different person/number features prevents binding of AGR$_1$ to AGR$_2$ or AGR$_3$, and the domain cannot be extended" (1992, p. 674); "the embedded AGR$_1$ cannot be bound to AGR$_2$ owing to the conflict of features: AGR$_2$ is for 3rd person, whereas AGR$_1$ is for 1st person" (Progovac, 1993, p. 760). In (35) AGR$_1$ cannot be bound by AGR$_3$ because AGR$_3$ is too far away and it violates minimality to cross AGR$_2$. Thus, Progovac is arguing that AGR$_2$ is an intervention effect that disrupts the anaphoric AGR chain from being established cross-clausally with the consequence that we only see local binding in (35).

Progovac argues that the blocking effect is surprising and suggests that syntactic binding is involved because the blocking effect is so closely related to an arrangement of person features. She concludes that "... syntactic binding must be involved, and that logophoric construal is employed only as a last resort, when syntactic binding fails" (1992, p 674). Progovac calls this anaphoric AGR approach to long-distance anaphora the 'relativized SUBJECT' analysis because the X^0 reflexive is bound by the closest X^0 head, invoking Rizzi's Relativized Minimality. Progovac argues that this anaphoric AGR analysis also finds support in languages with overt agreement when there is long-distance binding out of infinitivals. In the example below, we can see that a Russian anaphor cannot be bound across a finite subject clause:

36) Vanja$_i$ znaet [čto Volodja$_j$ ljubit svoj-u$_{*i/j}$ zěn-u]
Vanja knows that Volodja loves self's-ACC wife
'Vanja knows that Volodja loves self's wife'

(Progovac, 1992, p. 674)

However, if the embedded clause contains no overt agreement because it is an infinitival clause, the anaphor can be bound by the matrix subject:

37) Professor$_i$ poprosil assistenta$_j$ PRO čitat' svoj$_{i/j}$ doklad
Professor asked assistant-ACC PRO to-read self's report
'Professor asked assistant to read self's report'

(Progovac, 1992, p. 674)

Progovac argues that the fact that both Mandarin and Russian infinitivals allow long-distance binding follows from the fact that it is lack of overt morphological agreement that allows long-distance binding to occur. When the agreement is

anaphoric, as it is in Russian infinitivals and Mandarin, long-distance binding can take place:

> What is it that infinitival clauses in Russian have in common with Chinese finite clauses? Moreover, what makes the two distinct from Russian finite clauses? There is a general consensus that Chinese-type languages host no morphological AGR in their clauses ... The same is true of infinitivals. In fact, Borer (1989) argues that both infinitivals across languages and Chinese finite clauses host anaphoric (dependent) AGR. I [Progovac] will assume with Borer (1989) that the absence of morphological AGR in Chinese-type languages and infinitivals does not entail the absence of syntactic AGR. (Progovac, 1993, p. 758)

Russian finite clauses host morphological (overt) AGR and therefore form a governing category for X^0 reflexives. Recall, that this is just the typological division that is argued for by Koster and Reuland (1991). Koster and Reuland (1991) propose that there are two binding domains for LD-anaphora and that each binding domain is demarcated by an opacity factor F. The opacity factor for the local domain is defined by an accessible subject., while the opacity factor for the long-distance domain is defined by the first finite Infl. Let us see how Koster and Reuland justify this simpler typology.

Koster and Reuland survey languages that contain LD-anaphora and examine "the domains relevant for binding, the anaphors which can be bound in these domains, the prominence requirement to which they are sensitive, and whether they show complementarity with respect to pronominals" (1991, p. 11). An example from their survey is given below:

38)

Dutch[21]

Anaphor	Prominence factor of antecedent	Complementarity with respect to pronouns
Domain 1: first **(accessible) Subject**		
zichzelf 'himself'	c-command	yes
zich 'himself'	subject	yes/no
'mzelf 'him self'	c-command	yes
elkaar 'each other'	c-command	yes
Domain 2: first **finite Infl** beyond domain 1		
zich 'himself'	subject	no

Progovac (1993) argues that XP reflexives will not be affected by the distinction between overt and anaphoric AGR because they are not relativized to AGR as their subject. However, X^0 reflexives *are* relativized to AGR as their SUBJECT and therefore "... their binding possibilities are significantly influenced by the type of AGR in their local clause" (1993, p. 758)

As mentioned above, Progovac's relativized SUBJECT analysis also offers a principled explanation of the widely attested subject orientation of X^0 reflexives.[22] Progovac gives the following example from Russian:

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[21] *Zich* can be bound in Domain 1 when the verb is intrinsically reflexive. Within Domain 1, *zich* is not in complementary distribution with pronouns when it occurs in PPs but in other positions it is.

[22] Progovac notes that there are exceptions to this generalization. For example, some Icelandic speakers will accept object binding in local contexts:

2) Ég sendi Haraldi$_i$ föt á sig$_i$
I sent Harald clothes for self
'I sent clothes to Harold for self'

Progovac argues that an X^0 reflexive is dominated by an XP: -[$_{NP}$ [$_N$ self]] – and that this lets the 'self' morpheme act as a local XP anaphor. This analysis is supported by the fact that only local objects can bind the reflexive. Superordinate objects cannot bind the reflexive:

3) *Ég lofaði Haraldi$_i$ að raka sig$_i$
I promised Harald to shave.INF self

39) Milicioner$_i$ AGR$_i$ rassprašival arestovannogo$_j$ o sebe$_{i/*j}$
Policeman questioned suspect about self
'The policeman question suspect about self'

Progovac argues that subject orientation derives from the fact that X^0 reflexives can only be bound to another head.[23] In (39) the reflexive is bound to AGR and by transitivity it is bound only to the subject of the clause.[24] In agreementless languages like Mandarin "... X^0 reflexives are bound to anaphoric AGR ... [and] this anaphoric AGR is bound to a higher AGR, the reflexive can be coindexed to either of the subjects, which actually share one AGR chain. This explains not only subject orientation and long-distance effects, but also blocking effects" (Progovac, 1992, p. 675).[25]

Progovac then raises an issue that will become important for us: the anaphor agreement effect. Namely, she wonders "[i]f AGR is a possible binder for simple reflexives, one may wonder why they cannot appear in the subject position and be bound to AGR; it is a well-known fact that reflexives cannot appear in a nominative case" (1992, p. 676).[26] Progovac proposes that the anaphor agreement effect arises because reflexives are not 'strong enough' to 'trigger' agreement on AGR, and because they cannot trigger agreement they cannot be assigned nominative case.[27] Consequently, "[s]ubject reflexives are grammatical in Chinese-type languages since

---

'I promised Harald to shave self'

This works for the case at hand but it is not consistent with SE reflexives that can't be bound locally, apparently subject to Principle B. Furthermore, it also leaves unexplained the tendency for local X^0 reflexives (Mandarin '*ziji*' and Russian '*sebja*') to be subject-oriented, whereas no such subject-orientation holds in Icelandic *sig* and local English complex reflexives. Perhaps they are simply oriented towards the event center of the sentence, as Reuland suggests. Neverthless, this variation is observable only in the local environment and the long-distance binding is consistently subject-oriented and this fact follows from the X^0 gaining its binding properties through AGR

[23] It is important to note that X^0 reflexives are bound by the local X^0 AGR head. That is, they are always bound to the first/local AGR head and only if this AGR is anaphorically related to a higher AGR head can the reflexive be bound by the higher AGR through transitivity

[24] Recall that Reinhart and Reuland (1991) also argue that subject orientation is derived by having simplex reflexives associated with AGR.

[25] Although Progovac does not explicitly discuss how this analysis derives blocking effects, I think that the intuition is clear enough: Progovac is assuming that the AGR chain must have a consistent feature value across all of its links and this cannot occur if the subjects differ in person features, so blocking obtains.

[26] Rizzi (1990) studied the restriction on nominative anaphors and it was subsequently discussed extensively by Woolford (1999)

[27] Rizzi's (1990) explanation of the anaphor agreement effect was that the anaphor was subject to Principle A and had to be bound in its governing category ($Infl^0$/AGR). However, the ϕ-features in AGR were pronominal in nature and therefore subject to Principle B and had to be free in their governing category. A chain formed between an anaphor and AGR would therefore have contradictory requirements in having to be both free and bound in the same governing category.

morphological AGR is absent and thus need not be triggered" (Progovac, 1992, p. 677).

Progovac's analysis has the advantage that it allows us to explain long-distance binding without resorting to movement. We have seen that neither X^0 nor XP movement will account for the pattern of blocking that we see in Mandarin, nor does it make the right predictions about island phenomena. Progovac (1993, p. 769) observes that the movement to Infl approach must incorporate a number of unmotivated assumptions:

40)

i) X^0 reflexives not only can move, but must move.

ii) X^0 reflexives must move to Infl, and cannot stop at intermediate positions.

iii) The antecedent must immediately c-command the reflexive itself; in other words, it is not enough for the trace of the reflexive to be c-commanded by the antecedent. This amounts to saying that the D-structure position of the reflexive plays no role.

Some of these objections are quite prescient and anticipate principles that would come to constitute the Minimalist Programme. However, Progovac's theory is situated in the theoretical apparatus of its time. There have been a number of developments in syntactic theory that we can incorporate into the architecture of the derivation proposed by Progovac and construct a pleasing analysis.

Progovac's (1992, 1993) derivation of long-distance binding depends on the existence of tense and agreement and that these syntactic features be present on something akin to a T^0 node. However, Mandarin does not self-evidently have tense and agreement and therefore we might wonder if we can assume the existence of a T^0 projection in Mandarin. Sybesma (2007) provides evidence that there is a T^0 projection in Mandarin:

41)

a. Zhangsan zhu zai zher
Zhangsan live at here
'Zhangsan lives here'

b. Zhangsan 1989 nian zhu zai zher
Zhangsan 1989 year live at here
'Zhangsan lived here in 1989'

Sybesma (2007) argues that the example in (41)a has a present tense interpretation - (41)a cannot refer to a person who is dead, for example. Sybesma concludes that

the present tense interpretation arises in (41)a because it has tense, but there is no overt manifestation of tense. Accordingly, let us assume that Mandarin has a tense projection of the familiar sort:

42)[$_{TP}$ T^0 [$_{VP}$ ...]]

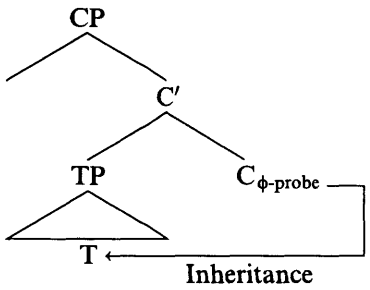
T^0 will possess tense and agreement features of the kind that we see in languages with overt agreement. However, under Progovac's analysis these features have independent content only in the root clause. Embedded clauses have no such independent content and their features are derived from the content on the matrix T^0; their features are anaphoric. Thus, when the matrix T^0 is merged, it gains its ϕ-features and these ϕ-features are shared with the embedded anaphoric T^0:

43)[$_{TP}$ $T^0_{[i]}$ [$_{VP}$ [$_{TP}$ $T^0_{[i]}$ [$_{VP}$ ...]]]]

In this model it is only the matrix T^0 that can acquire ϕ-features, and in the process of acquiring these ϕ-features transmits them to the embedded and anaphoric T^0. This is the model of clause structure that we will accept for Mandarin. Rather than lacking agreement, there is a skeletal agreement structure within each clause but it is only at the matrix level of the clause that features get valued and subsequently value the embedded T^0s as well.

When Progovac proposed her model derivation for long-distance binding she quite reasonably stipulated that the matrix T^0 obtained its ϕ-features through spec-head agreement with the subject. In more recent work it has been proposed that the ϕ-features on T^0 are inherited from C^0 (see Miyagawa, 2010; Chomsky, 2008):[28]

44)



Let us adopt the hypothesis that the ϕ-features enter at C^0 and are inherited by T^0.

Our Progovac-inspired derivation proceeds in the following manner. The syntactic structure is built and the matrix C^0 is merged. Upon merger C^0 probes for its ϕ-features and finds them on the matrix subject:

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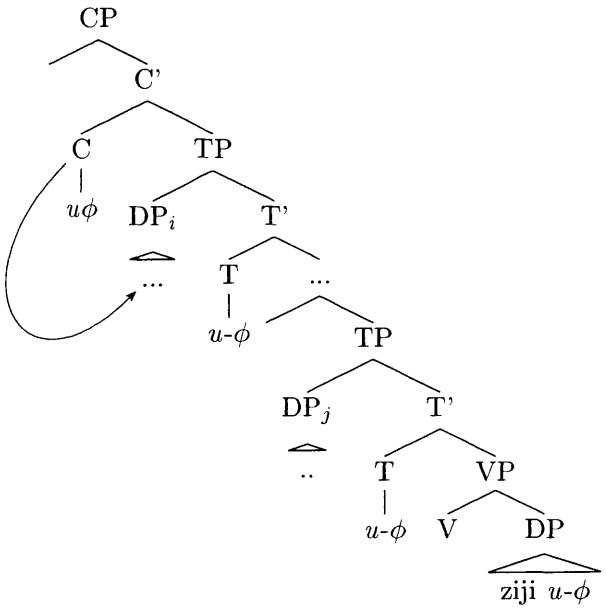
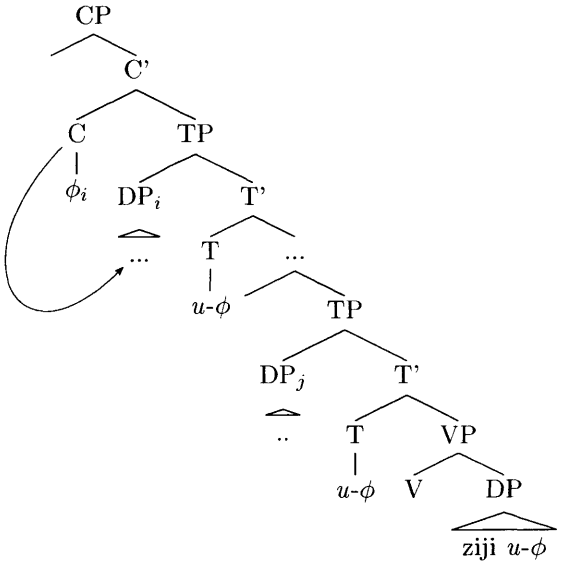
[28] Diagram from Miyagawa (2010).

45)



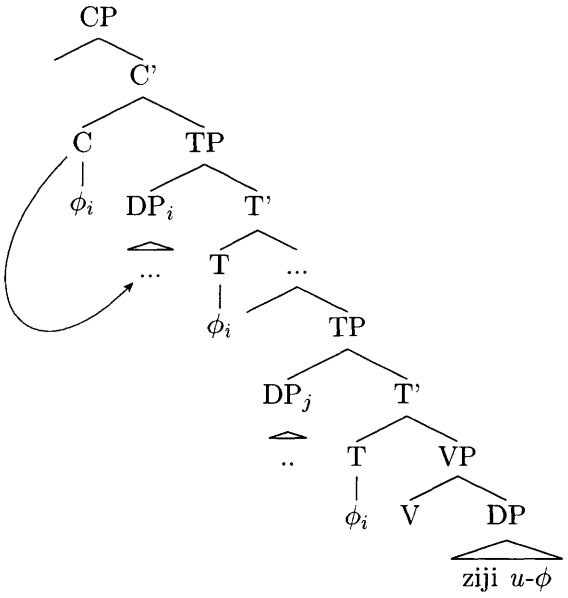
This values the ϕ-features in the matrix clause:

46)



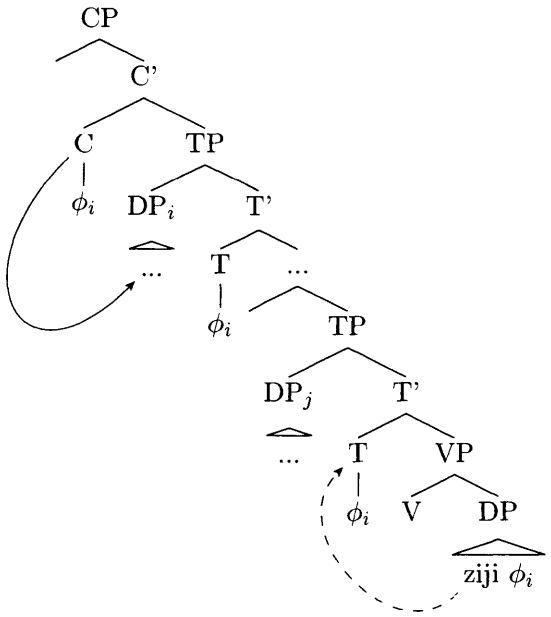
The features in C^0 are inherited by the matrix T^0 and the embedded anaphoric T^0 also comes to bear the same features:

47)



The embedded T^0 now has the ϕ-features of the matrix subject, and consistent with Progovac's conception of Relativized Minimality,[29] *ziji* can be bound by the embedded T^0, resulting in binding by the matrix subject:

48)



[29] If R is an X^0 (monomorphemic) reflexive, then its SUBJECTs are X^0 categories only, that is, AGR (as the only salient (c-commanding) head).

We can see how Progovac's derivation will give us the required binding by the matrix subject. However, it is a stipulation that the embedded T^0 is anaphoric to the matrix T^0. Fortunately, there is a manner of conceiving of the anaphoric relation between both T^0 positions as a principled and motivated relationship. The only source of ϕ-features in the Mandarin clause is the matrix C^0 and matrix T^0 inherits these ϕ-features upon merger. However, what is to stop *both* matrix T^0 and embedded T^0 positions from inheriting the ϕ-features from C^0? We are now faced with an intriguing possibility. If T^0 inherits ϕ-features from C^0, what is to stop lower instances of T^0 also inheriting these same ϕ-features from the matrix C^0? Assuming that AGREE is subject to Relativized Minimality, we can argue that embedded T^0 projections in the lower clauses lack ϕ-features and therefore inherit the ϕ-features of the matrix C^0 because ϕ-features only enter in the matrix C^0. The lack of ϕ-features in the embedded clauses means that there can be no intervention effects to block the inheritance operation applying to multiple instances of T^0. Furthermore, because Mandarin has no overt morphological agreement on the verbal complex, there needs to be no change to material that has been sent to PF once the inheritance operation takes place; that is, there is no violation of phase-hood. In the classical approach to phases (see Chomsky, 2000, 2001 for example), spelled-out material is inaccessible to the interfaces. However, Fox and Pesetsky (2005) propose that material in spell-out *is* accessible, but it cannot be altered to contradict what has been determined by spell-out. The inheritance process does not affect the phonology or semantics in Mandarin so there is no in-principle reason for it not to happen after spell-out. That is, the lack of overt agreement morphology in Mandarin means that there will be no alteration to any material that has been sent to PF if the embedded T^0 obtains ϕ-features from the matrix C^0.

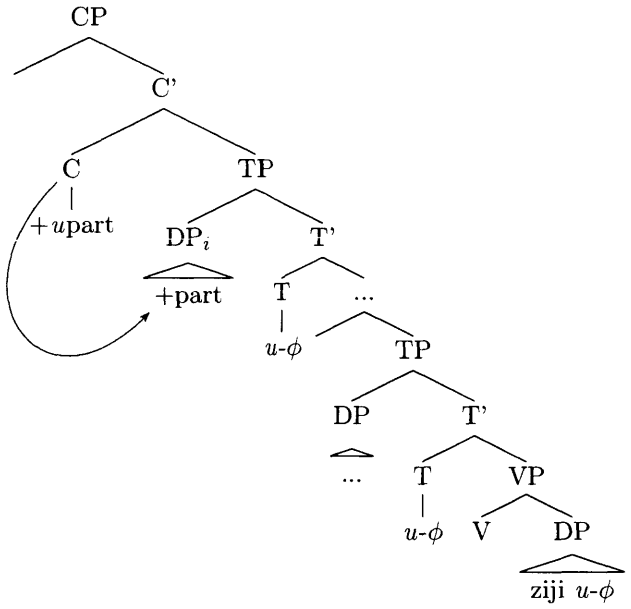
In Progovac's derivation a difference in person features will generate the blocking effect because the embedded T^0 is anaphoric to the matrix T^0. This anaphoric relationship can only be maintained if both T^0 projections agree in features. However, we have seen that the blocking effect is not generated by a simple difference in person features. Indeed, we have seen that the blocking effect manifests the weak PCC pattern. Obviously, we would like to explain why the weak PCC condition holds for long-distance binding of *ziji*, but the fact that long-distance binding possibilities replicate PCC effects attested elsewhere in the grammar suggests that the PCC pattern is a consequence of the same principles cross-linguistically. In Anagnostopoulou (2003, 2005), Béjar and Rezac (2003), and Nevins (2007) the basic logic is that PCC effects arise as a result of two goals attempting to license their person features against a single projection. I will follow this logic and propose that the single ϕ-probe in the matrix C^0 is looking to value its person features and that there are intervention conditions that can stop the matrix C^0 ϕ-probe from becoming valued. When these intervention conditions arise the blocking effect is manifested.

We will see that the conditions on *ziji* can be explained in terms of an interaction between three processes. First, there is a condition on how the ϕ-features on C^0 can

be valued; we will see that C^0 bears a [+participant] feature, which it seeks to value subject to CONTIGUOUS AGREE (Nevins, 2007). Second, there is a process of inheritance of the ϕ-features on C^0 by all lower instances of T^0, following and extending Chomsky (2005, 2008). Finally, there is a condition on the relation between the ϕ-features borne by a particular instance of T and those of its specifier, inspired by Béjar and Rezac's (2009) condition of *Match.* Because Mandarin T bears no overt agreement morphology, the ϕ-features inherited by T need not correspond to the ϕ-features of its specifier. However, when the ϕ-features do not correspond (more specifically, when the features of the specifier are not a subset of the features found on T), then the specifier cannot be taken as the origin of the features on T, and cannot be a binder for *ziji.*

Let us assume that matrix C^0 is looking to value a [+participant] feature. It is this unvalued [+participant] feature that provides ϕ-features for the derivation as a whole, but it is only merged in the matrix C^0. Once the probe is merged it probes its search domain for matching features. Note that the probe has a specific value that it is searching for: [+participant]. The probe is not looking for simply any source of ϕ-features but a very specific sort of ϕ-features: [+participant]: [30]

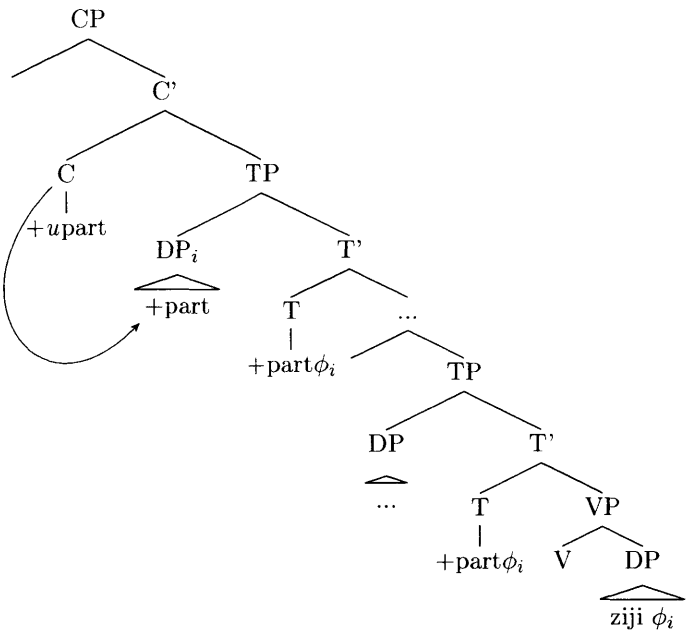
49)



[30] In the following argument I am going to proceed in a slightly unorthodox manner. I will restrict myself initially to only illustrating how binding by a matrix 1st / 2nd person subject occurs. I will not explain how binding is achieved by a local subject, or how binding is achieved by an intermediate subject, or how binding is achieved by a matrix 3rd person subject. Once we have a sufficiently rich derivation for matrix 1st/2nd person subject binding we will backtrack and use the established derivation to provide an analysis of local subject binding, intermediate subject binding, and 3rd person subject binding. By proceeding in this manner I hope to give the reader a chance to keep the plates spinning.

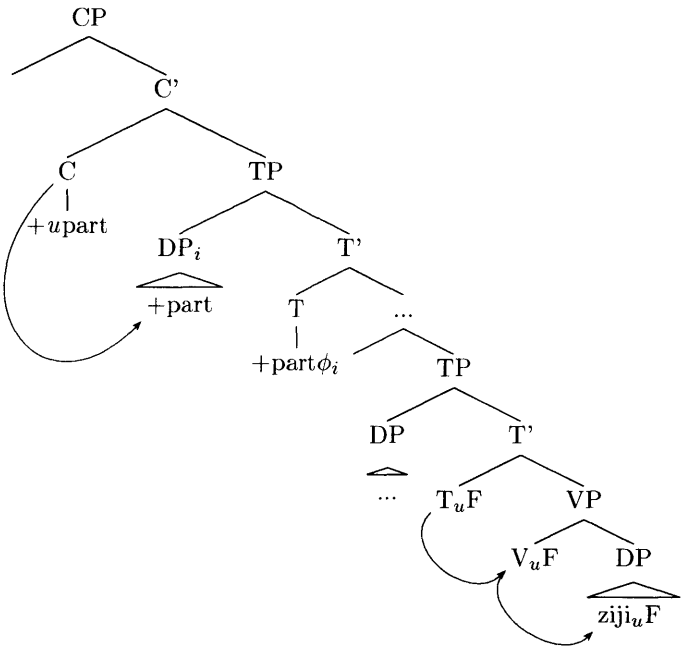
The matrix subject in (49) is a match for the probe's [+participant] feature. Both matrix T^0 and embedded T^0 will then inherit from matrix C^0 ϕ-features which are ultimately from the matrix subject. Consequently, *ziji* can be bound by the matrix subject, because of the features on embedded T^0 derive from the matrix subject:

50)



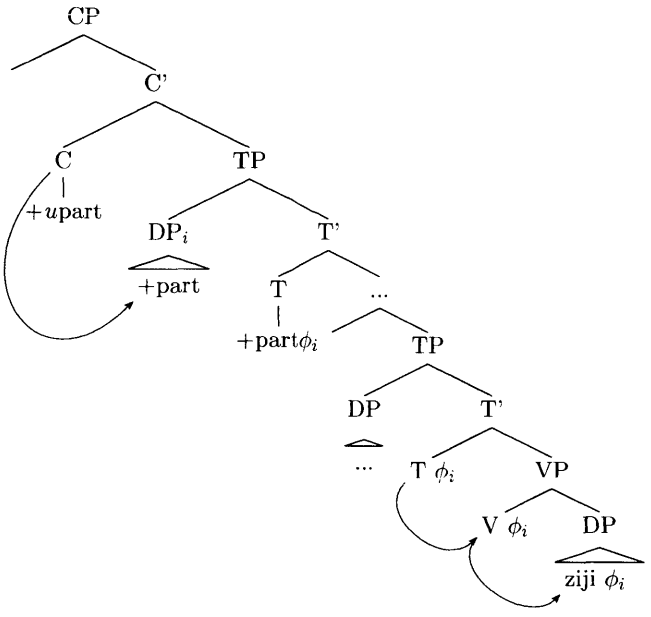
We have seen in Reuland's derivations that the T^0-V-SE complex forms a chain due to independent principles, but this T^0-V-SE does not yet bear any ϕ-features. Recall that the V-SE chain is created through accusative case assignment and T^0-V is created through the tense relationship:

51)



Once the matrix T^0 has matched the [+participant], the embedded anaphoric T^0 also matches for [+participant]. If the matrix subject values C^0, the [+participant] will be inherited by both the matrix T^0 and the embedded T^0. The features on the embedded T^0 will value the anaphor because the valuation on T^0 will allow the T^0-V-SE complex to extend to a ϕ-feature dependency:

52)



However, the probing of the domain by the [+participant] feature on the C^0 probe is subject to Nevins' (2007) CONTIGUOUS AGREE constraint.

53)

> **Contiguous Agree** (CA): For a relativization R of a feature F on a probe P, and $x \in$ Domain (R(F)), $\neg\exists y$, such that $y > x$ and $p > y$ and $y \notin$ Domain (R(F)).
>
> 'There can be no interveners between P and x that are not in the domain of relativization'[31]

Nevins' CONTIGUOUS AGREE can generate the PCC effects that we have seen by restricting the manner in which multiple goals can agree with a single probe. For example, we can derive the weak PCC (with clitics) by proposing that the DPs occur within the domain of a higher probe that must agree with both of the goals – subject to CONTIGUOUS AGREE. Nevins's system would work in the following manner. The probe is relativized to search for marked values of [participant], i.e., the positive values of participant. A convergent derivation requires that there cannot be any unmarked values of participant (negative values of participant) between the probe and a [+participant] goal in the probe's domain. A [-participant] goal that occurs between a [+participant] probe and [+participant] goal would violate the CONTIGUOUS AGREE condition above and cause the derivation to crash. Thus, relativizing the probe to [+participant] and making the MULTIPLE AGREE operation subject to CONTIGUOUS AGREE explains the existence of this particular intervention effect.

Nevins argues that the relativization of the probe and CONTIGUOUS AGREE can derive the various PCC effects. In order to derive the weak PCC we must establish the following two conditions:

> i) The probe is relativized to search for [+participant]
>
> ii) A convergent derivation will occur when there are no unmarked values of [participant] that intervene between the probe and the featural specification

---

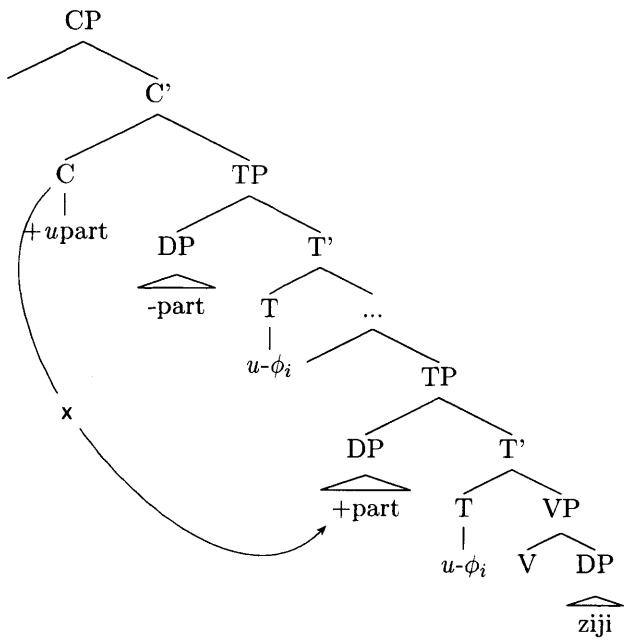
[31] There is a second constraint called MATCHED VALUES, but it is not directly relevant here so I will skip it in the interests of presentational parsimony.

> **Matched Values** (MV): For a relativization R of a feature F, $\exists\alpha, \alpha \in \{+, -\}$, $\forall x, x \in$ Domain(R(F)), val $(x,F) = \alpha$.
>
> 'All elements within the domain of relativization must contain the same value'

Matched Values is trivially satisfied when the probe is searching for a marked relativization of a single value of a binary feature because there cannot be elements within the domain with differing values of a feature.

that it is looking for. That is, there can be no [-participant] DPs that occur between the probe and a [+participant] DP.

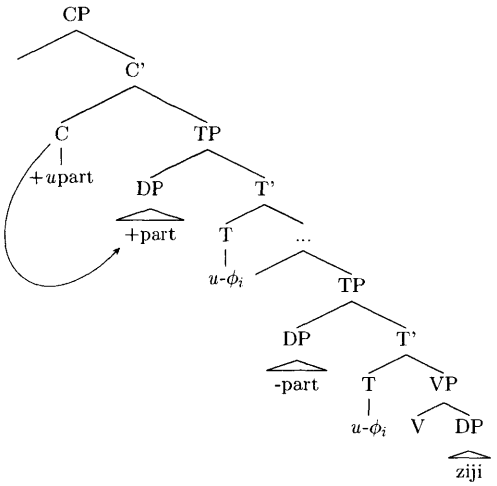
54)



In (54) CONTIGUOUS AGREE is violated and this means that no agreement operation takes place.[32] We will see that the violate the CONTIGUOUS AGREE condition leads to a ban on long-distance binding This approach to binding offers an explanation of why blocking occurs whenever 3 > 1/2 configuration arises, namely, such a configuration will violate CONTIGUOUS AGREE. Furthermore, however, this analysis can explain why the troublesome 3 > 1 > 3 configuration generates the blocking effect when 1 > 3 does not generate the blocking effect. In a 1 > 3 configuration we have [+participant] > [-participant] and this satisfies CONTIGUOUS AGREE leading to the valuation of the probe:

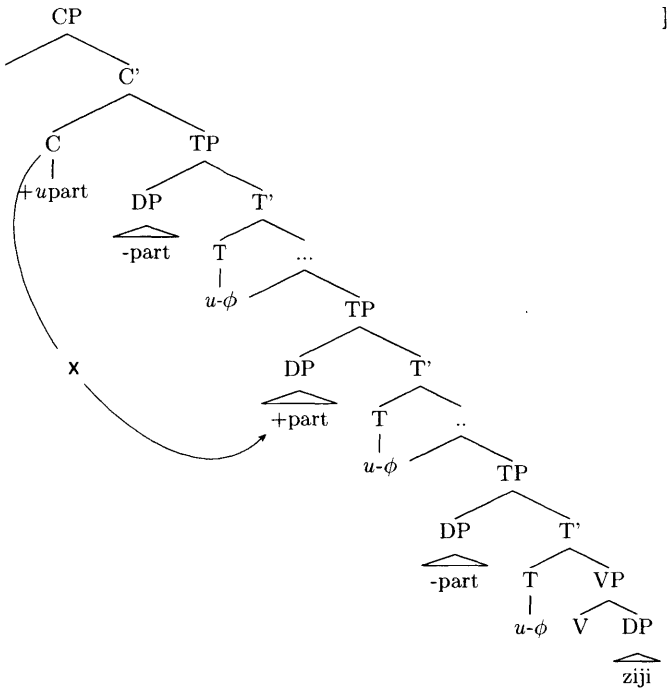
[32] Note that when CONTIGUOUS AGREE is violated no agreement operation takes place. That is, in (54) above, the matrix C^0 ***does not*** agree with the [-participant] feature of the matrix subject. Consequently, the lower T^0 heads ***do not*** inherit the features of the matrix C^0 because the agreement operation has failed.

55)



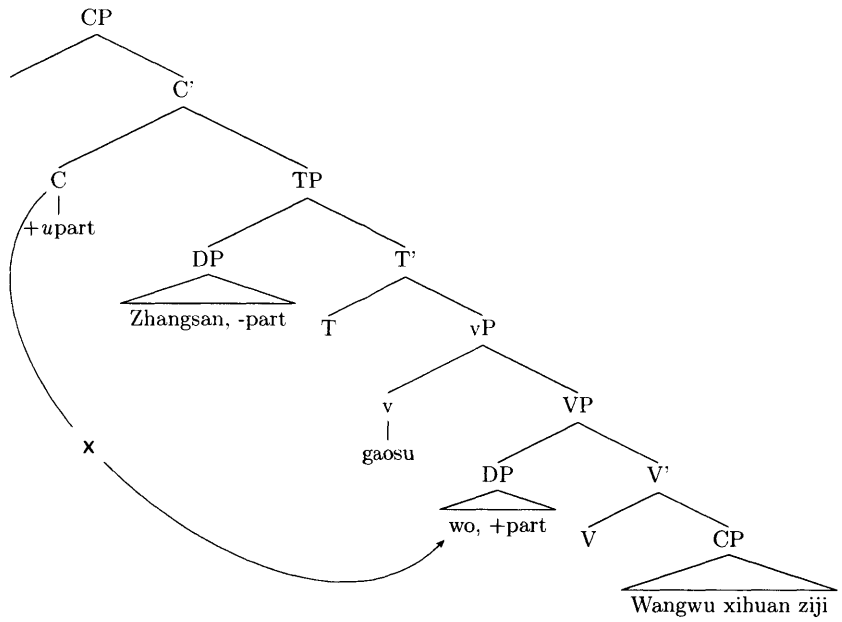
However, the C^0 participant probe cannot value its [+participant] feature across the [-participant] matrix subject because this violates CONTIGUOUS AGREE:

56)



Additionally, this analysis explains why objects will generate the blocking effect.

57)



In the exposition above we assumed that the probe in the matrix C^0 was looking for a [+participant] feature. We discussed this [+participant] feature as a primitive, but we can expand our understanding of the agreement process by giving the [+participant] feature some more articulated structure.[33]

Béjar and Rezac (2009) propose that ϕ-features are organized into subsets that reflect both natural classes and semantic entailment relations. That is, probes are articulated in the structure of their ϕ-features. All persons share some person feature (Béjar and Rezac's 'π'); 1st and 2nd persons are grouped together as [+participant] to the exclusion of 3rd person; and 1st person is distinguished from 2nd person by being [+speaker]. Thus, the following entailments hold: [speaker] → [participant] → [π]. These person specifications are represented below:

58)

Person specifications

A: Person specifications			B: Shorthand 1>2>3		
3rd	2nd	1st	3rd	2nd	1st
[π]	[π]	[π]	[3]	[3]	[3]
	[participant]	[participant]		[2]	[2]
		[speaker]			[1]

[33] Object intervention is evidence that C^0 is agreeing with the intervening DPs rather than just with the intervening T^0 heads.

Crucially, Béjar and Rezac propose that the AGREE operation consists of two distinct operations: *matching* and *valuing.* Chomsky (2000, 2001) argues that the AGREE relation consists of two operations: (i) *Match*, in which a relation is established between a set of unvalued features (the probe) and a c-commanded set of valued features (the goal), and (ii) *Valuation*, in which the valued features on the goal are copied onto unvalued features of the probe. Uninterpretable features must be deleted, and Béjar and Rezac argue that "... the deletion-licensing requirement [is] the Match Requirement, which allows correspondence between two non-identical feature structures if the interpretable one is identical to a subset of the uninterpretable one ..." (Béjar and Rezac, 2009, p. 45).[34] They define *Matching* in the following manner:

59)

Match Requirement

For a probe segment [*u*F], a subset [*u*F'] of [*u*F] must match

Béjar and Rezac (2009) define the operation AGREE in the following manner:

60)

a) Each feature that seeks to AGREE is *active* upon being inserted into the derivation.

b) When a feature [*u*F] matches with a goal [F'], AGREE *copies* the feature structure containing [F'] to [F] (i.e., all features that entail [F']) to [F]; this constitutes valuing.

c) An active feature that is locally related to a nonactive feature (i.e., a feature that stands in the configuration created by (b)) is no longer active.

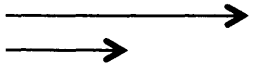
Thus, if a probe is relativized to search for a [participant] it will bear the features [*u*-3-2] and search for the best match for both of the 3 and 2 feature segments. If a probe [*u*-3-2] finds a goal with [3-2], the features [3-2] on the goal will be copied to the probe. However, condition (60)b above stipulates that *all* the features of the best matching goal are copied to the probe. Thus, if a [*u*-3-2] probe finds a goal with the features [3-2-1] – and there is no closer match for the goal – the feature structure [3-2-1] is copied to the [*u*-3-2] probe.

Note, that because the individual feature segments act as probes it is possible for the probe to match more than one goal:

---

[34] The Match Requirement of Béjar and Rezac differs from Chomsky (2000, p. 124). Chomsky argues that it is featural identity that licenses deletion, but Béjar and Rezac's Match Requirement allows correspondence between two non-identical feature structures.

61)



DP_2 matches [*u*2] → value H^0
DP_1 matches [*u*3] → [*u*2] keeps probing

H^0	DP_1	DP_2
[*u*3]	[*u*3]	[*u*3]
[*u*2]		[*u*2]

Under matching, the probe searches its domain and seeks to find the best match it can for its features. Then, the probe will be *valued* by the goal that matches its greatest number of features.[35] Thus, the features that drive the probe might diverge from the final valuation of the probe. Under this conception of AGREE we can generate various agreement patterns:

62)

(1)	a.	*v*		DP	b.	*v*		DP	c.	*v*		DP
		[*u*3]	---	[3]		[*u*3]	---	[3]		[*u*3]	---	[3]
								[2]				[2]
												[1]
(2)	a.	*v*		DP	b.	*v*		DP	c.	*v*		DP
		[*u*3]	---	[3]		[*u*3]	---	[3]		[*u*3]	---	[3]
		[*u*2]				[*u*2]	---	[2]		[*u*2]	---	[2]
												[1]
(2)	a.	*v*		DP	b.	*v*		DP	c.	*v*		DP
		[*u*3]	---	[3]		[*u*3]	---	[3]		[*u*3]	---	[3]
		[*u*2]				[*u*2]	---	[2]		[*u*2]	---	[2]
		[*u*1]				**[*u*1]**				[*u*1]	---	[1]

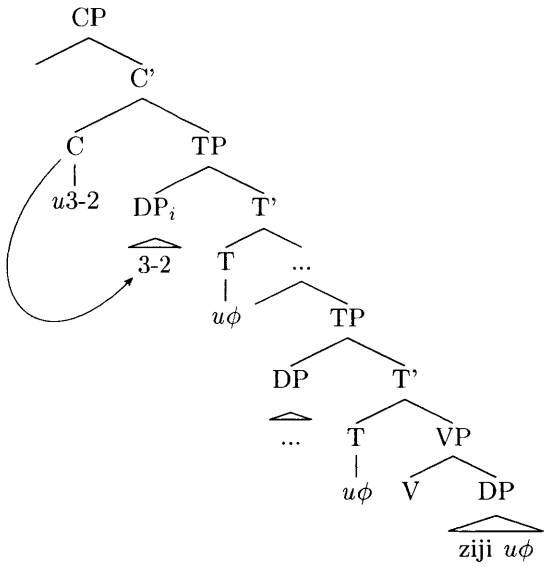
For example, in (62) (2)a above we can see that the *v* probe is searching for a [+participant] goal, but the DP is [3]. Thus, the probe and the DP match for [3] but, this leaves the [*u*2] as an active residue that can continue to probe its domain. If the probe finds a [+participant] goal to match the [*u*2] the [+participant] goal will match the probe and value the probe with its ϕ-features.

Béjar and Rezac's model of agree is an attractive refinement of Chomsky's (2000, 2001) model. The cyclic agree model accentuates the fact that AGREE is composed of two operations: *Match* and *Valuation. Match* is an abstract relation between a probe and one or more goals that is established in the process of the probe's search, while *valuation* serves as the copying operation that transfers features to the probe. Let us

[35] Note that the all the values of the goal are copied onto the probe. If a probe [*u*-3] finds a match [3-2-1], it is the entire feature structure [3-2-1] that is copied onto the probe. See condition (60)b above.

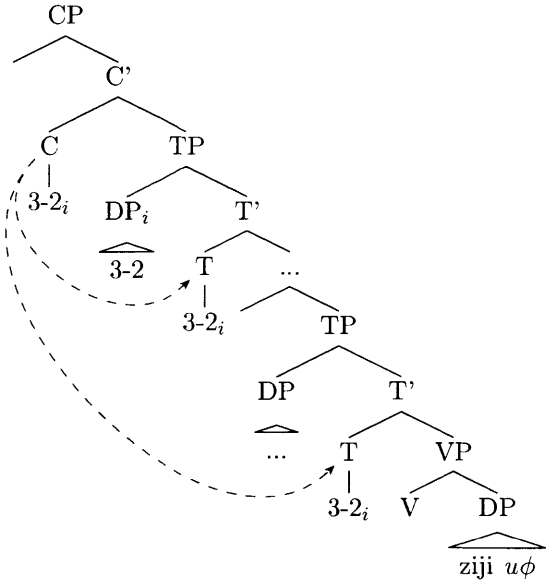
adopt Béjar and Rezac's characterization of AGREE as being constituted by two operations – match and value – and their feature structure for the probes. Having adopted these derivational steps we will have the following structure when the matrix C^0 is merged:

63)



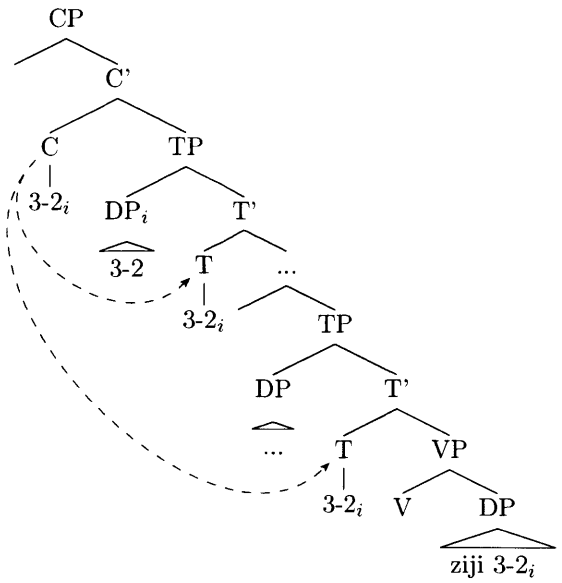
In (64) C^0 is merged and probes for its participant feature [*u*-3-2]. Upon finding the participant feature in the matrix subject, C^0 is valued and the T^0 projections inherit the valued feature from C^0:

64)



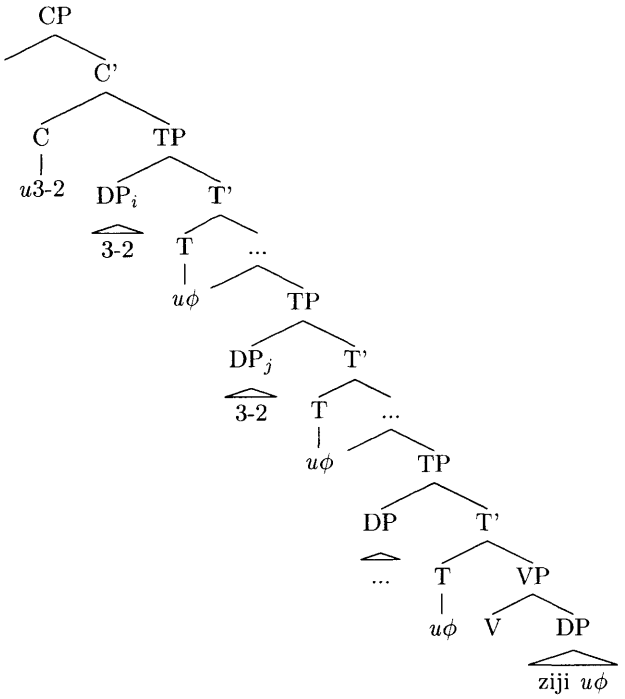
Once the embedded T^0 has acquired its features the T-V^0-SE complex will transmit these features to *ziji* and binding will be achieved though sharing the features of the matrix subject:

65)



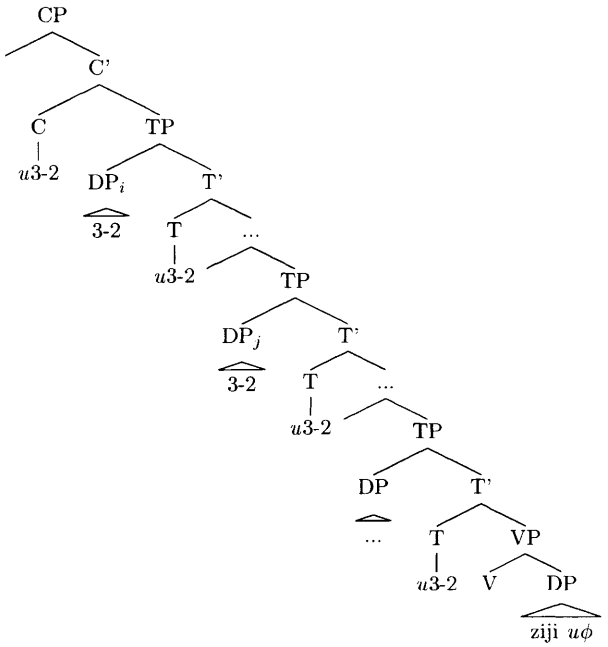
However, consider the situation when there is an intermediate [+participant] subject:

66)



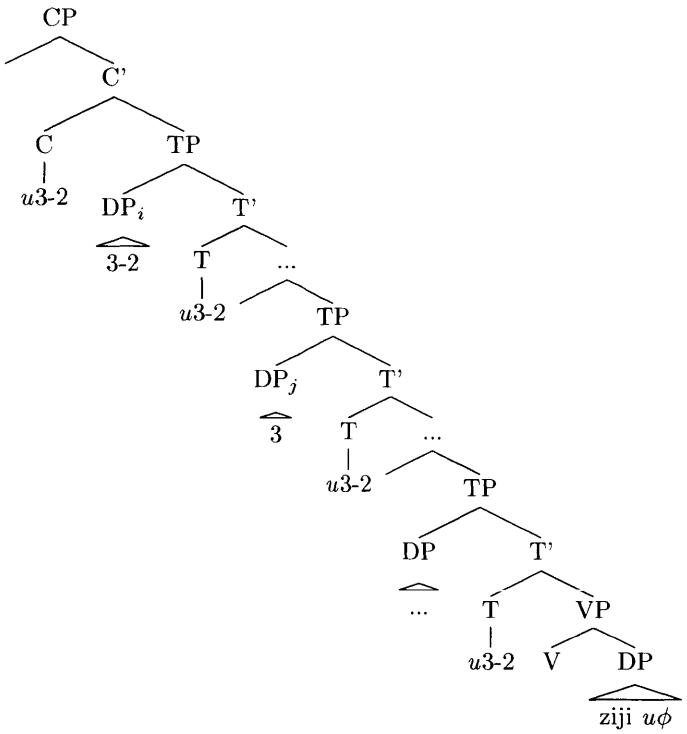
When the matrix C^0 probes it will find the [3-2] feature on DP_i, match this feature and continue to probe its search space because it is a species of MULTIPLE AGREE. The embedded T^0 projections then inherit the matched ϕ-features from C^0:

67)



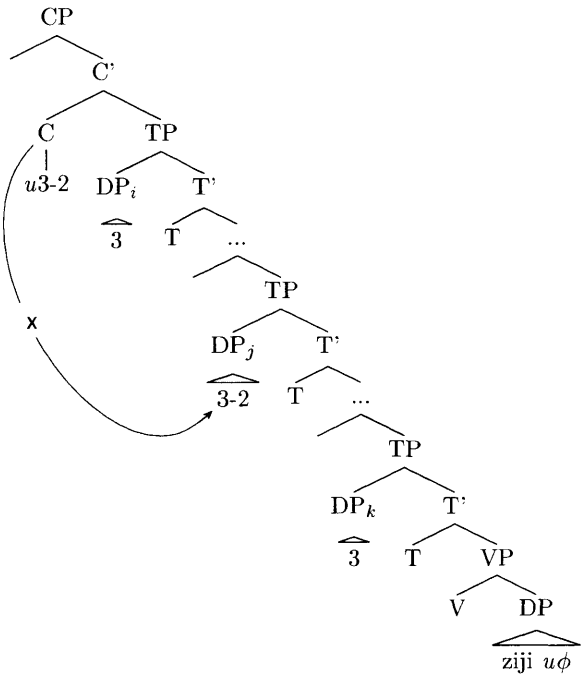
In (67) both the matrix T^0 and the intermediate T^0 have inherited matched features from the matrix C^0. Notice that both DP_i and DP_j satisfy Béjar and Rezac's Match Requirement in that for matching to occur a subset [*u*F'] of [*u*F] must match. Both DP_i and DP_j satisfy the Match Requirement and therefore either one of them can be used to value the [*u*-3-2] feature. If DP_i is used to value the [*u*-3-2] feature matrix binding occurs. If DP_j is used to value the [*u*-3-2] feature, intermediate binding occurs. Thus, the valuation operation displays optionality. Additionally, we can see that the above derivation also explains why it is possible to have 1/2 > 3 subject configuration that allows long-distance binding (as illustrated in (68) below):

68)



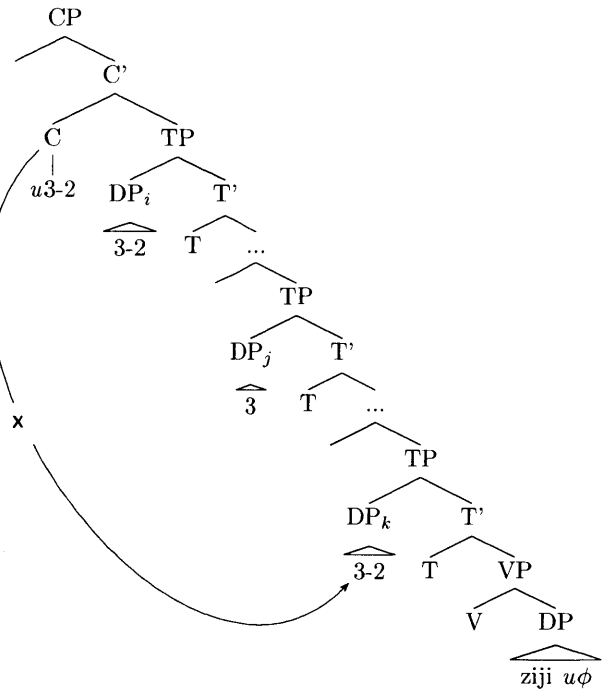
In (68), DP_j satisfies the Match Requirement because it has a subset of the features on the local T^0. We can also see how the blocking effect is generated in a 3 > 1/2 > 3 configuration:

69)



In (0 above the first probing of the matrix C^0 violates CONTIGUOUS AGREE, and therefore there is no agreement operation and no feature inheritance. As a consequence, AGREE fails and *ziji* can only be bound locally. Perhaps the most interesting instance of the blocking effect for this derivation are the 2 > 3 > 1 and 1 > 3 > 2 configurations. These configurations do not allow long-distance binding even though their matrix subject is a [+participant] goal. Accordingly, we might expect these constructions to satisfy CONTIGUOUS AGREE. However, when we look closely at the derivation we can see some interesting agreement configurations:

70)



In the derivation in (0 above we can see that the matrix subject will match the [+participant] probe in the matrix C^0. However, CONTIGUOUS AGREE is a species of MULTIPLE AGREE and this means that the probe will continue to probe its search domain after it has found a matching goal. The probe can AGREE with multiple goals as long as the goals do not conflict in features.[36] However, in the derivation in (0 the most deeply embedded [+participant] subject - DP_k - has an intervening [-participant] subject - DP_j. The probe will match the [+participant] feature on DP_k but the intervening [-participant] feature on DP_j intervenes. This violates CONTIGUOUS AGREE and AGREE fails. Consequently, there is no long-distance binding.

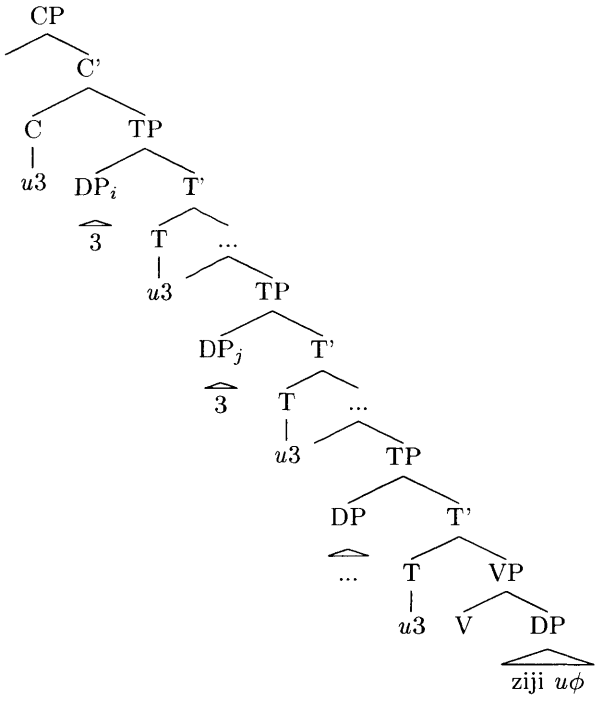
Additionally, we can also explain why 3 > 3 configurations allow long-distance binding. The matrix [*u*-3-2] is searching for a 1st or 2nd person feature, subject to CONTIGUOUS AGREE. If CONTIGUOUS AGREE is violated C^0 does *not* value its [+participant] feature, and if it does not value its [+participant] feature the inheritance operation cannot take place. Consequently, long-distance binding does not occur. That is, satisfaction of CONTIGUOUS AGREE is a precondition for inheritance. Thus, in a 3 > 2 > 3 configuration, C^0 will find the 2nd person feature, but because there is an intervening [-participant] feature this stops C^0 from being able to value its [+participant] feature.

However, in a 3 > 3 configuration CONTIGUOUS AGREE is *not* violated because the [*u*-3-2] does not find the feature that it is looking for. Following extensive work by

[36] Goals that do not conflict in features are goals that satisfy CONTIGUOUS AGREE.

Preminger (2014) we know that "... the fact that an operation is obligatory does not mean it successfully applies in every well-formed derivation" (Preminger, 2014, p. 11). Preminger documents sentences that "... involve attempted-but-failed agreement and are nonetheless fully grammatical" (Preminger, 2014, p. 1). Thus, the failure of a probe to find the goal that its features specify does not lead to ungrammaticality through a violation of the operation AGREE. Thus, we should not be surprised to find that long-distance binding is possible in a 3 > 3 configuration. In a 3 > 3 configuration there is *no* violation of CONTIGUOUS AGREE. The [*u*-3-2] probe does not find the [+participant] feature that it is looking for, but following Preminger's work we know that the probe does not have to successfully find its goal in every derivation. If the matrix [*u*-3-2] probe does not find a [3-2] probe it will match for [*u*-3] under the Match Requirement and transfer these features to the embedded T^0 projections, where they can be valued by the chosen subject and subsequently transfer their features to *ziji*:

71)



Finally, consider the following sentence:

72) $Bill_i$ zhidao $Zhangsan_j$ gaosu $ziji_{i/j/*k}$ wo_k xihuan Lisi
Bill know Zhangsan told self I like Lisi
'Bill knows Zhangsan told self that I like Lisi'

In this sentence the subjects form a 3 > 3 > 1 blocking configuration, but binding by the matrix subject is possible. This shows us that the ϕ-feature inheritance always starts at the root, but in this example the most deeply embedded T^0 does not inherit

ϕ-features and therefore the derivation does not violate CONTIGUOUS AGREE. The intuition is that the ϕ-features are inherited as far as possible down the tree without violating CONTIGUOUS AGREE.[37]

In the examples above we can see that it is possible to explain the long-distance binding of *ziji* as a consequence of agreement and that the blocking effect is a result of that operation failing to apply. This has an important consequence in that it shows that long-distance binding in Mandarin is a syntactic process but the syntactic process that mediates binding is AGREE. When AGREE cannot apply the blocking effect arises. If my syntactic analysis is plausible, long-distance binding and the manifestation of the blocking effect should not be considered prima facie evidence that long-distance *ziji* is a non-syntactic anaphor. I have argued that *ziji* is an anaphor that is bound through a syntactic operation. However, there is still more to say.

4.4 An Ultrastrong PCC blocking effect?

Li (1990) reports on a slightly different pattern of the blocking effect. Li reports the following judgments for bi-clausal sentences:

73)

a. Ta_i dangshi zhidao ta_j dui $ziji_{i/j}$ mei xinxin ✓3 > ✓3
He then know he to self no confidence
'He knew that he had no confidence in self at that time'

b. Ta_i dangshi zhidao ni_j dui $ziji*_{i/j}$ mei xinxin ×3 > ✓2
He then know you to self no confidence
'He knew that you had no confidence in self at that time'

c. Ta_i dangshi zhidao wo_j dui $ziji*_{i/j}$ mei xinxin ×3 > ✓1
He then know I to self no confidence
'He knew that I had no confidence in self at that time'

d. Ni_i dangshi zhidao ta_j dui $ziji_{i/j}$ mei xinxin ✓2 > ✓3
You then know he to self no confidence
'You knew that he had no confidence in self at that time'

e. Ni_i dangshi zhidao ni_j dui $ziji_{i/j}$ mei xinxin ✓2 > ✓2
You then know you to self no confidence
'You knew that you had no confidence in self at that time'

[37] Thanks to Norvin Richards (p.c.) for suggesting the example.

f. Ni$_i$ dangshi zhidao wo$_j$ dui ziji*$_{i/j}$ mei xinxin ×2 > ✓1
You then know I to self no confidence
'You knew that I had no confidence in self at that time'

g. Wo$_i$ dangshi zhidao ta$_j$ dui ziji$_{i/j}$ mei xinxin ✓1 > ✓3
I then know he to self no confidence
'I knew that he had no confidence in self at that time'

h. Wo$_i$ dangshi zhidao ni$_j$ dui ziji$_{i/j}$ mei xinxin ✓1 > ✓2
I then know you to self no confidence
'I knew that you had no confidence in self at that time'

i. Wo$_i$ dangshi zhidao wo$_j$ dui ziji$_{i/j}$ mei xinxin ✓1 > ✓1
I then know I to self no confidence
'I knew that I had no confidence in self at that time'

(Li, 1990, pp. 192-193)

The pattern reported is summarized below:[38]

74)

	1st	2nd	3rd
1st	F	F	F
2nd	B	F	F
3rd	B	B	F

If we remove cells that represent the same person feature we obtain the following pattern:

75)

	1st	2nd	3rd
1st		F	F
2nd	B		F
3rd	B	B	

Li explains:

[38] Person features in left-hand column are higher subject; person features in top row are lower subject; F stands for 'free' and means that long distance binding is possible. B means long-distance binding is blocked. Number blocking has been removed from Li's table

> The pattern that emerges is quite clear. ... The third-person ... shows no blocking effect at all with respect to first and second person. The second person blocks the third person, but does not block the first person. The first person blocks all the second and third person forms. (1990, p. 195)

Li observes that

> [t]his pattern seems to point to the fact that maybe some kind of hierarchical ranking among the persons is at work. The first person is higher than the second person and the second person is higher than the third ($1^{st}>2^{nd}>3^{rd}$). When coindexing the reflexive pronoun *ziji* with pronouns, one can only go down the hierarchy. This explains why first person blocks both second and third, second person blocks the third but not the first, and the third does not block the first or the second (Li, 1990, p. 196)

The intriguing thing about the pattern reported by Li is that it is the interference pattern known as the *Ultrastrong PCC.* The Ultrastrong PCC has been reported for Classical Arabic (Nevins, 2007) and as a pattern of speaker variation in Catalan (Bonet, 1991, 1994):

76)	Te'	m	van recomanar	per	la feina
	2	1	recommended-3pl	for	the job

'They recommended you to me for the job' *OK in weak/Ultrastrong Catalan*
'They recommended me to you for the job' *OK in weak/*in Ultrastrong Catalan*

Both Bonet and Nevins argue that there are two kinds of PCC in Catalan and Catalan speakers will have either the weak PCC or the Ultrastrong PCC. Weak PCC speakers accept both 2,1 and 1,2 combinations but Ultrastrong PCC speakers only accept 1,2 combinations. Notice that this is the same pattern of blocking that Li (1990) reports above

Nevins (2007) argues that the Ultrastrong constraint arises when a probe is relativized to agree with marked values of [Author] and with marked values of [Participant]. Thus, for a convergent derivation to occur the conditions on contiguous agree must be satisfied. Namely, there cannot be any unmarked [Author] or unmarked [Participant] features that intervene between the probe and the features that the probe is specified for:

77)

Ultrastrong PCC
Probe relativized to search for [+Author] [+Participant]

			CA	MV
OK	1	3		
OK	1	2		
*	2	1	*([Author])	
OK	2	3		
*	3	1	*([Auth, Part])	
*	3	2	*([Part])	

The fact that Li reports another PCC pattern is intriguing. We know that there is substantial variation in the manifestation of PCC patterns within languages so perhaps it is not surprising that we should see PCC variation within the Mandarin blocking effect.

4.5 Local Binding

In the exposition of my analysis above I illustrated how binding by the matrix subject and intermediate subject can be accounted for, but I did not discuss how binding by the local subject is possible. Binding by the local subject is always possible:

78) Zhangsan$_i$ renwei Wangwu$_j$ zhidao Lisi$_k$ xihuan ziji$_{i/j/k}$ ✓3 > ✓3 > ✓3
Zhangsan think Wangwu know Lisi like ziji
'Zhangsan thinks Wangwu knows Lisi likes self'

Furthermore, it remains possible even when the blocking effect holds:

79) Zhangsan$_i$ renwei wo$_j$ zhidao Lisi$_k$ xihuan ziji$_{i/j/k}$ ×3 > ×1 > ✓3
Zhangsan think I know Lisi like ziji
'Zhangsan thinks I know Lisi likes self'

We might simply assume that local binding of *ziji* is achieved through the same process as long-distance binding. However, there are good reasons to doubt that this is the case. I have argued that Mandarin *ziji* is a SE anaphor and this means that it is a pronominal that lacks ϕ-features, and it is the sharing of ϕ-features that results in binding. In Mandarin, *ziji* can always be bound by the local subject, but if *ziji* is a SE anaphor that means it cannot reflexivize a predicate and cannot be bound locally.

In the theory developed by Reinhart and Reuland, "... SE anaphors are subject only to condition B..." (1991, p. 315), and thus we would not expect *ziji* to be bound locally. Reinhart and Reuland (1991) argue that SE anaphors are still defective expressions and that "... they must find an antecedent, which they can do logophorically" (p. 315). However, there is another possibility: namely, that a locally bound SE anaphor

might be interpreted as a SELF anaphor that reflexivizes the predicate. If locally bound *ziji* is interpreted as reflexivizing a predicate we might expect the locally bound *ziji* to have different properties to the long-distance bound *ziji*. This is, in fact, what we find: there is no consciousness effect locally and there is no blocking effect. Consequently, I propose that when *ziji* is bound locally it is functioning as a reflexivizer, that is, as a SELF anaphor rather than as a SE anaphor.

4.5.1 No blocking effect locally

We can see evidence of the bifurcation between locally bound and long-distance *ziji* in the blocking effect. In the local clause, the blocking effect is never observed:

80)

a. John$_i$ gei wo$_j$ kan ziji$_{i/?j}$ de picture
John to I see self DE picture
John showed me self's pictures'

b. John$_i$ gaosu-le wo$_j$ ziji$_{i/?j}$ de fenshu
John told I self DE score
'John told me self's score'

c. John$_i$ gaosu-le ni$_j$ ziji$_{i/?j}$ de fenshu ma?
John told you self DE score Q
'Did John tell you self's score'

(Pan, 1997, p. 156)

Similarly, notice that the strong subject-orientation that we saw with long-distance bound *ziji* is weakened in the examples in (80). Some further examples are illustrated below:

81)

a. Shenyingshi$_i$ gei Bill$_j$ kan ziji$_{i/j}$ de zhaopian
Photographer to Bill see self DE pictures
'The photographer showed Bill pictures of self'

c. Bill$_i$ gei wo$_j$ kan ziji$_{i/j}$ de zhaopian
Bill to me see self DE pictures
'Bill showed me pictures of self'

(Pan, 1997, p. 18)

Cross-linguistically, we do find locally bound SE anaphors but it appears that they either have a marked usage or they generate interpretations that differ to their long-distance interpretations Recall that Faroese allows its SE anaphor to be used locally

when it is heavily stressed and "... becomes the equivalent of the complex reflexive" (Barnes, 1986, p. 99):

82)Jógvan$_i$ bardi seg$_i$
Jógvan hit SE
'Jógvan hit SE'

(Barnes, 1986)

And in Polish we have seen that the reflexive form *siebe* can be a simple reflexive or a reciprocal:

83)Chłopcy$_i$ rozmawiali ze soba$_i$
Boys.NOM talked with self/each other
'The boys talked with themselves/each other'

(Reinders-Machowska, 1991, p. 139)

However, the reciprocal reading not possible when the anaphor is bound long-distance:

84)Chłopcy czytali dziewcząt$_j$ wspomnienia o sobie
Boys$_i$ read of-girls$_j$ memories about self$_{i/j}$/each other$*_{i/j}$
'The boys read the girls' memories about self/each other'

(Reinders-Machowska, 1991, p. 147)

Thus, it is not typologically unique to find that *ziji,* as a SE anaphor, can be bound locally.

4.5.2 No consciousness effect locally

We might wonder whether locally bound *ziji* is actually a SELF anaphor or an exempt anaphor that is given a logophoric interpretation (as suggested as a possibility by Reinhart and Reuland, 1991). Since logophoric interpretations orient themselves towards centers of consciousness we would not expect, on this theory, to find inanimate antecedents for locally bound *zjii*, but we *do* find inanimate antecedents for locally bound *ziji*:

85)

a. [NP Mei yige gongyuan]$_1$ dou you ziji$_i$ de dongtian
Every one park all have self DE winter
'Every park has its own winter'

b. Dan Jian [NP yi-dao jing-qiao de baishi
But see one-cl beautiful DE white-stone

gongqiao]$_I$ zai jinzhi de shuimiaoshang
arch-bridge at still DE water-surface

touxia ziji$_i$ de daoying
throw-down self DE reverse-shape
'Suddenly I saw a beautiful white stone arch-bridge throwing its own mirror on the water'

(Pan, 1997, pp. 153-154)

Likewise, Huang and Liu (2001) observe when *ziji* is locally bound there is no logophoric requirement such that "... consciousness, which we see as a common property of logophoricity, clearly does not obtain [locally]" (2001, p. 166):

86)

a. Zhangsan$_i$ piping-le ziji$_i$
Zhangsan criticize-PRF self
'Zhangsan criticized himself'

b. Zhangsan$_i$ piping-le ziji$_i$ de pengyou
Zhangsan criticize-PRF self DE friend
'Zhangsan criticized self's friend'

(Huang and Liu, 2001, p. 166)

Huang and Liu observe that examples above are "... entirely licit even though *Zhangsan* may not be aware that the person he was criticizing was actually himself or his friend" (2001, p. 166). On the other hand, long-distance bound *ziji* displays consciousness effects. Pan (1997, p. 150) gives the following example:

87)

Scenario

Suppose that someone wrote a critical report about John to his supervisor, resulting in John's getting fired. However, John did not know why he was fired. One day, one of John's friends - who knew why John was fired - told John a story about a worker (John) getting fired. However, John did not know the story was about himself (John). If John makes a statement to the effect that the report hurt the man who was fired, the example below is infelicitous:

#John$_i$ renwei nage baogao hai-le ziji$_i$
John thinks that report hurt-PRF self
'John thinks that the report hurt self'

Both Huang and Liu (2001) and Pan (1997) suggest that long-distance bound *ziji* can manifest a consciousness requirement that is absent from locally bound *ziji*. This is further evidence that locally bound *ziji* and long-distance bound *ziji* are different anaphoric forms.

4.6 Nominative anaphors

The lack of the blocking effect in the local clause is evidence that *ziji* is not a SE anaphor when it is bound locally. However, given our analysis of long-distance bound *ziji* we might expect another environment to display a distinct binding distribution: subject position. In the Progovac based derivation illustrated above, the link between the antecedent and the anaphor is mediated by the T-V-SE complex in the local clause. Reuland explicitly proposes that it is the structural case link that allows the anaphor to enter into the T-V-SE chain:

> chain formation requires more than just "coindexing" in a local configuration. Bearing structural case is ... what appears to force the foot to enter the chain. My [Reuland] view is that this happens since the structural Case enables the verbal system to enter the chain formation process, and mediate establishing a chain ... It is the structural Case that establishes the relation. (Reuland, 2011, p. 116)

If *ziji* does not enter the structural Case relation it will not be able to enter into the T-V-SE chain relation because "[f]or the syntactic encoding of the dependency on [its] antecedent, [it has] a free ride on processes of chain formation" (Reuland, 2011, p. 261). Hence, if a SE anaphor cannot enter the agreement system it should not have the same distribution as a SE anaphor that can enter the agreement system.

Rizzi (1990, see also Woolford, 1999) observed that anaphors typically cannot occur in positions associated with agreement and he proposed the anaphor agreement effect:

88)

The anaphor agreement effect

Anaphors do not occur in syntactic positions construed with agreement

Rizzi (1990) and Woolford (1999) provide substantial cross-linguistic evidence that suggests that non-agreeing subjects can be reflexives and that agreeing subjects cannot be reflexives. Thus, we do not expect to find SE anaphors in agreeing subject positions:

89)

*C ... T ... C [SE T_{AGR} ...]

However, in languages that lack agreement we expect to find that nominative reflexives are possible – this is just what we find. In Khmer, Vietnamese, Mandarin, Korean, and Thai (all of which lack subject agreement), we find nominative anaphors (data from Woolford, 1999):[39]

90)

Khmer

a. Mɨt teŏŋ-pii neŏq kɨt thaa kluən ciə kounsəh
Friend both person think that self be student
'The two friends reasoned that they (self) are students'

Vietnamese

b. Anh-ấy e r`üang mình cũng không khoi tôi
He fear that self also not avoid sin
'He is afraid that he (self) will not avoid punishment'

Thai

c. Süommüaay khít wâa tuaʔeeŋ ca dây pay
S. think that self FUT get go
'Somai thinks that he (self) will get to go'

Büring notes that these facts are robust but "[u]nfortunately, Woolford's data do not allow us to determine whether the subject reflexives in these languages behave like exempt anaphors ... " (2005, p. 238). That is, Büring is speculating that the anaphor in the subject position of the examples above may not be a true anaphor but rather an exempt anaphor. If an anaphor in subject position is an exempt anaphor it may display different properties to those anaphors in object position. Indeed, in the system developed by Reuland (2011) we might expect that the subject position to be an exempt position because a chain cannot be formed. Reuland (2011) argues that anaphor-agreement effect is correct as a generalization, but that it is stipulative. In fact, Reuland argues that the anaphor agreement effect can be derived as a consequence of his derivation. Agreement features on T are uninterpretable features that must be checked but this agreement operation can only occur if the subject is fully specified for ϕ-features. Because a SE anaphor is underspecified for ϕ-features, it cannot check the features in T and the derivation crashes. Moreover, as Everaert observes, this argument "... immediately derives the result noted in the literature on the anaphor-agreement effect, that in languages lacking agreement (such as Chinese and Japanese) there is no prohibition against anaphors in subject position" (Reuland, 2011, p. 262). Thus, there is an asymmetry between subject and object SE anaphors. In object position the SE anaphor is "... part of the C_1-T_1-V_1-chain by virtue of the relations it independently and unavoidably enters..." (Reuland, 2011, p. 262). However, in subject position it does not enter this chain. Because a SE anaphor is underspecified and cannot value the ϕ-features on T it will not enter the agreement system and therefore we do not expect it to have the same binding

[39] Sundaresan (2012) examines verbal agreement that is triggered under anaphora in Tamil. Sundaresan argues that these anaphors have the logophoric properties that we might expect, but that these properties are a consequence of syntactically represented perspective phrases.

distribution as a SE anaphor in object position. This is just what we find. Consider the examples below:

91)Zhangsan$_i$ gaosu wo$_j$ ziji$_{i/*j}$ mei bei dahui
Zhangsan told me self haven't by conference

xuanshang
select
'Zhangsan told me that self was not selected by conference'

(Liu, 1999, p. 48)

In the examples above we can see that there is a 3 > 1 configuration and yet binding by the matrix subject is possible – there is no blocking effect. However, when the anaphor is in object position the blocking effect arises:

92)Zhangsan gaosu wo Lisi chang piping ziji$_{*i/*j/k}$
Zhangsan told me Lisi alwayscriticize self
'Zhangsan told me that Lisi always criticize self'

(Liu, 1999, p. 48)

The blocking effect is also absent in tri-clausal environments when the anaphor is in subject position:

93)

a. Zhangsan$_i$ renwei ni/wo$_j$ zhidao ziji$_{i/j}$ chang piping
Zhangsan think you/I know self alwayscriticize

Wangwu
Wangwu
'Zhangsan thinks you/I know self always criticize Wangwu'

b. Ni/Wo$_i$ renweiZhangsan$_j$ zhidao ziji$_{i/j}$ chang piping
You/I think Zhangsan know self alwayscriticize

Wangwu
Wangwu
'You/I think Zhangsan knows self always criticize Wangwu'

c. Zhangsan$_i$ renwei ni/wo$_j$ zhidao Wangwu$_k$ chang piping ziji$_{*i/*j/k}$
Zhangsan think you/I know Wangwu always criticize self
'Zhangsan thinks you/I know Wangwu always criticize self'

This subject/object asymmetry also holds for adjuncts and relative clauses:

94)

a. Zhangsan$_i$ xiang wo tujian [ziji$_i$ piping-le Lisi
Zhangsan to me recommend self criticize-PRF Lisi

de nei-ben shu]
DE that-cl book
'Zhangsan recommended to me the book in which he criticized Lisi'

b. Zhangsan$_i$ xiang wo tujian [Lisi piping-le ziji$_{??i}$
Zhangsan to me recommend Lisi criticize-PRF self

de nei-ben shu]
DE that-cl book
'Zhangsan recommended to me the book in which Lisi criticized self'

c. Zhangsan$_i$ zui xihuan[wo piping-le ziji$_{*i}$ de
Zhangsan most like I criticize-PRF ziji DE

nei-ben shu]
that-cl book
'Zhangsan most likes the book in which I criticized self'

(Huang and Liu, 2001, p. 169)

Huang and Liu (2001) also observe that there is an interpretive difference between subject and object anaphors. Consider the examples below:

95)

a. Zhangsan$_i$ yiwei ziji$_i$ de erzi zui congming
Zhangsan think self DE son most clever
'Zhangsan thought that self's son was the cleverest'

b. Zhangsan$_i$ yiwei Lisi zui xihuan ziji$_i$ de erzi
Zhangsan think Lisi most like self DE son
'Zhangsan thought that Lisi liked self's son most'

c. Zhangsan$_i$ shuo ziji$_i$ kanjian-le Lisi
Zhangsan say self see-PRF Lisi
'Zhangsan said that he saw Lisi'

d. Zhangsan$_i$ shuo Lisi kanjian-le ziji$_i$
Zhangsan say Lisi see-PRF self
'Zhangsan said that Lisi saw self'

In (95)a and in (95)c the anaphor is in subject position and allows a non-*de-se* reading. However, in examples (95)b and (95)d there is no *de re* reading available. That is, in (95)b and (95)d the *de se* reading is the only reading available.

According to the derivation we have developed we expect that subject anaphors should not be able to enter into the agreement system and should display a different distribution to object anaphors and this is just what we see in that subject anaphors are not subject to the blocking effect and do not force *de se* readings, whereas object anaphors are subject to the blocking effect and favor *de se* readings. Thus, we see that Mandarin offers support for the hypothesis that subject anaphors behave as exempt anaphors (just as Büring speculated), and that this distribution is what we would expect according to the derivation I have proposed in this dissertation.

4.7 Why different *zijis*?

We have seen that there are two environments – the local clause and subject position – that do not display properties associated with long-distance bound *ziji*. Nevertheless, *ziji* can be bound locally and it can occur in subject position – in neither of these positions is it ungrammatical. Following Reuland (2011), I have argued that in object position *ziji* enters into the agreement system and that this is what allows it to be bound by antecedents beyond the local clause. However, I argued that when *ziji* is bound locally it is a SELF anaphor rather than a SE anaphor, and that this is consistent with Reinhart and Reuland's (1991) characterization of SE anaphors.

Anaphors in subject position will not gain their interpretation from an AGREE-mediated relation and will be interpreted logophorically. Under Reinhart and Reuland's theory this is just what we would expect. When a chain cannot be formed between a SE anaphor and its antecedent the syntax cannot provide the SE anaphor with ϕ-features. Hence, Reuland (2011) proposes the following rule:

96)

Rule L: Logophoric Interpretation

NP A can be used logophorically unless there is a B such that an A-CHAIN <B, A> can be formed.

That is, simplex anaphors – SE anaphors - can be interpreted as logophoric pronominals when they do not enter into chain formation; they are free and can be interpreted as logophoric pronominals. Additionally, note that locally bound *ziji* functions as a SELF anaphor and this means that chain formation applies, blocking logophoric interpretation.[40] Reuland (2001) argues that "[t]here is no intrinsic

[40] Subject position anaphors cannot reflexively mark their predicate because this would violate the chain condition.

necessity for them to be syntactically bound, [but] [w]here anaphors must be bound, this is the result of an economy condition" (p. 363) that favors syntactic interpretation over logophoric interpretation.[41]

As Reuland makes clear, there is nothing to prevent SE anaphors from being interpreted as logophoric pronominals when they cannot be bound as anaphors. Likewise, Cole, et al. (2001) observe that "... Reuland's analysis would predict that only when chain formation is somehow blocked a pronominal interpretation would become possible. This prediction appears to be correct, at least with respect to Chinese. As was pointed out by Yu (1992, 1996) and others, when *ziji* is unbound syntactically it receives a pronominal interpretation that is subject to logophoric requirements" (p. xxxix):

97) Bu qingchu ziji shenme shihou neng qu Meiguo
Not clear self when can go U.S

nian shu; Xiao Li ye zheme juede
read book Little Li also thus feel
'It is not clear when I can go to the U.S. to study. Little Li feels the same way'

(Cole, et al. 2001, p. xxxix)

Cole, et al. observe that in (97) there is no syntactic binder for *ziji* and that this allows *ziji* to receive a pronominal interpretation, and this is shown by the fact that the elliptical clause can receive either a strict or sloppy interpretation. We can see that unbound *ziji* can readily be given a pronominal interpretation across sentences in the examples below:

98)

a. Lisi$_i$ hen nanguo. Baozhi shuo ziji$_i$
Lisi very upset. Newspaper mention self

shi yige huai zontong
is a bad/evil president
'Lisi is very upset. The newspaper mentioned self is a bad president'

[41] The formation of a local SELF-chain is independent of whether a SE-chain can be formed. Thus, a SELF-chain can be formed when long-distance binding is blocked *and* when long-distance binding is possible. The fact that locally bound *ziji* is a syntactic anaphor rather than a logophor reflects an economy condition that gives priority to syntactic interpretation.

b. Lisi$_i$ hen nanguo. Zhangsan$_j$ shuo ziji$_{*i/j}$
Lisi very upset. Zhangsan say self

bu shi yige hao tingzhong
not be a good listener
'Lisi is very upset. Zhangsan said self is not a good listener

(Haddad, 2007, pp. 370-371)

Thus, in (98)a *ziji* is in an exempt position and interpreted as a logophoric pronominal, so it can be bound by *Lisi* in the previous sentence. However, in (98)b there is a closer antecedent *Zhangsan* and this provides the logophoric center for the exempt anaphor.

4.8 A non-uniform analysis

I have argued that when *ziji* is a canonical SE anaphor and that it displays the properties that are typical of SE anaphors cross-linguistically: it is morphologically simplex, it is subject oriented, and it is bound out of non-finite clauses. However, we have seen that when it is bound locally we have evidence that it is interpreted as a SELF anaphor, and that when it is in subject position it is interpreted as an exempt anaphor because it cannot enter into the agreement system and SE anaphors need to enter into the agreement system to acquire the features that mediate the binding relationship. Thus, the analysis I have given is *non-uniform*. That is, *ziji*'s interpretation depends on the syntactic environment and the syntactic relationships that can be established in that environment. We have seen that such non-uniform approaches to anaphora provide good explanatory scope in Reinhart and Reuland (1991, 1993) and Pollard and Sag (1992), but these approaches focussed on local anaphora and the conditions under which exempt anaphora arise for SELF anaphors.[42]

Huang and Liu (2001) also argue for a non-uniform analysis of *ziji.* Liu (1999) observes three significant ways in which locally bound *ziji* differs from long-distance bound *ziji*: locally-bound *ziji* displays no blocking effect (see section 4.5.1), locally-bound *ziji* displays no deictic effect (see section 4.11.1), and locally-bound *ziji* displays no consciousness effect (see section 4.5.2). They argue for an analysis in which subject *ziji* and locally bound *ziji* are simply anaphors that are subject to

[42] Pollard and Xue (2001) also argue for a non-uniform analysis of *ziji.* Briefly, they argue that "... an NP can serve as the antecedent of *ziji* when it is either syntactically prominent (namely, a subject which structurally commands the reflexive) in the sentence or else pragmatically prominent in the discourse" (Pollard and Xue, 2001, p. 319). However, in the blocking effect we see subjects that cannot bind *ziji.* Pollard and Xue argue that this is a consequence of "... a processing strategy to avoid conflicts in point of view" (p. 338 fn. 6). Pollard and Xue cite Huang and Liu's direct discourse analysis of the blocking effect but we have seen that this theory cannot adequately explain the binding data. Rather, the blocking effect is an intervention effect that disrupts the agreement system and suggests that binding of *ziji* is mediated by the agreement system and the subject orientation is an artifact of this property.

Binding Condition A as in Chomsky (1986) and that long-distance bound *ziji* is a logophor. Likewise, Liu (1999) argues that "... long-distance bound *ziji* 'self' is in fact a discourse-pragmatic reflexive" (p. 51), but it "is considered an anaphor when it refers to a GC-internal antecedent" (Liu, 1999, p. 51). This is almost the opposite of my analysis. Huang and Liu argue that the blocking effect is a consequence of perspective conflict and that this is a signature of logophoricity. That is, for Huang and Liu (2001) and Liu (1999), the mechanism that allows long-distance binding is logophoricity and, for Huang and Liu the blocking effect disrupts the logophoric mechanism through perspective conflict. Hence, the blocking effect is evidence for the existence of logophoric binding. However, I have argued that the blocking effect cannot be explained under the analysis provided by Huang and Liu. Instead, I have argued that that the blocking effect is a signature of a cross-linguistically attested agreement process (the PCC), and therefore the blocking effect is evidence of an agreement process being disrupted. When the agreement operation is disrupted, *ziji*, as a SE anaphor, cannot obtain the necessary ϕ-features. I agree with Huang and Liu that locally bound *ziji* is a local anaphor that is bound according to Principle A (or Condition A of Reinhart and Reuland).[43] The distribution of *ziji* is neither a purely a discourse phenomenon nor purely a syntactic phenomenon. I have argued that the blocking effect cannot be explained by the various discourse theories and that its PCC pattern is evidence of an agreement based binding operation and that this is consistent with important aspects of Reuland's analysis of SE anaphors. However, discourse plays an important role when *ziji* is not bound in the syntax and hence we see logophoric properties.

4.9 Why *de se*?

We have seen that there is a strong tendency for long-distance anaphor to be interpreted *de se.* In discussions of the strong tendency for *de se* interpretation *de se* interpretation is often assumed to be a signature of logophoricity (see Cole, et al, 2001; Huang and Liu, 2001, for example), and that the logophoric roles of Sells' -

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[43] There is a small difference however. Liu (1999) argues that subject anaphors are governed by Principle A. For example:

4) Zhangsan gaosu wo ziji-de baba hen you qian
Zhangsan tell me self's father very have money
'Zhangsan told me that self's father is very rich'

(Liu, 1999, p. 91)

Liu argues that the anaphor here is subject to Principle A because the governing category will be the entire sentence (because the anaphor is not accessible to itself). However, above I argued that subject position anaphors were interpreted logophorically. The fact that there is no blocking effect when the anaphor is in subject position is good evidence that the blocking effect is not a consequence of a logophorically-driven perspective conflict:

5) Zhangsan$_i$ dui wo$_j$ shuo ziji$_{i/*j}$-de zhaopian zui hao kan
Zhangsan to I say self's picture most look good
'Zhangsan said to me that self's pictures look the best'

(Liu, 1999, p. 91)

SOURCE, SELF, or PIVOT – might even be reduced to a logophoric *de se* requirement. That is, long-distance reflexives are interpreted *de se* due to their logophoric nature. However, this tendency towards *de se* interpretation need not be a consequence of logophoric interpretation. Delfitto and Florin (2007, 2008) argue that *de se* interpretation can arise purely as a consequence of syntactic binding. Consider the following examples:

99)

a. John said that I am a war hero

b. John said that he is a war hero

Delfitto and Florin (2007) argue that when (99)b is interpreted *de re*, the 3rd person feature on *'he'* is interpretable. However, when (99)b is interpreted *de se*, the 3rd person feature on *'he'* is uninterpretable. That is, *'he'* enters the derivation without its person features as a bare formative and therefore must inherit its features from a linguistic antecedent through an agreement relation.[44] Delfitto and Florin argue that

> ... this dependency is interpreted as encoding the identification of the pronoun's referent with the referent of its antecedent *along with its thematic properties.* In the case of [(99)b], assuming that the 3-person feature on *he* is copied from its antecedent (the DP *John*), the referent of the pronoun is bound to be identified with its antecedent along with the thematic properties of the antecedent, thus unambiguously encoding a *de se* reading, informally paraphrased as 'John said that John, *conceived as the author of that event e of saying*, is a war hero'. (Delfitto and Florin, 2007, p. 34)

That is, on Delfitto and Florin's account, the *de se* interpretation arises as a consequence of feature sharing that is derived in the syntax. In our analysis, long-distance binding also occurs as a consequence of feature sharing and therefore we predict that the *de se* interpretation should be available purely as a consequence of syntactic binding. Thus, *de se* interpretation need not be a diagnostic or signature of logophoric interpretation. Indeed, we can see in the examples below that the *de se* interpretation is the favoured interpretation when *ziji* is in object position (from where it can be bound syntactically):

100)

a. Zhangsan$_i$ yiwei ziji$_i$ de erzi zui congming
Zhangsan think self DE son most clever
'Zhangsan thought that self's son was the cleverest' *de se/de re*

b. Zhangsan$_i$ yiwei Lisi zui xihuan ziji$_i$ de erzi
Zhangsan think Lisi most like self DE son

[44] The Inclusiveness Condition disallows new material from being inserted into the derivation and therefore copied features must already be present in the derivation and make no new semantic contribution.

'Zhangsan thought that Lisi liked self's son most' *de se*

c. Zhangsan$_i$ shuo ziji$_i$ kanjian-le Lisi
Zhangsan say self see-PRF Lisi
'Zhangsan said that self saw Lisi' *de se/de re*

d. Zhangsan$_i$ shuo Lisi kanjian-le ziji$_i$
Zhangsan say Lisi see- PRF self
'Zhangsan said that Lisi saw self' *de se*

In object position the anaphor must be bound syntactically and this results in feature sharing and the consequent *de se* interpretation. However, the subject position is an exempt position with the consequence that *ziji* is interpreted as logophoric pronominal that allows both the *de re* and *de se* readings.[45] Furthermore, this analysis supports the arguments of Reuland (2011) regarding the semantics of reflexivity. Reuland proposes that there are two distinct notions of reflexivity:

101) P(x, x)

This operation allows two arguments to be interpreted as identical. The second notion of reflexivity involves dissociation. This can be represented in the following manner:

102) P(x, f(x))

In this operation the function *f* prevents identity being established between the two arguments of the predicate. The second argument only approximates the first argument and is not formally identical to it. It is the representation in (102) that

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[45] Chierchia (1990) observed that *de se* interpretation of obligatory control [OC] PRO does not arise in non-attitude contexts. Thus, "... any attempt to pin the *de se* reading of OC PRO down to some inherent feature it bears would falsely predict that all instances of OC PRO should support this reading" (Landau, 2015, p. 22). Landau (2015, p. 22) observes that there are many OC contexts that are free of the *de se* entailment:

6)

a. This key$_i$ will serve/do [PRO$_i$ to open the door]
b. The transmission problem for the car$_i$ [PRO$_i$ to stop]

Landau (2015, p. 22) also notes that even if the controller is human there need be no *de se* entailment:

7)

a. John$_i$ managed [PRO$_i$ to avoid the draft] (because he spent that decade in a coma)
b. Mary$_i$ neglected [PRO$_i$ to send the payment]

leads to dissociated or proxy readings. Reuland argues that the semantic representations in (101) and (102) above are realized in different morphological forms. He argues that SE anaphors represent identity with the schema P(x, x) and that complex anaphors (SELF, a body part, or other element) are represented with the schema P(x, f(x)). The feature sharing account we have developed is consistent with Reuland's analysis of SE anaphors expressing a form of reflexivity in which two arguments are identical - P(x, x). This is just what we find:

103)

Scenario

One day, Queen Elizabeth II invited Zhangsan to visit the Royal Wax Museum, where wax figures of the royal family are displayed. There is a chair beside each wax figure. Visitors can sit down on the chair and take photographs for themselves. Suppose Zhangsan and the Queen were in front of the wax figures of Queen Elizabeth and Prince Charles and the Queen was wondering about which chair would be more appropriate for Zhangsan to sit in. The Queen decided that Zhangsan should sit in the chair next to her wax figure:

104)

a. #Nüwang$_i$ jueding qing Zhangsan zuo zai ziji$_i$-de
Queen decide invite Zhangsan sit at self-DE

shen bian
body side

b. Nüwang$_i$ jueding qing Zhangsan zuo zai ta$_i$-de
Queen decide invite Zhangsan sit at her-DE

shen bian
body side

(Liu, 1999, p. 7)

In (103)a we see that the long-distance bound *ziji* cannot be bound by the duplicated self "... the non-locally bound *ziji* must refer to the real *self* (i.e., Queen Elizabeth II)" (Liu, 1999, p. 8). From Reuland's typology we might expect that a locally bound *ziji* would have a dissociated reflexivity – P(x, f(x)). However, locally bound *ziji* still resists dissociation interpretations:

105)

Scenario

We play a game in which we cover up Zhangsan's eyes so that he cannot see anything. We then give Zhangsan two wooden puppets. One puppet looks like Zhangsan and one puppet looks like Lisi. We ask Zhangsan to hit one of the puppets and Zhangsan hits the puppet that looks like Zhangsan:

a. #Zhangsan$_i$ da-le ziji$_i$ yi-xia
Zhangsan hit-PRF self one-time
'Zhangsan hit self once'

b. Zhangsan$_i$ da-le taziji$_i$ yi-xia
Zhangsan hit-PRF self one-time
'Zhangsan hit self once'

(Liu, 1999, p. 8)

Liu concludes that "[w]henever a predicate allows for the interpretation of the anaphors as duplicated (i.e., a spatio-temporally different) entity, the complex anaphor is required" (Liu, 1999, p. 8). This fits in with Rooryck and Vanden Wyngaerd's conception of reflexivity in that they argue that truly simplex forms such as Dutch *zich* will never have a dissociation interpretation and that a dissociation context requires morphologically complex reflexive but morphological complex reflexives can appear in other environments as well. Thus, they propose the following conditional:

Dissociation context → morphologically complex reflexive

Reuland argues that SE anaphors represent identity with the schema P(x, x) and that complex anaphors (SELF, a body part, or other element) are represented with the schema P(x, f(x)). Rooryck and Vanden Wyngaerd contest Reuland's distinction and they propose that "there appears to be no superficially transparent relationship between morphological form and the type of reflexive interpretation" (2011, p. 185).

4.10 Sub-command Revisited

Recall that in Mandarin there is the phenomenon of subcommand, in which it is possible for a possessor to bind a reflexive:[46]

106) Zhangsan$_i$ de jiaoao hai-le ziji$_i$
Zhangsan's DE pride hurt-ASP self
'Zhangsan's arrogance harmed him'

(Tang, 1989, p. 100)

[46] Recall that sub-commanding antecedents will also generate the blocking effect.

That is, the usually strict condition for c-command in order for binding relationships to be established is relaxed in (106) above. In (106) above we can see that the specifier of the subject DP – *Zhangsan* - successfully binds *ziji* even though *Zhangsan* does not c-command *ziji*. Tang (1989) defines sub-command in the following manner:

107)

β sub-commands α iff

a. β c-commands α, or

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

Tang (1989) defines a potential binder in the following manner:

108)

A POTENTIAL BINDER for α is any NP which satisfies all conditions of being a binder of α except that it is not yet coindexed with α.

The definitions of sub-command and potential binder allow Tang to propose that the relevant version of principle A for ziji is the following:

109)

A reflexive α can be bound by β iff

a. β is coindexed with α, and

b. β sub-commands α, and

c. β is not contained in a potential binder of α

Tang's definition of sub-command manages to capture important facts about *ziji*'s distribution. For example, it restricts the antecedents of *ziji* to subject positions: [DP [DP]] and [DP[TP]], but these subject positions cannot be contained within a potential binder of *ziji*. Huang and Tang (1991) simplify Tang's initial formulation into the following sub-command condition:

110)

The sub-command condition

β sub-commands α iff β is contained in a DP that c-commands α or that sub-commands α, and any argument containing β is in subject position. (Huang and Tang, 1991, p. 266)

Tang's sub-command condition is designed to capture the fact that the most prominent animate nominal in subject position functions as the antecedent for *ziji*. Thus, the traditional relation of c-command is relaxed. In Tang (1989) and Huang and Tang (1991) sub-commanding antecedents were analysed as syntactic antecedents. However, we have seen that it is possible for anaphors to be exempt from syntactic conditions and interpreted logophorically. Thus, we might wonder whether these Mandarin sub-commanding antecedents are functioning as syntactic antecedents for A-bound anaphors or logophoric antecedents for pronominals/exempt anaphors. Icelandic provides a paradigmatic case of the contrast between syntactic binding and logophoric binding. The Icelandic anaphor *sig* can be bound long-distance out of infinitival clauses and subjunctive clauses. However, binding by a non-c-commanding long-distance antecedent is only possible when the anaphor is contained in a subjunctive clause:

111) *[Skoðun Jóns$_i$]$_j$ virðist [t$_j$ vera hættuleg fyrir sig$_i$]
Opinion John's seems be$_{INF}$ dangerous for self
'John's opinion seems to be dangerous for him'

(Reuland, 2001, p. 344)

112) [Skoðun Jóns$_i$] er [að sig$_i$ vanti hæfileika]
Opinion John's is that self-ACC lacks$_{SUBJ}$ talents
'John's opinion is that he lacks talent'

(Maling, 1984, p. 222, cited in Reuland, 2001, p. 343)

Reuland (2001, p. 348) argues that A-binding requires adherence to a strict version of c-command and that the lack of c-command in (111) accounts for its ungrammaticality. Additionally, Reuland (2001, p. 365, fn. 8, following Thráinsson, 1991) observes that the long-distance anaphor *sig* allows both a strict and sloppy reading when it is long-distance bound out of an infinitive clause by a c-commanding antecedent:

113) Jón$_i$ skipaði prófessornum$_j$ [að PRO fella$_{INF}$ sig$_i$ á
Jon ordered the professor to fail self on the

prófinu og Ari gerði það líka
test and Ari did so too

a = Ari ordered the professor to fail Ari on the test

b = Ari ordered the professor to fail John on the test

The lack of c-command in (112) suggests that this is not an instance of A-binding (see Reuland, 1998 for discussion; also Kayne, 1994) and therefore this leads us to wonder what the relation between *sig* and its antecedent might be in Icelandic subjunctives; that is, whether the relationship is one of variable binding or coreference.[47] Reuland argues (following Reinhart, 1983) that "... strict versus sloppy identity in VP-deletion contexts provides a diagnostic for coreference versus variable binding" (2001, p. 348). Thus, *sig* can be long-distance bound out of subjunctive clauses by c-commanding antecedents and the strict/sloppy ambiguity is present:

114)	Jón$_i$	telur	[að	prófessornum		muni	fella	sig$_i$
	Jon	believes	that	the professor		will$_{SUBJ}$	fail	self
	á	prófinu	og	Ari	telur	það	líka	
	on the	test	and	Ari	believes	so	too	

a = Ari believes that the professor will fail Ari on the test

b = Ari believes that the professor will fail John on the test

(Thráinsson, cited in Reuland, 2001, p. 348)

However, the sloppy/bound reading is "more difficult, if not impossible to get" (Thráinsson, cited in Reuland, 2001, p. 349) when *sig* is long-distance bound out of a subjunctive clause by a non-c-commanding antecedent:

115)	Skoðun	Jóns$_i$	er	[að	sig$_i$	vanti	hœfileika]	og
	Opinion	John's	is	that	self	lacks$_{SUBJ}$	talents	and
	það	er	skoðun	Péturs		lika		
	that	is	opinion	Peter's		too		

'John's opinion is that self lacks talent and that is Peter's opinion too'

---

[47] Binding out of specifier positions is also possible in English:

8)

a. Every girl$_i$'s father hates her$_i$ boyfriend

b. Mary$_i$'s father hates her$_i$ boyfriend

However, A-binding requires c-command:

9) Mary's father annoyed herself

a ≠ Peter's opinion is that Peter lacks talents

b = Peter's opinion is that John lacks talents

Reuland (2001) argues that the lack of a bound reading in (115) above is evidence that the relation between the anaphor its non-c-commanding antecedent is not variable binding. Rather, *sig* is "... interpreted as a pronominal and can be related to its antecedent by coreference" (Reuland, 2001, p. 350).[48] Thus, if *ziji* is bound as an anaphor by long-distance subcommanding antecedents we expect it to manifest the sloppy identity in VP-deletion contexts. This is just what we find:

116)

a. Zhangsan$_i$ xihuan ziji$_i$; Lisi$_j$ ye yiyang
Zhangsan like self; Lisi also the same
'Zhangsan like Zhangsan and Lisi like Lisi'

b. Zhangsan$_i$ de baogao shuo Lisi kuidai ziji$_i$;
Zhangsan DE report say Lisi mistreat self

Wangwu$_i$ de baogao ye yiyang
Wangwu DE report also the same
'Zhangsan's report says that Lisi mistreats Zhangsan;
Wangwu's report says that Lisi mistreats Wangwu'

c. Zhangsan$_i$ de kanfa shi Lisi$_j$ bu xihuan ziji$_i$;
Zhangsan DE opinion is Lisi not like self

Wangwu de kanfa ye yiyang
Wangwu DE opinion also the same
'Zhangsan's opinion is that Lisi doesn't like self; Wangwu's opinion is that Lisi doesn't like Wangwu'

If we accept Reinhart's (1983) argument that "... strict versus sloppy identity in VP-deletion contexts provides a diagnostic for coreference versus variable binding" (Reuland, 2001, p. 348), the examples above are strong evidence that subcommanding antecedents are syntactic antecedents that A-bind the anaphor. If we accept that subcommanding antecedents can syntactically bind anaphors we should be able to provide an analysis for this phenomenon.

[48]Recall that this is what we would expect given Reuland and Koster's (1991) typology of long-distance binding domains. Reuland and Koster argued that syntactic A-binding was only possible out of infinitive clauses. Long-distance binding out of subjunctive clauses was logophoric binding.

Battistella (following a suggestion by Chomsky) argued that the ϕ-features of an animate NP in Mandarin could percolate up to the inanimate NP that contains it (Y.-H. Huang, 1994, p. 105). Huang and Tang (1991) argued that "this way of looking at subject-Infl agreement does not seem seriously entertainable. There is little reason, other than to derive the blocking effects, to say that a matrix verb agrees not with its own subject, but with the subject of its [subject]" (p. 270). However, developments in syntactic theory and our cross-linguistic knowledge of agreement operations now provide perspectives that might accommodate the phenomenon of subcommand.

Bošković and Hsieh (2014) argue that in Mandarin there is no DP and that possessors are NP adjuncts and this allows them to c-command out of the containing NP. Bošković (2010) noted this property in Serbo-Croation. Bošković (following, Despić, 2011) argues that in examples below the possessor is an adjunct and this allows the possessor to c-command out of the containing NP, and this results in a condition B/C violation:[49]

117) *[$_{NP}$ Kusturicin$_i$ [$_{NP}$ najnoviji film]] ga$_i$ je zaista razočarao
Kusturica's latest film him is really disappointed
'Kusturica's latest film really disappointed him'

118) *[$_{NP}$ Njegov$_i$ [$_{NP}$ najnoviji film]] je zaista razočarao Kusturicu$_i$
His latest film is really disappointed Kusturica
'His latest film really disappointed Kusturica'

(Bošković and Hsieh, 2014, p. 5)

Bošković (2010) argues that Mandarin patterns with Serbo-Croatian in this respect:

119)

c. *Ta$_i$-de zuixinde dianying ciji le Li-An$_i$
He-DE newest movie provoke PRF Li-An
'His latest movie provoked Li-An'

d. *Li-An$_i$-de zuixinde dianying ciji le ta$_i$
Li-An-DE newest movie provoke PRF him
'Li-An's latest movie really provoked him'

(Bošković and Hsieh, 2014, p. 5)

Bošković and Hsieh (2014) argue that subcommanding antecedents and the condition B/C violations in (119) are "... due to the lack of the DP layer, the NP-adjoined possessor c-commands out of its TNP [Traditional Noun Phrases], which

[49] But see Nikolaeva (2014) for arguments for a different approach to similar data in Russian.

results in Condition B/C violations in [(119)] but the satisfaction of Condition A [with anaphors]" (p. 6).

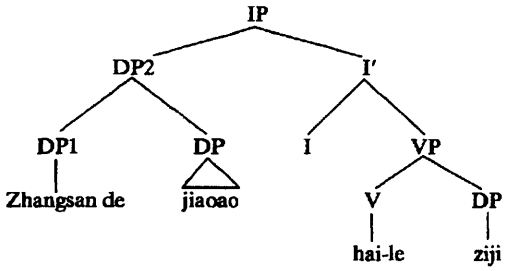
Bošković and Hsieh's analysis is consistent with that proposed by Huang and Liu (2001) and Kayne (1994). Kayne (1994) argues that specifiers are introduced through adjunction and this means that sub-command is a simply a case of c-command. Kayne defines c-command in the following manner:

120)

X c-commands Y iff X and Y are categories and X excludes Y and every category that dominates X dominates Y. (Kayne, 1994)

Thus, under Kayne's (1994) conception of phrase structure there is no need to give an explicit definition of sub-command. If we assume that specifiers are introduced through adjunction with the above definition of c-command then "any specifier of X c-commands everything that X c-commands" (Huang and Liu, 2001, p. 171).[50] Thus, in the example given below both *Zhangsan* (DP1) and *Zhangsan de jiaoao* both c-command *ziji*:

121)



Thus, the structural conditions on binding appear to be relaxed such that the normally strict c-command condition for binding might have some well-defined exceptions in the case of *ziji*. [51]

We have seen that both specifiers and NP heads can bind *ziji*. Thus, sometimes it is the complement that is the antecedent and sometimes it is the specifier that is the antecedent. How are we to reconcile such contradictory requirements? One method

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[50] Example (121) is from Huang and Liu (2001) and they analyze DP as the adjunction structure rather than NP

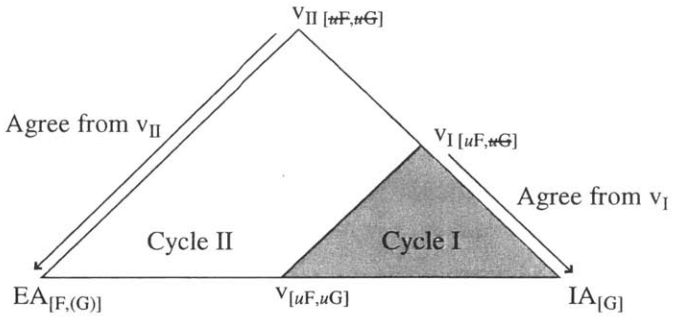
[51] However, it has been reported in the literature that the ability for sub-commanding antecedents looks like it is a phenomenon that is restricted to *ziji*'s local clause. That is, for some informants *ziji* cannot be bound long-distance by sub-commanding antecedents outside of the minimal clause:

10) Zhangsan$_i$ de xin biaoshi Lisi$_j$ hai-le ziji$^{*i/j}$
Zhangsan DE letter indicate Lisi hurt-ASP self
'Zhangsan's letter indicates that Lisi hurt self'

However, my informants report that both *Zhangsan* and *Lisi* are potential antecedents for *ziji* in (28) above.

that immediately recommends itself is the *cyclic agree* operation of Béjar and Rezac (2009). In cyclic agree, a probe engages in a cyclic expansion of the search space seeking to match/value its features. In Béjar and Rezac's original formulation the probe has a "preference for an IA [internal argument] controller that is superseded by an EA [external argument] controller if the IA controller does not suffice to check all segments of a language's characteristic probe" (Béjar and Rezac, 2009, p. 47).

122)



Clearly, this is the situation we find ourselves in with the binding data above. If the head noun in the internal argument position is [+animate], then the containing NP will be marked with the ϕ-features of the head noun. However, if the NP in the internal argument position is [-animate] the probe remains active and will expand its search space to include the specifier. If a [+animate] DP is in the specifier of the probe the probe will agree with EA and the entire subject DP will be marked with the ϕ-features of the specifier. Thus, the probe must intervene between the complement and specifier positions. Let us propose a functional head π^0 with the head NP as its complement and the possessor phrase as its specifier. π^0 will first seek to agree with its complement and then seek to agree with its specifier.[52]In this way we can derive the subcommand phenomenon.[53]

4.11 Remaining questions

4.11.1 Pragmatics

We have seen that the only requirement on interpretation for SE anaphors is that they acquire ϕ-features. Reinhart and Reuland argue that:

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[52] Béjar and Rezac's original discussion focused on v^0 as the probe that undergoes cyclic expansion. I am arguing that such cyclic expansion occurs with D^0 as the locus of expansion but the structural configurations are the same as those discussed by Béjar and Rezac.

[53] Although possessor agreement does seem to be rare cross-linguistically it is not unknown. Shklovsky (2012) shows that Tseltal external possession constructions have verbal agreement with the possessor phrase of the direct object:

11) lah k-ai-bat a-k'ayoj
PFV ERG1-hear-APPL.ABS2 POSS2-song
'I heard your song'

> [t]he grammar only determines (independently) the conditions under which they can be associated with I, but no grammatical condition (analogous to [Condition] A prevents them from being free in any specific domain. The only requirement is that as anaphoric (defective) expressions they must find an antecedent, which they can do logophorically. In other words, SE anaphors are subject only to Condition B, but, in languages which allow their logophoric use, there are no further syntactic restrictions on their occurrence as such. (1991, p. 315)

That is, when no chain can be formed between the anaphor and its antecedent a SE anaphor can be used logophorically. Reuland (2011) proposes the following rule:

123)

Rule L: Logophoric Interpretation

NP A can be used logophorically unless there is a B such that an A-CHAIN <B, A> can be formed.

Under this conception, logophoric interpretation is only possible when chain formation does not apply. However, there is an important class of pragmatic exceptions to this principle. Consider the example below:

124)	Zongtong$_i$	qing	wo$_j$	[PRO$_j$	zuo	zai	ziji$_{i/*j}$	de	shenbian]
	President	ask	me		sit	at	self	DE	side

'The president asked me to sit beside him'

(Pollard and Xue, 2001, p. 321)

In this example the 3 > 1 configuration should block the matrix subject from being the antecedent of *ziji*, but it doesn't. Pan (2001) points out in this example "... the predicate in the embedded clause is irreflexive, and thus precludes co-reference of its arguments ... (p. 302). Pan provides some further examples:

125)	Zhangsan$_i$	pa	[	wo/ni$_j$	hui	chaoguo	ziji$_{i/*j}$]
	Zhangsan	fear		I/you	will	surpass	self

'Zhangsan fears that I/you will surpass self'

(Pollard and Xue, 2001, p. 321)

Pan's analysis of irreflexive predicates is plausible. Furthermore, it is consistent with Reinhart and Reuland's conception of SE anaphors in that "[t]he only requirement is that as anaphoric (defective) expressions they must find an antecedent, which they can do logophorically" (1991, p. 315). In examples (124) and (125) AGREE cannot establish a chain due to the blocking effect, so binding through agree cannot occur. Thus, *ziji* should be interpreted as a SELF anaphor that reflexivizes the predicate. However, the irreflexive nature of the predicate that contains *ziji* resists reflexivization.[54] Consequently, *ziji* must be interpreted

[54] I will assume that if predicates such as *behave, shave, wash* can be lexically reflexive they can also be lexically irreflexive.

logophorically.[55] Cases such as (124) and (125) are often cited as evidence that pragmatic factors are the primary determinant for the distribution of *ziji*. However, Pan's observation that such effects are limited to irreflexive predicates suggests that such pragmatic effects have a limited domain and are not the general case. Nevertheless, examples such as (124) and (125) have been used as evidence for a logophoric analysis of all long-distance bound instances of *ziji*. For example, Y.-H. Huang (1994) provides the following contrast:

126)

a. Xiaoming$_i$ yiwei mama hui lai jie ziji$_i$
Xiaoming think mum will come meet self
'Xiaoming thinks that Mum will come to collect him'

b. ?Xiaoming$_i$ yiwei mama hui qu jie ziji$_i$
Xiaoming think mum will go meet self
'Xiaoming thinks that Mum will go to collect him'

(Y.-H. Huang, 1994, p. 133)

Y.-H. Huang argues that "... the use of *lai* 'come' is a clear indication that the mental state is reported from the point of view of Xiaoming, hence the use of the long-distance reflexive *ziji*. On the other hand, ... the use of *qu* 'go' makes clear the description of the mental state is not from Xiaoming's point of view, hence the use of the long-distance reflexive is much less natural here" (Y.-H. Huang, 1994, p. 133). However, this effect is a consequence of how the verbs *lai/qu* orient themselves against the utterance context. Pan observes "... that *lai* is oriented towards the speaker or hearer, but *qu* points away from the speaker" (Pan, 1997, p. 102). He provides the following contrast:

127)

John moves away from the speaker

a. *Dang John xiang ta$_i$ zou-lai de shihou Bill$_i$ xiao-le
When John toward he walk-come time Bill smile-l
'When John was walking towards him, Bill smiled'

John moves away from the speaker

---

[55] Reflexive marking of irreflexive predicates doesn't generally allow logophoric interpretation of the anaphor:

12) *John$_i$ is afraid that Mary will surpass himself$_i$

Thus, Norvin Richards (p.c.) suggests that this is an idiosyncratic feature of *ziji* rather than a general principle of language.

b. Dang John xiang ta_i zou-qude shihou $Bill_i$ xiao-le
When John toward he walk-go time Bill smile-l
'When John was walking towards him, Bill smiled'

This contrast arises because the sentence is unembedded, so the verbs *lai/qu* are oriented towards the speaker. Hence, *qu* will be felicitous because *John* moves towards *Bill* and away from the speaker (assuming that *Bill* and the speaker aren't standing together). Similarly, *lai* will be infelicitous because it requires movement towards the speaker, rather than movement towards *John*. Hence, the contrast provided by Y.-H. Huang in (126) replicates this phenomenon. The embedded predicate is irreflexive so the local subject cannot be an antecedent. However, because *lai/qu* are embedded under an attitude predicate they are oriented towards the attitude holder. Hence, only *lai* is felicitous. The deictic verbs *lai* and *qu* create idiosyncratic contexts that affect the interpretation of *ziji*. However, Liu (1999) argues that contrasts such as (126) are evidence that long-distance bound *ziji* is a logophor. Liu argues that because *lai/qu* are deictic verbs their locus will be the same deictic center/pivot that logophoric *ziji* will refer to. He provides the following contrast:

128)

a. $Mama_i$ shuo jia chuqu-de $nuer_j$ yijing
Mother say marry go-out daughter already

hui lai $ziji_{i/*j}$ -de jia le
return come self DE home PERF
'Mother said that the married daughter had already come back to self's home'

b. $Mama_i$ shuo jia chuqu-de $nuer_j$ yijing
Mother say marry go-out daughter already

hui qu $ziji_{*i/j}$ -de jia le
return go self DE home PERF
'Mother said that the married daughter had already gone back to self's home'

Liu (1999) argues that in (128)a the deictic center is *Mama* and therefore *ziji* as a logophor will be bound by *Mama*. On the other hand, in (128)b "the use of the verb *qu* 'go' implies that what is described is not from the mother's 'point of view'. That is, the use of the verb *qu* 'go' indicates movement away from rather than toward *Mama* 'mother'; therefore, *Mama* 'mother' cannot be the pivot ... Consequently, the logophoric interpretation of *ziji* 'self' is not allowed" (Liu, 1999, pp. 39-40). However, this analysis is unconvincing; the contrasts in example (128) above do not entail a logophoric analysis of *ziji*. Rather, the deictic verbs independently constrain

the orientation of the utterance (see (127) above) and binding patterns will reflect those constraints.[56] Examples such as (124) and (125) illustrate that pragmatically infelicitous readings can over-ride blocking effects and therefore we should not be surprised that deictic verbs can eliminate possible readings.[57]

The fact that irreflexive predicates and deictic verbs such as *lai* and *qu* influence binding possibilities shows that it is possible for pragmatics and or world knowledge to influence interpretation. We have seen that Huang and Liu's (2001) account of perspective clash cannot account for the patterns that we see in the blocking effect. Another piece of evidence that they cite for their analysis is that when a deictic use of the pronoun *ta* occurs it blocks a matrix subject from binding:

129)	Zhangsan	shuo	[☞	ta	qipian-le	ziji]
	Zhangsan	said		he/she	cheat- PRF	self
	'Zhangsan said that he/she cheated self'					

Huang and Liu (2001) argue that *ziji* must be bound by *ta* and cannot be bound by *Zhangsan.* The matrix subject is blocked because the deictic use of *ta* (with the pointing gesture) establishes an external PIVOT, "... thus blocking the possibility of a distinct PIVOT as an LD [long-distance] antecedent of *ziji*" (Cole, et al., 2006, p. 61). However, this local subject will always be a possible antecedent and a strong deictic gesture (symbolized by the pointing finger) will pragmatically favour the local subject just as the deictic verbs *lai* and *qu* will influence interpretation.

Another class of exceptions to our analysis are psychological predicates. In the example below *ziji* can refer to the experiencer object *Lisi*:

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[56] Liu (1999) reports that the deictic verbs *lai/qu* do not have this effect on locally bound *ziji*:

13)

a.	Zhangsan	yijing	hui-lai	ziji-de	jia	le
	Zhangsan	already	return-come	self's	home	SFP
	'Zhangsan had already come back to self's home'					
b.	Zhangsan	yijing	hui-qu	ziji-de	jia	le
	Zhangsan	already	return-go	self's	home	SFP
	'Zhangsan had already come back to self's home'					

Pollard and Xue (2001) suggest that this is because in Mandarin it seems that "the external speaker may or may not take the viewpoint of the sentence internal referent" (p. 332). However, this optionality does not appear to be possible when the deictic verbs are within the scope of an attitude holder.

[57] See Anand (2006) and Anand and Hsieh (2005) for discussion of the blocking effect with *lai* and *qu*.

130) Zhangsan$_i$ xiangxin [[ziji$_{i/j}$ de xiaohai mei de
Zhangsan believe self DE child not get

jiang de xiaoxi] shi Lisi$_j$ hen nanguo]
prize DE news make Lisi very sad
'Zhangsan believed that the news of self's child not getting a prize made Lisi sad'

(Pollard and Xue, 2001, p. 318)

These psychological predicates also allow binding by experiencer objects in English:

131)

a. Rumours about himself$_i$ enraged John$_i$
b. Pictures of each other$_i$ annoyed the students$_i$
c. Each other$_{i+j}$'s supporters worried Freud$_i$ and Jung$_j$

(Pesetsky, 1995, p. 43)

In (131) we might appeal to the fact that the anaphor is in an exempt position and this is what allows the experiencer object to binding the anaphor. Similarly, we have argued that subject positions are exempt positions for *ziji* and therefore we might not be surprised that *ziji* can be bound by both *Zhangsan* and *Lisi* in (0. Similarly, Cheung and Larson (2015) give numerous examples of binding by experiencer objects when *ziji* is in an exempt position:

132)

a. Ziji$_i$ de pengyou de guanhuai gandong-le Lisi$_i$
Self DE friend DE solicitude touch-PRF Lisi
'The solicitude of self's friends touched Lisi'

b. Ziji$_i$ de zhichizhe de beipan jinu-le Lisi$_i$
Self DE supporter DE betrayal infuriate-PRF Lisi
'Self's supporters' betrayal infuriated Lisi'

(Cheung and Larson, 2015)

This backward binding is not possible for simple transitives (133)a and experiencer subjects (133)b:

133)

a. *Ziji$_i$ de pengyou da-le Lisi$_i$
Self's DE friend hit-PRF Lisi

b. *Ziij$_i$ de pengyou pa/danxin/xihuan Lisi$_i$
Self's DE friend fear/be.worried/like Lisi

(Cheung and Larson, 2015)

In this dissertation I have not addressed blocking patterns that arise in the *ba/bei* construction.[58] Cole and Wang note that both subjects and nominals that follow *ba/bei* are possible antecedents for *ziji*. Subjects will create strong blocking effects but the nominals following *ba/bei* do not create strong blocking effects:

134)

a. Zhangsan$_i$ yiwei wo$_j$ hui ba ni$_k$ dai
Zhangsan yiwei I will BA you take

hui ziji*$_{i/j/k}$ de jia
back self DE home
'Zhangsan thought I would take you back to self's home'

b. Zhangsan$_i$ yiwei wo$_j$ hui bei ni$_k$ dai
Zhangsan yiwei I will by you take

hui ziji*$_{i/j/k}$ de jia
back self DE home
'Zhangsan thought I would be taken by you back to self's home'

c. Zhangsan$_i$ yiwei Lisi$_j$ hui ba ni$_k$ dai
Zhangsan yiwei Lisi will BA you take

hui ziji$_{i/j/k}$ de jia
back self DE home
Zhangsan thought Lisi would take you back to self's home'

d. Zhangsan$_i$ yiwei Lisi$_j$ hui bei ni$_k$ dai
Zhangsan yiwei Lisi will by you take

hui ziji$_{i/j/k}$ de jia
back self DE home
'Zhangsan thought Lisi would be taken by you back to self's home'

(Cole, et al. 2005, p. 62)

In the sentences above we can see that the nominals following *ba/bei* are possible antecedents for *ziji*. However, they do not generate the blocking effect and we have seen that objects do generate the blocking effect. Only the subjects generate the

[58] *Ba* is the preverbal object marker and *Bei* is the passive morpheme.

blocking effect. I will leave this subject to future research but before leaving this topic I will mention an intriguing data pattern discussed by Huang and Liu (2001, p. 163). Consider the sentence below with two embedded anaphors:

135)	[	Zhangsan$_i$	renwei	[	Lisi$_i$	zhidao	[	Wangwu$_i$
		Zhangsan	think		Lisi	know		Wangwu
	ba	ziji$_1$	de	shu	song-gei	le	ziji$_2$	de	pengyou]]]
	BA	ziji	DE	book	give-to	PRF	ziji	DE	friend

Huang and Liu report the following pattern of binding:

e. ziji$_1$ = ziji$_2$ = Wangwu
f. ziji$_1$ = ziji$_2$ = Lisi
g. ziji$_1$ = ziji$_2$ = Zhangsan
h. ziji$_1$ = Wangwu ziji$_2$ = Lisi
i. ziji$_1$ = Wangwu ziji$_2$ = Zhangsan
j. ziji$_1$ = Zhangsan ziji$_2$ = Wangwu
k. ziji$_1$ = Lisi ziji$_2$ = Wangwu
l. *ziji$_1$ = Zhangsan ziji$_2$ = Lisi
m. *ziji$_1$ = Lisi ziji$_2$ = Zhangsan

The generalization in this intricate pattern is that when both *ziji's* are both beyond the local clause they must have the same antecedent. This suggests that when long-distance binding occurs there is only one feature value that can mediate the binding relation and this is why blocking occurs in (h) and (i). However, given the fact that this example is based on *ba* construction I will simply note it and leave it to future research.

Chapter 5 – Other analyses

5.1 Introduction

Classical Binding Theory (CBT) as exemplified in Chomsky (1986) explained the interpretation of local anaphors, pronouns, and R-expressions. The principles of binding theory provided impressive empirical and typological coverage but CBT was simply silent on simplex long-distance anaphors - of which *ziji* is an exemplar. It is certainly a possibility that these long-distance anaphors may be exceptions to binding theory and their distribution may not be governed syntactic principles at all. Conversely, we might find that long-distance anaphors *are* governed by syntactic principles. However, we have seen that complex local anaphors can be exempt from the binding principles (Pollard and Sag, 1992; Reinhart and Reuland, 1993), and that when they are exempt they exhibit properties that suggest they are governed by extra-grammatical principles such as discourse. As such, we should be open to the possibility that simplex long-distance reflexives have a syntactic distribution *and* an extra-grammatical distribution. In this chapter I will consider the various analyses of *ziji* that have been proposed. I will argue that these previous theories are inadequate in their empirical coverage and in their theoretical plausibility. Consequently, I will propose an analysis that is consistent with theoretical approaches to the PCC, Reuland's agree-based approach to binding, and the empirical data that is crucial in the Mandarin blocking effect. In this chapter I will restrict myself to an examination of some representative analyses of *ziji*. Namely, the parameterization of the binding domain (Manzini and Wexler, 1987); the covert movement analysis (Battistella, 1989; Huang and Tang, 1991; Cole and Sung, 1994; Cole and Wang, 1996); and the logophoric analysis (Pan, 1997, 2001; Huang and Liu, 2001).

5.2 Parameterizing the Binding Domain

One of the earliest approaches to long-distance binding was Manzini and Wexler's (1987) proposal to parameterize the governing category across languages. In English the governing category would be the local clause, while in Mandarin the binding category would be the root sentence. Manzini and Wexler (1987, pp. 423) proposed the following definition of governing category:

1)

γ is a governing category for α iff

γ is the minimal category that contains α and a governor for α and

a. can have a subject, or for α anaphoric, has a subject β, $\beta \neq \alpha$; or
b. has an Infl; or
c. has a Tense; or
d. has a "referential" Tense;[1] or
e. has a "root" Tense;

if, for α anaphoric, the subject β', $\beta' \neq \alpha$, of γ, and of every category dominating α and not γ, is accessible to α.

Thus, according to this proposal languages can choose to set their governing categories according to the possible parameter values listed above. For example, English sets its parameter under clause (a) of (0 above and therefore the governing category for its anaphors and pronouns clause (a). However, languages that contain both local and long-distance reflexives will not be able to set a single parameter for all of their anaphoric and pronominal elements because the elements have different governing categories:

2)

a. Zhangsan$_i$ zhidao Lisi$_i$ xihuan ziji$_{i/j}$
Zhangsan knows Lisi likes self
'Zhangsan knows that Lisi likes self'

b. Zhangsan$_i$ zhidao Lisi$_i$ xihuan taziji $*_{i/j}$
Zhangsan knows Lisi likes self
'Zhangsan knows that Lisi likes self'

c. Zhangsan$_i$ zhidao Lisi$_i$ xihuan ta$_{i/*j}$
Zhangsan knows Lisi likes self
'Zhangsan knows that Lisi likes him'

Consequently, Manzini and Wexler propose the hypothesis in (0:

[1] A referential Tense is a Tense that is inherently defined as opposed to an anaphoric Tense that derives its properties from some superordinate Tense.

3)

Lexical Parameterization Hypothesis

Values of a parameter are associated not with particular grammars but with particular lexical items.

Thus, a language could have separate governing categories for its simplex reflexives, complex reflexives, and pronouns. In other words, a learner will need to know what the nature of the nominal DP. That is, they will need to know whether the expression is a local anaphor, a long-distance anaphor, a pronoun, or an R-expression. Furthermore, the lexical parameterization hypothesis demands that they will need to know what the binding domain is for each type of expression.[2]

The parameterization approach faces a number of challenges. Firstly, the expansion of the binding domain appears to be restricted to reflexives and not to pronouns. This suggests that there is some property of reflexives that allows them to be bound beyond their local domain. That is, although long-distance reflexives are typologically common, long-distance disjointness requirements are relatively rare. This suggests that parameter variation for pronouns is not empirically warranted and the local domain is the proper governing category for pronouns. We have seen that long-distance reflexives have some common typological properties: subject-orientation, monomorphemicity, and blocking effects. Parameterizing the governing category does not predict this clustering of properties. If the values of the parameter are simply set with individual lexical items we would predict much more variation in the morphology and distribution of long-distance reflexives. As such, we leave the observed common features unexplained and the parameterization approach does not predict the clustering of these properties. By contrast, if the binding domain is predictable from the morphological form of the reflexive the learner's task is simplified. Secondly, the parameterization of the binding domain cannot explain why the binding domains differ when the blocking effect arises:

4)

a. Zhangsan$_i$ zhidao wo$_i$ xihuan ziji $*_{i/j}$
Zhangsan knows I like self
'Zhangsan knows that I like self'

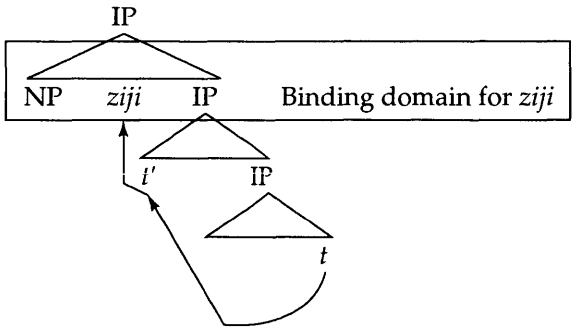
b. Zhangsan$_i$ zhidao Lisi$_i$ xihuan ziji$_{i/j}$
Zhangsan knows Lisi likes self
'Zhangsan knows that Lisi likes self'

[2] Manzini and Wexler also argue that each parameter must be independent of all the other parameters for learnability reasons.

5.3 Movement analyses

Pica (1987) first suggested a covert movement analysis of long-distance reflexives, and this suggestion was developed by Battistella (1989), Huang and Tang (1991), Cole et al. (1990), and Cole and Sung (1994), and others for Mandarin. These movement analyses of *ziji* argue that long-distance binding is a result of covert movement of the anaphor in LF. Although such analyses were not designed to explain binding as AGREE, such analyses did propose movement of the anaphor so that it could become local to its antecedent in LF where agreement could take place in a local configuration. In these movement theories the reflexive moves successive-cyclically from its base position into the binding domain of a higher antecedent and moves either through XP movement or head movement. Essentially, *ziji* in its base position is bound only by the local subject and this binding is licensed by Principle A. However, *ziji* may acquire long-distance antecedents through successive-cyclic movement at LF. In this way remote antecedents become local antecedents, and each long-distance antecedent is in a local relationship with the anaphor. A matrix antecedent is only possible if all the intervening antecedents are also possible. The covert movement analysis explained why a dependent element such as a reflexive could have a non-local antecedent, given that reflexives usually have strict locality constraints on where their antecedent can be.

5) Successive binding domains for covert movement analyses.[3]



However, as Cole, et al. (2006, p. 52) point out, there are several questions that a movement analysis must address:

i) What is the nature of the movement? Is it XP A'-movement of a maximal projection containing the anaphor or is it head movement of the anaphor?

ii) Which position does the reflexive move to?

iii) Why does the movement occur?

---

[3] Long-distance binding domains derived through covert successive-cyclic movement of *ziji*. Taken from Cole, et al. (2006, p. 52).

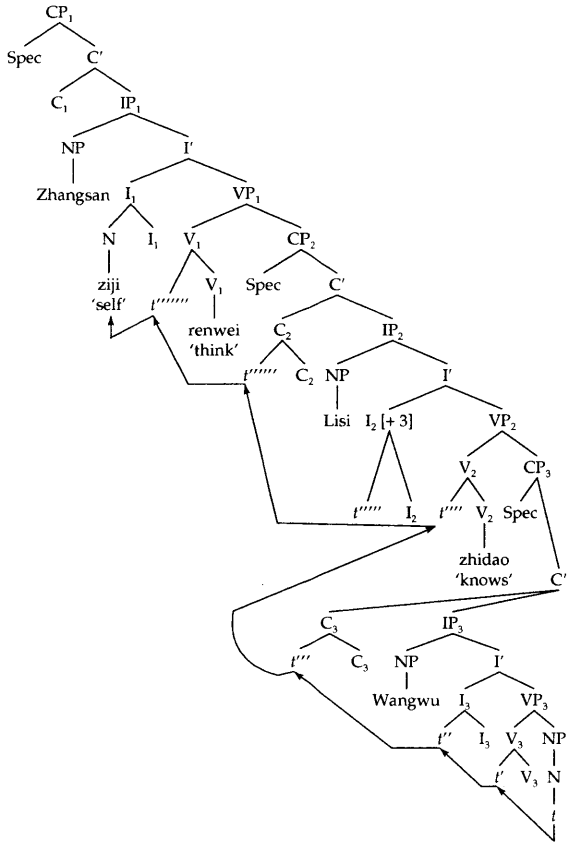
There are two major proposals for movement: head movement to Infl/AGR (Pica, 1987; Battistella, 1989; Cole, et al. 1990; Cole and Sung 1994) and XP movement by adjunction to IP (Huang and Tang, 1991; Huang and Liu, 2001).

5.3.1 Head movement

One of the earliest covert movement analyses of *ziji* was proposed by Battistella (1989; see Pica, 1987 for similar analyses). In these analyses it was argued that simplex reflexives could raise at LF to successive Infl nodes in a manner that was similar to clitic movement. The monomorphemic nature of *ziji* meant that it was an X^0 category and therefore could undergo I^0 to I^0 movement. Such approaches have come to be called 'movement-to-Infl' analyses. In the head movement approach, *ziji* moves successively-cyclically through intervening heads in order to reach its remote antecedents. We can see in (0 below that *ziji* moves by head movement from its base position to the Infl of the superordinate clauses where it becomes local to the other subjects.[4] By moving successive-cyclically the reflexive respects locality conditions on movement and allows the reflexive to be bound in accordance with Principle A.

[4] For the moment I am ignoring the blocking effect. We will return to it shortly and consider how these movement analyses accommodate the blocking effect.

6) Head movement.[5]



In the head movement approach *ziji* moves through successive heads until it reaches the matrix I^0. Under this approach, *ziji* undergoes successive cyclic head movement in the LF component of the grammar, thus making *ziji* a locally bound anaphor that is subject to standard Principle A binding conditions for anaphors. In the covert head movement analysis, monomorphemic *ziji* obligatorily moves to I^0 of the minimal IP containing it, and then optionally moves to I^0 in higher IP's covertly. The derivation in (0 above shows that binding of *ziji* is possible because at LF it can adjoin to the matrix I^0 position, from where it can be bound by the matrix subject.[6] That is, the anaphor is actually bound within its local governing category at LF. Battistella (1989) argues that the successive cyclic movement of *ziji* also derives the Tang's characterization of the blocking effect.[7] Battistella argues that each trace of *ziji* must agree in grammatical features with its local subject and with the head of the movement chain (that is, *ziji* itself). Therefore, all traces of *ziji* must share the

---

[5] Successive-cyclic movement of *ziji* through head movement into higher binding domains. Taken from Cole, et al. (2006, p. 53)

[6] Note that *ziji* does not allow split antecedents and thus cannot be bound by both *Zhangsan* and *Lisi*. That is, *ziji* can only be bound once in a given construction.

[7] In Tang's version of the blocking effect a simple difference in person features will generate a blocking effect. Thus, 3 > 1, 1 > 3, *et cetera* will equally generate the blocking effect.

same grammatical features and because all the traces must also agree with their local subjects, all local subject must agree in features. Furthermore, because *ziji* is gaining its antecedent by movement to I^0 we can explain the subject orientation of *ziji* because I^0 is only indexed with subjects.

Thus, according to this analysis, LF movement of *ziji* is a species of head movement. We would therefore expect *ziji* to be restricted in its behaviour in accordance with the known properties of head movement. Thus, we would expect movement to Infl approaches to respect the head movement constraint (HMC). Following Travis (1984) we can define the head movement constraint as:

7)

HEAD MOVEMENT CONSTRAINT

Movement from one head position to another is only possible between a given head and the closest head which asymmetrically c-commands it (i.e. between a given head and the next highest head in the structure containing it. (Travis, 1984)

It might be objected that head movement is a strictly local phenomenon and thus it is unlikely that such long-distance head movement is the correct analysis. However, we do see instances of inter-clausal head movement as in clitic-climbing, in which pronominal object clitics of embedded infinitives can optionally cliticize to the matrix verb:

8)

a. Gianni vuole comprar=lo
   Gianni wants to.buy=it
   'Gianni wants to buy it'

b. Gianni lo=vuole comprar
   Gianni it=wants to.buy
   'Gianni wants to buy it'

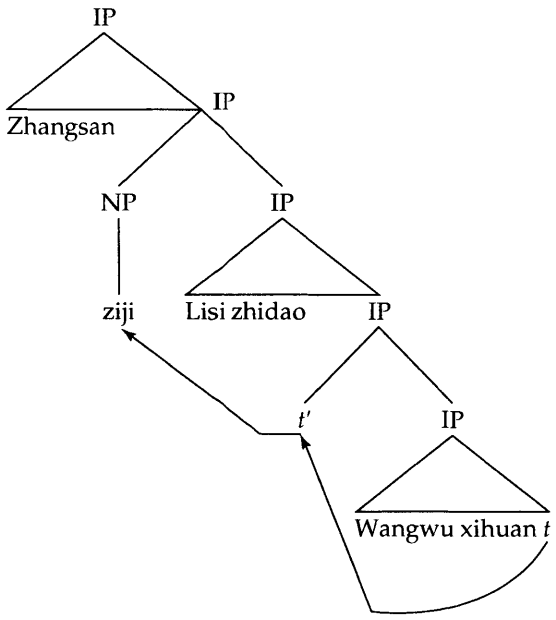
(Rizzi, 1978)

Indeed, Chomsky and Lasnik (1993) might be interpreted as hinting at such a possibility: "[i]t is plausible to regard the relation between a reflexive and its antecedent as involving agreement. Since agreement is generally a strictly local phenomenon, the reflexive must move to a position sufficiently near its antecedent. This might happen in the syntax, as in the cliticization process of Romance languages. If not, then it must happen in the LF component" (Chomsky and Lasnik, 1993, p. 553). Thus, long-distance head movement might be on firm conceptual ground. On this theory, monomorphemic *ziji* adjoins to I^0 of the minimal IP containing it and can optionally move to higher c-commanding IPs in LF.

5.3.2 XP movement

In the XP movement approach successive adjunction of the anaphor to the IP below the subject is simply A'-movement and this movement places *ziji* in the local domain of a new antecedent from where it can be bound in accordance with Principle A.[8]

9) XP Movement.[9]



It is important to note that the adjunction site is the local IP. Huang and Tang (1991, p. 273) illustrate this with the following sentences:

10)

a. Zhangsan$_i$ manyuan Lisi$_j$ chang shuo [Wangwu$_k$bu xihuan ziji$_k$]
Zhangsan complain Lisi often say Wangwu notlike self
'Zhangsan complained that Lisi often said that Wangwu does not like self'

b. Zhangsan$_i$ manyuan Lisi$_j$ chang shuo [ziji$_j$[Wangwu$_k$bu xihuan t$_j$]]
Zhangsan complain Lisi often say self Wangwu notlike
'Zhangsan complained that Lisi often said that Wangwu does not like self'

---

[8] Huang and Tang (1991) suggest that this movement might be similar to quantifier raising (QR).

[9] Successive-cyclic movement of *ziji* through adjunction to IP to higher binding domains. Taken from Cole, et al. (2006, p. 54).

c. Zhangsan$_i$ manyuan [ziji$_i$ [Lisi$_j$ changshuo [t_i [Wangwu$_k$ bu xihuan t_j]]]
Zhangsan complain self Lisi often say Wangwu not like
'Zhangsan complained that Lisi often said that Wangwu does not like self'

Huang and Tang (1991, p. 273)

It is at the adjunction site that the superordinate subject binds the reflexive because the local subject no longer c-commands the reflexive. Thus, the two movement analyses differ in the type of movement they propose (XP movement vs head movement) and the position that is the target of the movement (IP vs Infl).

5.3.3 Comparing the two approaches

Head movement and XP movement are two very different syntactic operations and therefore it should be possible to distinguish between them as analyses for *ziji*.

5.3.3.1 Morphology

Both movement approaches utilize different types of movement and therefore make different predictions about which elements can move. Under a head movement approach, we expect that long-distance reflexives will be simplex because they can move as heads, but we expect locally bound reflexives to be complex because they cannot move as heads. In Mandarin, this is just what we find: *ziji* can be bound long-distance but *taziji/woziji/niziji* must be locally bound. Cole, et al. (2006, p. 56) argue that interclausal XP movement is only available through the specifier of CP and that movement through the specifier of CP is typically restricted to operators. Because *ziji* is not an operator, *ziji* would not be able to move out of its local clause.[10] Thus, head movement has the advantage that it corresponds to the morphological nature of the reflexive where the XP movement analysis requires some auxiliary assumptions about *ziji* in order to allow it to undergo XP movement

We have seen that cross linguistically morphologically simplex reflexives are often long-distance anaphors and *ziji* shares this property along with the cluster of properties that canonical SE anaphors bear (underspecified for features, subject-oriented, only sloppy readings under VP ellipsis). This would seem to strong empirical justification that *ziji* is a SE anaphor and therefore an X^0 category, and furthermore that its analysis should correspond to analyses of other SE anaphors However, Cole, et al. suggest that *ziji* is in fact *atypical* of long-distance reflexives and that its simplex nature does not mean that it shares distributional properties with SE anaphors cross-linguistically

[10]Of course, we might argue that bare reflexives *are* operators (or at least operator bound) and that their complex counterparts are not (see Chierchia, 1989; Anand, 2006; Huang and Liu, 2001 for such proposals). On this account the long-distance movement is just the property typical of operators

Cole, et al. (2006) agree with prevailing approaches that "... the property that distinguishes long-distance reflexives from local reflexives is that the former lack phi-features while the latter have them, and making the further assumption that only reflexives without ϕ-features can be long distance, it would be predicted that only reflexives that are not distinguished for person can be long distance" (p. 57). That is, the motivation for the movement of *ziji* is that it moves to acquire features, hence its movement to Infl. However, Cole, et al. caution that although this is the correct characterization of *ziji* "... it is not in fact generally the case that reflexives with phi-features cannot be long distance. It will be remembered that Chinese *ziji* [sic], Italian *se* and *proprio*, and Icelandic *sig*, are all restricted to third person antecedents. But despite the fact that they are generated with phi-features *se, proprio,* and *sig* can take long distance antecedents" (2006, p. 57). However, Cole, et al's characterization of feature driven SE anaphor movement is too restrictive. We have seen that cross-linguistically SE anaphors *do not* need to be underspecified for *all* their features. Recall that Reuland argues that an anaphor like Dutch *zich* might be *specified* for 3rd person but *underspecified* for gender and number. Thus Reuland (2011, p. 47) argues for the following characterization of SE anaphors:

11)

A SE anaphor is nonclitic pronominal that is underspecified in ϕ-features

Thus, *ziji* is underspecified for all its ϕ-features but Italian, Dutch, and Icelandic SE anaphors are not underspecified for all their ϕ-features, these anaphors being specified for person. The unifying fact about SE anaphors is that they are underspecified for features, not that they must lack all features. Thus, Cole, et al.'s conclusion that "an explanation of the simplex nature of long-distance reflexives as due to the correlation between morphological simplicity and the absence of phi-features may seem to be accidental" is not warranted (2006, p. 57), and *ziji* is not a typologically unusual long-distance anaphor. Rather, the simplex nature of *ziji* derives from its being a pronoun that is underspecified for ϕ-features. Thus, the simplex nature of *ziji* is present because it is a SE anaphor and therefore the correlation between simplicity and absence of ϕ-features is not accidental. Thus, the morphological nature of *ziji* is consistent with it being a SE anaphor (an X^0 category), and as such we would expect it to undergo head movement rather than XP movement, if movement is the operation that allows long-distance binding to occur.

Alternatively, following Huang and Liu (2001) we might propose that bare *ziji* is an operator and the inherent nature of operators is to undergo A'-movement. Bare reflexives are operators or operator bound (see Chierchia, 1989; Huang and Liu, 2001) but complex reflexives are not operators and therefore cannot undergo operator movement or be operator bound. The complex reflexives cannot be operators because they contain a pronominal element that makes them definite in a way equivalent to a pronoun. Because the bare reflexive contains no pronominal element they are indefinite NPs akin to indefinite quantifiers. In this way, we can propose that the long-distance LF movement that we see with *ziji* is simply an

instance of long-distance A'-movement, rather than the typologically unusual long-distance head movement.

5.3.3.2 Subject orientation

The head movement approach also has the advantage that it provides a natural characterization of subject orientation: Infl is coindexed with the subject so when the anaphor moves to Infl to acquire its features, it naturally becomes bound be the subject:

12)

a. Zhangsan$_i$ gaosu Lisi$_j$ Wangwu$_k$ bu xihuan ziji$_{i/*j/k}$
Zhangsan told Lisi Wangwu not like self
'Zhangsan told Lisi that Wangwu doesn't like self'

LF_1

b. Zhangsan$_i$ gausu Lisi$_j$ [$_{IP}$ Wangwu$_k$ ziji$_k$ bu xihuan t$_k$]

LF_2

c. [$_{IP}$ Zhangsan$_i$ ziji$_i$ gausu Lisi$_j$ [$_{IP}$ Wangwu$_k$ t$_i$ bu xihuan t$_i$]]

(Cole, et al., 2006, p. 58)

In (12) we see two potential LFs. In LF_1 *ziji* is c-commanded by *Wangwu* and is bound. In LF_2 *ziji* moves to the matrix Infl that is co-indexed with the subject where it is bound. Thus, the movement to Infl approach predicts the pattern of binding that we observed. *Ziji* is never local to *Lisi* and thus can never be bound by the NP object of *gausu*. However, Huang and Tang's XP adjunction predicts that in this construction *Lisi* will be a possible antecedent:

13)

a. Zhangsan$_i$ gausu Lisi$_j$ Wangwu$_k$ bu xihuan ziji$_{i/*j/k}$
Zhangsan told Lisi Wangwu not like self
'Zhangsan told Lisi that Wangwu doesn't like self'

LF

b. Zhangsan$_i$ gausu Lisi$_j$ [$_{IP}$ ziji$_{i/*j}$ [$_{IP}$ Wangwu$_k$ bu xihuan t]]

(Cole, et al., 2006, p. 58)

In (13) above we can see that adjunction to the local IP means that the anaphor is now c-commanded by both *Zhangsan* and *Lisi*, and this predicts that they will both be possible antecedents of *ziji*, contrary to fact. Of course, we might propose

different adjunction sites - like VP - to overcome this problem, but the theory as presented in Huang and Tang (1991) is restricted to local IP adjunction and as such appears to make inaccurate predictions.

We have seen that head movement approaches and XP approaches both manage to capture the long-distance binding interpretations that we see with *ziji*. However, neither approach is completely satisfactory. The head movement approach suggests that *ziji* moves to acquire its features from the Infl node. The idea that *ziji* must acquire features in order to be bound is consistent with current thinking (see Reuland, 2011) about SE anaphors and their behaviour cross-linguistically. However, long-distance head movement of the type required is unusual and not well-supported. On the other hand, long-distance XP movement is a well-attested phenomenon but the Huang and Tang (1991) theory of XP movement requires some additional assumptions about where the adjunction sites are and requires that *ziji* behave as an XP in spite of its surface monomorphemicity.

5.4 The problems with movement

Although the traditional movement analyses have their virtues, there are problems with such analyses. For example, if LF movement is to account for the long-distance binding possibilities of *ziji* we should find that long-distance binding is not possible out of environments in which movement is blocked. Thus, we predict that in Mandarin *ziji* cannot be bound by a remote antecedent when it is in an environment that blocks extraction.

We have seen that there are two kinds of covert movement that are postulated to explain the long-distance nature of *ziji*: head movement and XP movement. However, these two approaches differ in that the two forms of movement are different (head movement vs XP movement) and the position which is targeted by movement (in the head movement analysis the anaphor moves into the clause containing the antecedent, but in the XP movement analysis the anaphor targets the IP below the clause in which the antecedent occurs).

The head movement approach has a number of advantages. Firstly, it explains the requirement of monomorphemicity for long-distance reflexives. If *ziji* is an X^0 long-distance head movement akin to clitic climbing the it might be that the X^0 nature of the lexical item is the crucial factor that licenses covert movement of *ziji* so that it can be bound in higher clauses. On the other hand, if we assume that *ta-ziji* is phrasal this would disallow head movement and restrict *taziji* to its local clause where it will be locally bound. This is just what we find:

14) Zhangsan$_i$ renwei Lisi$_j$ zhidao Wangwu$_k$ xihuan taziji$_{*i/*j/k}$
Zhangsan think Lisi know Wangwu like him-self
'Zhangsan thinks Lisi knows Wangwu likes himself'

Secondly, the subject orientation of *ziji* follows naturally from the head movement approach. If we assume that possible antecedents are mediated through the φ-features on I^0 that are derived from the subject it follows that successive head movement though I^0 will be subject oriented due to agreement between I^0 and the subject DP.

Thirdly, XP movement and adjunction to IP predicts that objects should be possible binders for *ziji*. Consider the following example:

15) Zhangsan$_i$ gaosu Lisi$_j$ Wangwu$_k$ bu xihuan ziji$_{i/*j/k}$
Zhangsan told Lisi Wangwu not like self
'Zhangsan told Lisi that Wangwu does not like him/himself'

XP movement in which *ziji* adjoins to the IP lower than the clause that contains the antecedent raises a problem.

Although the head movement analysis is attractive and elegant in its use of existing syntactic operations it faces some difficult challenges. It cannot account for the asymmetrical version of the blocking effect. Battistella (1989) argued that because Infl is the locus of agreement the blocking effect arose as a consequence of Infl agreeing with the subject DP. That is, differences in subject features caused the blocking effect because it was only subject that agreed with Infl. However, it is not true that only person differences between Infl nodes will generate the blocking effect because non-subjects that differ in person features will also generate the blocking effect:

16) Zhangsan$_i$ zhidao Lisi$_j$ gao-su-guo ni$_k$ youguan ziji $_{*i/j/*k}$ de
Zhangsan know Lisi tell you about self DE

gongzuo
work
'Zhangsan knew that Lisi told you about self's work'

(Pan, 2001, p. 281)

5.4.1 Islands for XP

If movement is responsible for the long-distance binding of *ziji* we would expect the long-distance binding possibilities to be constrained by those same movement operations. That is, long-distance binding should not be possible in environments in which movement is blocked. However, with *ziji* we find that long-distance binding is possible out of environments that block movement. We will see some examples but let us first reacquaint ourselves with some theoretical preliminaries of the framework that these theories are embedded in.

Both relative and adjunct clauses are examples of syntactic islands but both of these environments allow long-distance binding of *ziji*:

Relative Clause

17)Zhangsan$_i$ renwei [Wangwu$_j$ kanjian [$_{CP}$ neige taoyan ziji$_{i/j/k}$ de ren$_k$]]
Zhangsan think Wangwu see that dislike self DE person
'Zhangsan thinks Wangwu saw the person who dislikes self'

Adjunct Clause

18)Zhangsan$_i$ renwei [Wangwu$_j$ shou [$_{CP}$ rugoo Lisi$_k$ piping ziji$_{i/j/k}$],
Zhangsan think Wangwu say if Lisi criticize self

ta jiu bu qu.
he then not go
'Zhangsan thinks that Wangwu said that if Lisi criticized self, then he won't go'

(Cole, et al., 2006, p. 66)

In (17) *ziji* would move out of the relative clause but in (18) it would move out of the adjunct clause. Although such movement would violate Subjacency or the Condition on Extraction Domains (CED) for overt movement, it is well known that LF movements do not exhibit Subjacency or CED effects for argument wh-phrases. For example (following four examples from Cole, et al., 2006, p. 67):

19)Ni zui xihuan [shei xie de shu]
You most like who write DE book
'You like the books that who wrote most'

In (19) above we can see that LF movement of the wh-phrase must take place out of the relative clause even thought the relative clause should be an island. Additionally, in Mandarin it is possible to covertly move a wh-phrase out of an adjunct:

20)Ni shi zai [shei lai-le yihou] cai zou de
You be at who came after then leave PRT
'You left after who had come'

English also allows LF extraction of wh-phrases out of islands for multiple wh-questions:

21)Who bought the books who wrote?

22)Who left after who arrived?

Thus, we might expect that Mandarin, as a wh-in-situ language with covert LF movement, would also allow its long-distance anaphor to escape islands because argument wh-phrases display no islands effects and therefore we might expect that long-distance reflexives to move. However, if long-distance reflexives move with the same operation as wh-phrases they must move as operators, that is, as XPs. If we appeal to the fact that wh-phrases can move out of islands as an explanation for long-distance binding we are saying that whatever licenses wh-movement also licenses the movement of *ziji*, and this would, presumably be the same operation: an A'-movement operation.[11]

Huang and Tang (1991) argue that movement to Infl approaches have precisely this difficulty in explaining how any movement out of adjunct clauses or relative clauses could occur. Huang and Tang (1991) observe that "since in the Infl-movement theory the movement of *ziji* in LF is a case of head movement, the traces left over by *ziji* are subject to antecedent government (Chomsky, 1986, 1988)" (1991, p. 270), and that movement of a head cannot cross any barrier because that means its trace will not be antecedently governed.[12] Adverbial clauses and relative clauses are barriers, and therefore head movement out of these environments is not possible.[13] We can see below that adjunct wh-phrases in adverbial clauses and relative clauses cannot be moved in overt syntax:

23)

a. *Why$_i$ did you go home [before John bought the book t_i]

b. *Why$_i$ did you like [the man who kicked Bill t_i]

(Huang and Tang, 1991, p. 271)

---

[11] Norvin Richards (p.c.) cautions that we don't know very much about covert A-movement and that covert A-movement may be just as immune to island effects as covert A'-movement.

[12] Chomsky's *Barriers* (1986) framework is the relevant theoretical apparatus that these movement theories are situated within. Without resuscitating the intricacies of the entire *Barriers* framework I will simply note that adjuncts and relative clauses are barriers for movement because they are clauses that are not selected by a lexical head. Chomsky (1986) argues that the crucial feature of a Barrier is that it is a Blocking Category:

1) γ is a Blocking Category for β if and only if γ is not L-marked and γ dominates β.

L-marking is simply θ-marking by a lexical head

[13] Head movement is subject to the Empty Category Principle (ECP). The ECP states that all traces must be both head governed and antecedent governed. The head government requirement means that the trace of head movement must be inside the immediate X' complement of the head targeted by movement. That is, when X^0 moves to Y^0, XP must the complement of Y^0.

Adjunct wh-phrases cannot be moved at LF either because Mandarin displays the same island effects for adjunct wh-phrases in adverbial and relative clauses even though it is a wh-in-situ language:

24)

a. *Suiran Lisi weishenme mei lai, ni haishi bu
Though Lisi why not come, you still not

shenqi
come
'Though Lisi didn't come why, you weren't angry'

b. *Ni zui xihuan [ta weishenme mai de shu]
You most like he why buy DE book
'You most like the book that he bought why'

(Huang and Tang, 1991, p. 271)

Another island in Mandarin is the A-not-A question. Huang (1982) argues that the A-not-A element is an element in Infl and that Infl movement – head movement - cannot cross barriers:

25)

a. *Ruguo ta lai-bu-lai, ni jiu hui shenqi?
If he come-not-comyou then will angry
'If he comes or not, then will you be angry?'

b. *Ni zui xihuan ta mai-bu-mai de shu
You most like he buy-not-buy DE book
'You most like the books that he will buy or not buy'

(Huang and Tang, 1991, p. 271)

Thus, we can see that Mandarin *does* display island effects but these island effects occur when we try to move a phrase whose trace must be antecedently governed. That is, "a phrase whose trace needs to be antecedently governed cannot cross any singular barrier. Thus, adjuncts located in adverbial clauses and in relative clauses cannot be moved out of these islands" (Huang and Tang, 1991, pp. 270-271). Thus, because head movement must respect antecedent government we would predict head movement out of adjunct clauses and relative clauses to be impossible – but this is not what we find:[14]

[14] (26)b also violates the Specificity Condition, which prohibits movement out of a specific NP. Mandarin otherwise respects the Specificity Condition (Huang, 1982).

26)

a. Zhangsan$_i$ shuo [ruguo Lisi$_j$ piping ziji$_{i/j}$],
Zhangsan say if Lisi criticize self

ta jiu bu qu
he then not go
'Zhangsan said that if Lisi criticized self, then he won't go'

b. Zhangsan$_i$ bu xihuan [neixie piping ziji$_{i/j}$ de ren$_i$]
Zhangsan not like those criticize self DE people
'Zhangsan does not like those people who criticize self'

(Huang and Tang, 1991, p. 271)

Cole, et. al., (2006, p. 65) provide some further examples of binding out of islands:

27)Zhangsan$_i$ renwei [Wangwu$_j$ kanjian [$_{CP}$ neige taoyan ziji$_{i/j/k}$ de ren$_k$]]
Zhangsan think Wangwu see that dislike self DE person
'Zhangsan thinks Wangwu saw the person who dislikes self'

In (27) above, *ziji* can be bound by three possible antecedents, but the relative clause should stop the anaphor from moving into the higher clauses so that *ziji* become local to the higher subjects.

28)Zhangsan$_i$ renwei [Wangwu$_j$ shou [$_{CP}$ rugoo Lisi$_k$ piping ziji$_{i/j/k}$],
Zhangsan think Wangwu say if Lisi criticize self

ta jiu bu qu.
he then not go
'Zhangsan thinks that Wangwu said that if Lisi criticized self, then he won't go'

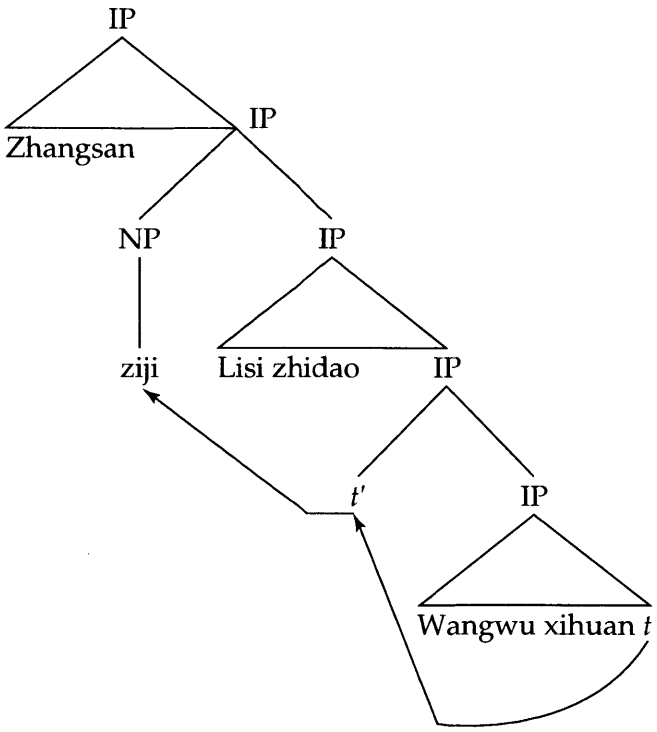
In (28) above we can see that both *Zhangsan* and *Wangwu* can bind *ziji* but this means that *ziji* would have to move out of the adjunct clause in order to be bound locally in higher CPs. If we appeal to movement operations in order to explain how *ziji* can be bound out of adjunct or relative clauses we would expect the binding possibilities to be restrained by the independently existing constraints on movement. Thus, we would expect that the examples in (26) – (28) above would either be ungrammatical, or that *ziji* could only be bound by the local subject - because *ziji* remains in its base position and respects antecedent government.

Huang and Tang (1991) argue that *ziji* and wh-arguments are allowed to move out of islands because they are elements of the same type, namely, XPs. And, as XPs they both use A'-movement to escape their islands. Briefly, in Mandarin both *ziji* and wh-

phrases are XPs that adjoin to IP in LF.[15] This adjunction operation 'debarrierizes' the XP that is adjoined to because movement only crosses one segment of the barrier instead of crossing the whole barrier:

29)

IP Adjunction[16]



Huang and Tang (1991, citing Fiengo et al., 1988) argued that adjunction to an XP meant that the XP was not a barrier for movement but *was* a barrier for government. Thus, arguments could move because they were lexically governed but adjuncts were not lexically governed, and this meant they had to be antecedent governed. However, such antecedent government was not possible in islands, even when there was adjunction to an XP barrier. Huang and Tang (1991) adopt Fiengo, et al.'s approach and argue that "[t]he adjunction process must be allowed to cross island barriers, given the well-known fact that Subjacency and CED [Condition on Extraction Domains] do not obtain in LF ... (p. 280). When *ziji* occurs in an argument position it is lexically governed and this means that IP adjunction is not subject to antecedent government. Thus, under Huang and Tang's (1991) analysis we predict that long-distance binding out of adjunct clauses and relative clauses should be

[15] Huang and Tang's analysis is an adaptation of Fiengo et al.'s (1988) argument that IP adjunction is available at LF in order to allow operations like QR. Such IP adjunction is not available in overt syntax, but this is a stipulative prohibition

[16] Long-distance XP movement through IP adjunction of *ziji*. Taken from Cole, et al. (2006, p. 54)

possible because these environments do allow lexically governed DPs to move, but movement to Infl approaches is a case of head movement and this means the traces of the moved head (*ziji*) are subject to antecedent government. Antecedent government does derive the fact that movement of *ziji* must be successive cyclic but it also predicts that certain long-distance binding should not be possible because antecedent government is blocked in such environments; two such environments being adjunct clauses and relative clauses. Thus, if we wish to explain binding out of adjuncts and relative clauses as a consequence of movement, Huang and Tang's XP analysis is much more consistent with our knowledge about how XP movement works rather than our knowledge about how X^0 movement works. Nevertheless, it does leave some aspects of movement as still requiring explanation. For example, if *ziji* utilizes XP movement we might expect that it would block wh-movement. For example, in (30) below we can see that the embedded wh-adjunct is grammatical and that it has matrix scope:[17]

30)Zhangsan yinwei Lisi weishenme zan Wangwu ne
Zhangsan think Lisi why praise Wangwu Q
'Why, according to what Zhangsan thinks, did Lisi praise Wangwu?'

However, when there is an argument wh-phrase, matrix scope for the wh-adjunct *weishenme* is not possible; the sentence is only grammatical as an echo question:

31)*Zhangsan yinwei Lisi weishenme zan shei
Zhangsan think Lisi why praise who
'Why, according to what Zhangsan thinks, did Lisi praise who?'

This contrast does not arise when *ziji* is used in object position in the embedded clause:

32)Zhangsan$_i$ yinwei$_j$ Lisi weishenme zan ziji$_{i/j}$ ne
Zhangsan think Lisi why praise self Q
'Why, according to what Zhangsan thinks, did Lisi praise self?'

In (32) we can see that *weishenme* can take matrix scope and *ziji* can be bound by the matrix subject. Thus, XP movement of *ziji* does not block wh-movement but XP movement with multiple wh-phrases *does* block movement. If both *ziji* and *shei* are utilizing the same XP movement operation we would expect them to display the same blocking distribution as we see in (31), but this is not what we see.

5.4.2 The X^0 strikes back

Sung and Cole (1991; see also Cole and Sung, 1994) argue that a sufficiently twisty 'de-barrierizing' approach could be incorporated into the head movement analysis,

[17] This argument and the examples derive from McKeown (2013).

such that it would also allow movement out of islands. Sung and Cole argue for the following assumption:

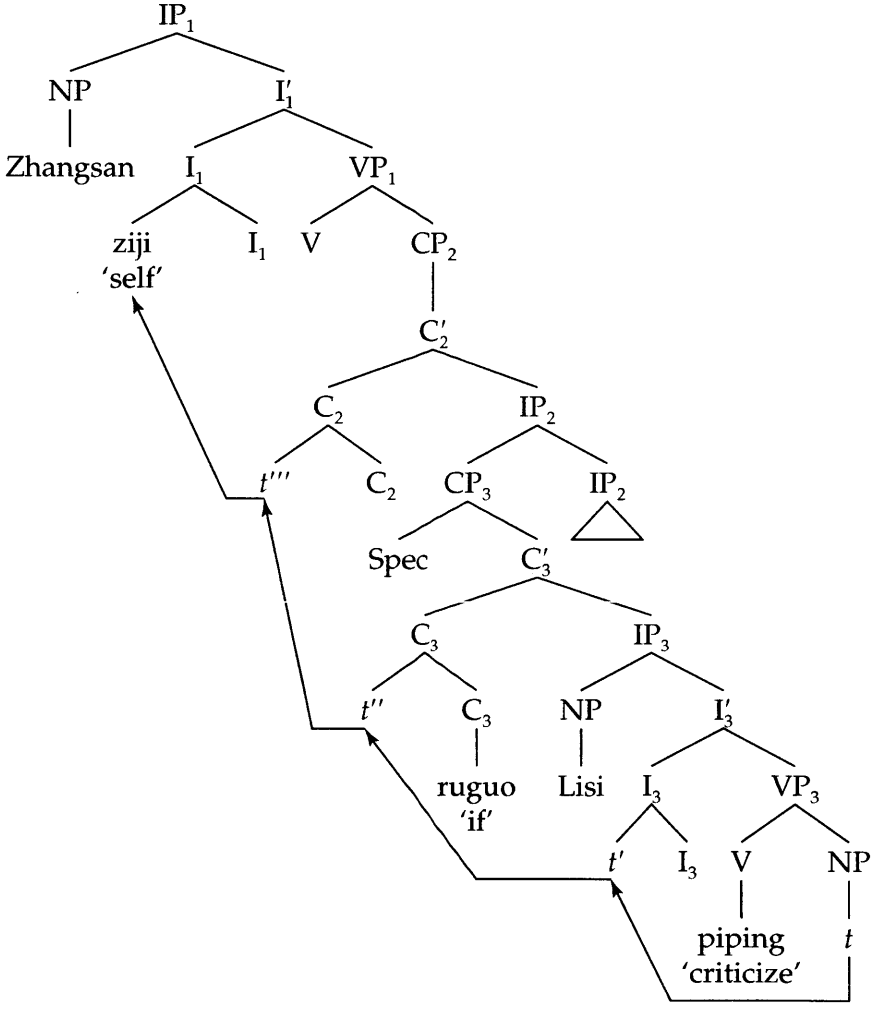
33)

> In order for a head to L-mark a maximal projection, it must: (i) be a lexical rather than a functional head; and (ii) govern the maximal projection.

Let us see how this approach will apply inside an adjunct clause:

34)

Long-distance head movement[18]



In (0 above we can see movement of *ziji* to C_2^0. Sung and Cole (1991) argue that because *ziji* is lexical when it adjoins to C_2^0, C_2^0 L-marks C_3^0, thus allowing movement of *ziji* out of the adjunct clause. XP adjuncts cannot move to C_2^0 and L-

[18] Taken from Cole, et al. (2006, p. 53).

mark C_3^0, and this means that XP adjuncts cannot license extraction from adjunct clauses. Thus movement of the reflexive to Infl de-barrierizes adjuncts and relative clauses by making Infl lexical and L-marking the barriers

Huang and Tang's (1991) XP movement analysis and Cole and Sung's X^0 analysis both provide explanations for the fact that *ziji* can be bound out of two island environments: relative clauses and adjunct clauses. It is independently known that Mandarin allows wh-movement out of these environments for argument wh-phrases and disallows wh-movement for adjunct wh-phrases. Thus, accepting the assumption that Mandarin allows true wh-movement out of adjunct clauses and relative clauses suggests that the same mechanism allows *ziji* to move at LF and become a local anaphor. That is, Huang and Tang (1991) propose that LF movement of *ziji* is XP movement because given what we know about wh-in-situ in Mandarin we should not be surprised that *ziji* has the same distribution. Cole and Sung (1994) propose that the stipulative prohibition of having IP adjunction only apply at LF is unmotivated and fails to explain why other reflexives such *taziji* cannot also adjoin to IP and be bound long-distance.

Although both the XP movement analysis and the X^0 analysis both manage to explain why arguments are able to move from adjunct clauses and relative clauses at LF there remain many empirical and theoretical problems with these analyses. For example, in either analysis, the movement of *ziji* necessarily voids the barrierhood of the barrier node in order to allow the reflexive to move out of the relevant clause. Thus, if a relative clause or an adjunct clause contains a long-distance bound *ziji,* that clause should no longer be an island because the movement (XP or X^0) eliminates the barrier. However, this prediction is clearly incorrect. In (35) we can see that it is not possible to extract a wh-adjunct from the relative clause. (36) below shows that even though *ziji* is long-distance bound by the matrix subject, it does not license extraction of a wh-phrase in the relative clause, suggesting that movement of *ziji* does not de-barrierize the relative clause:[19]

35)*Zhangsan zui xihuan[ta weishenme mai de shu]?
Zhangsan most like he why buy DE book
'Zhangsan likes the book that he bought why'

36)*Zhangsan$_i$ bu xihuan[weishenme piping ziji$_i$ de ren]
Zhangsan not like why criticize self DE person
'For what reason, Zhangsan does not like the person who criticized self for x'

(Cole, et al., 2006, p. 74)

[19] Sung and Cole (1991) suggest L-marking of the island might only hold at the stage of the derivation when the moved head governs island and once *ziji* moves to its final position it fails to L-mark the barrier. Thus, *ziji* would only eliminate the barrier for itself only and the barrier would remain in place for any subsequent movement. However, under a copy theory of movement *ziji* would always L-mark its barrier and thus we would expect subsequent movements to be possible.

Although the XP and X^0 analyses both provide plausible analyses they differ in important ways typologically. That is, considering what we know about movement operations we might expect XP movement to be the operation that licenses long-distance extraction rather than X^0 movement. If X^0 anaphor movement is modelled after overt clitic movement (Pica, 1987) we should be surprised that long-distance reflexives can escape islands because clitic-movement appears to be constrained by islands:

Adjunct Island

37)*Pablo lo_i-quiere dormer [sin leer t_i]
Pablo it-wants sleep without read
'Pablo wants to sleep without reading it'

Relative clause Island

38)*Pablo lo_i-quiere ver [el hombre que conoció t_i]
Pablo him-wants see the man who knows
'Pablo wants to see that man who knows him'

Complex NP Island

39)*Pablo los_i-quiere explicar [la creencia de que Juan vio t_i]
Pablo them-wantsexplain the belief that que John saw
'Pablo wants to explain the belief that John saw them'

Coordinate Structure Island

40)*Pablo lo_i-quiere [comprare t_i y dar un paseo]
Pablo it-wants buy and take a stroll
'Pablo wants to buy it and take a stroll

(Gamon, 1996, p. 101)

The LF movement theory of X^0 anaphors has often invoked clitic movement as an overt manifestation of the operation that moves X^0 reflexives at LF (see Pica, 1987). We see that LF movement of anaphors can readily cross islands, but movement of clitics in overt syntax does not have the same freedom; clitics are island-sensitive. The analysis of Cole and Sung (1994) is technically feasible but its explanation is restricted to long-distance anaphors and this restriction is stipulative. We might wonder why it is only long-distance anaphors that can undergo such an operation and why all other instances of head movement are typically local in nature.[20]

[20] We also might wonder why it is only X^0 reflexives that can move successive-cyclically through adjunction and why XP reflexives cannot move through adjunction to XP projections.

5.5 Analyses of the blocking effect

There are a number of important analyses of the blocking effect in the literature and these analyses divide into semantic/pragmatic analyses (Y. -H. Huang, 1994; Pan, 1997; Huang and Liu, 2001; Anand, 2006), syntactic accounts (Battistella, 1989; Tang, 1989; Cole, et al., 1990; Huang and Tang, 1991, Cole and Sung, 1994). Although these studies characterize the blocking effect differently they agree on the following contrast:[21]

41) Zhangsan$_i$ renwei Lisi$_j$ zhidao Wangwu$_k$ xihuan ziji$_{i/j/k}$ ✓3 > ✓3 > ✓3
Zhangsan think Lisi know Wangwu like self
'Zhangsan thinks Lisi know Wangwu likes self'

42) Zhangsan$_i$ renweiwo$_j$ zhidao Lisi$_k$ xihuan ziji$_{*i/*j/k}$ ✗3 > ✗1 > ✓3
Zhangsan think I know Lisi like self
'Zhangsan thinks I know Wangwu likes self'

These accounts have various advantages but none of them observe that the blocking effects manifests the PCC pattern and none of them discuss the problematic nature of the look-ahead problem discussed above. In this section I will discuss some prominent accounts of the blocking effect.

5.5.1 Cyclical reindexing

Tang (1989) was the first to provide a formal analysis of *ziji*.[22] Tang proposed that *ziji* is best analysed as *pro-ziji*. The *pro* element transfers its ϕ-features to *ziji*. Tang proposed an optional feature copying rule:

43) *Feature Copying Rule* (optional)

> The *pro* in a *pro-ziji* anaphoric reflexive may transfer its features (person, number, gender) to *-ziji* after the application of Binding Theory, thus turning *-ziji* into a long-distance reflexive

The features that *ziji* acquires from *pro* are fixed and cannot be changed as the derivation proceeds. In this way Tang ensures that the person features on all of the subjects must be identical. However, Tang proposes that *ziji* also has a referential index and that it is possible for that referential index to be changed as the derivation

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[21] Pan (1997) finds that the 1st person intermediate subject (the *j* reading) in (42) is a possible antecedent (see his examples in [59a-c]. This is not the usual judgment that we find in the literature and my informants find this antecedent impossible. However, Pan acknowledges in footnote 14 that the judgment "... is from a survey the author conducted with a dozen native speakers. Some speakers may find the *j* reading [the intermediate subject] marginal" (Pan, 1997, p. 48).

[22] It is important to remember that Tang's characterization of blocking effect was that it arose whenever there was a difference in person features.

proceeds. The referential index is absent because *ziji* is merged without ϕ-features and thus without a referential index. She proposes a reindexing rule:

44)
Reindexing Rule (iterative and obligatory)

Reindex the long-distance reflexive (that is, one to which Binding Theory has applied) with the potential NP [antecedent] of the next higher governing category

In its local clause *ziji* is simply a reflexive that is governed by Principle A. If the optional feature copying applies this means that the features of the superordinate subject are transferred to *ziji* via the *pro*. When the feature copying rule is applied the reindexing rule must then be applied. Thus, local reflexives are subject to Binding Theory but long-distance reflexives are subject to the reindexing rule.[23] This reindexing is subject to two conditions: such reindexing must proceed cyclically and the antecedent must agree with the ϕ-features of *ziji*. In this way, *ziji* can be cyclically bound by subjects that are outside of the local clause and we ensure that the subjects must all agree in person features (again, assuming Tang's characterization of the blocking effect).

Unlike Manzini and Wexler's parameterization of binding domains, Tang's analysis is specific to reflexives and therefore does not have to postulate different binding domains for pronouns and reflexives – remembering that Mandarin *ta* respects Principle B in its local clause. Tang's analysis also explains why *taziji* does not undergo cyclical reindexing; *taziji* bears ϕ-features so it is also assigned a referential index that cannot be changed. However, there are a number of shortcomings in the analysis: subject orientation remains stipulative; the presence of features does not block long-distance anaphors cross-linguistically; and the operation of cyclical reindexing itself is unique to *ziji*. The process of cyclical reindexing allows *ziji* to be reindexed with the "potential NP of the next higher governing category" (Tang, 1989, p. 110), but this is a stipulation. Although it is plausible that only subjects would come to bind *ziji*, it is stipulative in this analysis. The head movement account allows for principled account of subject orientation through movement to Infl but the operation of cyclical reindexing does not provide a natural account of subject orientation. Tang argues that it the absence of ϕ-features that allows *ziji* to undergo the reindexing operation that derives long-distance binding: "[a] pronoun has its inherent features, while a pro does not ... [t]hus it seems plausible that a pro (but not a pronoun) prefix should be able to transfer its features" (Tang, 1989, p. 110).

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[23] Tang (1991) argues that long-distance bound reflexives are true reflexives and not pronouns because they remain subject-oriented but pronouns can be bound by objects:

2) Zhangsan$_i$ gaosu Lisi$_j$ Wangwu$_k$ dui ziji$_{i/*j/k}$/ta$_{i/j/*k}$ mei xinxin
Zhangsan tell Lisi Wangwu to self/him no confidence
'Zhangsan told Lisi that Wangwu had no confidence in self/him'

Thus, Tang argues that when a DP has inherent features it should not be able to undergo cyclical reindexing because it bears inherent features and this will provide an inherent referential index. However, we have seen that absence of features is not a necessary condition for long-distance binding. Rather, it is simply underspecification for one or more features that allows long-distance binding. If a lack of all ϕ-features is a necessary condition for cyclical reindexing we will not be able to use this operation for long-distance anaphora that are specified for person such as Icelandic *sig*, Dutch *zich*, Italian *se* and *proprio, et cetera.*[24] Finally, the operation of cyclic reindexing is not a consequence of the operations that are generally believed to constitute the language faculty such as Merge and AGREE.

5.5.2 XP movement and cyclical reindexing

Huang and Tang (1991) propose that long-distance binding is a consequence of XP and cyclical reindexing that occurs when *ziji* moves into a local relationship with the superordinate subject. We have seen that XP has a number of advantages over head movement in the way that it explains how *ziji* might move out of island environments. Huang and Tang (1991) incorporate Tang's (1989) cyclical reindexing analysis into the XP movement account in order to explain the blocking effect.

In this analysis a bare reflexive like *ziji* has its ϕ-features licensed at S-structure and its referential index assigned at LF. The derivation proceeds in the following manner. Each NP (including *ziji*) is merged with a combination of a ϕ-feature index - ϕ(i), ϕ(j), *et cetera* – and a referential index – R(2), R(3), *et cetera.* Prior to S-structure *ziji* has no ϕ-features and no referential index:[25]

45) Zhangsan$_{(,(i)R(3))}$ shuo Lisi$_{(,(i)R(2))}$ chang piping ziji$_{(,(0)R(0))}$
Zhangsan say Lisi often criticize self
'Zhangsan say Lisi often criticize self'

Binding theory applies at S-structure and *ziji* receives the ϕ-feature index of the local subject *Lisi*:

46) Zhangsan$_{(,(i)R(3))}$ shuo Lisi$_{(,(i)R(2))}$ chang piping ziji$_{(,(i)R(0))}$
Zhangsan say Lisi often criticize self
'Zhangsan say Lisi often criticize self'

---

[24] This objection also holds for Huang and Tang's (1991) analysis of *ziji*. In this later paper Huang and Tang argue that "a bare reflexive does not have inherent ϕ-features nor inherent reference, and must rely on an antecedent for both these features. It is therefore a 'double anaphor', in that it needs to pick up two indices, one for its ϕ-features and for its reference, from an antecedent" (p. 275).

[25] All examples in section 3.2 from Huang and Tang (1991).

At LF, the ϕ-feature indexed *ziji* can stay in place or it can move. If *ziji* remains in its base position it will satisfy binding theory only if it bears the referential index of the local subject *Lisi:*

47)Zhangsan$_{(,(i)R(3))}$ shuo Lisi$_{(,(i)R(2))}$ chang piping ziji$_{(,(i)R(2))}$
Zhangsan say Lisi often criticize self
'Zhangsan say Lisi often criticize self'

However, *ziji* can also optionally move and adjoin to IP:

48)Zhangsan$_{(,(i)R(3))}$ shuo [$_{IP}$ ziji$_{(,(i)R(0))}$ [$_{IP}$ Lisi$_{(,(i)R(2))}$ chang piping t$_{(,(i)R(0))}$]]
Zhangsan say self Lisi often criticize t
'Zhangsan say Lisi often criticize self'

When it does move and adjoin to a higher IP in LF, the structure in (48) "can be licensed if *ziji* is assigned either the R-index of *Zhangsan* or that of *Lisi*, as either (i, 3) or (i, 2)" (Huang and Tang, 1991, p. 276).

49)Zhangsan$_{(,(i)R(3))}$ shuo [$_{IP}$ ziji$_{(,(i)R(2/3))}$ [$_{IP}$ Lisi$_{(,(i)R(2))}$ chang piping t$_{(,(i)R(2/3))}$]]
Zhangsan say self Lisi often criticize t
'Zhangsan say Lisi often criticize self'

Huang and Tang (1991, p. 272) argue that this pattern of binding is on a par with the examples of binding that we see in reconstruction with English wh-movement:

50)

a. John knows that Bill likes pictures of himself
b. John knows that, [pictures of himself]$_i$, Bill likes t_i
c. [Pictures of himself]$_i$, John knows that Bill likes t_i

51)

a. John knows that Bill likes these pictures of himself
b. John knows that, [which pictures of himself]$_i$, Bill likes t_i
c. [Which pictures of himself]$_i$ does John think that Bill likes t_i

Huang and Tang argue that under this analysis of *ziji* the blocking effect can receive a straightforward explanation. Binding theory applies at S-structure and this means that *ziji* receives its ϕ-features in the local clause and these ϕ-features cannot be changed in the course of the derivation. If *ziji* adjoins to IP it will have to bear the same ϕ-features that it acquired in the local clause. In this way, the blocking effect is generated.

5.5.3 The agreement theory of blocking

Y.-H Huang (1984) was one of the first people to notice the blocking effect and most early studies of *ziji* proposed that it was of syntactic origin and based on the operation of agreement (Battistella, 1989; Tang, 1989; Cole, et al., 1990; Huang and Tang, 1991, Cole and Sung, 1994). According to the agreement theory of blocking, "all languages have a rule of 'subject-verb' agreement which states that spec of IP and I must be non-distinct with respect to phi-features. Chinese ... lacks base generated person feature[s] on Infl. Thus, in most sentences in Chinese spec-head agreement (subject-verb agreement is vacuous" (Cole, et al., 2006, p. 44). Although I^0 has no intrinsic person feature it can acquire person features and the universal rule of non-distinct spec IP-I^0 feature matching applies. The mechanism by which I^0 acquires its features is known as feature percolation:

52)**The Feature Percolation Principles (FPP)**

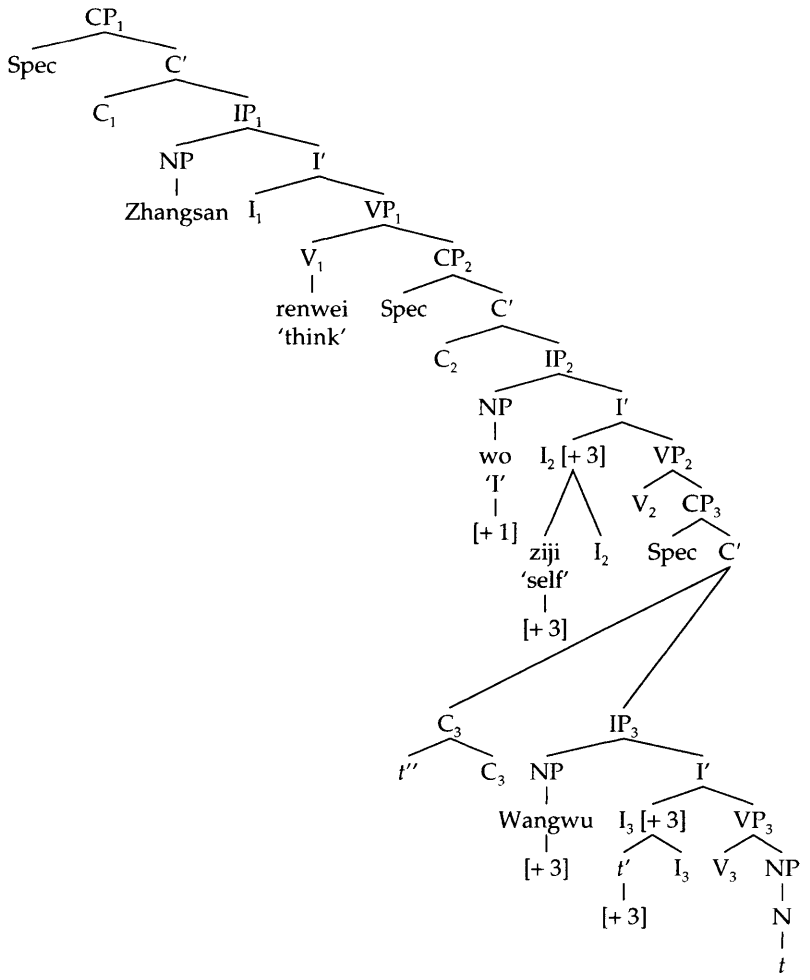
a. The features of the mother node and the features of the daughter nodes will be identical.

b. If the features of the daughter nodes conflict, the mother node will have features of the head node.

Let us see how these principles would work in practice for a head movement account. Consider the tree below:[26]

[26] Long-distance head movement of *ziji* with feature percolation illustrated. Taken from Cole, et al. (2006, p. 45).

53)



Ziji can be bound by a DP with 1st, 2nd, or 3rd person features so we assume that it can be generated with any person feature. In (0 above we see that *ziji* is generated with a [+3] feature. In IP_3 *ziji* adjoins to I^0. In Mandarin there is no person feature on I^0 so the [+3] person feature percolates up to IP where the universal rule of spec IP-I^0 agreement is checked. In IP_3 the subject is *Wangwu* and this is [+3] so the derivation converges at IP_3, making *Wangwu* a possible antecedent for *ziji*. However, when *ziji* moves and adjoins to IP_2 there is a conflict between the [+3] person feature of *ziji* and the [+1] person feature of *wo*. This is an ill-formed output and the derivation cannot converge at IP_2. This means that movement to IP_2 is impossible and the reflexive can only bound in its local clause. Additionally, because movement to IP_2 is impossible, movement to IP_1 is impossible because the head movement constraint requires that movement would have to proceed cyclically through IP_2.

5.5.4 The empirical problem with movement

We have seen that both the XP movement theory and the X^0 theory manage to accommodate some of the core empirical facts about the distribution of *ziji*: they can both explain why long-distance reflexives are monomorphemic and strictly local

reflexives are complex; they can both explain subject orientation; and they can both explain how long-distance movement might escape islands; and they can both explain Tang's characterization of the blocking effect.

We have seen that there are many theory internal problems with the predominant movement analyses. However, the real problem with movement is its empirical inadequacies both XP movement and X^0 movement). We have seen that the various movement analyses each have their advantages. However, all such movement approaches share a common problem that casts doubt on any analysis that incorporates movement and that problem is the blocking effect. In (54) below it is only the local subject that can bind *ziji*.

54) Zhangsan$_i$ renweiwo$_j$ zhidao Lisi$_k$ xihuan ziji$_{*i/*j/k}$ ×3 > ×1 > ✓3
Zhangsan think I know Lisi like self
'Zhangsan thinks I know Wangwu likes self'

This is surprising because we have seen that configurations with 1>3 license the long-distance binding of *ziji*. This is repeated in (55) below. This pattern of binding possibilities in (49) is surprising because we have seen that bi-clausal configurations with 1>3 license the long-distance binding of *ziji*. This is repeated in (55) below.

55) Wo$_j$ zhidao Lisi$_k$ xihuan ziji$_{i/j}$ ✓1 > ✓3
I know Lisi like self
'I know Wangwu likes self'

So, we must wonder why the intermediate subject is unavailable for binding in (54). If *ziji* moved up by successive cyclic movement (head or XP movement) we would expect the subject of the intermediate clause in (54) to be a potential binder because we have seen that moving from a clause with a 3rd person subject to a clause with a 1st person subject licenses long-distance binding. However, this is not the case in (54). The minimal contrast in (54) and (55) suggests that it is the properties of the matrix subject that are blocking the intermediate subject from being an antecedent, because the prohibited 3 > 2 relation occurs between the matrix subject and the intermediate subject. But this would mean that *ziji* can foresee the properties of the matrix subject even before the matrix antecedent has been merged. That is, the possibility of being bound by the intermediate subject co-varies with the person features on the matrix subject. This is an acute problem that *any* approach using successive cyclic movement will struggle to explain. Furthermore, any movement analysis will have to account for the fact that non-subjects can also generate the blocking effect, and adjunction to IP or I^0 cannot accommodate this fact without further auxiliary assumptions.

5.6 The logophoric analyses

Y.-H. Huang's (1984, 1994) extensive study of *ziji* included many instances of *ziji* that could not be reconciled with the generative binding theory of the time. Y.-H. Huang's early analysis of the blocking effect was a functional one and its explanatory approach was adopted by Huang and Liu (2001). I will argue that this functional approach is not adequate and that the blocking effect is a syntactic phenomenon rather than a functional phenomenon.

5.6.1 Huang and Liu perspective clash analysis (2001)

Essentially, Y.-H. Huang's explanation of the blocking effect was that *ziji* is not a syntactic anaphor of the SE or SELF kind. Rather, it is a special kind of anaphoric pronoun that orients itself towards a semantically or pragmatically determined antecedent, and it is important to note that this is quite different to the subject orientation of the syntactic analyses we have seen. In the syntactic analyses the antecedent was determined with relation to grammatical function/position. However, in the functional approach the antecedent is determined according to extra-syntactic factors. In Y.-H. Huang's approach the antecedent of *ziji* is the speaker of a direct quote; the direct quote being the clausal complement. This analysis originates in Kuno's (1972) "direct discourse complementation" analysis of certain English pronouns. Kuno proposed that bound 3rd person pronouns derive from an underlying representation in which the bound pronoun is represented as a 1st person indexical:

56)

Direct Discourse representation

a. John$_i$ said, "I$_i$ saw Bill"

Surface Structure

b. John$_i$ said that he$_i$ saw Bill

In (56) the pronoun refers to the matrix subject because the matrix subject is the speaker of the embedded clause. Thus, Kuno proposed that there was a rule *1st person pronoun → 3rd person pronoun* that converted the 1st person pronoun in the process of indirect discourse formation. Kuno argued that such a representation was not limited to speech act verbs but could also be extended to thinkers, feelers, knowers, experiencers. For example:

57)

Direct Discourse representation

a. John$_i$ feared in his mind that, "I$_i$ might lose her"

Surface Structure

b. John$_i$ was afraid that he$_i$ might lose her

Y.-H. Huang (1984) adopted this approach and argued that long-distance bound *ziji* could correspond to "I" in the direct discourse representation of a sentence in which the reflexive occurs. For example:

58)

Surface Structure

a. Zhangsan$_i$ manyuan Lisi chang piping ziji$_i$
Zhangsan complain Lisi often criticize self
'Zhangsan complained that Lisi often criticized self'

Direct Discourse representation

b. Zhangsan$_i$ manyuan " Lisi chang piping wo$_i$"
Zhangsan complain Lisi often criticize me
'Zhangsan complained that Lisi often criticized me'

Thus, the embedded object is not a reflexive in which identity is established through a reflexivization operation, but rather a 1st person pronoun that refers to the speaker in a direct discourse complement. Y.-H. Huang (1984) argues that this analysis will explain why the blocking effect occurs:

> The above analysis enables us to explain why the appearance of 'I/me' in the sentence would block the LD-binding of *ziji* by the matrix subject. The reason is that if *ziji* is long-distance bound by the matrix subject, then if would be the first person pronoun 'I/me' in underlying structure. When the sentence is reported by a third party, another appearance of 'I/me' [i.e., in place of Lisi in [(58)a] would refer to the reporter [i.e., the external speaker], but not the matrix subject [i.e., the 'internal speaker]. Thus two instances of 'I' occurring in the same clause would be used to refer to two separate individuals [i.e., the speaker of the entire sentence, and the 'speaker' of the embedded discourse]. Under such a situation the hearer is apt to be confused, and communication cannot be effective ... (Y.-H. Huang, cited in Huang and Liu, 2001, p. 149)

Huang and Liu (2001) agree with Y.-H. Huang (1984) and argue that "... blocking effects are the effects of a perceptual strategy, i.e., to avoid perspective conflicts

when the relevant sentences are put in the context of a direct speech act. Most of these effects can be explained by taking literally Kuno's direct discourse representation hypothesis" (Huang and Liu, 2001, p. 161). Huang and Liu replicate Y.-H. Huang's example:

59)

a. *Zhangsan$_i$ juede wo zai piping ziji$_i$
Zhangsan think I at criticize self
'Zhangsan thinks that I am criticizing self'

b. Zhangsan$_i$ juede " wo$_{[speaker]}$ zai piping wo$_i$"
Zhangsan think I at criticize I
'Zhangsan thinks that I am criticizing self'

Huang and Liu's explanation of the blocking effect is that (0b there are two occurrences of *wo*. Surface 1st and 2nd person pronouns are always obligatorily anchored to the external speaker but *ziji* is a 1st person pronoun anchored to the speaker of direct discourse. Under the intended reading in (0b the lexical item *wo* refers to the external speaker of the entire sentence and the internal speaker (*Zhangsan*) of the direct discourse complement. This contradictory indexing of *wo* creates perspective conflict and means that (0b is not acceptable under the intended reading and this explains why binding of *ziji* by the matrix subject is not possible. This analysis also explains why blocking also occurs with an embedded 2nd person subject:

60)

a. *Zhangsan$_i$ juede ni zai piping ziji$_i$
Zhangsan think you at criticize self
'Zhangsan thinks that you are criticizing self'

b. Zhangsan$_i$ juede " ni$_{[addressee]}$ zai piping wo$_i$"
Zhangsan think you at criticize I
'Zhangsan thinks that you are criticizing self'

In (60)b *ni* refers to the addressee, but the addressee is assessed with respect to the coordinates of the external speaker. However, *ziji* is oriented to the internal speaker in the underlying representation and this once again creates perspective conflict resulting in the blocking effect. By contrast, when the subjects are both 3rd person or matrix subject is 1st/2nd person and the embedded subject is 3rd person, we see no blocking effect:

61)

a. Zhangsan juede $Lisi_j$ zai piping $ziji_{i/j}$
Zhangsan think Lisi at criticize self
'Zhangsan thinks Lisi is criticizing self'

b. Wo_i juede $Lisi_j$ zai piping $ziji_{i/j}$
I think Lisi at criticize self
'I think that Lisi is criticizing self'

c. Ni_i juede $Lisi_j$ zai piping $ziji_{i/j}$
You think Lisi at criticize self
'You think Lisi is criticizing self'

Huang and Liu (2001) argue that 3rd person NPs are not obligatorily anchored to the external speaker and can always be anchored to the internal speaker. Thus, 3rd person NPs do not induce blocking

62)

Surface Structure

a. Wo_i juede $Lisi_j$ zai piping $ziji_{i/j}$
I think Lisi at criticize self
'You think Lisi is criticizing self'

Direct Discourse representation

b. Wo_i juede " $Lisi_j$ zai piping $wo_{i/j}$"
I think Lisi at criticize me
'I think Lisi is criticizing self'

In cases such as (62) above the direct discourse complement has no lexical item anchored to the external source and this means that there is no perspective conflict when *ziji* is anchored to the internal source when it is the 1st person pronoun. Huang and Liu argue that this analysis also explains why blocking effects also occur with non-subjects; the direct discourse complement would generate perspective conflict because *wo* is anchored to two different speakers:

63)

Surface Structure

c. 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'

Underlying Representation

d. Zhangsan$_i$ gaosu wo$_j$ " Lisi$_k$ hen wo$_{*i/*j/k}$"
Zhangsan tell me Lisi hate me
'Zhangsan told me that Lisi hates self'

Huang and Liu (2001) argue that the direct discourse analysis of Kuno received crucial support when Clements (1975) showed that logophoric pronouns existed in Ewe and these pronouns must refer to an antecedent "whose speech, thoughts, feelings or general state of consciousness are reported " (p. 175). These logophoric pronouns are intrinsically oriented towards a semantically or pragmatically controlled antecedent. For example:

64)

a. Kofi$_i$ be yè$_{1/*2/*s}$ -dzo
Kofi say LOG left

b. Kofi$_i$ be e$_{*1/2/*s}$ -dzo
Kofi say he left

c. Kofi$_i$ be me$_{*1/*2/s}$ -dzo
Kofi say I left

(Clements, 1975)

The 3rd person pronoun *e* 'he' and the 1st person pronoun *me* 'I' have the expected distribution, but the logophoric pronoun *yè* can only refer to the subject of *be* 'say' – it cannot refer to any other person. These are the logophoric pronouns of Clements (1975). These logophoric pronouns are not restricted to verbs of saying; they can be used in the complements of *be happy, know,* or *see*:

65)

a. Ana$_i$ kpɔ dyidzo be **yè**$_{1/*2}$ -dyi vi
Anna see happiness comp LOG -bear child
'Ana was happy that she$_{1/*2}$ bore a child'

b. Kofi$_7$ (me-) nya be me -kpɔ **yè**$_{7/*2}$ (o)
Kofi not know comp I see LOG
'Kofi$_7$ knew/didn't know that I had seen him$_{7/*2}$

c. Kofi$_7$ kpɔ be **yèwo**$_{7+2/*2}$ -do go
Kofi see comp LOG-PL -come out
'Kofi saw that they (including Kofi) had come out'

(cited in Büring, 2005, p. 61)

Indeed Büring (2005, p. 62) argues that these logophoric pronouns can be equated with pronouns that occur in complements of direct discourse. He argues that the examples in (64) and (65) can be paraphrased in the following manner:

66)

a. Kofi said: "*I* left"

b. Ana was happy thinking: "*I* am bearing a child"

c. Kofi knew/didn't know: "X has seen *me*" (where X is the speaker of the sentence)

d. Kofi saw (something that triggered the mental representation): "*We* have come out"

(Büring, 2005, p. 62)

In these cases, the logophoric pronouns of the original sentence are replaced by 1st person pronouns that are embedded in direct discourse. Büring suggest the following rule of thumb for logophoric pronouns:

67)

> A logophoric pronoun can be used if it is embedded in a constituent c such that (i) c is embedded, (ii) c denotes a proposition p, which (iii) can be paraphrased as a mental state or reported utterance of the pronoun's antecedent such that the paraphrase contains a 1st person pronoun in place of the pronoun. (Büring, 2005, p. 63)

The class of logophoric antecedents, according to Büring varies from language to language, but "[u]sually some lexical element indicates the presence of a 'logophoric environment,' e.g. a verb of saying, thinking, etc. or a special embedding complementizer. Further conditions may obtain" (Büring, 2005, p. 63). The fact that we can see clear instances of logophoric pronouns in Ewe shows us that dedicated logophoric pronouns are a real linguistic phenomenon. Büring warns that "[l]ogophoricity is attested in many languages of the world. It is important to keep the option of logophoricity in mind when attempting to describe Binding Conditions in a given language, precisely because it can so easily be mistaken for something else, e.g. long-distance subject orientation" (2005, p. 63).

Huang and Liu (2001) also argue that these Ewe pronouns are typological evidence that languages can contain pronouns capable of orienting themselves towards antecedents with particular properties and that "research on logophoricity in the past few years has established, beyond doubt, its firm place in any adequate description of the reflexive" (Huang and Liu, 2001, p. 151). Huang and Liu's proposal is that long-distance *ziji* is a logophoric pronoun of the sort that we see in Ewe and that the blocking effect derives from a perspective conflict that arises between a perspective internal to the sentence and the speaker's external perspective.

Huang and Liu's direct discourse analysis provides an attractive approach to an explanation of the blocking effect, however, it is not without its problems. Kuno (1972, p. 163) argues that the two sentences below have their respective direct discourse representations:

68)

Surface Structure

a. $John_i$ expects that he_i will be elected

Direct Discourse Representation

$John_i$ expects, "I_i will be elected"

Surface Structure

b. $John_i$ claimed that he_i was the best boxer in the world

Direct Discourse Representation

$John_i$ claimed, "I_i am the best boxer in the world"

However, Kuno notes that verbs such as *forgot* and *deny* do not allow for embedded direct discourse complements:

69)

a. *John denied, "I am sick"

b. *John forgot, "I have an appointment at two"

Kuno argues that the examples in (69) are not possible because the embedded proposition "... is not John's own direct discourse or feeling, but someone else's direct discourse, saying, or rumour, or some abstract fact" (Kuno, 1972, p. 163). That is, Kuno argues that verbs that allow direct discourse complements represent the direct discourse/direct feeling of the matrix subject, but verbs that do not allow direct discourse complements represent someone else's discourse or feeling. Recall

that Huang and Liu (2001) adopt Kuno's direct discourse analysis and argue that "... blocking effects are the effects of a perceptual strategy, i.e., to avoid perspective conflicts when the relevant sentences are put in the context of a direct speech act. Most of these effects can be explained by taking literally Kuno's direct discourse representation hypothesis" (Huang and Liu, 2001, p. 161). This predicts that *ziji* will not have a long-distance reading for verbs that do not allow direct discourse complements – as in (69) above for example. However, the facts appear to be otherwise:

70)

a. Zhangsan$_i$ wangle le Lisi$_j$ hen taoyan ziji$_{i/j}$
Zhangsan forget PRF Lisi very hate self
'Zhangsan forgot that Lisi hates self'

b. Zhangsan$_i$ bu xiao de Lisi$_j$ hen taoyan ziji$_{i/j}$
Zhangsan not aware DE Lisi very hate self
'Zhangsan forgot that Lisi hates self'

(Cole, et al., 2001, p. 4)

We can see that in (70) there is long-distance binding under a predicate that disallows direct discourse complements. This demonstrates that direct discourse complements are not a necessary condition for long-distance binding of *ziji*. Additionally, direct discourse complements are opaque domains for NPI licensing:

71)

a. *John didn't say, "I have any doughnuts"

b. *John didn't claim, "I have any doughnuts"

However, NPIs can be licensed inside embedded clauses that contain a long-distance anaphor:

72)

a. Zhangsan$_i$ meiyou tingshuo renhe ren piping ziji$_i$
Zhangsan not hear any person criticize self
'Zhangsan didn't hear anyone criticize self'

b. Zhangsan$_i$ bu renwei ziji$_i$ piping guo renhe ren
Zhangsan not think self criticize ASP any person
'Zhnagsan didn't think that self criticized anyone'

The fact that the NPI can be licensed across a clausal boundary in (72) above is good evidence that the clausal complement is not direct discourse and yet *ziji* can have a

long-distance interpretation. It appears that clausal complements do not have to be represented as direct discourse in order to allow long-distance interpretation of *ziji*. However, once again the real problem with the direct discourse theory of Huang and Liu is that it doesn't explain the distribution of the blocking effect. Recall the pattern:

73) Wo$_j$ zhidao Lisi$_k$ xihuan ziji$_{i/j}$ ✓1 > ✓3
I know Lisi like self
'I know Wangwu likes self'

In (73) we have an embedded direct discourse complement and at the level of direct discourse representation *ziji* becomes *wo* and both tokens of the 1st person pronoun refer to the external speaker so there is no perspective clash. However, under this analysis we would also expect the 1st person pronoun to be available as an antecedent in (74) below:

74) Zhangsan$_i$ renweiwo$_j$ zhidao Lisi$_k$ xihuan ziji$_{*i/*j/k}$ ✗3 > ✗1 > ✓3
Zhangsan think I know Lisi like self
'Zhangsan thinks I know Wangwu likes self'

(73) shows us that there is no perspective clash that arises when 1 > 3, so the 1st person subject should be a possible antecedent here. Furthermore, assuming Kuno's analysis, (73) shows us that a direct discourse complement is possible below *zhidao*, and yet long-distance binding is not possible in (74). Perhaps a direct discourse complement is not possible below *zhidao* in (74) but it is not clear why such a prohibition would be in place here. (74) is surprising on other grounds as well. Huang and Liu (2001) argue that " ... 1st and 2nd person pronouns ... are obligatorily anchored to the external speaker, [but] a 3rd person NP is not obligatorily anchored to the external speaker ... " (Huang and Liu, 2001, p 162).[27] However, in (74) we see that the 1st person antecedent is blocked. If *ziji* was a pronoun that sought its orientation according to the speaker – either internal or external – *wo* should be a possible antecedent here because it is both the internal speaker of the hypothesized direct discourse complement and the external speaker of the utterance. Thus, I conclude that Huang and Liu's direct discourse representation theory of *ziji* is inadequate.

Cole, et al. (2006) also note that these tri-clausal blocking patterns raise problems for a discourse based analysis in which *ziji* is a logophor that orients itself towards the PIVOT Cole, et al. mark the blocking pattern in (74) as ✗3 > ??1 > ✓3. They argue that the intermediate subject – *wo* 'I' – would be the (external) PIVOT of the sentence

[27] It is not clear to me why 1st and 2nd person pronouns must be obligatorily anchored to the external speaker in direct discourse contexts. In examples such as (68) above the 1st person pronoun is coindexed with the internal speaker and we might therefore reasonably expect an anaphor and 1st / 2nd person pronoun to both refer to the internal speaker, but this would not generate the perspective conflict necessary for Huang and Liu's analysis of the blocking effect

due to its first person feature and this prevents *Zhangsan* from being the (internal) PIVOT. Local subjects are not affected by the logophoric conditions so local binding is always possible. Cole, et al. note that the degraded judgement for the intermediate subject (??1) is not predicted on the discourse based analysis. Tri-clausal sentences of a 3 > 3 > 3 form freely allow binding by the intermediate subject so we know that the local 3rd person subject doesn't create a PIVOT, so we would expect that the intermediate subject in (74) to be a possible antecedent, but it isn't

Büring (2005; following Sells, 1987) provides a formalization of logophoric pronouns. 1st and 2nd person pronouns have the following denotations:

75)

a. $[\![\text{I/me/my/myself}_n]\!]^{g,s,u} = g(n)$ if $g(n) = s$, undefined otherwise

b. $[\![\text{you/your}_n]\!]^{g,s,u} = g(n)$ if $g(n)$ is the person s addresses in u

Büring argues that we can extend this conception of pronouns and include a contextual parameter *o*.[28]

a. $[\![\text{pronoun}_n^{log}]\!]^{g,s,u,o} = o$, if $o = g(n)$

The logophoric pronoun will always refer to the individual *o*.[29] The *o* parameter can be shifted by verbs of saying, thinking, etc. to the sayer, thinker, etc. And this means that the denotations of these verbs will be:

76)

a. $[\![\text{say (that) S}]\!]^{g,s,u,o} = \lambda x.x$ says something which entails $[\![\text{ S }]\!]^{g,s,u,x}$

b. $[\![\text{hear from NP (that) S}]\!]^{g,s,u,o} = \lambda x.x$ hears y, y $= [\![\text{ NP }]\!]^{g,s,u,o}$, says something which entails $[\![\text{ S }]\!]^{g,s,u,y}$

c. $[\![\text{believe (that) S}]\!]^{g,s,u,o} = \lambda x.x$ what x believes entails $[\![\text{ S }]\!]^{g,s,u,x}$

d. $[\![\text{ S frightens NP}]\!]^{g,s,u,o} = 1$ iff x , x = $[\![\text{ NP }]\!]^{g,s,u,o}$, prefers a state of affairs in which $[\![\text{ S }]\!]^{g,s,u,x}$ is false to one in which it is true

Remember that it is the verb itself that shifts the *o* parameter such that the logophoric *o* pronoun is replaced by the *x* variable. When the shifting verb combines with the subject through functional application we get the intended coreference between the subject and the pronoun. Thus, "[t]he intuition here is, of course, that *say* and *think*, but not *look like*, involve the report of an utterance or thought, and thus only they have a source to come along with it" (Büring, 2005, p. 65)

---

[28] '*o*' is the *origo*, the *source*

[29] Büring assumes that logophors, like 1st and 2nd person pronouns, are indexed and their lexical content is a presupposition

If we try to use Büring's suggested formalization for *ziji* we have no way of generating the blocking effect in (74) above. For example, a biclausal sentence will allow us to generate the following LF:

77)

a. Wo_j shou $Lisi_k$ xihuan $ziji_{i/j}$
I said Lisi like self
'I said Wangwu likes self'

b. $[\![\text{say (that) S}]\!]^{g,s,u,o}_{g,s,u,x} = \lambda x.x$ says something which entails $[\![$ Lisi likes x $]\!]$

This LF is derived as a consequence of the embedding verb that shifts the *o* parameter and therefore should be available as an interpretation whenever these structural conditions arise. But, we know that this LF is *not* possible when (77) is embedded under a 3rd person matrix subject:

78) $Zhangsan_i$ renweiwo$_j$ zhidao $Lisi_k$ xihuan $ziji_{*i/*j/k}$ ✗3 > ✗1 > ✓3
Zhangsan think I know Lisi like self
'Zhangsan thinks I know Wangwu likes self'

For a derivational/compositional theory this is a problem. The derivation cannot examine the structure yet to be merged and decide that the *origo* parameter cannot be reset because it would lead to perspective clash in the future. Rather, if *ziji* is to be reset to the *origo* of the embedding verb, it should happen immediately upon merger of the shifting verb.[30] Büring acknowledges that it is not clear how a re-set origo parameter could extend beyond the scope of the embedding verb, but suggests that it should follow from a general treatment of *modal subordination* (Roberts, 1987, 1996). However, it is not clear that this approach is applicable to our problem. Büring (2005) notes that a "... hallmark of logophoric pronouns is that they can sometimes occur without a sentence internal antecedent at all. [(0] illustrates this with an example from Icelandic, involving *sér*, the dative of the logophoric pronoun *sig*" (Büring, 2005, p. 62):

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[30] It might be objected that this kind of look-ahead problem is not unknown within formal theories of grammar. For example, NPI licensing can happen long-distance:

3) John didn't know if Bill ate any apples

However, this NPI example involves licensing an element that is *ungrammatical* until the licensing element is merged. In the discussion above we see an LF that is possible and then becomes *impossible* when further structure is added. Such a derivational process would violate our principles of structure preservation.

79)

Formaðurinn$_i$	varð	óskaplega	reiður.
The chairman	became	furiously	angry

Tillagan	væri	avívirðileg.
The proposal	was-SUBJ	outrageous

Væri	henni	beint	gegn	**sér**$_i$	persónulega?
Was-SUBJ	it	aimed	against	self	personally

In (0 above the pronoun *sér* is used logophorically because there is no sentence internal binder. However, it is clear that the second and third sentences report the chairman's thoughts so the logophoric pronoun is gaining its interpretation from the first sentence; that is, across a sentence boundary (see Reuland, 2001, for discussion of Icelandic logophors). Büring argues that the pattern that we see in Icelandic above can be reconciled with Roberts' analysis of modal subordination. Roberts (1987, 1991) discussed sentences such as (80) below:

80)A thief might break into the house. He would take the silver.

Intuitively, the pronoun in the second sentence of (80) is interpreted with respect to those worlds identified by the modal quantification in the first sentence – that is those worlds in which a thief breaks into the house. Pearson (2013) shows that Ewe logophoric pronouns can also be interpreted in this manner:

81)Kofi$_i$	be	yè$_i$	bidzi.	Marie	zu	yè$_{i/*j}$.
Kofi	say	LOG	angry.	Marie	insult	LOG

'Kofi said that he was angry. Mary insulted him'

(Pearson, 2013, p. 446)

Pearson (2013, citing an observation by Clements, 1975) observes that the logophoric pronoun *yè* can only occur in the scope of an attitude predicate. However, "*yè* may occur in an unembedded sentence if the sentence preceding it contains an attitude predicate, in which case it must denote the attitude holder associated with the predicate in this earlier sentence" (Pearson, 2013, p. 446). Crucially, Clements observed that when *yè* is embedded under multiple attitude predicates, it can refer to *any* of the attitude holders:

82)Marie	be	Kofi	xɔse	be	yè	na	yè	cadeau
Marie	say	Kofi	believe	comp	LOG	give	LOG	gift

'Mary said that Kofi believed that she gave him a gift'

'Mary said that Kofi believed that he gave her a gift'[31]

(Pearson, 2013, p. 446)

[31] Pearson's glosses do not say whether the pronoun can have the same antecedent

Notice that the pattern in (82) is precisely what we do *not* see in the Mandarin blocking effect. The Mandarin blocking effect *prevents* attitude holders from being the antecedent of *ziji.* In the Ewe examples above we see that logophoric pronouns can always be bound by the attitude holder but this is not the pattern we see in Mandarin. Additionally, it is not clear how modal subordination could be applied to the blocking effect data. Modal subordination requires an antecedent who is an attitude holder in a previous sentence to bind the logophoric pronoun, but in the blocking effect the higher subject eliminates an interpretation that is usually available. That is, in the blocking effect a normally licit interpretation becomes *unavailable* due to the presence of a higher subject. In the modal subordination cases the higher subject makes an interpretation *available* but the blocking effect is a consequence of the properties that is beyond the scope of the embedding verb that re-sets the *origo* parameter.

An important aspect of Huang and Liu's analysis is that they take the presence of the blocking effect to be a diagnostic that syntactic binding has not occurred in the relevant construction. In their analysis, the blocking effect does not derive from syntactic factors and thus it only arises when *ziji* is bound using pragmatic/discourse principles. That is, Huang and Liu (2001) argue that when *ziji* is bound long-distance it is an exempt position that is not governed by syntactic principles. Huang and Liu (2001) argue that when *ziji* is bound in the syntax there is no blocking effect because the pragmatic/discourse principles of perspective clash are not applicable. I think the discussion above is strong evidence against Huang and Liu's direct discourse theory, however, I think that their approach to an explanation is the correct one. Huang and Liu (2001) argue that the distribution of *ziji* is governed by principles that apply only in particular environments; that is, they propose a non-uniform analysis. Huang and Liu argue that rather than explaining all instances of *ziji* in functional terms (e.g., Chen, 1992) or syntactic terms (Huang, 1982), it "seems clear that the most promising account is one that treats some instances of reflexive binding as instances of syntactic anaphor [sic] and others as instances of logophoricity" (Huang and Liu, 2001, p. 150). This is consistent with the approach proposed in Reinhart and Reuland (1993) and Pollard and Sag (1992), but I think that Huang and Liu's proposal is back to front. Contra Huang and Liu, I will argue that when the blocking effect occurs this is a consequence of an intervention effect in the agreement system and thus demonstrates a failure of syntactic binding that usually applies to such positions. That is, the blocking effect arises in positions that are not exempt from syntactic binding. We have seen that the binding pattern of *ziji* is quite different to the pattern of binding that we see with classic logophors of the West African type. Furthermore, the analyses developed for these logophors are not adequate for the analysis of *ziji*. This suggests that "the logophoricity found with long-distance reflexives is entirely separate from that found in classical logophoric pronoun systems ..." (Cole et al., 2001, p. xli)

5.6.2 Attitudes *de se*

Although long-distance reflexives, and *ziji* in particular, do not seem to function as classical anaphors there does appear to be an important restriction on them in that they "... manifest logophoricity due to *de se* restrictions..." (Cole, et al., 2001, p. xli). Sells (1987) proposes that there three basic discourse roles that logophoric anaphora can be oriented towards:

SOURCE:	one who is the intentional agent in a communication
SELF:	one whose mental state or attitude the content of the proposition describes.
PIVOT:	one with respect to whose (space-time) location the content of the proposition is evaluated

Sells argues that SOURCE, SELF, and PIVOT define a range of options for cross-linguistic conditions on being an antecedent for a logophoric anaphor. Thus, SOURCE predicates such as *say* or *heard* can point towards the agent of communication. Thus, Sells' SOURCE is similar to the concept of logophor discussed by Hagège in relation to Ewe. That is, the SOURCE is the source of speech. SELF predicates pertain to psychological predicates such as *think, know,* or *believe*; SELF is the individual whose mental state the sentence describes. PIVOT is understood "as the locus to which deictic elements must refer" (Reuland, 2006, p. 10); it is the "center of deixis or perspective for the sentence (the reference point for indexicals)" (Cole, et al., 2006, p. 33). Huang and Liu (2001) argue that there is an implicational relationship between these discourse roles:

83)

SOURCE $\subseteq$ SELF $\subseteq$ PIVOT

In this manner, "Huang and Liu try to unify the various types of logophoricity by taking them to represent a progressive liberation of the notion of 'core logophoricity' - SELF being an extended (or 'virtual') SOURCE, and PIVOT being an extended (or 'virtual') SELF" (Cole, et al., 2001, p. xxvi). Thus, in some languages it is only verbs of saying (SOURCE) that will license logophoricity, while in others verbs of thinking (SELF) and verbs of saying (SOURCE) will license logophoricity. The discourse roles proposed by Sells provide the conditions that the antecedents must satisfy for the interpretation for logophoric anaphors. The idea that the antecedent must be a SOURCE, SELF, or PIVOT is a condition on logophoricity. However, it should be noted that while the condition on logophoricity is a necessary condition for long-distance binding, it is not a sufficient condition. That is, simply satisfying the condition on logophoricity does not entail being an antecedent for a long-distance reflexive; syntactic conditions must be satisfied as well. Chierchia (1989) argued that Sells' logophoric taxonomy could be partly reduced to a self-ascription (*de se*) requirement on long-distance reflexives. Cole et al., (2001) follow Chierchia and propose that long-distance reflexives must be associated with a *de se* interpretation

and that both SOURCE and SELF are derivable from the *de se* requirement. However, Cole, et al. argue that the PIVOT restriction cannot be reduced to a *de se* requirement.

5.6.3 *De Se* interpretation

One notable fact about long-distance binding of *ziji* is that there is a strong preference for *de se* interpretation. Huang and Liu (2001), Pan, (1997, 2001), and Cole, et al. (2001) extend Sells' suggestion that there are semantic/discourse restrictions on what can function as an antecedent for *ziji.* These authors suggest, following a suggestion by Chierchia (1989), that an antecedent for *ziji* "... must be aware that the sentence is a description of an event in which he himself is a protagonist (a *de se* restriction), or more precisely, that the individual actually ascribes, or is disposed to ascribe to himself/herself the property containing the reflexive. Following Chierchia, the *de se* restriction is taken to be applicable to long-distance reflexives generally" (Cole, et al., 2001, p. xxvi). Thus, these researchers argue that *ziji* has a *de se* requirement on its antecedent and any apparent orientation towards Sells' SOURCE, SELF, or PIVOT roles is really an artefact of the stronger *de se* requirement. That is, long-distance reflexives display logophoricity due to their *de se* restriction rather than bearing one of Sells' logophoric restrictions.

Huang and Liu's (2001) work on *ziji* illustrates that there is strong tendency for long-distance *ziji* to be interpreted *de se.*[32] Huang and Liu (2001, p. 158) give the following example:

84)

Scenario: *Suppose Zhangsan sees a pickpocket running away with a purse. Zhangsan doesn't realize that the thief has actually stolen his own (Zhangsan's) purse. Zhangsan goes to a police station to tell the police that he saw the pickpocket running away. The speaker, who knows that the purse belongs to Zhangsan, can report on Zhangsan's deed as follows*:

a. Zhangsan shuo pashou tou-le ta-de pibao
Zhangsan said pickpocket steal-PERF his-DE purse
'Zhangsan said that the pickpocket stole his purse'

[32] Cole, et al. (2001) caution that the facts regarding *de se* interpretation are often unclear and that "[w]e take such apparent factual contradictions among authors writing about Chinese as indicative of the fact that the discourse conditions vary in subtle ways from dialect to dialect, and from speaker to speaker within a single dialect. It would appear that the extent of the variation has not been recognized adequately in the literature" (p. xx). For example, Cole et al. argue that in Singapore Teochew there is a *de se* requirement on the antecedent for a long-distance reflexive but there is no such *de se* requirement in Singapore Mandarin. We will see that there is a strong preference for *de se* interpretation in the dialect under discussion.

b. #Zhangsan shuo pashou tou-le ziji-de pibao
Zhangsan said pickpocket steal-PERF self-DE purse
'Zhangsan said that the pickpocket stole self's purse'

In this scenario where *Zhangsan* has no belief that his purse was stolen the long-distance binding of *ziji* is not possible. This is evidence that long-distance binding is only well-formed under the *de se* interpretation. Huang and Liu (2001) further examine this aspect *ziji* and propose that "... it is a necessary property of logophoric *ziji* that its antecedent denotes an individual conscious of the relevant event being reported. This is so as a matter of definition, for a *de se* reading is one in which the antecedent is disposed to refer to the logophor by the first person pronoun" (Huang and Liu, 2001, p. 159). That is, if *ziji* is a logophor that generates *de se* readings, we expect that its long-distance antecedent must be conscious of the event containing *ziji*. Huang and Liu call this the 'consciousness effect' and illustrate it with the following example:

85)Zhangsan$_i$ kuajian-le changchang piping ziji$_i$ de naxie ren
Zhangsan praise-perf often criticize self DE those people
'Zhangsan praise those people who criticize him a lot'

In (85) Zhangsan could be aware that someone is criticizing him (Zhangsan) – a *de se* interpretation. However, in (86) below Zhangsan is assumed not to be aware of the plot to kill him and this means that the *de se* restriction cannot be satisfied (this is a lousy example... fix)

86)??Zhangsan$_i$ kuajian-le houlai sha si ziji$_i$ de naxie ren
Zhangsan praise-perf later kill die self DE those people
'Zhangsan praise those people who later killed him'

Huang and Liu (2001) argue that this *de se* interpretation only arises between an object long-distance reflexive and its antecedent (Cole, et al. p. xx).[33]

Like Huang and Liu (2001), Pan argues that *ziji* is a *de se* anaphor, and therefore its antecedent must be a self-ascriber. One of the properties of being a self-ascription is that the self-ascriber must be conscious. Pan argues that long-distance *ziji* can only induce a *de se* reading, Pan illustrates this point with the following examples:

87)

[33] Pollard and Xue reject this characterization and argue that "the key fact about such cases is that any commanding subject qualifies as the antecedent for *ziji* on the strength of its syntactic prominence alone" (cited in Cole, et al., 2001, p. xx). By contrast, Huang and Liu (2001) argue that both semantic and syntactic conditions must be met. They argue that "... the relation of a long-distance reflexive to its antecedent is mediated through a structure of predication that normally requires the reflexive to be c-commanded by the antecedent" (2001, p. xxvi).

Scenario: *Someone has written a report that is critical of John and given the report to John's supervisor. John has been fired as a consequence, but John does not know why he was fired. John's friends know that the reason John was fired was because of the report. One day one of John's friends told John a story about someone being fired because of a report without telling John that this story was about John.*

a. *John$_i$ renwei nage baogao hai-le ziji$_i$
John thinks that report hurt self
'John thinks that report hurt self'

Scenario: *John has had brain surgery and lost his memory. John reads a biography about himself and is very impressed with the intelligence of the character in the biography so he says, "Wow, this guy is smart"*

b. *John$_i$ shuo ziji$_i$ hen congmin
John say self very smart
'John said self is very smart'

However, Pollard and Xue (2001) question the connection between long-distance binding and *de se* readings. Pollard and Xue give the following example:

88)Zhangsan$_i$ zai mei you jian guo jiu le ziji$_i$ ming de
Zhangsan again not have see ASP save ASP self life DE

na ge ren
that CL person
'Zhangsan didn't see again the person who saved his life'

Pollard and Xue argue that "[t]he problem is that there is no sense in which *Zhangsan* here can be considered a self-ascriber..." (2001, p. 336). However, Anand (2006) argues that "... there is no attitude predicate in [(88)] thus making issues of *de se* interpretation moot ... [only] in intensional contexts [is] *ziji* interpreted *de se*" (Anand, 2006, p. 122).[34] Thus, although there are certainly complications and obscurities in our understanding of *de se* interpretation of *ziji* we can assume that it is a robust enough intuition for our current purposes.

5.6.4 Pan's self ascription analysis

Pan (1997) proposes an analysis of *ziji* that is similar to Huang and Liu (2001), but differs in crucial respects. In short, Pan proposes that when *ziji* is bound long-distance it is "... constrained by self-ascription ... *ziji* is a *de se* anaphor, so it requires

[34] Huang and Liu (2001) acknowledge such constructions as significant counterexamples to the *de se* requirement. Huang and Liu argue that "... [these] examples with LD binding ... exhibit no clear *de se* effects, but we found them to exhibit blocking effects quite generally. Since Mandarin LD *ziji* may take Pivot as an antecedent (i.e., be a Perspective logophor), the requirement of actual *de se* attitudes (sourcehood and consciousness) is not absolute" (Huang and Liu, 2001, p. 187).

that its antecedent be a self-ascriber" (Pan, 1997, p. 145).[35] Pan (2001) argues that this analysis of *ziji* is not a logophoric analysis as existing accounts of logophoricity (e.g. Clements, 1975; Sells, 1987) cannot account for all of the properties of *ziji* (the blocking effect, rigid subject-orientation, *et cetera*). However, Huang and Liu (2001) propose, correctly I think, that we should "... consider logophoricity to be a descriptive cover term for a number of related phenomena whose content has been enriched by the properties of Chinese LD *ziji*, and we take it that the syntax and semantics [of] *de se* beliefs that we have assumed here constitute (at least the beginnings of) a theory of logophoricity" (2001, p. 183). That is, rather than *ziji* being a linguistically unique entity, Huang and Liu (2001) propose that it is a logophor but that it is a logophor in which "... further conditions may obtain" and "[w]hat qualifies as a logophoric antecedent ... varies from language to language" (Büring, 2005, p. 63). Thus, the further conditions on *ziji* are entirely consistent with contemporary knowledge of logophors (see Büring, 2005 or extensive discussion). Huang and Liu (2001) further propose that in Pan's analysis "... the treatment of LD *ziji* as a *de se* anaphor is essentially a restatement of Kuno's original insights in interpretive terms – without postulating direct discourse underlying structures and transformational mechanisms for forming indirect discourse" (2001, p. 150).

Although, Pan does not explicitly situate his theory in the framework of Kuno (1972), Pan's theory can be reconciled with more contemporary interpretations of Kuno's older theory. Recall that Büring offers the following rule of thumb for logophoric pronouns:

89)

> A logophoric pronoun can be used if it is embedded in a constituent c such that (i) c is embedded, (ii) c denotes a proposition p, which (iii) can be paraphrased as a mental state or reported utterance of the pronoun's antecedent such that the paraphrase contains a 1st person pronoun in place of the pronoun. (Büring, 2005, p. 63)

Crucially, Büring also says that "[w]hat qualifies as a logophoric antecedent ... varies from language to language" (2005, p. 63). Pan's proposal is simply formalizing the conditions for what constitutes a logophoric antecedent in Mandarin for long-distance bound *ziji*. It is important to note that Pan explicitly rejects the logophoric approach to *ziji*, but his rejection is restricted to logophoric approaches where the logophor must refer to an entity "whose speech, thoughts, feeling, or general state of consciousness are reported" (Clements, 1975, p. 141). Pan's proposal can be reconciled with the logophoric approach if we allow conditions on logophoric antecedents to vary, as suggested by Büring above.

Pan argues that *ziji* is not simply a logophoric pronoun that refers to an entity "whose speech, thoughts, feeling, or general state of consciousness are reported" (Clements, 1975, p. 141). Pan argues that logophoricity is subjective with respect to the subject of consciousness (Zribi-Hertz, 1989) and this means that logophoric

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[35] Pan attributes the suggestion that *ziji* is a *de se* anaphor to Krifka

pronouns will only occur with verbs "which are related to communication and mental experience. If there are no special verbs involved, then logophoricity will not come into play" (Pan, 1997, p. 94). Of course, *ziji* can be long-distance bound in belief contexts and environments that typically license logophoricity, but *ziji* can be bound in other environments as well. Pan (1997, citing Baker) offers the following examples:

90)

a. John_i minglin Bill_j PRO gei $\text{ziji}_{i/j}$ guahuzi
John order Bill PRO to self shave
'John ordered Bill to shave self'

b. John_i bi Bill_j PRO gei $\text{ziji}_{i/j}$ guahuzi
John force Bill PRO to self shave
'John force Bill to shave self'

c. John_i rang Bill_j PRO gei $\text{ziji}_{i/j}$ guahuzi
John let Bill PRO to self shave
'John let Bill shave self'

(Pan, 1997, p. 95)

Pan observes that these sentences are not about *John*'s feelings, thoughts, mental experience and neither is *John* a source.[36] Thus, on the logophoric account in which the antecedent must be an entity whose speech, thoughts, feeling, or general state of consciousness are reported, the sentences above are difficult to explain. Pan also demonstrates that *ziji* is not simply a logophoric pronoun that is oriented towards a source:

91) John_i cong Bill_j nar tingshuo Mark_k bu xihuan $\text{ziji}_{i/*j/k}$
John from Bill there hear Mark not like self
'John heard from Bill that Mark does not like self'

92) John_i shou wo_j de shu hai-le $\text{ziji}_{*i/j}$
John say I DE book hurt self
'John said my book hurt self'

(Pan, 1997, p. 97)

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[36] Pollard and Xue (2001) argue that these examples are evidence against Pan's characterization of *ziji* as requiring a self-ascriber as an antecedent. Pollard and Xue argue that the matrix predicates are not attitude predicates whose complement clauses express *de se* beliefs and therefore we do not expect binding by the matrix subject to be possible, contrary to fact. However, perhaps Anand's suggestion that when there is no attitude predicate *de se* interpretation is a moot point (Anand, 2006, p. 122).

In (91) above *ziji* cannot be bound by the source of the report *Bill*, and in (92) the blocking effect prevents the source of the from binding the anaphor. Clearly, being a source is neither necessary nor sufficient to qualify as an antecedent for *ziji*.

Pan (1997, p. 146) proposes that the relevant condition for *ziji*'s antecedent is that it must be a *self-ascriber.* Pan argues that every sentence is divided into three parts *ascriber*, *ascribe*, and *property*.[37] In a sentence an *ascriber* attributes a *property* to an *ascribe*. For example, consider the sentence below:

93)

a. John thinks Bill likes Mary

b. John likes Mary

In (93)a *John* is the ascriber, *Bill* is the ascribee, and *likes Mary* is the property ascribed to *Bill.* In (93)b, the ascriber is the speaker, *John* is the ascribee, and *likes Mary* is the property ascribed to *John*. Pan argues that "[i]f the ascriber consciously ascribes a property to himself, then I refer to it as *self-ascription*" (Pan, 1997, p. 146).

Belief *de re* is a belief that it about a specific entity: "[t]hat is, the ascriber or believer ascribes a property to an entity, the ascribee" (Pan, 1997, p. 146). Consider the example below:

94)John thinks that Mary is smart

In (94) *John* is the ascriber and has a belief about the entity *Mary*, and this means that he ascribes the property of *being smart* to the ascribe, *Mary.* Pan observes that "[a]lthough belief *de re* requires a specific entity, it does not require that the specific entity exist in the actual or real world we inhabit; it could be an entity that only exists in *John*'s dream" (Pan, 1997, p. 146). By contrast, "[b]elief *de se* is a belief that one has about oneself, so the ascriber self-ascribes the property in question" (Pan, 1997, p. 146). For example, if *John* consciously ascribes the property *study at Stanford* to himself in (95) below, that is a *de se* interpretation:

95)John$_i$ believes that he$_i$ is studying at Stanford University

Both *de re* and *de se* beliefs are ascriptions but *de se* belief is self-ascription. That is, it is necessarily true that the ascriber and the ascribee are the same. Pan argues that "*de se* beliefs always imply that the referent of the believer is self-conscious while *de re* beliefs do not necessarily suggest that. That is, in the *de re* reading, it is possible to construct an example in which John has forgotten who he is, so he talks about

[37] Since Pan's work there has been a great deal of work on attitudes *de se* (see Anand, 2006; Pearson, 2013 for example). However, I will draw on Pan's discussion because it is this discussion that Pan uses to explain the blocking effect.

John just like any other 3rd person NP. This kind of example cannot be constructed for the *de se* reading" (Pan, 1997, p. 147).[38]

5.6.5 Pan's analysis of the blocking effect

Pan argues that 1st and 2nd person NPs are obligatorily self-conscious in the utterance context but 3rd person NPs are only optionally self-conscious. Additionally, 1st and 2nd person NPs are obligatory self-ascribers but a 3rd person NP is only an optional self-ascriber. Pan (2001, updating 1995, 1997) proposes the following conditions for the interpretation of *ziji*:[39]

96)

a. THE CONDITION FOR THE 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

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[38] Huang and Liu argue that Pan's analysis cannot make the proper distinction between *de re* and *de se* beliefs but I will ignore this issue here. See Huang and Liu (2001, p. 183) for details.

[39]

4)

a. THE CONDITION FOR THE SELF-ASCRIPTION OF *ziji*:

Ziji can be bound to the most prominent compatible self-ascriber in a linguistic domain γ iff there is no intervening self-ascriber in γ

b. 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.

i. SUBJECT > OBJECT or OBLIQUE

ii. DOMINATING NPs > DOMINATED NPs

c. THE COMPATIBILITY CONDITION:

α and β are compatible if α and β are syntactically, semantically and pragmatically compatible

These conditions are designed to account for different phenomena. The condition on self-ascription is designed to account for the blocking effect. The prominence condition is designed to account for subject-orientation and subcommand; and the compatibility condition is designed to account for interpretations that are unavailable. For example, although syntactic binding may be possible an irreflexive verb will simply block a bound interpretation.

b. 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.

i. SUBJECT > OBJECT or OBLIQUE

ii. DOMINATING NPs > DOMINATED NPs

c. THE COMPATIBILITY CONDITION:

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.*

Pan argues that these conditions explain "all the long-distance bound cases of *ziji* and can provide a natural account of the blocking effect" (Pan, 2001, p. 298). Pan provides the following range of data:

97)

a. John$_j$ yiwei Bill$_k$ xihuan ziji$_{i/j}$
John think Bill like self
'John thinks Bill likes self'

b. John$_j$ yiwei [naben shu]$_k$ hai-le ziji$_{i/*j}$
John think that-CL book like-PERF self
'John thinks that book likes self'

c. John$_j$ yiwei wo/ni$_k$ xihuan ziji$_{*i/j}$
John think I/you like self
'John thinks I/you like self'

d. Wo$_j$ yizhi yiwei Bill$_k$ xihuan ziji$_{i/j}$, keshi wo zuo le
I always think Bill like self, but I wrong PERF
'I always think Bill likes self, but I was wrong'

Let us see how Pan explains the blocking effect. Pan argues that "[i]n a *de se* belief situation, *self-ascribers* include all the referents of the animate subjects of attitudinal verbs, and first- and second-person pronouns" (2001, p. 298).[40] The data above is explained the following way. In (97)a the local subject is not a 1st or 2nd person pronoun and neither is it the subject of an attitudinal predicate. Therefore, there is

[40] I assume that this is because there is no *de se* requirement on the local subject. The condition for self-ascription only holds for long-distance bound *ziji*

no self-ascriber in the believed proposition. This means that there is no blocker in the believed proposition and *ziji* can be bound long-distance to the carrier of belief, the most prominent self-ascriber, this being the matrix subject *John.*[41] In (97)b the domain γ for long-distance bound *ziji* is the matrix clause. Within the believed proposition there is no self-ascriber and consequently no blocker and this licenses long-distance binding by the matrix subject.[42] In (97)c there is a 1st/2nd person pronoun *wo/ni* in the embedded clause and this is a self-ascriber that precedes *ziji*, and this means that it is a blocker in the believed proposition. Thus, Pan's conditions predict that long-distance binding will be impossible in (97)c which is just what we find. In (97)d the local subject is not a self-ascriber and this allows binding by the matrix subject, the carrier of belief. This logic will also work for tri-clausal sentences:

98)[$_{S1}$ John$_i$ zhidao [$_{S2}$ Bill$_j$ juede Mark$_k$ xihuan ziji$_{i/j/k}$]]
John know Bill think Mark like self
'John knows that Bill thinks Mark likes self'

Pan argues that in (98) "... there are two domains for the long-distance bound *ziji*: the matrix clause S_1 and the intermediate clause S_2. For domain S_1, since there is a self-ascriber in the believed proposition S_2, i.e., the subject of the attitudinal predicate *juede* 'think' in S_2, this self-ascriber may function as a blocker for the matrix subject if it is an obligatory self-ascriber. But ... third-person NPs are optional self-ascribers, so when the intermediate subject does not function as a self-ascriber, and is thus not a blocker, the matrix subject can be the antecedent of *ziji*. As for the intermediate subject domain S_2, similar to [(97)a, the condition on self ascription] allows it to be the antecedent of *ziji*" (Pan, 2001, p. 299) That is, binding by *John* can occur because there is no intervening self-ascriber between *John* and *ziji*. However, if we introduce a 1st or 2nd person DP into the subject position of S_2 we will generate the blocking effect:[43]

99)[$_{S1}$ John$_i$ zhidao [$_{S2}$ wo/ni$_j$ juede Mark$_k$xihuan ziji$_{*i/j/k}$]]
John know I/you think Mark like self
'John knows that I/you thinks Mark likes self'

Pan argues that the structure in (99) violates the condition on self-ascription. The subject of S_2 is 1st/2nd person and this means that the believed proposition contains an obligatory self-ascriber and this 1st/2nd person NP will be a blocker for the matrix

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[41] Pan argues in passing that the possibility of local binding by *Bill* "... is due to the locality *ziji* which is not the concern of this [Pan's] chapter" (Pan, 2001, p. 299).

[42] Local binding is impossible because *naben shu* 'that book' is an inanimate subject and cannot feel pain

[43] The judgment in (99) is Pan's reported judgments and differs crucially from the judgment pattern I have assumed in this dissertation; namely, the intermediate subject. Pan's analysis will not work for the judgment pattern assumed in this dissertation, but I will argue that Pan's analysis will not work without assuming some stipulations for the judgments that he reports either.

subject because it precedes *ziji* and is contained within the believed proposition. Pan argues that "... unlike the matrix subject, the first/second-person pronouns in (99) can be the antecedents of *ziji,* as they are the most prominent NPs in the domain S_2, and there are no (other) self-ascribers in the believed proposition" (Pan, 2001, p. 299). Pan (2001) argues that his condition on self-ascription is the core of his analysis of the blocking effect. He argues that the blocking effect arises "... because of the difference between first/second person pronouns and third-person NPs. The blocking effect is observed because of the obligatoriness of first/second person pronouns being a self-ascriber if they do not agree in person features with the carrier of belief, knowledge, or desire involved. Since *ziji* points to the carrier of belief, a self-ascriber, the intervening obligatory self-ascribers will prevent it from being bound by farther-away self-ascribers. Hence, the blocking effect" (Pan, 2001, p. 305). Thus, Pan's analysis is based firmly on the well-supported syntactic principle of locality; when *ziji* is bound outside of its local clause it must be bound by the closest self-ascriber.

Huang and Liu argue that Pan's analysis of the blocking effect is flawed because "... to call the embedded subject in [(97)c] a self-ascriber is not appropriate for what the term self-ascription means. An ascriber is one who has [a] certain mental attitude over some property expressed by the complement of an attitudinal predicate ... but the embedded subject is simply the subject of some event-denoting predicate; its referent does not *ascribe* any property" (Huang and Liu, 2001, p. 184, italics in original). Pan does explicitly state that self-ascribers are the subjects of attitudinal predicates and all 1st and 2nd person pronouns (whether they are the subjects of attitudinal predicates or not). It might be reasonable for Pan, contra Huang and Liu, to stipulate that 1st and 2nd person pronouns are obligatory self-ascribers but there is a deeper problem with Pan's analysis: it doesn't capture the data. Once again we see that the blocking effect is more complicated than we expect. If *ziji* is a *de se* anaphor in Pan's sense we expect that it will orient itself towards 1st and 2nd person pronouns as obligatory self-ascribers, as we see with the matrix subject in (100) below:

100) Wo$_j$ zhidao Lisi$_k$ xihuan ziji$_{i/j}$ ✓1 > ✓3
I know Lisi like self
'I know Wangwu likes self'

However, under Pan's analysis we would also expect the 1st person pronoun *wo* to be available as an antecedent in (74) below because *wo* is an obligatory self-ascriber and the 3rd person subject *Lisi* is not a self-ascriber. This means that *Lisi* should not be a blocker for long-distance binding of *ziji*:[44]

[44] *Lisi* is not a self-ascriber because it is not 1st/2nd person and neither is it the subject of an attitudinal predicate. In Pan's earlier (1997, 1995) condition *Lisi* would be an optional self-ascriber and therefore there should be a derivation in which *ziji* can be bound by *wo* when *Lisi* is not a self-ascriber.

101) Zhangsan$_i$ renweiwo$_j$ zhidao Lisi$_k$ xihuan ziji$_{*i/*j/k}$ ×3 > ×1 > ✓3
Zhangsan think I know Lisi like self
'Zhangsan thinks I know Wangwu likes self'

5.6.6 Anand

The final theory of blocking I would like to discuss in Anand's (2006) logophoric blocking approach. Anand argues that long-distance binding of *ziji* is semantically determined and that the core motivation for this conclusion is the fact that long-distance bound *ziji* must be interpreted *de se*. In Anand's approach the *de se* interpretation is a consequence of an operator that binds *ziji* rather than the reflexive itself.[45] Anand (2006, p. 136) argues that the operator has the following form:

102) LOG-Mandarin: ALL [att-verb (OP-LOG^U)] optionally binds all [log] items

Furthermore, in order to capture the blocking effect Anand (2006, p. 136) proposes the following condition:

103) LOG-Mandarin INDEXICAL POLARITY
Wo and *ni* cannot be in the scope of an OP-LOG$_J$^{U}

Anand does not give an example of how such an operator works in simple cases. I assume that it has the following simplified LF:

104) Zhangsan$_i$ zhidao [**OP$_i$** Lisi xihuan ziji$_i$]
Zhangsan thinks Lisi like self
'Zhangsan thinks Lisi likes self'

The attitude verb introduces the OP-LOG^U that is coindexed with the subject of the attitude verb into its complement and the operator binds *ziji*. If we introduce the operator and there is a 1st or 2nd person subject within the complement the condition on indexical polarity - (103) above – prohibits long-distance binding:

105) Zhangsan$_i$ zhidao [**OP$_i$** wo xihuan ziji$_{*i/j}$]
Zhangsan thinks I like self
'Zhangsan thinks I like self'

---

[45] Anand discusses two patterns of judgments within his Mandarin speakers and classifies the two patterns as IND-Mandarin (Indexical Mandarin) and LOG-Mandarin (Logophoric Mandarin). Anand's analysis of *ziji* in IND-Mandarin is that it is a shifted indexical. Anand's analysis of *ziji* in LOG-Mandarin is that it is a logophor. The pattern of judgments that Anand reports for LOG-Mandarin is closest to the pattern I have been concentrating on in this thesis and therefore I will restrict my discussion to Anand's analysis of LOG-Mandarin.

Note that on Anand's account the operator *optionally* binds all of the logophoric elements within its scope. Anand must have this optionality because of the well-attested cross-clausal optionality that we see in Mandarin long-distance binding:

106) Zhangsan$_i$ renwei Wangwu$_j$ zhidao Lisi$_k$ xihuan ziji$_{i/j/k}$
Zhangsan think Wangwu know Lisi like self
'Zhangsan thinks Wangwu knows Lisi likes self'

Thus, the optionality must be present in Anand's condition because the operator must be merged in the complement of *know* ('*zhidao*') and *think* ('*renwei*') in order to have *ziji* bound by *Zhangsan* and *Wangwu*:

107)

a. Zhangsan$_i$ renwei [**OP**$_i$ Wangwu$_j$ zhidao Lisi$_k$ xihuan ziji$_i$]
Zhangsan think Wangwu know Lisi like self
'Zhangsan thinks Wangwu knows Lisi likes self'

b. Zhangsan$_i$ renwei Wangwu$_j$ zhidao [**OP**$_i$ Lisi$_k$ xihuan ziji$_j$]
Zhangsan think Wangwu know Lisi like self
'Zhangsan thinks Wangwu knows Lisi likes self'

In (107)a the operator is not merged as the complement of *know* ('*zhidao*') and this allows *ziji* to be bound by the matrix subject. In (107)b, merging the operator as the complement to *know* ('*zhidao*') binds *ziji* and thus prevents a higher operator from binding it. Presumably this is the derivation that happens in (108) as well:

108) Wo$_i$ zhidao [**OP**$_i$ Lisi xihuan ziji$_i$]
I think Lisi like self
'I think Lisi likes self'

In (108) long-distance binding can occur because we can optionally merge the operator as a complement to the attitude predicate and the condition on indexical polarity is satisfied because there is no 1st or 2nd person indexical within the scope of the operator. Anand's operator can also successfully generate the blocking effect:

109) *Zhangsan$_i$ renwei[**OP**$_i$ wo$_j$ zhidao Lisi$_k$ xihuan ziji$_i$]
Zhangsan think I know Lisi like self
'Zhangsan thinks I know Lisi likes self'

In (109) we optionally merge the operator into the complement of the attitude verb, but there is a 1st person subject within the scope of the operator and this violates the condition on indexical polarity, making binding by the matrix subject impossible; it is the blocking effect. However, consider the following LF that can be generated by Anand's operator:

110) *Zhangsan$_i$ renwei wo$_j$ zhidao [**OP**$_j$ Lisi$_k$ xihuan ziji$_j$]
Zhangsan think I know Lisi like self
'Zhangsan thinks I know Lisi likes self'

We optionally merge the operator in the complement of the attitude predicate and it binds *ziji* to the subject of the attitude predicate. However, there is no violation of the condition on indexical polarity because there is no 1st or 2nd person pronoun within the scope of the operator. Anand's derivation predicts that we should be able to have binding by the intermediate subject, but we do not; Anand's operator over-generates.

Anand briefly discusses the fact that *ziji* can refer to the speaker of the utterance and proposes that there is a perspective center (P-Center) – point-of-view head – high in the left periphery of the sentence, and it is this head that binds *ziji* when *ziji* refers to the speaker. Hence, in an example like (108) above there may be no need for the operator to be merged in the complement of the attitude verb. Perhaps *ziji* is bound by this higher point-of-view head when there is a 1st person antecedent. Thus, as Anand explains, "P-center binding of LOG-Mandarin *ziji* is simply a case of local binding, and hence if there is a closer long-distance binder than the P-center, it will be preferred. Thus, concretely speaking, for LOG-Mandarin, a *ziji* that could be long-distance bound by a 1st person antecedent will always be bound by that antecedent" (Anand, 2006, p. 138). However, this is not what we see. In (110) we see that binding by a 1st person antecedent is not possible and we will assume that P-center binding has not occurred in this case.

5.7 Conclusion

In this dissertation I have argued that *ziji* is a canonical SE anaphor that displays many of the properties that we expect of SE anaphors: long-distance binding, subject orientation, and simplex morphology. Accordingly, and as proposed by Reinhart and Reuland (1991, 1993) and Reualnd (2011), *ziji* can be syntactically bound through the agreement system. However, in Mandarin we see that conditions can arise such that syntactic binding of *ziji* as a SE anaphor is blocked and that this blocking effect replicates the well-attested PCC pattern that we find in a wide variety of languages. This is an intriguing discovery because Mandarin displays no overt agreement morphology but a well-attested agreement phenomenon (the PCC) emerges nonetheless. However, *ziji* can also be used as a SELF anaphor and as an exempt anaphor and I have therefore argued that the distribution of *ziji* is best explained by a non-uniform analysis.

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