

LOGOPHORICITY, ATTITUDES, AND ZIJI AT THE INTERFACE

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1. INTRODUCTION

Long-distance reflexives (LDRs) constitute an interesting phenomenon for theoretical linguistics because they pose a challenge to the standard theory of anaphor binding as put forth in Chomsky (1981) and subsequent revisions of it within the Principles-and-Parameters framework. The standard theory takes a reflexive pronoun to be an anaphor subject to the condition in (1) (henceforth, BCA), with the notion of a governing category as defined in (2):

- (1) Binding Condition A (Chomsky, 1981)
An anaphor is bound in its governing category.
- (2) The Governing Category (cf. Huang, 1983, and Chomsky, 1986)
 α is the governing category for β if and only if α is the minimal category containing β , a governor of β , and a SUBJECT accessible to β .

Long-distance reflexives are those that have their antecedents outside their governing categories. Their existence in any language would refute the BCA as a principle of UG under the assumption that these reflexives

are anaphors and that the antecedents outside their governing categories are indeed their most immediate binders. Much research in the past 15 or so years has been devoted to the task of ascertaining whether this problem should lead one to abandon or revise BCA, or to rethink the assumption that they are indeed anaphors that are directly bound long-distance. Furthermore, since the phenomenon of long-distance reflexivization seems more widespread in some languages than in others, any attempt to deal with the phenomenon must also keep such cross-linguistic variations in mind.

One of the most often talked about items in this subfield of binding theory is the reflexive pronoun *ziji* in Mandarin Chinese. Although Huang (1982) provided examples in which *ziji* could only be construed with a local antecedent (in compliance with BCA), he did not consider structurally similar examples in which it could prima facie be long-distance bound (in apparent violation of BCA). The first serious look at Mandarin reflexives was taken by Y.-H. Huang (1984) (cf. also Huang *et al.*, 1984), where it was observed that (a) only the monomorphemic (“bare”) reflexive *ziji* ‘self’, but not the polymorphemic *taziji* ‘himself/herself’ can be long-distance bound; (b) only subjects may qualify as antecedents; (c) long-distance binding may be blocked by certain local potential antecedents with ϕ -features distinct from those of the remote antecedent. Tang (1989) further noted that a “sub-commanding” subject may qualify as an antecedent under appropriate conditions. These properties—monomorphemicity, subject-orientation, sub-commanding, and blocking—as illustrated in (3a–d), respectively, constitute the basic properties of the Chinese reflexive which have been the subject of much study in recent years.

(3) a. Monomorphemicity:

*Zhangsan_i renwei [Lisi_j hen ziji_{i/j}/taziji_{*i/j}].*
 Zhangsan think Lisi hate self/himself
 ‘Zhangsan_i thinks that Lisi_j hates himself/him_i.’

b. Subject-Orientation:

Zhangsan_i song (gei) Lisi_j yi-zhang ziji_{i/j}-de xiangpian.
 Zhangsan give to Lisi one-CL self’s picture
 ‘Zhangsan_i gives Lisi_j a picture of himself_{i/j}.’

c. Sub-Commanding Antecedent:

Zhangsan_i-de jiaoao hai-le ziji_i.
 Zhangsan’s arrogance hurt-Perf self
 ‘Zhangsan_i’s arrogance harmed him_i.’

d. Blocking Effects:

*Zhangsan_i renwei [ni_j hen ziji_{*i/j}].*
 Zhangsan think you hate self

‘Zhangsan thinks that you hate yourself.’
 (cf. (3a) with *ni* replaced by *Lisi*)

Many scholars have attempted to explain these properties with proposed accounts that range from being purely syntactic to purely pragmatic. Our discussion will be directed to support the claims indicated in (4):

- (4) a. Neither the pure syntactic nor the pure pragmatic approach provides an adequate account of reflexive binding.
 b. A fundamental distinction must be drawn between the anaphoric and the logophoric uses of the reflexive, the former subject to syntactic conditions of anaphoricity, and the latter subject to certain pragmatic conditions of logophoricity.
 c. The dividing line between these two uses, we claim, is given by the traditional notion of “governing category” (GC) as given in (2).

We shall start out in Section 2 with a review of major previous studies. In Section 3, we shall see that important evidence exists for treating the LDR as a logophor subject to pragmatic conditions, thus that the pure syntactic account is incorrect. We examine a clustering of properties which presented difficulties for the pure syntactic account and show that they lend themselves to a natural explanation we shall provide in logophoric terms. In Section 4 it will be shown that a pure pragmatic account is also incorrect, as there exists evidence that certain occurrences of the reflexive must be treated as syntactic anaphors subject to formal binding requirements. The conclusion that the reflexive may be a syntactic anaphor in some contexts but a pragmatic logophor in others thus supports the same claims already made by Reinhart and Reuland (1993), Pollard and Sag (1992), for English, and Xue, Pollard, and Sag (1994) for Mandarin. We argue that the traditional notion of governing category provides a satisfying “dividing line” between the anaphoric and logophoric uses of the reflexive, and compare our analysis with Reinhart and Reuland and Xue *et al.* In Section 5, we take up the syntax and semantics of logophoricity, adopting an LF syntax involving IP-adjunction as originally proposed in Huang and Tang (1991), and a semantics of *de se* attitudes à la Chierchia (1989), and provide a brief comparison with Pan (1997). A summary of the results follows in Section 6.

2. PREVIOUS ANALYSES

We will not be able to discuss in detail all of the worthy proposals that have been made in the literature, but mention only a few representative ac-

counts that have touched upon the Chinese LDR. Three approaches can be distinguished, the formal/syntactic, the functional/pragmatic, and a "mixed" approach that incorporates both the formal and the functional views.

2.1. The Formal Analyses

The strict formal/syntactic approach treats all instances of the LDR as anaphors subject to BCA and seeks to cope with their problematic behavior by one of two strategies: (i) by revising the theory or (ii) by reanalyzing the facts.

The first strategy is represented by the works of Yang (1983) and Manzini and Wexler (1987), who attempted to accommodate LDRs by parameterizing the notion of a GC across languages. According to this approach, languages differ in the size of the GC in which anaphors must be bound, which may range from the minimal clause in one language to the entire root sentence in another. LDRs exist in those languages with binding domains larger than the size of a minimal clause. The second strategy, which has enjoyed greater popularity, sought to reanalyze apparent LD binding as involving a number of successive steps of local binding, each in full satisfaction of BCA. Tang (1989) developed an early account using this strategy, with the proposal of an LF-reindexing rule. Following an idea of Lebeaux (1983), Chomsky (1986), and Pica (1987), Battistella (1989) proposed that the LDR was made possible by *ziji* undergoing LF head-movement across clause boundaries. This LF head-movement account was developed most fully in a number of papers by Cole, Hermon, and Sung (see Cole, Hermon, and Sung, 1990; Cole and Sung, 1994; Cole and Wang, 1996, among others), which turned out to be highly influential because of its apparent ability to explain a number of special properties of the LDR, including all of the basic properties illustrated in (3). According to this hypothesis, the monomorphemic *ziji* obligatorily moves in LF to I⁰ of the minimal IP containing it, and optionally moves I⁰-to-I⁰ to a higher IP, as illustrated:

- (5) [_{IP} Zhangsan [_I ziji_i] [_{VP} yiwei [_{IP} Lisi [_I t'_i] [_{VP} piping-le t_i]]]]
 Zhangsan self think Lisi criticize-Perf

Apparent LD binding of the reflexive is possible because the reflexive has moved to the matrix Infl position, where it is locally bound by the matrix subject. The requirement of monomorphemicity follows from the natural assumption that only monomorphemic *ziji* is an X⁰ category which can undergo head-movement, but not polymorphemic, phrasal *taziji*, etc. Subject orientation follows from the fact that, with *ziji* in I⁰, the subject is the only NP that c-commands the reflexive. The blocking effect also follows, under the assumption that I⁰ agrees with its Specifier in ϕ -features. Because the

Head Movement Constraint (HMC, of Travis 1984) requires *ziji* to move to the lower I⁰ before it moves to the higher I⁰, *ziji* (and its trace *t'*) must agree with the Spec's of both the lower and the higher IP, and hence the two Spec's (subjects) themselves must also agree in ϕ -features. Finally, a sub-commanding subject qualifies as a binder in Mandarin when it is the most prominent potential antecedent that enters into agreement with I⁰.

Although the LF head-movement account enjoyed considerable popularity, it also encountered a number of problems—both theoretical and empirical. Among other things, Huang and Tang (1991) noted that LD binding into an island (e.g., an adjunct or relative clause) is possible:

- (6) Zhangsan_i bu xihuan [_{NP} [_{CP} neixie piping ziji_i de ren]].
 Zhangsan not like those criticize self DE person
 'Zhangsan_i does not like those people who criticized him_i.'
- (7) Zhangsan_i shuo [zhiyao Lisi bu zai piping ziji_i, jiu rang ta
 Zhangsan say if Lisi not again criticize self then let him
 canjia].
 join
 'Zhangsan_i said that if Lisi will stop criticizing him_i, he will let him participate.'

Because the requisite head movement out of an island is prohibited by well-known strict locality conditions (HMC or the ECP), the head-movement approach would wrongly rule out these cases. Huang and Tang (1991) developed a different approach involving IP adjunction of the phrasal categories containing *ziji* which also derived most of the facts in (3) and was free from the difficulty posed by (6)–(7).¹

Regardless of their differences, all these formal accounts suffer from a number of important empirical problems that have since come to light. Some of these surround the putative blocking effects first observed by Y.-H. Huang (1984). First, as pointed out by Xue *et al.* (1994), blocking effects may be triggered by non-subjects which, in general, are not potential antecedents of *ziji*.

- (8) a. Zhangsan_i gaosu wo_j Lisi_k hen ziji_{*i/*j/k}.
 Zhangsan tell me Lisi hate self
 'Zhangsan_i told me_j that Lisi_k hated self_{*i/*j/k}.'
- b. Zhangsan_i dui wo_j shuo Lisi_k chang piping ziji_{*i/*j/k}.
 Zhangsan to me say Lisi often criticize self
 'Zhangsan_i said to me_j that Lisi_k often criticized self_{*i/*j/k}.'

Second, there is a *number* asymmetry with respect to the blocking effect. As Tang (1989) and Huang & Tang (1991) noted, a plural local subject does not

block a remote singular antecedent, though a singular local subject does block a remote plural antecedent, thus raising a question as to why this should be the case:

- (9) *Lisi_i zhidao tamen_j chang piping ziji_{i/j}.*
Lisi know they often criticize self
'Lisi_i knows that they often criticize him_i/themselves.'
- (10) *tamen_j zhidao Lisi_i chang piping ziji_{i/*j}.*
they know Lisi often criticize self
'They_j know that Lisi often criticizes himself/*them_i.'

Third, a *person* asymmetry also exists between first/second and third person NPs with respect to their ability to induce blocking effects. As noted in Xu (1993) (cf. also Pan, 1997), it appears that although a local first/second-person NP may block a remote third-person NP from being a LD antecedent, a local third-person NP does not block a remote first/second-person NP from being a LD antecedent.²

- (11) a. *Zhangsan_i danxin wo/ni_j hui piping ziji_{i/j}.*
Zhangsan worry I/you will criticize self
'Zhangsan is worried that I/you might criticize myself/yourself/*him.'
- b. *wo_i danxin Zhangsan_j hui piping ziji_{i/j}.*
I worry Zhangsan will criticize self
'I am worried that Zhangsan will criticize ?me/himself.'
- c. *ni_i danxin Zhangsan_j hui piping ziji_{i/j} ma?*
you worry Zhangsan will criticize self Q
'Are you worried that Zhangsan will criticize ?you/himself?'

In fact, we found that under some circumstances, even a third-person NP may induce blocking. One such circumstance is when the local third subject is presented deictically, as in (12), where the pointing finger indicates that the speaker points to someone in the audience as he utters the sentence.

- (12) *Zhangsan shuo ta qipian-le ziji.*
Zhangsan say he/she cheat-Perf self
'Zhangsan said that he/she cheated himself/herself.'

Another situation where a third-person NP may induce blocking is when multiple occurrences of *ziji* are involved. The relevance of the following example was first pointed out by Pan (1997), who attributes it to C. L. Baker. The available readings are summarized in (13), where ZS = Zhangsan, LS = Lisi, and WW = Wangwu:

- (13) [*ZS renwei [LS zhidao [WW ba ziji₁ de shu song-gei le ziji₂ de pengyou]]]*.
ZS think LS know WW BA self DE book gave-to Perf
self DE friend.
- a. $ziji_1 = ziji_2 = WW$
b. $ziji_1 = ziji_2 = LS$
c. $ziji_1 = ziji_2 = ZS$
d. $ziji_1 = WW, ziji_2 = LS$
e. $ziji_1 = WW, ziji_2 = ZS$
f. $ziji_1 = ZS, ziji_2 = WW$
g. $ziji_1 = LS, ziji_2 = WW$
h. $*ziji_1 = ZS, ziji_2 = LS$
i. $*ziji_1 = LS, ziji_2 = ZS$

In this sentence, there are two occurrences of *ziji* and three c-commanding subjects. As indicated previously, the two occurrences of *ziji* may refer to the same antecedent, in which case any of the c-commanding subjects can be the antecedent (a, b, c). The two occurrences may also refer separately, as long as one of these occurrences is locally bound by Wangwu (d, e, f, g). Crucially, if both occurrences of *ziji* are to be LD bound, then they must be bound by the same LD antecedent (as in (b, c)), but not separately bound, as in (h, i). This range of possibilities indicates that a third-person NP does not induce blocking when it is itself a nonbinder or local binder of *ziji*, but does so when it is itself an LD binder of *ziji*. In the illicit cases (h, i), the intermediate subject Lisi is the LD binder of one occurrence of *ziji*, and it prevents the other *ziji* from being bound by the matrix subject Zhangsan.

All of these complications are unexpected under the formal accounts discussed here. In fact, they call into serious question the very existence of a generalization concerning blocking effects as stated in connection with (3) above, and also to all versions of the formal account that were designed to derive this putative generalization.

In addition to the blocking effects, certain objections have also been raised concerning other properties that have been claimed to hold, though the force of the objections is sometimes unclear.

2.2. The Functional Analyses

Although the formal approach came into vogue after the problems were introduced by Y.-H. Huang (1984), the first account proposed in Huang *et al.* (1984) was, in effect, a functional one. Essentially, the proposal was that the Chinese LD reflexives are not true anaphors in the sense of Binding Theory, but a special kind of anaphoric pronoun referring to the matrix sub-

ject as the “speaker” in an underlying representation in which the embedded clause originates as a direct quote, following Kuno’s (1972) “direct discourse complementation” analysis of certain pronouns in English. According to Kuno, under one coreferential reading, the sentence (14a) is directly derived from (14b) as its underlying structure:

- (14) a. John said that he saw Bill.
b. John said, “I saw Bill.”

In the terms of earlier generative studies, the claim is that the transformational process that forms an indirect complement structure from its direct discourse underlying source converts the first-person pronoun ‘I’ in (14b) directly into the third-person pronoun ‘he’ in (14a), without going through the intermediate step (15a) or (15b):

- (15) a. John said that John saw Bill.
b. John said, “John saw Bill.”

In other words, the pronoun ‘he’ in (14a) is not a result of “pronominalizing” a full NP under identity with another NP somewhere else in a sentence, but has as its direct source the first-person pronoun ‘I’ in the direct-discourse representation of the complement clause. The pronoun refers to the matrix subject, the “speaker” of the embedded clause, identified by the first person pronoun in the underlying direct-discourse complement source. The referent of the matrix subject may be the actual speaker of the direct discourse complement as in (14b), or a “virtual speaker” (e.g., thinker, feeler, fearer, knower, experiencer) in situations like (16) below:

- (16) a. John was afraid that he might lose her.
b. John feared in his mind: “I might lose her.”

Huang *et al.* (1984) suggested, following Kuno (1972), that the reflexive *ziji* in its LD use was permitted when it corresponds to ‘I’ in the direct discourse representation of a sentence in which it occurs. Thus, in (17):

- (17) a. *Zhangsan manyuan Lisi chang piping ziji.*
Zhangsan complain Lisi often criticize self
‘Zhangsan complained that Lisi often criticized him.’
b. *Zhangsan manyuan, “Lisi chang piping wo.”*
Zhangsan complained, “Lisi often criticized me.”

the embedded object reflexive is not the result of reflexivization on identity with its own matrix subject, but the result of converting from the speaker-referring *wo* ‘me’ in the underlying direct discourse.

The idea that the LD reflexive *ziji* is related to *wo* in a direct discourse representation source would go a long way toward an explanation of some

of the basic properties including subject-orientation and observed blocking effects. For example, in the typical cases represented by (17b), the first person pronoun in the direct discourse typically refers to the matrix subject, the “source” of the discourse. The blocking effects, where they seem to hold, also seem to lend themselves to explanations in perceptual terms, i.e., conflicting perspectives, once the sentences are given a direct discourse analysis. Speaking of cases like (17a) where the long-distance construal would be blocked if the embedded subject *Lisi* were replaced by *wo* ‘I’, Huang *et al.* (1984, 208) write:³

- (18) 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 it 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 (17a)] 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. . . .

However, the idea was not developed further in these earlier studies of *ziji*. Part of the reason was the lack of an explicit and fully developed model that convincingly established the need to recognize a functional account *in addition to* a formal syntactic account of the behavior of reflexives, and partly due to the ready availability of a formal syntactic model embodying head-movement and LF interpretation, etc., which was producing attractive, though by no means conclusive, results. Since it is clear that not all uses of the reflexive fall under the direct discourse perspective, this approach entails the “ambiguity thesis,” i.e., that in English and Chinese (and many other languages) the reflexive is an anaphor in some uses but something else in others. By Occam’s Razor, a theory that treats all uses of the reflexive in a uniform way should be preferred over one that advocates the ambiguity thesis, in the absence of strong evidence for the latter. At the time, evidence for recognizing two reflexives *ziji* did not seem strong enough.

The direct discourse perspective received crucial support, however, from a paper by Clements (1975), who showed that a separate series of “logophoric” pronouns exist in Ewe for the sole purpose of referring to an antecedent “whose speech, thoughts, feelings or general state of consciousness are reported” (p. 141). Such logophoric pronouns generally correspond to those cases of a reflexive or pronoun in English that, in Kuno’s (1972) terms, de-

rives directly from *I, me, my*, etc., in the underlying direct discourse representation. The independent existence of such logophoric pronouns in natural language opened the door for the ambiguity thesis and made it seem a natural hypothesis for languages in which no such distinct pronouns exist. In the meantime, it has become increasingly clear that many uses of the reflexive simply cannot be accommodated as an anaphor falling under any version of BCA. Many authors, including Kuno (1987), Sells (1987), Iida and Sells (1988), and Zribi-Hertz (1989), have since provided further evidence for logophoricity and substantial accounts of conditions on its use. Regarding the Chinese reflexive *ziji*, Yu (1992, 1996) gave important evidence for its logophoric use, some of which was also reproduced in Xu (1993, 1994) and Chen (1992). Another recent account of the Chinese reflexive is provided in Pan (1997), who, following suggestions of Manfred Krifka, proposed to analyze the LD *ziji* as an element expressing beliefs “*de se*” in the sense of Lewis (1979). As we shall see, 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. We shall return to Pan’s analysis.

It seems clear that research on logophoricity in the past few years has established, beyond doubt, its firm place in any adequate description of the reflexive. A natural question that arises is whether all uses of the reflexive can be adequately accounted for within a functional account of logophoricity without reference to the formal syntactic account of anaphor binding. While a hypothesis with a positive answer to this question may be a priori desirable, there is also abundant evidence that this cannot be correct. For one thing, if Clements’ (1975) study crucially established the role of logophoricity, then it certainly also reaffirmed the role of syntactic anaphoricity since, after all, the crucial evidence comes from the existence, in languages like Ewe, of a series of logophoric pronouns *in addition to* a separate series of nonlogophoric anaphoric forms. In spite of certain attempts to account for all occurrences of the reflexive in functional terms (e.g., Chen 1992), it seems clear that the most promising account is one that treats some instances of reflexive binding as instances of syntactic anaphor and others as instances of logophoricity. The two most prominent recent works advocating the “mixed approach” are Reinhart and Reuland (1993) and Pollard and Sag (1992). An adaptation of the latter for an analysis of Mandarin *ziji* is found in Xue *et al.* (1994).⁴ We turn now to such analyses briefly.

2.3. Nonuniform Approaches

Reinhart and Reuland (1993) propose a radical conceptual departure from the standard notion of anaphor binding. In contrast to familiar concep-

tions treating reflexivization as a property of reflexive pronouns, they argue that it is a property of predicates. Central to their account are the definition of a “syntactic predicate” and the notions of being “reflexive-marked” and being “reflexive.”

- (19) 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 theta-role or Case by P.)
 b. A syntactic predicate (formed of P) is reflexive-marked iff either P is lexically reflexive or one of P’s arguments is a self anaphor.
 c. A predicate is reflexive iff two of its arguments are coindexed.

By (19a), all argument positions receiving theta-role or Case from a given head P belong together in the same “syntactic predicate.”⁵ By (19b), such a syntactic predicate is termed “reflexive-marked” if it involves an inherently reflexive verb like *behave* or one of its arguments is *himself* (or *ziji*). By (19c), this syntactic predicate is “reflexive” if two of its arguments are coindexed. The relevant condition on anaphor binding they propose is the following “Condition A”:⁶

- (20) Condition A (R&R)
 A reflexive-marked syntactic predicate is reflexive.

According to (20), whenever a sentence contains an argument reflexive (hence, “reflexive-marked”), that reflexive must be coindexed with another argument of the same predicate (thereby making the predicate “reflexive”). This accounts for the following basic patterns:

- (21) a. Mary_i said that Linda_j criticized herself_{*ij}.
 b. Mary_i believed herself_i to be honest.⁷

The condition (20) says nothing about adjunct reflexives or those in sentences like the following.

- (22) a. Mary_i said that John loved no one but herself_i.
 b. The queen_i invited both Max and herself_i to our party.

Reinhart and Reuland (1993) assume that these instances of the reflexive pronoun represent their logophoric uses falling outside the domain of syntactic binding. The following cases are also attributed to logophoricity:

- (23) a. They_i heard several rumors about themselves_i.
 b. They_i thought that rumors about themselves_i had spread too fast.
 c. They_i thought that for rumors about themselves_i to spread would be bad.

- d. They_i thought that it would be bad for rumors about themselves_i to spread.
 e. They_i arrived after rumors about themselves_i had already spread.

According to Reinhart and Reuland, then, syntactic binding of an anaphor is closely tied to the notion of argument structure. Argument structure (or theta and possibly Case theory) provides the dividing line between syntactic anaphoricity and discourse-pragmatic logophoricity. This view has also been independently proposed by Williams (1989, 1994), Pollard and Sag (1992), and Xue *et al.* (1994), though these authors also differ in the specifics of their proposals.

Analyzing Mandarin *ziji* sentences in the framework of Pollard and Sag, for example, Xue *et al.* (1994) argue that *ziji* can be syntactically bound by an argument by being its co-argument (as is the case with Reinhart and Reuland), or by being contained within a constituent that is the antecedent's co-argument. A syntactic reflexive (or what they call a "Z pronoun") is subject to the following principle:

- (24) Principle Z
 Z-pronouns must be o-bound by animate subjects.

where α o-binds β iff α and β are coindexed and α is a less oblique co-argument of (i) β or (ii) some constituent γ properly containing β . X is a less oblique (or more prominent) co-argument of Y iff X and Y are co-arguments and X precedes Y on the following "Obliqueness Hierarchy": Subject < Primary Object < Secondary Object < Other Complement. In other words, a syntactic reflexive *ziji* is o-bound by an animate subject iff the coindexed animate subject is (i) a co-argument of *ziji* in nonsubject position or (ii) a co-argument of some nonsubject properly containing *ziji*. In case (i), *ziji* is locally o-bound; in case (ii), *ziji* is long-distance o-bound.

The systems of Reinhart and Reuland and of Xue *et al.* are very different conceptually: for Reinhart and Reuland reflexivity is a property of predicates, but for Xue *et al.* it is a configurational relation between two NPs. Empirically, however, they are similar in that they consider only arguments of a predicate to be relevant in defining the domain of reflexivity. The major difference between Xue *et al.* and Reinhart and Reuland is that Xue *et al.* allow a syntactic reflexive to be genuinely long-distance bound (as long as it is contained in some co-argument of its antecedent). Thus, a syntactic reflexive may be locally bound as in (25), or long-distance bound as in (26)–(27).

- (25) *Zhangsan_i piping-le ziji_i.*
 Zhangsan criticize-Perf self
 'Zhangsan criticized himself.'

- (26) *Zhangsan_i shuo [Lisi piping-le ziji_i].*
 Zhangsan say Lisi criticize-Perf self
 'Zhangsan_i said Lisi criticized him_i.'
- (27) *Zhangsan_i bu xihuan [nage [e_i piping ziji_i] de ren_j].*
 Zhangsan not like that criticize self DE person
 'Zhangsan_i does not like the person who criticized him_j/himself.'

In (25) the local *ziji* is a co-argument of its antecedent *Zhangsan*. In (26)–(27) the long-distance bound *ziji* is contained in a constituent (a complement clause in (26) and a relativized NP in (27)) which is a co-argument of *Zhangsan*. On the other hand, in the following sentences, *ziji* is not o-bound and hence, cannot be treated as a syntactic reflexive:

- (28) *Zhangsan_i de jiaoao hai-le ziji_i.*
 Zhangsan DE arrogance harm-Perf self
 'Zhangsan's arrogance harmed him.'
- (29) *yinwei Lisi piping-le ziji_i Zhangsan_i gandao hen shangxin.*
 because Lisi criticize-Perf self Zhangsan feel very sad
 'Because Lisi criticized him_i, Zhangsan_i felt sad.'

In (28) the antecedent *Zhangsan* sub-commands *ziji* but is not a co-argument of *ziji*. In (29), *ziji* is contained in an adjunct of the matrix clause, and neither *ziji* nor the adjunct clause is a co-argument of *Zhangsan*. For Xue *et al.*, the reflexives in these cases are treated as instances of the discourse reflexive. Note that once (29) is further embedded in a complement, as in (30), *ziji* may be bound by the matrix subject, as a syntactic reflexive:

- (30) *Zhangsan_i shuo [yinwei Lisi piping-le ziji_i ta gandao hen shangxin].*
 Zhangsan say because Lisi criticize-Perf self he feel very sad
 'Zhangsan said that because Lisi criticized him, he felt sad.'

Note that because Xue *et al.* allow for a broader notion of a syntactic reflexive than Reinhart and Reuland, some of the cases attributed to logophoricity by Reinhart and Reuland are admitted under Pollard and Sag's syntactic account (e.g., all of the sentences in (22) and (23a–d)). All cases of the discourse-pragmatic reflexive under Pollard and Sag's account (e.g. (23e), (28)–(29)) are necessarily attributed to logophoricity by Reinhart and Reuland.

In this section, we have reviewed previous formal, functional, and nonunitary approaches to the reflexive. We indicated that the nonunitary approach holds most promise to a successful account. In Section 3, we pro-

vide crucial evidence for *ziji* as a logophor, thus falsifying any version of a pure formal approach that does not take logophoricity into account. In Section 4, we provide crucial evidence for *ziji* as a syntactic anaphor and address the question of the “dividing line” between *ziji* as an anaphor and *ziji* as a logophor.

3. ZIJI AS A LOGOPHOR

3.1. Logophoricity, Direct Discourse, and Attitudes *de se*

As indicated in Section 2.2, Kuno (1972) was the first to demonstrate the importance of what has now come to be known as logophoricity for a full understanding of natural language (co)-reference (see also Kuno, 1987, Chapter 3). He argued that many sentences with an embedded pronoun (or reflexive) bound by a matrix constituent should be analyzed as deriving from direct-discourse complements in which the pronoun originates as the first (or second) person pronoun. Such a direct-discourse representation is obligatory when sentences with quotative or attitudinal verbs and their complements are understood as describing the thoughts of the matrix subjects. Thus, under such a reading, the “deep structure” of (31a) would be represented as in (31b), but not as in (31c):

- (31) a. Ali claimed that he was the best boxer in the world.
 b. Ali claimed, “I am the best boxer in the world.”
 c. Ali claimed, “Ali is the best boxer in the world.”

The sentence (31a) is obtained by a rule of the form $I \rightarrow he/she$ as part of the process of indirect-discourse formation. Among other things, this analysis explains a contrast that can be observed with pairs of sentences like the following:

- (32) a. That he_i was the best boxer in the world was claimed by Ali_i .
 b. ??That Ali_i was the best boxer in the world was claimed by him_i .

Both these sentences are well formed with coreference of Ali and the pronoun *he/him* if they are used to report the speaker’s own knowledge of the relevant state of affairs. A contrast is observed as indicated, however, if they are intended as reports (by the speaker) on the inner or direct feelings of Ali, the underlying matrix subject. Under Kuno’s theory, this contrast follows from the direct discourse analysis indicated in (31a–b), since the pronoun *he* in (32a) is directly derived by the $I \rightarrow he$ rule but there is no similar rule that derives the name *Ali* in (32b).⁸

While in English the same pronoun is used in reports of both “the speaker’s knowledge” and “the subject’s direct feeling,” Hagège (1974) and Clements (1975) report on some West African languages where the distinction is grammaticalized. In these languages, a distinct set of *logophoric* pronouns exists for the sole purpose of referring to an antecedent “whose speech, thoughts, feelings or general state of consciousness are reported.” Another case where this distinction is grammaticalized is provided by the Italian possessive reflexive *proprio*, in contrast to the pronoun *suo*, as illustrated by the following pair (from Chierchia (1989, 24)):

- (33) a. *Pavarotti crede che i propri pantaloni siano in fiamme.*
 ‘Pavarotti believes that self’s pants are on fire.’
 b. *Pavarotti crede che i suoi pantaloni siano in fiamme.*
 ‘Pavarotti believes that his pants are on fire.’

Following Lewis (1979), Chierchia distinguishes two ways in which the English sentence *Pavarotti believes that his pants are on fire* (and its Italian counterpart (33b)) may be true, with the pronoun *his* bound by *Pavarotti*. Suppose that Pavarotti’s pants are on fire and he just caught sight of the burning pants in the mirror. Pavarotti has the belief that a certain man’s pants are on fire. The speaker knows that this man is, in fact, Pavarotti himself, hence, that *his* and *Pavarotti* refer to the same person. Pavarotti himself, however, may or may not realize that it is, in fact, his own pants that are on fire. Pavarotti is said to have a *de re* belief. In the subcase of the *de re* reading where Pavarotti is himself aware that it is his own pants that are on fire, we say that Pavarotti has a *de se* belief. In the *de se* situation, Pavarotti is disposed to say, “My pants are on fire!” (and run for the fire extinguisher). In the (non-*de se*) *de re* situation, he may be disposed to say, “His pants are on fire!” (and continue to sing “*O sole mio*”).

Clearly, the distinction between the *de re* and the *de se* beliefs corresponds to Kuno’s distinction between a report of “speaker’s knowledge” and that of the “matrix subject’s direct feeling.” (We shall return to the syntactic and semantic representation of *de se* and *de re* readings.) Chierchia’s relevant point regarding (33a) and (33b) is that, whereas (33b) with the bound pronoun *suo* may be acceptable under the *de re* scenario, (33a) with the LD bound reflexive *proprio* is acceptable only under the *de se* scenario. In other words, *proprio* is a logophor, while *suo* is a normal anaphoric pronoun.

While Kuno’s direct-discourse representation captures an important, perhaps the core, case of logophoricity, the underlying representation that he proposed does not quite fit into any sophisticated current theory of syntax–semantics interface. In Section 5, we adopt Chierchia’s (1989) semantics of attitudes *de se*, which not only captures Kuno’s essential insights but also accommodates a wider range of phenomena that are now believed to fall

under logophoricity. Sells (1987) provided a useful taxonomy of such phenomena in terms of three primitive roles of the antecedent of the logophor.

- (34) a. Source: the one who is the intentional agent of the communication.
 b. Self: the one whose mental state or attitude the proposition describes.
 c. Pivot: the one with respect to whose (time-space) location the content of the proposition is evaluated.

In other words, a logophor refers to a person whose (a) speech or thought, (b) attitude or state of consciousness, and/or (c) point of view, or perspective, is being reported. This person may be the speaker (the external Source, Self, or Pivot) or an internal protagonist denoted by an argument of the sentence (e.g., the matrix subject). These roles are illustrated by the following examples, with Lisi being the internal protagonist under consideration.

- (35) a. *Lisi_i shuo [Zhangsan chang piping ziji_i].*
 Lisi_i say Zhangsan often criticize self
 'Lisi_i says that Zhangsan often criticizes him_i.'
 b. [*Ziji_i-de xiaohaimi de jiang*]-*de xiaoxi shi Lisi_i hen shangxin.*
 Self's child not get prize DE news make Lisi_i very sad
 'The news that his_i child didn't win the prize made Lisi_i very sad.'
 c. ?[*Zhangsan lai kan ziji_i*]-*de shihou, Lisi_i zheng zai kan shu.*
 Zhangsan come see self DE moment Lisi_i now at read book
 'Lisi_i was reading when Zhangsan came to visit him_i.'

In (35a), Lisi may be understood as the source antecedent of *ziji*. In (35b), Lisi is the internal Self whose mental state is being reported. And (35c) may be understood as reporting an event from the perspective of Lisi, the Pivot. Sells (1987) notes that there is an implicational relation among these three roles of a logophoric antecedent. Thus, if a sentence is interpreted as reporting on the speech or thought of an internal Source antecedent, the same antecedent must also be a Self whose mental state is described and a Pivot from whose perspective the report is made or perceived. Similarly, if a sentence simply reports on the mental state or consciousness of its antecedent (Self), it must also be the case that the sentence is evaluated from the viewpoint of the antecedent (Pivot). The reverse does not hold, however. Thus, in (35c) the speaker is simply empathizing with Lisi but does not purport to be reporting on his mental state (as in (35b)) or his speech or belief (as in (35a)). Sells suggests that these roles characterize certain cross-linguistic variations and shows that languages differ as to whether they permit one, two, or all three kinds of logophoric antecedents. We submit that, rather than primitives, these three labels express a progressive degree of liberation in the linguistic expression of logophoricity, Source being the "core," Self

being the "extended," and Pivot having yet further extended uses. Thus, some languages may permit logophoric reference to the Source only, others allow either Source or Self, and still others allow all three roles; but we do not expect to find languages allowing Pivot as a logophoric antecedent but specifically excluding NPs that denote the Source.

As indicated previously, Huang *et al.* (1984) made an early attempt to analyze certain cases of Mandarin LD *ziji* using the direct-discourse representation of Kuno (1972). The cases that were naturally analyzable in this way are typically the "core" cases, i.e., Source in Sells' system. In spite of the fact that this attempt was abandoned for several years, we think now that there is abundant reason to go back to this position. In the rest of this section, we point out a number of cases from Mandarin where *ziji* cannot be fully accounted for by any reasonable version of the Binding Condition A, but must be treated as a logophor falling under one of Sells' categories.

3.2. Evidence for *Ziji* as a Logophor

3.2.1. SENTENCE-FREE *ZIJI* REFERS TO SPEAKER

Yu (1992, 1996) points out that *ziji* may be completely unbound syntactically. Furthermore, when it's sentence-free, it must refer to the speaker. Hence, in the following examples, *ziji* would be replaceable by a first-person pronoun 'I, me' or reflexive 'myself'.

- (36) *Zhe-ge xiangfa, chule ziji, zhiyou san-ge ren zancheng.*
 This-CL idea, besides self only three-CL people agree
 'As for this idea, besides myself, only three other people agree.'
 (37) *Zhe-pian wenzhang shi Ann he ziji he-xie de, (qing duoduo zhijiao).*
 This-CL article be Ann and self co-author DE, (please many advise)
 'This article was co-authored by Ann and myself; please give me your advice.'

It is obvious that these sentences would be a problem for any account that treats all instances of *ziji* as syntactic anaphors. Under the logophoric account, however, these sentences are nicely explained as each involving a logophor bound, by default, to the speaker (the external Source). These sentences are reminiscent of phrases like *as for myself* in English (Kuno, 1987; Ross, 1970):

- (38) a. As for myself, coffee will be fine.
 b. ??As for yourself, coffee will be fine.
 c. * As for himself, coffee will be fine.

3.2.2. BINDING BY INTERNAL SOURCE OR SELF

There is evidence that LD binding of *ziji* as in (35a) is most readily acceptable only under the *de se* interpretation, as is expected from Huang *et al.*'s (1984) analysis. This point is not easily appreciated from (35a) itself, but now with Chierchia's demonstration in (33), a clearer point can be made. Suppose that Zhangsan sees a pickpocket running away with his purse without realizing it's his own purse; he may kindly report the theft to the police. The speaker, who knows that the purse actually belongs to Zhangsan, can report on Zhangsan's deed as follows:

- (39) *Zhangsan shuo [pashou tou-le ta-de pibao]*
 Zhangsan shuo [pickpocket steal-Perf his purse
 'Zhangsan said that the pickpocket stole his purse.'

That is, the sentence under the coreference interpretation can be true as expressing a (non-*de se*) *de re* belief of Zhangsan that his purse was stolen. In this same scenario, the reflexive *ziji* does not fit in place of the pronominal *ta-de* 'his.' The following sentence is well formed only under the *de se* interpretation:

- (40) *Zhangsan shuo [pashou tou-le ziji-de pibao]*
 Zhangsan shuo [pickpocket steal-Perf self's purse
 'Zhangsan said that the pickpocket stole his purse.'

The LD *ziji*, then, is like Italian *proprio* in being limited to logophoric uses, here, a case of logophoric *ziji* referring to the internal Source. The following examples provide evidence for *ziji* referring to the internal Self:

- (41) a. *Zhangsan kuajiang ziji_i xia-le Lisi_i yi tiao.*
 Zhangsan praise self scare-Perf Lisi one jump
 'That Zhangsan praised him₁ greatly surprised Lisi_i.'
 b. **Zhangsan kuajiang Lisi_i xia-le ziji_i yi tiao.*
 Zhangsan praise Lisi scare-Perf self one jump
 'That Zhangsan praised Lisi_i greatly surprised him_i.'

These sentences show that backward reflexivization is preferred over forward reflexivization, a pattern somewhat reminiscent of Kuno's (32), though forward pronominalization (as shown below) is fine:

- (42) *Zhangsan kuajiang Lisi xia-le ta yi tiao.*
 Zhangsan praise Lisi scare-Perf he one jump
 'That Zhangsan praised Lisi greatly surprised him.'

The contrast in (41) may be derived along Kuno's (32) if the sentential subject is given a direct discourse representing the experiencer Lisi's thought,

i.e., the internal Self. Under such an analysis, the *ziji* in (41a) takes the internal Self, Lisi, as its antecedent. In (41b), Lisi is not the internal Self and so does not qualify as the antecedent. On the other hand, (42) is acceptable because, unlike LD *ziji*, use of a normal pronoun *ta* is allowed under normal *de re* conditions.

3.2.3. CONSCIOUSNESS

In the preceding cases involving a Source or Self antecedent, 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. Now we shall show that LD *ziji* does exhibit consciousness effects. In the following examples, LD binding of *ziji* is possible in a scenario in which the remote antecedent can be assumed to denote someone conscious of the event involving him/her, but is difficult to obtain if the antecedent denotes someone who cannot possibly have conscious knowledge of the event. In (43a), Zhangsan could be aware that someone was criticizing him; in (43b), Zhangsan is assumed not to be aware at all of the event, or even the plot, of his killing.

- (43) a. *Zhangsan_i kuajiang-le [[changchang piping ziji_i de] naxie*
 Zhangsan praise-Perf often criticize self DE those
ren_j].
 persons
 'Zhangsan_i praised those people who criticize him_i a lot.'
 b. ??*Zhangsan_i kuajiang-le [[houlai sha si ziji_i de] naxie ren_j].*
 Zhangsan praise-Perf later kill die self DE those persons
 'Zhangsan_i praised those persons who later killed him_i.'

Similarly, in the following scenario depicting the historical hero Xue Rengui who, after leaving his pregnant wife to serve in the troops for years and not knowing his son—now grown up and a brave soldier—was praising his son. Under this scenario, the sentence (44) does not allow an LD construal of *ziji*:

- (44) ??*Xue Rengui_i, zai yudao Wang Baochuan zhi-qian, yizhi shuo*
 Xue Rengui at meet Wang Baochuan before always say
[buxia renwei [ziji_i-de erzi, Xue Dingshan, zui yonggan]].
 staff think self's son Xue Dingshan most brave
 'Before he saw his wife Wang Baochuan, Xue Rengui_i always said that his staff thought that his_i own son, Xue Dingshan, was the bravest.'

These contrasts do not follow from any pure syntactic account, but illustrate the relevance of Self, or consciousness, as a property of logophoricity.

An effect of the consciousness requirement can also be observed through the following contrast:

- (45) *Yinwei Lisi piping ziji, suoyi Zhangsan_i hen shengqi.*
 Because Lisi criticize self so Zhangsan very angry
 'Because Lisi criticized him, Zhangsan was very angry.'
- (46) ??(*Dang*) *Lisi piping ziji_i de shihou, Zhangsan_i zheng zai kan*
 (at) Lisi criticize self DE moment Zhangsan right at read
shu.
 book
 'At the moment Lisi was criticizing him, Zhangsan was reading.'

The contrast seems to stem mainly from the fact that a causal relation between the two events described obtains in (45) but not in (46). This contrast seems to be reducible to the effect of consciousness, a property of the Self as a logophoric antecedent.⁹ Thus, in (45), the explicit causal relation strongly implicates Zhangsan's awareness of Lisi's criticism of him, and the use of LD *ziji* is licit. In (46), however, which describes two concurrent events and implicates the nonexistence of a causal relation and possible nonawareness on the part of Zhangsan, it is considerably less natural to use *ziji* to refer to Zhangsan. (Replacement of the reflexive with the pronoun *ta* makes (46) completely natural, as it does (45).) Note that, for some speakers, the status of (46) ranges from acceptable to somewhat marginal. It seems that this is possible when the speaker, rather than maintaining a neutral perspective, empathizes with the internal protagonist Zhangsan, i.e., taking *Zhangsan* as the Pivot antecedent of *ziji*. If the speaker retains a completely neutral position, (46) is unacceptable under the relevant interpretation. Thus, it seems that Mandarin logophoric *ziji* may take a Source or Self readily, but a pure Pivot only in environments in which the pivothood is clear, as its antecedent.¹⁰ Note, incidentally, that the coindexing in (46) becomes completely licit when (46) is embedded under 'Zhangsan said':

- (47) *Zhangsan_i shuo (dang) Lisi piping ziji_i de shihou, ta_i zheng zai*
 Zhangsan say (at) Lisi criticize self DE moment he right at
kan shu.
 read book
 'Zhangsan_i said that at the moment Lisi was criticizing him_i, he_i was reading.'

This follows because *ziji* now refers to the internal Source Zhangsan, thus fully meeting the consciousness requirement.

3.2.4. BLOCKING EFFECTS EXPLAINED

In Section 2.1., we noted that the so-called "blocking effects" are more complicated than first met the eyes of those who discovered them and attempted to account for them in pure syntactic terms. In particular:

- (48) a. A person asymmetry exists such that a first/second-person pronoun may block a third-person LD antecedent, but not the other way round.
 b. LD *ziji* may be blocked by nonsubjects which are not potential antecedents.
 c. A deictically identified third-person NP does induce blocking.
 d. In cases with multiple occurrences of *ziji*, some third-person NPs may induce blocking effects.
 e. Plural NPs behave differently than do singular NPs, both as potential antecedents and as blockers.

We now show that all of these complications may be naturally explained, based primarily on the suggestion made in Huang *et al.* (1984) but drawing in part on similar suggestions made by others (Chen, 1992; Pan, 1997). Recall that the suggestion made in Huang *et al.* (1984)—as quoted previously in (18)—was 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. Take (49a), for example, which, as we saw, does not permit LD binding of *ziji*. Assuming that the LD *ziji* is underlyingly *wo* 'I/me', then (49a) under the long construal would have the representation (49b):

- (49) a. *Zhangsan juede wo zai piping ziji.*
 Zhangsan think I at criticize self
 'Zhangsan thinks that I am criticizing self.'
 b. *Zhangsan juede, "wo zai piping wo."*
 Zhangsan think I at criticize me
 Zhangsan thinks, "I am criticizing me."

In (49b), there are two occurrences of *wo*. Under the intended reading, the first *wo* refers to the (external) speaker of the entire sentence, and the second *wo* refers to Zhangsan, the (internal) "speaker" of the direct discourse complement. Because of the perspective conflict it would cause, (49b) is not acceptable under the intended reading. This, in turn, explains why the intended LD binding of *ziji* is impossible to get. (The local binding of *ziji* is, of course, licit, *ziji* simply being an anaphor obeying BCA.) The blocking ef-

fect induced by a second-person subject as in (50a) is similarly explained, given the representation (50b):

- (50) a. *Zhangsan juede ni zai piping ziji.*
 Zhangsan think you at criticize self
 'Zhangsan thinks that you are criticizing self.'
 b. *Zhangsan juede, "ni zai piping wo."*
 Zhangsan think you at criticize me
 Zhangsan thinks, "You are criticizing me."

In (50b), *ni* refers to the addressee with respect to the external speaker, but *wo* refers to the internal speaker Zhangsan. Again, we have a conflict between the internal Source (to whom *wo* is "anchored") and the external Source (to whom *ni* is anchored). On the other hand, unlike surface first- or second-person pronouns which are obligatorily anchored to the external speaker, a third-person NP is not obligatorily anchored to the external speaker and can always be anchored to the internal speaker, the matrix subject. Thus, third-person NPs do not induce blocking.

- (51) *Zhangsan juede Lisi zai piping ziji.*
 Zhangsan think Lisi at criticize self
 'Zhangsan thinks Lisi is criticizing him.'

This is the case even if the matrix is first or second person:

- (52) *wo juede Lisi zai piping ziji.*
 I think Lisi at criticize self
 'I think that Lisi is criticizing me.'
 (53) *ni juede Lisi zai piping ziji.*
 You think Lisi at criticize self
 'You think that Lisi is criticizing you.'

In all three cases (51)–(53), the direct discourse complement is 'Lisi zai piping wo' with nothing obligatorily anchored to the external Source. This allows *wo* to refer to the matrix subject, regardless of the latter's person feature. Thus we explain not only why blocking effects should occur in cases like (49)–(50), but also why they do not occur in cases (52)–(53), i.e., the "person asymmetry" described in (48a).¹¹

It also follows that the "blocker" does not have to be a subject (i.e., the property (48b)), as illustrated (= (8a)):

- (54) *Zhangsan_i gaosu wo Lisi_k hen ziji_{*i/k}.*
 Zhangsan tell me Lisi hate self
 'Zhangsan_i told me that Lisi hated *him_i/himself.'

The deep structure source of (54) would be 'Zhangsan gaosu wo, "Lisi hen wo"', again with two occurrences of *wo* that are anchored to different speakers.¹²

This account also explains why even third-person NPs may induce blocking when they are introduced deictically (i.e., property (48c)), as shown in (12), repeated here:

- (12) *Zhangsan shuo ta qipian-le ziji.*
 Zhangsan say he/she cheat-Perf self
 'Zhangsan said that he/she cheated himself/herself.'

A deictic NP involving the speaker's pointing finger is, by definition, anchored to the external speaker. Thus, a deictically identified third-person is not unlike the first- or second-person pronoun in this respect. LD binding of *ziji* by the internal speaker Zhangsan is therefore ruled out on a par with (49)–(50).

As for property (48d), the striking pattern of blocking displayed by sentences with multiple occurrences of *ziji* also receives a straightforward explanation. As noted previously, (13) allows the construals (a) through (g), but disallows (h) and (i). The generalization is that an LD binder of *ziji* blocks a higher LD binder, but a local binder does not.

- (13) [*ZS renwei [LS zhidao [WW ba ziji₁ de shu song-gei le ziji₂ de pengyou]]].*
 ZS think LS know WW BA self DE book give-to Perf self
 DE friend.
 a. $ziji_1 = ziji_2 = WW$
 b. $ziji_1 = ziji_2 = LS$
 c. $ziji_1 = ziji_2 = ZS$
 d. $ziji_1 = WW, ziji_2 = LS$
 e. $ziji_1 = WW, ziji_2 = ZS$
 f. $ziji_1 = ZS, ziji_2 = WW$
 g. $ziji_1 = LS, ziji_2 = WW$
 h. * $ziji_1 = ZS, ziji_2 = LS$
 i. * $ziji_1 = LS, ziji_2 = ZS$

We assume that only LD *ziji*'s are logophors originating as first-person pronouns in direct discourse, but local *ziji*'s are just anaphors subject to BCA. Thus, when—and only when—there are two LD binders involved, the direct discourse representation will involve one direct quote within another. This is the case with the construals (h) and (i). The direct discourse representation for (13h–i) has the following form:

- (55) *ZS renwei*, “*LS zhidao*, ‘*WW ba wo-de shu song-gei le wo-de pengyou*.’”
Zhangsan thinks, “Lisi knows, ‘Wangwu gave my book to my friend.’”

with two occurrences of *wo*, one of which is bound by Lisi, the inner “speaker” and the other bound by Zhangsan, the outer speaker. This situation is precisely the same as cases of first/second-person blocking like (49) and (50), with the direct discourse complement “*wo/ni . . . wo . . .*.” In this latter case, the first *wo* (or *ni*) is anchored to the external speaker, and the second *wo* to the internal speaker (the matrix subject). The unavailability of (13h) and (13i) is simply another example of blocking arising from the perceptual strategy of avoiding conflicting reference to speech act participants. Note that each of (b)–(g) involves, at most, one LD binder, and hence, only one underlying direct discourse complement. No similar conflict needs to occur here, and all these readings are readily available. Under the current hypothesis, the readings (a–g) are analyzed as follows (where ‘his own’ is used to translate the locally bound *ziji-de*):

- (56) a. ZS thinks that LS knows that WW gave his own book to his own friend.
b. ZS thinks that LS knows, “WW gave my book to my friend.”
c. ZS thinks, “LS knows that WW gave my book to my friend.”
d. ZS thinks that LS knows, “WW gave his own book to my friend.”
e. ZS thinks, “LS knows that WW gave his own book to my friend.”
f. ZS thinks that LS knows, “WW gave my book to his own friend.”
g. ZS thinks, “LS knows that WW gave my book to his own friend.”

Finally, the peculiar asymmetry between plural and singular NPs with respect to blocking (i.e., property (48e)) can also be explained. Recall that although a plural NP does not block a singular LD antecedent, a singular NP does seem to block a plural antecedent:

- (57) *Lisi_i shuo tamen_j chang piping ziji_{i/j}*
Lisi say they often criticize self
‘Lisi_i said that they often criticized him_j/themselves.’
- (58) *tamen_i shuo Lisi_j chang piping ziji_{*i/j}*
they say Lisi often criticize self
‘They_i said that Lisi often criticized himself/*them_j.’

In fact, a plural LD antecedent may also be blocked by another plural NP. The following sentence, with $i \neq j$, permits only local binding:

- (59) *tamen_i shuo tamen_j chang piping ziji_{*i/j}*
they say they often criticize self
‘They_i said that they_j often criticized *them_j/themselves.’

On the other hand, if a plural NP is accompanied by the universal quantifier *dou*, then neither singular nor plural NPs will block LD binding. Compare (58)–(59) with the following:

- (60) *tamen_i dou shuo Lisi_j chang piping ziji_{i/j}*
they all say Lisi often criticize self
‘Each_i of them said that Lisi often criticized him_j/himself.’
- (61) *tamen_i dou shuo tamen_j chang piping ziji_{i/j}*
they all say they often criticize self
‘Each_i of them said that they_j often criticized him_j/themselves.’

The generalization is that a LD antecedent of *ziji* must be *semantically* singular, so when *ziji* takes a plural antecedent, the antecedent must be understood in the distributive sense. In fact, these sentences require a strict distributive interpretation of both the antecedent and the reflexive, so that each person must have the *de se* belief “Lisi/They criticized me” but not “Lisi/They criticized us.” It has been observed that, unlike English plurals, Chinese plural NPs do not distribute without the aid of a distributor such as the universal quantifier *dou* (see S. Huang, 1996; Li, 1997; Lin, 1996).¹³ The impossibility of LD-binding in (58)–(59) arises because the matrix subjects cannot distribute on their own.

Why should LD *ziji* disallow group-denoting antecedents? We submit that this arises because *de se* attitudes typically represent the inner feelings of individuals, and groups are not individuals with inner feelings (unless they are treated collectively as an individual). In Section 5, we shall represent *de se* readings by structures of operator-variable binding. The distributive reading comes from treating the reflexive as a variable ranging over singular entities.¹⁴

To summarize, we have seen that the cluster of blocking effects indicated in (48) receive a natural or plausible explanation in logophoric terms, though they have posed nontrivial problems for previous pure syntactic accounts. More generally, we have seen extensive evidence for treating Mandarin *ziji* as a logophor whose reference is not determined by Binding Condition A but is identified with the Source or Self (or, possibly, Pivot) of a reported event or proposition.¹⁵ There are many other instances of *ziji* binding, however, which cannot be treated in logophoric terms, but which seem to fall under BCA rather nicely. Such cases constitute evidence for also treating *ziji* as a syntactic anaphor. We turn to such cases now.

4. ZIJI AS A (SYNTACTIC) ANAPHOR

4.1. Local Binding

One clear case of a syntactic anaphor is when *ziji* is bound by a co-argument, i.e., a subject of the same clause:

- (62) a. *Zhangsan piping-le ziji.*
Zhangsan criticize-Perf self
'Zhangsan criticized himself.'
b. *Zhangsan gen ziji guo-bu-qu.*
Zhangsan with self pass-not-go
'Zhangsan gave himself a hard time.'
c. *Zhangsan ji-le yi-ben shu gei ziji.*
Zhangsan send-Perf one-CL book to self
'Zhangsan sent a book to himself.'

Another case is when *ziji* is contained in an NP and is bound by a co-argument of the containing NP. Thus, instead of *ziji* as an object in (62), we have *ziji de pengyou* 'self's friend', etc., in (63):

- (63) a. *Zhangsan piping-le ziji de pengyou.*
Zhangsan criticize-Perf self DE friend
'Zhangsan criticized his own friend.'
b. *Zhangsan gen ziji de didi guo-bu-qu.*
Zhangsan with self DE brother pass-not-go
'Zhangsan gave his own brother a hard time.'
c. *Zhangsan ji-le yi-ben shu gei ziji de erzi.*
Zhangsan send-Perf one-CL book to self DE son
'Zhangsan sent a book to his own son.'

In these sentences, binding is possible even when no logophoric requirements hold. In each case, the local binder is not, or need not be, a Source, Self, or Pivot. For example, since these sentences are reports on an action performed by Zhangsan but not of his speech or thought, the notion Source is irrelevant. Second, these sentences do not require the speaker or hearer to take the empathy focus of Zhangsan, but can be uttered entirely from the speaker's own viewpoint. Third, consciousness, which we see as a common property of logophoricity, clearly also does not obtain. Thus, (62a) and (63a) are entirely licit even though Zhangsan may not be aware that the person he was criticizing was actually himself or his own friend. It is also easy to imagine a scenario in which the following holds true with Zhangsan, even at the time of his death, still not knowing whom he was victimized by:

- (64) *Zhangsan_i bei ziji_i (de pengyou) hai-si le.*
Zhangsan by self DE friend wrong-death Perf
'Zhangsan was wronged to death by himself / his own friend.'

That local binding does not exhibit consciousness effects is also evident from the contrast between the grammatical (65) and the ungrammatical (44) we saw above.

- (65) *Xue Rengui_i zheng zai chengzan ziji_i-de erzi Xue Dingshan*
Xue Rengui right at praise self-DE son Xue Dingshan
'Xue Rengui is praising his own son Xue Dingshan right now.'

In the event that is being reported at present, both the narrator and the reader—but not Xue Rengui himself in the historical past—are aware of the father-son relationship. Given what we know in the plot, in other words, Xue Rengui only had a *de re* belief about the virtues of his son, but not a *de se* belief. As we saw in (44), where *ziji* is the object of an embedded clause that excludes *Xue Rengui*, LD binding is hard to obtain as an expression of Xue's *de se* belief about his son.

Finally, such locally bound *ziji*'s also do not exhibit any blocking effects. In the following examples, the intervening first- and second-person pronouns do not induce blocking:

- (66) *Zhangsan_i gaosu wo ziji_i de fenshu.*
Zhangsan tell me self DE grade
'Zhangsan told me about his own grade.'
(67) *ta_i xiang ni tidao ziji_i de quedian le ma?*
he to you mention self DE shortcoming Perf Q
'Did he mention his own shortcoming to you?'
(68) *ta zheng-tian dui-zhe wo chui-peng ziji.*
he whole-day to-DUR me boast self
'He boasted about himself in front of me all day long.'

Summarizing, we have identified two cases where *ziji* is locally bound: when it is bound by a co-argument ((62), (64), and (68)) and when it is contained in an NP and bound by a co-argument of the containing NP ((63)–(67)). We saw that these cases of binding do not require any *de se* beliefs on the part of the referent of the antecedent, nor do they exhibit any perspectivity, consciousness, or blocking effect. The same is true where a locally bound *ziji* is an adjunct or contained in an adjunct:

- (69) *Zhangsan zai ziji jiali bei da-hun le.*
Zhangsan at self home by hit-unconscious Perf
'Zhangsan was knocked unconscious at his own home.'

- (70) *Zhangsan cong ziji de jiaodu pinggu zhe-jian shi de*
 Zhangsan from self DE angle assess this-CL matter DE
libi.
 pro-and-con
 'Zhangsan assessed the pros and cons of this matter from his own
 point of view.'

All of these cases therefore do not involve logophoricity, and it is our claim that in each case, the locally bound reflexive is an anaphor.

4.2. The Dividing Line: Governing Category

What is the "dividing line" between the local reflexive which we take to be an anaphor and the LD reflexive which we take to be a logophor? It turns out that the traditional notion of a governing category (GC), as given in (2), defines roughly the correct environments for a syntactic anaphor to be bound. Thus, in (62)–(70), each reflexive is bound within the minimal category that contains it, its governor, and an accessible subject. The GC also seems to make a correct distinction between embedded subject and object reflexives:

- (71) a. *Zhangsan yiwei ziji de erzi zui congming.*
 Zhangsan think self DE son most clever
 'Zhangsan thought that his son was the cleverest.'
 b. *Zhangsan yiwei Lisi zui xihuan ziji de erzi.*
 Zhangsan think Lisi most like self DE son
 'Zhangsan thought that Lisi liked his son most.'
- (72) a. *Zhangsan shuo ziji kanjian-le Lisi.*
 Zhangsan say self see-Perf Lisi
 'Zhangsan said that he saw Lisi.'
 b. *Zhangsan shuo Lisi kanjian-le ziji.*
 Zhangsan say Lisi see-Perf self
 'Zhangsan said that Lisi saw him.'

In all these examples, *ziji* may be bound by the matrix subject *Zhangsan* under appropriate logophoric conditions (e.g., under a *de se* scenario). In addition, under a non-*de se* scenario (when the coreference is reported purely as the speaker's knowledge from the speaker's own perspective), *ziji* may also be bound by the matrix subject *Zhangsan* in (71a) and (72a), though not in (71b) or (72b). In the (b) sentences, under the non-*de se* scenario, the reflexive is only naturally bound by the embedded subject *Lisi*. This is consistent with the view that, when logophoric conditions do not hold, a reflexive is admitted if locally bound and that "local binding" means binding in its GC: the

GC for the reflexive in (a) is the main clause, and the GC for the reflexive in (b) is the embedded clause.¹⁶

The subject-object asymmetry displayed in (71)–(72) is corroborated by the distribution of blocking effects. As shown in the following (b) and (c) examples, a first-person pronoun blocks the LD binding of *ziji* in the embedded object. However, as shown in the (a) examples, a first-person pronoun does not induce blocking when *ziji* occurs in or within an embedded subject position.

- (73) a. *Zhangsan_i gaosu wo ziji_i de erzi zui congming.*
 Zhangsan tell me self DE son most clever
 'Zhangsan_i told me that his_i son was the cleverest.'
 b. ??*Zhangsan_i gaosu wo Lisi zui xihuan ziji_i de erzi.*
 Zhangsan tell me Lisi most like self DE son
 'Zhangsan_i told me that Lisi liked his_i son most.'
 c. **Zhangsan_i yiwei wo zui xihuan ziji_i de erzi.*
 Zhangsan think I most like self DE son
 'Zhangsan_i thought that I liked his_i son most.'
- (74) a. *Zhangsan_i dui wo shuo ziji_i piping-le Lisi.*
 Zhangsan to me say self criticize-Perf Lisi
 'Zhangsan_i said to me that he_i criticized Lisi.'
 b. ??*Zhangsan_i dui wo shuo Lisi piping-le ziji_i.*
 Zhangsan to me say Lisi criticize-Perf self
 'Zhangsan_i said to me that Lisi criticized him_i.'
 c. **Zhangsan_i shuo wo piping-le ziji_i.*
 Zhangsan say I criticize-Perf self
 'Zhangsan_i said that I criticized him_i.'

This asymmetry is observed not only with complement constructions, but also with adjuncts, such as relative clauses:

- (75) a. *Zhangsan_i xiang wo tuijian [ziji_i piping-le Lisi de*
 Zhangsan to me recommend self criticize-Perf Lisi DE
nei-ben shu].
 that-CL book
 'Zhangsan_i recommended to me the book in which he_i
 criticized Lisi.'
 b. ??*Zhangsan_i xiang wo tuijian [Lisi piping-le ziji_i de*
 Zhangsan to me recommend Lisi criticize-Perf self DE
nei-ben shu]
 that-CL book
 'Zhangsan_i recommended to me the book in which Lisi
 criticized him_i.'

- c. **Zhangsan_i zui xihuan [wo piping-le ziji_i de nei-ben shu]*
 Zhangsan most like I criticize-Perf self DE that-CL book
 'Zhangsan_i likes the book in which I criticized him_i.'

We therefore submit that the binding domain of *ziji* as a syntactic anaphor is the traditional GC. If *ziji* is not bound in its GC, it will have to be admitted as a logophor, and in that case, we expect it to exhibit logophoricity effects.¹⁷

4.3. Subcommanding Antecedents

We have considered various constructions in which a given occurrence of *ziji* can be identified as either a syntactic anaphor or a logophor, each with its expected properties. What about cases where *ziji* takes a subcommanding NP as its antecedent? An example is repeated in (76):

- (76) *Zhangsan_i-de jiaoao hai-le ziji_i.*
 Zhangsan's arrogance hurt-Perf self
 'Zhangsan_i's arrogance harmed him_i.'

Is *ziji* an anaphor or a logophor in (76)? The fact that it is not c-commanded by its antecedent might suggest that it is a logophor (see, e.g., Xue *et al.*, 1994). From this, we should expect it to display some logophoricity properties that are by now familiar. We now argue that it should be treated as an anaphor, rather than a logophor. This view is supported by the following facts. First, the antecedent *Zhangsan* cannot be appropriately characterized as a logophoric antecedent, as it is not the Source, nor necessarily the Self conscious of the event described, nor does it necessarily represent the speaker's empathy focus. Example (76) can be naturally read as a speaker's report of his own observation. Second, sentences with subcommanding antecedents do not exhibit any blocking effect.

- (77) *Zhangsan_i de biaoqing gaosu wo_j [ziji_{i/*j} shi wugude].*
 Zhangsan DE expression tell me self is innocent
 'Zhangsan_i's [facial] expression tells me that he_i is innocent.'
- (78) *Zhangsan_i de xin gen wo tando-le ziji_i.*
 Zhangsan DE letter to me discuss-Perf self
 'Zhangsan_i's letter discussed him_i with me.'

Third, note that long-distance binding by a subcommander is unacceptable in cases like (79):¹⁸

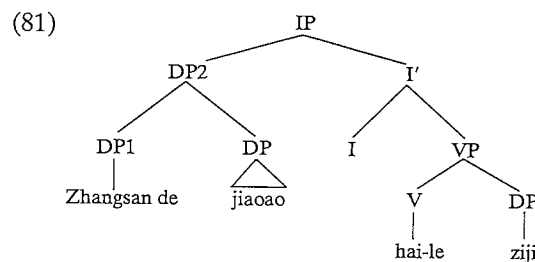
- (79) **Zhangsan_i de shibai biaoshi tamen dui ziji_i mei xinxin.*
 Zhangsan DE failure indicate they to self no confidence
 'Zhangsan's failure indicates that they have no confidence in him.'

This fact would be unexpected if a subcommander is a possible logophoric antecedent, since a logophor is typically long-distance bound.

The absence of logophoricity effects on subcommand binding thus leads us to the conclusion that it must be a case of anaphoric binding. The question that remains is why in cases like (76)–(78) strict c-command is not required for syntactic binding to be possible. The answer has already been provided by Tang (1989), who attributes it to the fact that Chinese reflexive *ziji* is inherently [+animate]. A subcommander qualifies as an antecedent precisely because, by definition, it is contained only in inanimate c-commanders that are themselves nonpotential antecedents. In fact, under Kayne's (1994) conception of phrase structure, there is no need for the notion of subcommand, as subcommand is just a case of c-command. Specifically, assuming that specifiers are introduced by adjunction, and that c-command is as defined here:

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

then any specifier of X c-commands everything that X c-commands. In the case of (76), both *Zhangsan* (DP1) and *Zhangsan de jiaoao* (DP2) c-command *ziji*:



But since the inanimate *Zhangsan de jiaoao* is not a potential antecedent, *Zhangsan* minimally binds *ziji* and, hence, is the syntactic antecedent of *ziji* as a syntactic anaphor.¹⁹

We therefore conclude that binding of *ziji* by a subcommander is a case of anaphor binding. From here, it follows that (a) subcommand binding exhibits no logophoricity effects and (b) subcommand binding is always local. One may still ask why a logophor cannot take a subcommander as its antecedent. The answer seems simple: a subcommander, being a modifier, does not represent the Source, Self, or Pivot of speech or reported event, and hence, plays no role in logophoricity.

Summarizing, we have seen that in the environments described in

(82a–d), *ziji* is a syntactic anaphor obeying BCA, and in (82e), it may be used as a syntactic anaphor or as a logophoric pronoun.

- (82) a. When it is bound by a co-argument subject.
 b. When it is contained in an argument NP and bound by a co-argument of that NP.
 c. When it is contained in an adjunct and locally bound by an argument outside.
 d. When it is locally bound by a subcommanding NP.
 e. When it is the subject of an embedded clause, or contained in the subject of an embedded clause, and is locally bound in the matrix clause.

4.4. Comparison with Other Mixed Approaches

We thus share with major proponents of the “mixed” approach, including Reinhart and Reuland (1993) Pollard and Sag (1992) and Xue, Pollard, and Sag (1994), in assuming that some instances of reflexive binding are governed by syntactic conditions of anaphor binding while others are governed by logophoric considerations. We differ from these proponents, however, in seeing where the dividing line lies between these two uses of *ziji*.

According to Reinhart and Reuland (and also Williams 1989, 1994), for example, the syntactic notion of reflexivity is defined in terms of the argument structure of a predicate. Put in somewhat simplified terms, a predicate is said to be reflexive iff two of its arguments are coindexed. A sentence that contains the reflexive pronoun as one of its arguments is said to be “reflexive-marked.” As far as Binding Theory is concerned, it provides that if a predicate is “reflexive-marked,” then it must be “reflexive.” That is, if a sentence contains a reflexive pronoun as an argument, that reflexive argument must be bound by a co-argument. All other occurrences of the reflexive fall outside of the core theory of anaphor binding. Reinhart and Reuland’s conception of the syntactic anaphor is thus considerably narrower than ours, covering only cases of co-argument binding (i.e., (82a)). If we were to adopt their approach regarding Mandarin *ziji*, then all other cases in (82) would have to be attributed to logophoricity, along with those cases in which *ziji* is truly long-distance bound. As we have seen, the cases represented in (82) represent those that do not exhibit logophoricity effects associated with truly LD-bound *ziji*, and that the traditional GC gives us a convenient dividing line to categorize two (partially overlapping) groups of environments, each with a set of distinct, predictable properties. Adopting Reinhart and Reuland’s view amounts to adopting a wider definition of the notion of logophoricity. However, to the extent that they did not offer a theory of

logophoricity that characterizes (82b–e) and other LD *ziji* environments to the exclusion of (82a), such a liberal notion of logophoricity appears to be little more than a catchall term for everything that violates their co-argument requirement for anaphor binding.

A similar objection may be raised against the approach developed in Xue *et al.* (1994). Ignoring the technical details, Xue *et al.* propose that *ziji*, their “Z-pronoun,” occurring in or within some nonsubject argument position, is a “syntactic reflexive” subject to syntactic binding by an animate subject. A reflexive that does not meet this description is a “pragmatic reflexive” subject to certain pragmatic-discourse conditions. The cases for a syntactic reflexive include:

- (83) a. When *ziji* is bound by its co-argument subject, and
 b. When *ziji* is contained in an argument NP or clause and is coindexed with a subject that is a co-argument of the containing NP or clause.

Condition (83a) corresponds to our case (82a). The second case includes our (82b) and also includes some instances of (82e), where *ziji* occurs in some argument embedded clause or other. In these cases, then, Xue *et al.*’s “syntactic reflexive” is empirically more inclusive than is Reinhart and Reuland’s in correctly recognizing more environments in which a reflexive is syntactically bound. However, like the latter, they also incorrectly exclude adjunct and adjunct-contained *ziji*’s that are locally bound (82c), as well as *ziji*’s with locally subcommanding antecedents (82d) from the class of syntactic anaphors. Xue *et al.*, in fact, explicitly consider subcommanding binding as a case of a pragmatic reflexive, but as we have seen, subcommand binding exhibits strict locality effects but neither logophoricity nor blocking effects, and is more reasonably regarded as a case of syntactic binding. In other words, Xue *et al.*’s notion of a syntactic *ziji* is narrower than the notion of a syntactic anaphor adopted here.

Furthermore, because Xue *et al.*’s notion of a syntactic reflexive does not impose locality on the binding of *ziji*, their syntactic *ziji* is also broader than our notion of a syntactic anaphor. Thus, according to Xue *et al.*, a syntactic *ziji* may occur as the object of an embedded complement clause and LD bound by the subject of a higher clause, as a subcase of (83b). We consider such binding configurations to be logophoric, however, as evidenced by the various logophoric (including blocking) effects they display.²⁰ In other words, Xue *et al.*’s conception of a syntactic reflexive includes cases of LD binding that exhibit certain logophoricity effects (as well as locally bound *ziji* with no such effects) and their conception of a pragmatic reflexive includes cases of local binding with no logophoricity effects (as well as LD binding with such effects). On the other hand, using the GC as the dividing

line, we capture the two uses of *ziji* in terms of two sets of largely exclusive properties: the syntactic anaphor exhibits BCA effects (e.g., locality but no blocking), and the logophor exhibits logophoricity effects (e.g., blocking). It seems that our approach gives a more satisfactory partitioning of the relevant matters.²¹

5. THE LONG DISTANCE *ZIJI*: SYNTAX AND SEMANTICS

In the preceding pages, we have argued for distinguishing between the anaphoric and the logophoric uses of *ziji*, each with its distinct properties. We assume that, syntactically, the anaphoric *ziji* is subject to Condition A of the Binding Theory and, semantically, it is referentially dependent on the antecedent that locally binds it. We shall have nothing further to say about the syntax and semantics of the anaphor *ziji*, but assume that they would be in line with general conceptions concerning the syntax and semantics of A-binding.²² As for the logophoric *ziji*, although we have isolated a number of its properties (that it is bound by a Source, a Self, or a Pivot, and that it may display blocking effects), these properties have been presented and discussed at an informal and intuitive level. We have discussed the pragmatic properties of the logophoric *ziji*, but have not addressed its syntax or semantics. We turn to these issues now.

5.1. The Semantics of Logophoricity

Although Kuno's (1972, 1987) early observations and discussion of the discourse-pragmatic effects of anaphora provide valuable insight into the nature of logophoricity in an intuitively satisfactory way, his account of them in terms of direct-discourse representations did not tie itself with a general theory of semantics and of the syntax-semantics interface. In particular, his proposal that logophoric sentences are literally derived from deep structures with direct discourse complements was framed in the early Standard Theory or generative semantics framework, but the most sophisticated semantic theory developed to date in generative grammar is not generative, but interpretive. The direct discourse representative itself is too crude to be a true semantic representation of logophoric sentences in general. The hypothesis that logophoric sentences are literally derived from underlying structures with direct quotes may be reasonable for some sentences—especially those with matrix quotative verbs like *say*, *claim*, *exclaim*, *ask*, etc. (or their equivalents in other languages), it is not entirely suitable for a large

number of other embedding constructions (e.g., *dream*, *know*, *forgot*, etc.), and would be highly contrived for constructions like the following:

- (84) *Zhangsan kan-wan-le [Lisi piping ziji de nei-pian wenzhang]*
Zhangsan read-finish-Perf Lisi criticize self DE that-CL article
'Zhangsan finished reading the article in which Lisi criticized him.'
- (85) [*Lisi bu xihuan ziji de shi*] *shide Zhangsan hen shangxin.*
Lisi not like self DE thing make Zhangsan very sad
'The fact that Lisi dislikes him caused Zhangsan to be very sad.'

Sells (1987) argues that the notion of a logophoric antecedent should be analyzed in terms of the three roles Source, Self, and Pivot, and develops a semantics within Discourse Representation Theory (DRT) in which these roles are directly postulated as primitives. Chierchia (1989) argues, however, that the notion of logophoricity can be integrated into an interpretive theory of semantics by independently needed notions in semantic theory (but without recourse to newly postulated "primitives" like Source or Self).

Chierchia adopts Lewis' (1979) distinction between *de re* and *de se* beliefs and capitalizes on his insight that while the *de re* readings of attitudinal sentences express a relation between a believer and a proposition, the *de se* readings express a relation between a believer and a property. The former is a normal *believe* relation, where the believer holds a certain proposition to be true, and the latter a *believe-to-have* relation, where a believer (knowingly) ascribes a certain property to himself/herself. Chierchia proposes that this distinction can be directly captured in semantic representation by representing the complement clause either as a propositional argument or as a (secondary) λ -predicate. Thus for the sentence (86), the *de re* and *de se* readings are respectively represented in (87):

- (86) Pavarotti believes that his pants are on fire.
- (87) a. $(\lambda x (\text{believe} \cdot (x, x\text{'s pants are on fire}))) (P)$
b. $\text{believe} (P, \lambda x (x\text{'s pants are on fire}))$ ²³

In other words, a surface sentence like (86) is analyzed as having a normal structure of complementation or a structure of (secondary) predication. The structure of predication is appropriate for the *de se* reading, because it is already a fact of other known structures of secondary predication that they permit only *de se* interpretations. For Chierchia (1984, 1989) (and Williams, 1980, etc.), structures of secondary predication include structures of obligatory control. Note that the obligatory control sentences in (a) must be interpreted as expressing *de se* beliefs only, whereas the (b) sentences, with pronominal binding, may express general *de re* beliefs.

- (88) a. John claims [PRO to be innocent].
b. John claims that he is innocent.
- (89) a. John expects [PRO to win].
b. John expects that he will win.

The (b) sentences could be true of scenarios in which John points to someone in the mirror (who the speaker knows is John's own image), but the (a) sentences are true only of scenarios in which John actually says, or is disposed to say, "I am innocent" or "I will win." Taking obligatory control to be predication, (88a) and (89a) have the following representations:

- (90) a. claims (J, λx (innocent (x)))
b. expects (J, λx (will-win (x)))

These are identical in relevant respects to (87b),²⁴ each representing a belief-to-have relation between an individual and a property. To ensure that these structures are interpreted as desired, Chierchia (1989) proposes the following definition of *de se* attitudes:

- (91) x stands in a belief relation with the property Q (i.e., x self-ascribes Q in Lewis' terms) iff x believes (*de re*) that x has Q , and furthermore, $K(x, x)$, where K is the cognitive access that we have to ourselves.
- (92) $K(x, x) =_{def} x$ is disposed to describe the relevant belief by referring to x by the first-person pronoun.

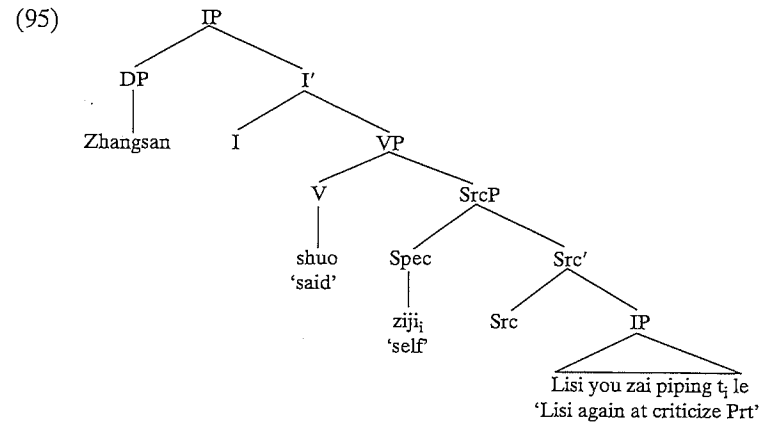
Assuming Chierchia's semantics, we treat the LD *ziji* as a variable bound by a λ -operator, in the semantic representation.

5.2. The LF Syntax of Logophoricity

How would such a semantic representation as (90) be related to, or derived from, the syntactic structure of LDR sentences, in a proper theory of syntax-*semantics* interface? The answer, we suggest, is readily provided by the syntax of LF proposed in Huang and Tang (1991). According to them, the LD reflexive adjoins in LF to an IP, and from the IP-adjoined position, it is coindexed with—rather, predicated on—its antecedent. Under the LD construal of the reflexive, the sentence (93) has the LF representation (94):

- (93) *Zhangsan shuo Lisi you zai piping ziji le.*
Zhangsan say Lisi again at criticize self Prt
'Zhangsan said that Lisi was again criticizing him.'
- (94) *Zhangsan shuo [ziji_i [Lisi you zai piping t_i le]].*

As an alternative, and in the spirit of Huang (1984) and especially Rizzi's (1997) recent work on the "fine structure of the left periphery," we can also replace the IP-adjunction hypothesis with the hypothesis that *ziji* moves to the Spec of a CP-type functional category in LF which identifies itself as the property of a self-ascriber (i.e., Source or Self in the core cases, to be expanded to include the Pivot). Rizzi (1997) argues for a "split CP" hypothesis, according to which the traditional CP consists of a complex of functional categories (including a Force Phrase, a Focus Phrase, a Finiteness Phrase, and potentially several Topic Phrases). These are elements that play an important role in mediating between syntax and discourse. Let's hypothesize that one such "Topic" Phrase is reserved for marking the Source, i.e., that it is, in fact, a SourceP. The LF representation of (93) then has *ziji* as the Spec of the SourceP:²⁵



Note that this LF representation is directly convertible to the semantic representation (96). λ -abstraction consists of simply translating the operator *ziji* in Spec of "Source Phrase" into the λ -operator and its trace into a bound variable.

- (96) *shuo [Zhangsan, λ_x [Lisi you zai piping x le]]*

Coindexing the LF-raised *ziji* with the antecedent *Zhangsan* is part and parcel of what Chomsky (1982, 1986) terms predication or "strong binding." In semantic terms, the λ -predicate as a whole is taken as denoting a property of Zhangsan.²⁶

Note that the postulation of a Source Phrase as in (95) provides a direct way to obtain the semantics of *de se* attitudes that Chierchia's (stipulated) definition in (91)–(92) is intended to bring out, and makes it possible to eliminate the latter. According to (95), the LF-raised *ziji* is identified as Source.

Having this identity as Source (i.e., 'me') included in the belief of an internal protagonist amounts to the claim that the protagonist has a belief about himself/herself in the first person, which is the same as saying that the protagonist has a *de se* belief about the property described in the Source Phrase.

Summarizing, although it is clear that some important properties (e.g., blocking effects) of the LD reflexive fall outside of syntax in the traditional sense, we claim that the LF syntax proposed in Huang and Tang still captures the syntax of logophoricity in important ways. For one thing, the LF-raised structure provides a direct input for translation into semantic representation. Furthermore, the idea that *ziji* LF-raises into [Spec, SourceP] also provides the syntactic correlate of the semantics of self-ascription. A third important aspect of the Huang and Tang approach that is preserved here is the claim that so-called LD binding is, in fact, local. In particular, the predication or strong-binding relation between the LF-raised *ziji* and its antecedent is strictly local, though the operator-variable chain consisting of *ziji* and its trace may be long distance.^{27,28}

In other words, we treat a logophoric *ziji* not as a normal "pronoun in coreference" but as a variable A'-bound by an operator which is itself anaphoric, on a par with a null operator (OP) or an obligatory control PRO in constructions like the following:²⁹

(97) John is easy [OP [to please t]].

(98) John left [PRO tired].

(99) John wanted [PRO to win].

In addition to strict locality, another well-known property of such constructions is that they exhibit obligatory sloppy identity under VP ellipsis:

(100) John is easy [OP [to please t]], and Bill is, too.

(101) John left [PRO tired], and Bill did, too.

(102) John wanted [PRO to win], but Bill did not.

These sentences cannot have a "strict" reading according to which Bill is easy for John to be pleased, or Bill left with John being tired, or Bill did not want John to win. Our treatment of the logophor along the lines of (94)–(96) predicts that an LD *ziji* allows only sloppy identity under VP ellipsis. As pointed out by Cole *et al.* (this volume), this prediction is correct. In the following sentence,

(103) *Zhangsan juede Lisi chang qipian ziji, Wangwu ye shi.*
Zhangsan feel Lisi often cheat self Wangwu also be
'Zhangsan feels that Lisi often cheated him, and so does Wangwu.'

there is a reading according to which Wangwu feels that Lisi often cheated Wangwu (the sloppy reading), but no reading according to which he feels that Lisi often cheated Zhangsan (the strict reading). According to the analysis depicted in (94)–(96), (103) has the following relevant representation:

(104) . . . , *Wangwu ye shi* [λx [x *juede* [λy [*Lisi change qipian y*]]]].
Wangwu also be feel Lisi often cheat

where the property denoted by [λy [*Lisi change qipian y*]] is predicated of the subject x of *juede* 'feel' (i.e., Wangwu). Such a representation gives rise only to the sloppy reading, because neither the operator λy , nor the variable y it binds, can be bound by anything other than *Wangwu*.³⁰

Summarizing, we assume, in much the same spirit as Huang and Tang (1991), that the LF syntax of logophoricity involves operator-movement of *ziji* to Spec of SourceP.³¹ The logophor *ziji* is an anaphoric element (akin to null OP or obligatory control PRO) subject to predication or strong binding by an appropriate local antecedent, or is interpreted in discourse by default to denote the speaker. The operator-variable structure is translated into a λ -predicate denoting a property that *ziji*'s antecedent self-ascribes.

5.3. Extensions: Consciousness and Perspectivity

The syntax and semantics of the LDR described previously works straightforwardly for the core cases—sentences in which the logophoric *ziji* is bound by a matrix subject of an attitudinal or communicative verb. In such a case, the antecedent is directly represented, in semantic representation as in the syntax, as the self-ascriber of *de se* beliefs. However, there are many cases of logophoric *ziji* where this relation cannot be directly obtained from syntactic structure. These include sentences with experiencer or causative predicates, like (84)–(85), repeated below:

(84) *Zhangsan kan-wan-le [Lisi piping ziji de nei-pian wenzhang].*
Zhangsan read-finish-Perf Lisi criticize self DE that-CL article
'Zhangsan finished reading the article in which Lisi criticized him.'

(85) [*Lisi bu xihuan ziji de shi*] *shide Zhangsan hen shangxin.*
Lisi not like self DE thing make Zhangsan very sad
'The fact that Lisi dislikes him caused Zhangsan to be very sad.'

These sentences exhibit both blocking and consciousness effects, and the reflexive is therefore logophoric. In particular, LD binding becomes unacceptable if *Lisi* is replaced by *wo* 'I'. Furthermore, in both cases the natural assumption is that Zhangsan is aware that Lisi criticized him or does not like him in some context and therefore is disposed, if asked, to describe such

states of affairs using the first-person pronoun. In other words, Zhangsan is disposed to self-ascribe some property all right, but neither (84) nor (85) is a description of Zhangsan's self-ascription of that property.

These cases present a problem for the LF syntax and interpretive semantics of attitudes *de se* we have adopted here, as much as they did for Kuno's generative approach involving direct discourse complementation. One way to account for these cases would be to postulate an additional subtype of logophoricity. This is essentially what Sells (1987) has done, according to whom there are three subtypes of logophoric antecedents (Source, Self, and Pivot), and (84)–(85) are cases with Self antecedents. These subtypes are not entirely independent of each other, but are related by an implicational relation: Source implies Self, which, in turn, implies Pivot, but not the other way round. We have seen that the semantics of Source logophoricity fits well under the semantics of attitudes *de se*. What about cases with Self logophors?

One way to accommodate both Source and Self in the semantics of *de se* beliefs while preserving the implicational relation between them is to say that, in the former cases, the *de se* belief is *asserted*, but in the latter cases, it is simply *implied* by the truth of a given sentence. For example, under the *de se* reading, the sentence *John claimed that he was the smartest* asserts that the Source self-ascribes the property of being smart. For a sentence like *John is saddened by Bill's criticism of him*, no similar assertion is being made of John, but for the sentence to be true under the *de se* reading, it must be true also that John implicitly self-ascribes the property of being the object of Bill's criticism. For the examples (84) or (85) at hand, we can say that their truth implies the following at the level of semantic representation:³²

(105) believe (NP, λx (. . . x . . .))

Although stating (105) as an implication allows us to unify Source and Self under the semantics of *de se* attitudes, this move is not sufficient to account for those cases of logophoricity that involve Pivot antecedents. As mentioned earlier, some speakers find such sentences as (46)—repeated below—to be acceptable, even under the assumption that Zhangsan was unaware that Lisi was criticizing him, i.e., even if (105) does not hold of the antecedent NP.

(46) ??(Dang) Lisi piping ziji de shihou, Zhangsan_i zheng zai kan
(at) Lisi criticize self DE moment Zhangsan right at read
shu.
book
'At the moment Lisi was criticizing him, Zhangsan was reading.'

A crucial requirement for this to be possible, however, is that the speaker and the antecedent must share the same perspective. Example (46) is unacceptable if the speaker does not empathize with Zhangsan. This require-

ment can also be illustrated by the following contrast, which obtains for some speakers.³³

- (106) ?*Zhangsan_i kuajiang-le [[houlai sha si ziji_i de] naxie ren_j].
Zhangsan praised-Perf later kill die self DE those persons
'Zhangsan_i praised those persons who later killed him_i.'
- (107) ?Zhangsan_i kuajiang-guo [[houlai sha si ziji_i de] naxie ren_j].
Zhangsan praised-Exp later kill die self DE those persons
'Zhangsan_i has praised those persons who later killed him_i.'

The contrast arises from the fact that the main verb ends with the perfective aspect *-le* in (106) but with the experiential aspect *-guo* in (107). Sentence (106) is a report of a past event, whereas (107) is an evaluation from the standpoint of the speaker's present. A clearer contrast also obtains between the somewhat marginal (106)–(107) and the following which are fully unacceptable:

- (108) *Zhangsan_i san-nian qian zanmei-le [zuotian shasi-le ziji_i de
Zhangsan 3-year ago praise-Perf yesterday kill-Perf self DE
nei-ge ren].
that-CL person
'Zhangsan praised 3 years ago the person who killed self
yesterday.'
- (109) *Zhangsan_i shang xingqi zanmei-le [jin zao piping ziji_i de
Zhangsan last week praise-Perf this morning criticize self DE
nei-ge ren].
that-CL person
'Zhangsan praised last week the person who criticized self this
morning.'

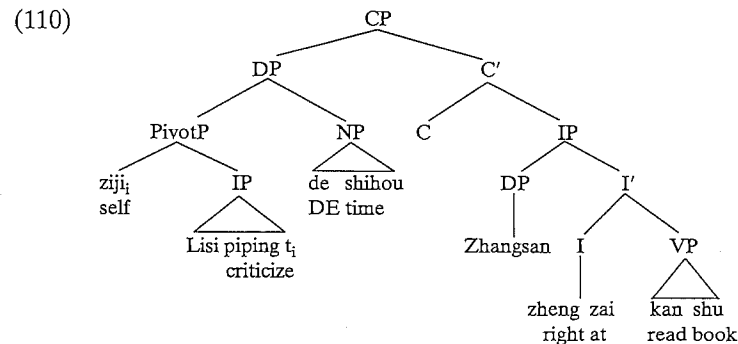
These sentences are worse because explicit time expressions are provided to indicate the sequence of events. Thus, these sentences are more naturally regarded as objective descriptions of the relevant sequence of events, rather than the subjective evaluation from the speaker's present perspective. When the events are evaluated from the speaker's present perspective *and* when the speaker empathizes with the internal protagonist, binding by the internal protagonist becomes possible.

Obviously, these sentences cannot be accommodated by the condition (105) because we are looking at scenarios where the internal protagonist was actually unaware of the event that would occur later which would be ascribed to him or her. The question is why an exception is allowed only when a shift in perspectives occurs that puts together the internal protagonist with the speaker. It seems to us that this shift in perspective allows the speaker to

“go proxy” for the internal protagonist in viewing the relevant event or state. In this way, the internal protagonist has *virtual* consciousness given the benefit of the speaker’s *actual* consciousness, and hence, had *virtual de se* attitudes about the relevant event or state.³⁴

In other words, Pivot logophors represent an extension of core logophoricity, which is limited to cases where the LD *ziji* is part of the description of a property which the relevant protagonist is disposed to self-ascribe in some way. The Source may be said to explicitly self-ascribe that property by using the first-person pronoun, but the Self is simply disposed to do so given its own state of consciousness, while the Pivot is enabled to do so with the help of the speaker’s empathy. Put in another way, Kuno’s (1972, 1987) various functional principles of anaphora, including direct discourse, consciousness, and empathy, are not independent of each other, but represent the different degrees of directness in which attitudes *de se* manifest themselves.

How are these various cases of logophoricity to be integrated to the syntax we have proposed? One solution that suggests itself is to postulate a Self Phrase and a Pivot Phrase in addition to the Source Phrase, though given the implicational relation among these subtypes, the Pivot Phrase is all that we need, as one of the positions in the “fine structure of the left periphery” in Rizzi’s (1997) system. Thus, (46) has the following structure:



An appropriate predication relationship can obtain for this structure if the Spec of Pivot Phrase is bound by an NP that, minimally, is the Point-of-View holder of the relevant discourse. When no internal protagonist is identified as a Point-of-View holder, the Speaker is the default antecedent of the Spec of Pivot Phrase.

5.4. Comparison with Pan

As indicated previously, our treatment of LD *ziji* in terms of attitudes *de se* à la Chierchia (1989) is a descendant of Huang *et al.* (1984) à la Kuno

(1972). The idea that LD *ziji* is a “*de se* anaphor” was also proposed by Pan (1997), based on a suggestion of Manfred Krifka.³⁵ In spite of the similarities, however, we differ from Pan in several important respects.³⁶

First of all, we differ in how we situate the account of *de se* attitudes in a theory of logophoricity. Pan argues that LD *ziji* is not a logophor, as existing theories of logophoricity (e.g., Clements, 1975; Sells, 1987) cannot account for all the properties that *ziji* exhibits. This has the implication that while Chinese *ziji* is a “*de se* anaphor,” LD-reflexives (and logophoric pronouns) in other languages belong to a distinct category called logophors. On the other hand, we 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 *de se* beliefs that we have assumed here constitute (at least the beginnings of) a theory of logophoricity

Second, we differ from Pan in how we treat the syntax and semantics of *de se* beliefs. Following Chierchia (1989) and Lewis (1979), we assume that *de se* beliefs denote relations between the believer and a property, represented by a λ -predicate in semantic representation. Such λ -predicates, in our system, correspond to LF structures created by A'-movement of the LD *ziji*. Pan does not assume an LF-syntax of the kind we do, nor a semantics that can make the proper distinction between *de re* and *de se* beliefs. For the sentence *John thinks that he is smart*, for example, Pan gives the following for the *de se* and *de re* readings:

- (111) a. $\lambda x [x \text{ thinks that } x \text{ is smart}] (j)$ (*de se*)
 b. $\lambda x [x \text{ thinks that } j \text{ is smart}] (j)$ (*de re*)

This amounts to the claim that the *de se* vs. *de re* distinction is simply one of binding vs. accidental coreference. But *de se* interpretation cannot be reduced to variable binding alone. In the following sentence, where the pronoun is bound by *everyone*, we still have both the *de re* and the *de se* readings:

- (112) Everyone says that he is smart.

The sentence can readily have the *de se* reading, but it is also possible that everyone unknowingly praises himself. This latter situation is possible if everyone, all of whom have never seen mirrors before, respectively points at his own image in a mirror and says “he is smart” without realizing he was praising himself. This latter reading is *de re*, but it is a bound reading. The semantics Pan gives in (111a) is not adequate for the *de se* reading.³⁷

Finally, we differ from Pan in our explanation for the blocking effects. We follow Huang *et al.* (1984) and claim that the blocking effects reflect perceptual difficulties that arise when elements within the same discourse domain

are “anchored” to different “speakers.” Thus, an embedded clause containing *ziji* bound by a third-person matrix antecedent cannot contain first- or second-person pronouns:

- (113) **Zhangsan_i shuo [wo/ni bu yinggai qipian ziji_i].*
 Zhangsan say I/you not should cheat self

That is, the intended reading requires the protagonist Zhangsan to be able to describe the content of the embedded clause in the first person, but this is prevented by the presence of *wo* and *ni* in (113), which are anchored to the external speaker.

Pan’s account for the blocking effect is based on the claim that the first- and second-person pronouns are “obligatory self-ascribers” whereas third-person NPs denote “optional self-ascribers.” According to him, in (113) the presence of the obligatory self-ascribers *wo* and *ni* in the c-domain of the remote third-person *Zhangsan* prevents the latter from being the LD antecedent of *ziji*. That is, a closer obligatory self-ascriber blocks a remote optional ascriber.³⁸

There are two flaws of Pan’s account that make it an unlikely candidate as an explanation of blocking. For one thing, to call the embedded subject in (113) a self-ascriber is not appropriate for what the term self-ascription means. An ascriber is one who has certain mental attitude over some property expressed by the complement of an attitudinal predicate (at whatever level of representation). In (113), the embedded subject is simply the subject of some event-denoting predicate; its referent does not *ascribe* any property.

Furthermore, Pan’s theory also fails to account for blocking effects induced by indexical/deictic elements. Recall that a speaker may introduce a third-person embedded subject by pointing a finger to its referent in the audience (see (12)). A third-person indexical NP in the embedded subject position is no ascriber, let alone obligatory self-ascriber, of any property. But such a deictic/indexical pronoun does induce blocking. And this, again, cannot follow from Pan’s account.³⁹

6. SUMMARY

In this chapter, we have re-examined the bare reflexive *ziji* in Mandarin and showed that its properties are best accounted for if a distinction is made between local *ziji* and long-distance bound *ziji*. The local *ziji* is an anaphor whose reference is governed by Condition A of binding theory. The LD *ziji* is a logophor, whose occurrence is limited by the condition that it be part of a description of some property that its antecedent’s referent either explic-

itly self-ascribes, or is implicitly disposed to self-ascribe on its own state of consciousness, or virtually do so with the help of the speaker’s perspective. We showed that the blocking effects are best accounted for as perceptual effects resulting from conflicting “anchors” of discourse-sensitive NPs (including first- and second-person pronouns, indexical terms, etc.).⁴⁰ In so doing, we claim that the earlier account of Huang and Tang (1991) in terms of LF movement is inadequate as an account of the blocking effects. At the same time, we have also shown that the LF movement process they proposed is preserved, as a means to create a functional structure that mediates between grammar and discourse and that captures the syntax, semantics, and pragmatics of logophoricity.⁴¹

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NOTES

¹See also Progovac (1992) for further discussion of problems of the LF-movement account and an account in terms of the notion of a “Relativized Subject.” Huang and Tang’s account makes crucial use of the fact that *ziji* lacks Φ -features, but dissociates itself from the property of monomorphemicity. This has both desirable and undesirable consequences.

²Although there is still a clear preference for local binding over LD binding in (b-c), we believe that there is a real contrast between these and (a), where the LD reading seems quite impossible.

³Translated from the Chinese text.

⁴Pollard and Xue (1998, and this volume) now assume a somewhat different approach. While arguing for the need to distinguish syntactic and nonsyntactic uses of

reflexives, they do not treat reflexives as being ambiguous in having pronominal or anaphoric properties. They treat reflexives as items that can be, but do not need to be, bound syntactically but that, if not syntactically bound, must be interpreted in accordance with appropriate pragmatic conditions.

⁵This includes positions that make up the Complete Functional Complex (Chomsky, 1986) of a verb plus the embedded subject in an ECM construction.

⁶Reinhart and Reuland assume a two-module theory of anaphora. In addition to Conditions A and B defined over reflexivity and reflexive marking, they also invoke a condition defined over A-chains which, among other things, requires its head to contain only nonreferential elements. Thus, the sentence **Himself saw John* satisfies Condition A, but is ruled out by the Chain Condition.

⁷In (21b), *herself* is Case-marked by *believe*, hence, a "syntactic co-argument" of *Mary*.

⁸As Kuno argues, this contrast would not follow from any existing formal version of Binding Theory, according to which both (32a) and (32b) would be well-formed. The standard theory correctly characterizes the sentences as grammatical, however, under the interpretation that they report on the speaker's knowledge.

⁹This pair bears great similarity to one discussed in Sells (1987), though Sells argues that the relevant contrast between the Japanese examples he provided was illustrative of a property of the Pivot or perspectivity. We consider this an effect of consciousness, for the reasons stated in the text.

¹⁰The status of a Pivot antecedent seems not only marginal but also variable among dialects or speakers. Cf. Cole, Hermon, and Lee (this volume), where it is shown that whereas Singapore Mandarin speakers are quite permissive with Pivot antecedents, Teochew speakers are quite reluctant to accept Pivot antecedents. We view Source, Self, and Pivot as constituting a hierarchy representing progressive grammaticalization of these pragmatic concepts.

¹¹This explanation in terms of conflicting sources is reminiscent of a principle proposed by Kuno (1987), the Ban on Conflicting Empathy Foci. Since Source implies Pivot, conflicting sources lead to conflicting perspectives.

¹²The fact that nonsubjects may induce blocking was first due to Xue *et al.* (1994). Pan claims that they do not. Our own judgment agrees with that of Xue *et al.*'s. We do share the feeling that the blocking effect observed in (54) is not as strong as is observed in (49a), where the blocker is the embedded subject. We submit that this arises from the fact that in (54) the first person pronoun originates in the matrix clause but is not part of the direct discourse complement. This presumably makes it easier to tell apart the *wo* that refers to the external speaker from the *wo* that refers to the internal speaker, and therefore reduces the perceptual difficulty involved.

¹³In English, *John and Bill bought a car* can mean either that they bought a car together or that they each bought a car (two cars total), but the Chinese counterpart in (i) only has a collective reading. To obtain the distributive reading, either the distributor *ge* 'respectively' or the universal quantifier *dou* 'all' is required:

- (i) *Zhangsan gen Lisi mai-le yi-liang che.* (Collective)
Zhangsan and Lisi buy-Perf one-CL car

- (ii) *Zhangsan gen Lisi ge mai-le yi-liang che.* (Distributive)
(iii) *Zhangsan gen Lisi dou mai-le yi-liang che.* (Distributive)

¹⁴The local *ziji* also has only a distributive reading, but it does not require its local subject to be distributed by *dou* or *ge*:

- (i) *tamen zai piping ziji.*
they at criticize self
'They are criticizing themselves.'

Huang (1998b) argues that this arises from LF head-movement of *ziji* to the governing verb, forming an LF-compound meaning 'self-criticize'. The obligatory distributive reading thus parallels that of *They are self-criticizing*. Since head-movement cannot go long-distance, a long-distance plural antecedent must be distributed by some other means.

¹⁵If a logophor is not subject to Condition A, the question arises as to what a logophor is in the general typology of noun phrases: is it a pronoun, an r-expression, or something new? It is tempting to suggest that the logophoric *ziji* is simply a pronoun, obeying only Condition B that requires it to be free in its governing category. As just noted in the preceding paragraph, and for reasons that will become clear in Section 5, however, we shall take the logophor to be a variable bound by an operator which is itself predicated on an appropriate antecedent, i.e., akin to the null operator.

¹⁶This means that in or within the embedded subject position, the reflexive bound by the immediately higher subject may have ambiguous status, much as the pronoun *his* in *Pavarotti believes that his pants are on fire*.

¹⁷We exclude from consideration cases where *ziji* is used to express focus and/or contrast in discourse. They don't seem to be reducible to logophoricity and will not be covered in this work.

¹⁸In contrast to (79), the following is acceptable:

- (i) *Zhangsan_i de baogao biaoshi tamen dui ziji_i mei xinxin.*
Zhangsan DE report indicate they to *ziji* no confidence
'Zhangsan's report indicates that they had no confidence in self.'

This is because (i) implies that Zhangsan himself indicates that they had no confidence in him. (If his report indicates P, then he indicates P.) No similar implication holds of the unacceptable (79).

¹⁹The illicit **John's arrogance harmed himself* in English is ruled out by minimality, on a par with **John's mother loves himself*, because in English reflexives are not inherently [+animate].

²⁰In all fairness, we should mention that Xue *et al.* (and Ping Xue, personal communication) do cite examples with LD binding which 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. See discussion in Section 5.3.

²¹So far, our argument for the GC as the dividing line has been based largely on

the distribution of certain logophoricity effects (especially blocking effects). Two other independent arguments for the dividing line are offered here. The first has to do with the distribution of reciprocals. As is well known, unlike reflexives, reciprocals are typically locally bound cross-linguistically. This is not surprising if true long-distance binding means logophoricity. Since reciprocals by definition do not refer to protagonists who ascribe a relevant property by the first-person pronoun, they cannot be logophors and hence, cannot be LD bound. However, reciprocals are admitted in many positions where they are locally bound in their GC, but not by a co-argument:

- (i) a. They_i heard several rumors about each other_i.
 b. They_i thought that rumors about each other_i spread too fast.
 c. They_i thought that for rumors about each other_i to spread would be bad.
 d. They_i thought that it would be bad for rumors about each other_i to spread.
 e. They_i arrived after rumors about each other_i had already spread.

Since reciprocals cannot be logophors, the reciprocals in these examples must be anaphors. This conclusion is, of course, compatible with our view that the GC defines the domain of anaphor binding.

A second independent argument comes from a difference between local and LD *ziji* with respect to the distributive interpretation of their plural antecedents. As observed in Huang (1998b), both the local reflexive and the LD reflexive require their plural antecedents to be interpreted distributively. An important difference between local and LD *ziji*, however, is that whereas the LD antecedent requires the distributor *dou* 'all' or *ge* 'each', the local plural antecedent may distribute on its own without the aid of *dou* or *ge*.

- (ii) a. *tamen_i (dou) zai piping ziji_i*.
 they all at criticize self
 'They are all involved in the act of self-criticism.'
 b. *tamen_i *(dou) yiwei Lisi hui piping ziji_i*.
 they all think Lisi will criticize self
 'Each of them thinks that Lisi will criticize him.'

When *ziji* is embedded in a possessor position and is bound in its GC, note that no distributor is required:

- (iii) a. *tamen_i taiqi-le ziji_i-de gangqin*.
 they lift-Perf self's piano
 'They each lifted their (own) pianos.'
 b. *tamen_i zhi gen ziji_i-de mama shuo-hua*.
 they only with self's mother talk
 'They only talked to their (respective) mothers.'

This shows that the possessive reflexive in (iii) behaves on a par with a local anaphor. The facts shown in (i-iii) thus provide further evidence for taking the GC as the domain in anaphor binding, against Reinhart and Reuland's claim that only co-argument counts as local binding.

²²Some interesting properties of the local reflexive are treated in Huang (1998b).

²³A fuller representation of the *de se* reading that parallels (87a) is (i):

- (i) λx (believe ($x, \lambda y$ (y 's pants are on fire))) (P)

where λy (y 's pants are on fire) is predicated on x , hence, co-indexed with x .

²⁴Unlike *claim* and *expect*, the verb *believe* does not permit an obligatory control structure. Thus, there is no grammatical sentence **John believes PRO to be innocent* on a par with (88a) representing the ambiguous reading. It is a grammatical, not a semantic, property peculiar to English *believe* (and some other verbs) that they permit Exceptional Case Marking but exclude PRO. *Claim* disallows ECM but permits PRO, whereas *expect* allows both. The ungrammaticality of **John believes PRO to be innocent* does not preclude *believe* ($J, \lambda x$ (*innocent* (x))) as an appropriate semantic representation for the *de se* reading of *John believes he is innocent*.

²⁵For the view that the bare reflexive *ziji* and its Japanese counterpart *zibun* are operators, see Katada (1991) and Huang (1993). In very much the same spirit, one may take Chierchia's assumption that a null operator is directly inserted to an IP-adjoined position, where it binds the reflexive as its variable:

- (i) *Zhangsan xiangxin* [OP_i [*Lisi you zai piping ziji_i le*]]

It is generally agreed that null operator is the closest syntactic correlate of a λ -operator. The reason why this is the case is that the null operator is itself anaphoric, itself needing to be bound (i.e., predicated on some term). From this point of view, it is entirely natural that the IP-adjoined *ziji* is also an appropriate syntactic source of the λ -operator in semantic representation. One consideration that led Chierchia to the assumption of OP-insertion rather than LF-movement is that the binding relation is unconstrained by familiar island conditions. However, at least at a descriptive level, it has also been well known that LF-movement affecting arguments is exempt from island conditions (see Huang, 1982, etc.). Whatever the ultimate explanation of why this is the case (cf. Tsai, 1994, among others), it should be noted that normal familiar null-operator constructions (e.g., *tough*-constructions, some relatives) do exhibit island effects. One must, on a principled basis, ensure that such constructions are not generated by the insertion of a null operator.

The idea represented by (95) is also in the spirit of Nishigauchi's (1999) proposal of a Point-of-View (POV) projection for constructions headed by the auxiliary *te simaw* in Japanese. Nishigauchi explicitly assimilates this proposal to the "Empty Topic" Phrase proposed in Huang (1984). In order to accommodate those cases involving Pivot antecedents, we shall, in fact, have to assume that the relevant phrase is the Pivot Phrase (or the POV Phrase). Another point of convergence that has come to our attention is Jayaseelan (1998).

²⁶The IP-adjunction assumed in (94) is entirely in the same spirit as the null-operator movement proposed in Huang (1984) for null pronouns that are discourse bound.

²⁷Part of Huang and Tang's claim concerning strict locality that is not preserved here is the idea of successive-cyclic IP adjunction. In their study, it is assumed that *ziji* is IP-adjoined successive-cyclically. This assumption was made for the purpose of

deriving the blocking effects. However, as they also note (see also Cole and Sung, 1994), the result was achieved only at additional technical costs. As we have seen, the blocking effects should be explained on pragmatic but not syntactic considerations. We therefore do not require the IP-adjunction of *ziji* to operate successive-cyclically.

²⁸Yet another aspect of the Huang and Tang analysis that is preserved here is the assumption that the relevant LF-movement that accounts for the LDR is a case of XP-movement, rather than head-movement of the sort advocated most forcefully by Cole, Hermon, and Sung (1990) and subsequent works. As we have seen, an XP-moved *ziji* is an A'-phrase that corresponds readily to the λ -operator in the semantic representation. According to the head-movement hypothesis, however, *ziji* does not occur at the A'-position of a proposition, but is moved to a position above the matrix verb:

- (i) *Zhangsan ziji_i xiangxin [Lisi you zai piping t_i le]*
Zhangsan self believe Lisi again at criticize Perf

In such an LF representation, the movement chain does not identify the bracketed clause as the property of a self-ascriber Source or Self. Such an LF representation does not provide us with the desired input for translation into the semantic representation (96).

One way to avoid this problem under the head-movement approach is to assume, as in Cole *et al.* (this volume), that *ziji* stops at the C of the CP under 'believe' but does not move up to the matrix I. The head-movement analysis (with movement to Infl above 'believe') was proposed originally to account for blocking effects by reducing them to agreement effects and, in part, to derive subject orientation. But if these considerations are not relevant, movement-to-C is a possible alternative.

²⁹Williams (1980) and Chierchia (1984) take obligatory control to be a case of predication.

³⁰Cole *et al.* (this volume) also point out that an LD *ziji* requires a c-commanding antecedent (generally), and they take this, together with the sloppy identity requirement, to mean that Mandarin LD reflexives are anaphors rather than pronouns. In our treatment, the anaphoric nature of the LD *ziji* follows from our taking the LF operator-variable construction (as in (94) and (96)) to be a structure of predication on a par with obligatory control and null-operator constructions. There is, of course, the case where the *ziji* operator is unbound, in which case the speaker is taken to be the "default" antecedent. (This could be reduced to a special case of local control under the performative analysis of declarative sentences.)

³¹On the other hand, in line with Cole *et al.* (1990) (also Lebeaux, 1983, Chomsky, 1986), we assume that head-movement is involved in the LF of locally bound *ziji*. See Huang (1998b) for considerations that led to this conclusion. Among other things, the LF head-movement analysis explains why the (locally bound) bare *ziji* permits only of distributive readings, unlike *himself* in English. It also explains subject-orientation, as has been pointed out by Cole *et al.* and others. Note that only the local *ziji* is truly subject-oriented in the syntactic sense, and this fact is explained by head-movement and the requirement of c-command (or subcommand). According to our logophoric analysis, the LD *ziji* is bound by an NP denoting the holder of a *de*

se belief. In the most typical cases, the holder of the *de se* belief is also the subject of a higher verb. But there are cases where this is not true. One of them is when the logophor is sentence-free, in which case the antecedent is the speaker, but not a syntactic subject. Another case is when the antecedent is the object of an experiencer verb that represents the Self, or an NP in a preceding discourse representing the Pivot. In these latter cases, there is no subject-orientation for the LDR.

³²An alternative to accommodate cases like (84) in syntax is to postulate a higher intentional predicate above the verb *xihuan*. This (light) predicate would denote the relevant mental attitude of its subject (cf. also note 25). This will not quite work with cases like (85), however, where the antecedent is an embedded subject. We are indebted to Gennaro Chierchia (personal communication) for discussion of related issues.

³³We thank Shizhe Huang, Audrey Li, and Yafei Li (personal communication) for the observation and useful discussion concerning (106)–(109).

³⁴Yafei Li (personal communication) noted that the following sentence is acceptable even if Lisi has not actually expressed a *de se* belief.

- (i) *ni kan, Lisi juran gan shuo Laoshi mei zhaogu ziji.*
you see, Lisi incredibly dare say teacher not care-for self
'Look, Lisi even has the nerve to say that the teacher did not care for him.'

The crucial part of the sentence that makes this acceptable is the speaker-oriented adverb 'incredibly'. The speaker of (i) takes it for granted that other listeners know that Lisi is talking about himself (even if unknowingly) and expresses his disbelief that Lisi makes such an unfair statement about the teacher. The speaker's point is that, given what we all know, Lisi is, *in effect*, virtually expressing a *de se* belief. We take this to be also a perspectivity effect, similar to the cases illustrated in the text.

³⁵Pan (1997) did not refer to these three earlier sources. He provided some critical comments on the perspectivity account presented in Kuno (1987), but did not discuss an earlier chapter of the same book devoted to direct discourse complementation.

³⁶Pan's contribution to this volume contains ideas adopted or revised from Pan (1997). Our discussion will be concerned with Pan (1997) primarily; we shall not discuss any point specific to Pan's current contribution.

³⁷See Chierchia (1989) for further discussion. This problem for Pan was pointed out in Huang (1998a).

³⁸An obligatory self-ascriber that occurs of the c-domain of an optional self-ascriber will not induce blocking. See Pan (1997) and his contribution in this volume on this point.

³⁹Pan (1997, p. 42) claimed that *ziji* could be used as a verb meaning 'self control', citing examples like (i):

- (i) *yi kandao nage qifen, jiu zaiye buneng ziji [sic] le.*
once see that atmosphere, then any-more cannot self Perf
'Once [he] sensed that atmosphere, [he] could no more control himself anymore.'

This claim clearly results from a misreading of the relevant Chinese orthography. The relevant character that means 'control' (actually, 'cease') is *yi*, not *ji* of *ziji*. The two characters are very similar in shape, but represent different morphemes.

⁴⁰Because we analyze all three subtypes of logophoricity in terms of self-ascription (explicit, implicit, and virtual) and attribute blocking effects to conflicts that arise in contexts of self-ascription, we also explain why all three subtypes of logophoricity exhibit blocking effects.

⁴¹There are many questions that have remained unanswered. One of these is why the blocking effects are found only in Chinese, but not, or not as clearly observed, in other languages. In fact, we have been told that some other languages also exhibit similar, but milder, blocking effects, including Korean, Japanese, and Italian (for the use of *proprio*). (Also, Malayalam, per Jayaseelan, 1998.) The fact that the blocking effects are mild and may be over ridden under special conditions goes along with the view that these are pragmatic, not grammatical, effects. There are, in fact, contexts in Chinese where the blocking effects may be suppressed. Two well-known examples are given below (from Yu (1992) and Xu (1993)):

- (i) *nüwang qing wo zuo zai ziji de shenbian.*
 queen ask I sit at self DE side
 'The queen asked me to sit by her side.'
- (ii) *Zhangsan shen-pa wo chaoguo ziji.*
 Zhangsan deep-fear I surpass self
 'Zhangsan very much fears that I might surpass him.'

The question still remains why the blocking effects seem, in general, to be stronger in Mandarin than in most other languages. We tentatively surmise that this is due to the fact that Mandarin (and other Chinese dialects) do not have a real complementizer than can distinguish direct from indirect speech. Whether and how precisely this idea may work remains to be seen.

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