

# X<sup>0</sup> REFLEXIVIZATION AND SUBJECT ORIENTATION IN KOREAN AND CHINESE

Hong-Ki Sohng

Department of Linguistics  
University of Washington, WA, USA

## 1. INTRODUCTION

Long-distance reflexivization (also called as X<sup>0</sup> reflexivization) has been an interesting topic in the literature, leading to subsequent research and linguistic discoveries that have uncovered outstanding properties of long-distance reflexives in natural languages (Pica 1987, Manzini & Wexler 1987, Battistella 1989, Cole, Herman, & Sung 1990, Katada 1991, Huang & Tang 1991, Cole & Sung 1994, etc.).<sup>1</sup> X<sup>0</sup> reflexives in natural languages are well-known to exhibit such properties as subject orientation and long-distance antecedence. On the other hand, X<sup>0</sup> reflexives in Korean and Chinese show distinct properties such as split antecedency, arbitrary reference, inherent reference, etc., which are not shared by X<sup>0</sup> reflexives in such European languages as Italian, Icelandic, etc.

Considering that X<sup>0</sup> reflexives in these Asian languages behave differently from those in such European languages as Italian and Icelandic, the current paper will discuss X<sup>0</sup> anaphora in Korean and Chinese. I will assume Cole & Sung's (1994) Head Movement Analysis in this paper, in which the Binding Theory applies at LF and X<sup>0</sup> reflexives undergo head-movement to the functional category I (or T) at LF.

Section 2 discusses the properties of X<sup>0</sup> reflexives in Korean and Chinese in detail. It is found that Korean X<sup>0</sup> reflexives manifest distinct anaphoric properties such as weak subject orientation, split antecedency, arbitrary reference, and inherent reference, and that Chinese *ziji* shows strong subject orientation, the so-called blocking effect, arbitrary reference, and inherent reference.

Section 3.1 introduces the framework of the Head Movement Analysis put forward by Cole & Sung (1994). In 3.1, I propose an account of subject orientation for X<sup>0</sup> reflexives in Korean and Chinese based on "binding" and "chain-binding" in the sense of Barss (1986), and show that the two kinds of subject orientation for the X<sup>0</sup> reflexives in Korean and Chinese readily follow from this account of Subject Orientation, whose LF Condition on Chain-binding excludes an object from being an antecedent for Chinese *ziji* with no inherent  $\phi$ -features. Section 3.2 will prove that the blocking effect for Chinese *ziji* comes from LF Spec-head agreement that assigns and checks the  $\phi$ -features of *ziji* with no inherent  $\phi$ -features, while the absence of the blocking effect for the Korean X<sup>0</sup> reflexives is due to their inherent  $\phi$ -features. Section 3.3 will show that the antecedence of *ziji* by *bal/bei* nominals is explained in the split-I phrase structure originating with Pollock (1989) in terms of LF Spec-head agreement.

Overall, under the current inquiry, X<sup>0</sup> reflexivization in Korean and Chinese has to do with whether the X<sup>0</sup> reflexives in these Asian languages have inherent  $\phi$ -features.

## 2. X<sup>0</sup> REFLEXIVES IN KOREAN AND CHINESE

The Korean X<sup>0</sup> reflexive *caki* is restricted to the third-person NPs (DPs), as shown in (1a-b). The other X<sup>0</sup> reflexive *casin* behaves differently in that regard. It can refer to the second or the third person DP, but it can only refer to the first-person DP in the local domain in which there is no other second or third-person singular DP, as illustrated in (2-3). The descriptive generalizations on *casin* are given in (4).

- (1) \*Nay<sub>i</sub>/ney<sub>i</sub>-ka/John<sub>i</sub>-i caki<sub>i</sub>-lul coaha-n-ta.  
I/you-Nom/John-Nom self-Acc like-Prs-Dec  
'\*I/you/John like(s) myself/yourself/himself.'

---

<sup>1</sup> As has been observed by several linguists including Pica (1984, 1987), Yang, D.-W. (1983, 1989), etc., LD reflexives are monomorphemic, X<sup>0</sup> elements while local reflexives are polymorphemic, X<sup>max</sup> (= XP) elements.

- (2)  $Nay_i/ney_i$ -ka/ $John_i$ -i casin<sub>i</sub>-ul coaha-n-ta.  
I/you-Nom/John-Nom self-Acc like-Prs-Dec  
'I/you/John like(s) myself/yourself/himself.'
- (3) a.  $Nay_i$ -ka  $ne_j$ -eykey casin<sub>i/j</sub>-uy chinkwu-tul-eytaehay malha-yess-ta.  
I-Nom you-Dat self-Gen friend-Pl-about tell-Pst-Dec  
'I told you about my/your friends'  
b.  $Ney_i$ -ka  $Tom_j$ -eykey casin<sub>i/j</sub>-uy uymwu-eytaehay malha-yess-ta. ( $i > j$ )  
You-Nom Tom-Dat self-Gen duty-about tell-Pst-Dec  
'You told Tom about your/?(?)his duties.'  
c.  $John_i$ -i [ $nay_j$ -ka [ $Mary_k$ -ka casin<sub>i/k</sub>-ul salangha-n-ta-ko]  
John-Nom I-Nom Mary-Nom self-Acc love-Prs-Dec-Comp  
sayngkakha-n-ta-ko] malha-yess-ta.  
think-Prs-Dec-Comp say-Pst-Dec  
'John said that I think that Mary loves him/\*me/herself.'
- (4) A. Casin has  $\phi$ -features [2<sup>nd</sup>] and [3<sup>rd</sup>] specified in its lexical entry.  
B. Casin has the form [ $pro_{+1}$  casin] when the first person DP occurs with the absence of any other second or third person DP in the local domain.

Unlike the Korean  $X^\circ$  anaphors, *ziji* is used for all persons, genders, and numbers, as is shown in (5).

- (5) a. Zhangsan<sub>i</sub> renwei [wo /ni<sub>j</sub> hai-le ziji<sub>i/j</sub>]  
Zhangsan think I / you hurt-Asp self  
'Zhangsan thought that I / you hurt \*him/myself/yourself.'  
b. Zhangsan<sub>i</sub> renwei Lisi<sub>j</sub> zhidao Wangwu<sub>k</sub> xihuan ziji<sub>i/j/k</sub>  
Zhangsan think Lisi know Wangwu like self  
'Zhangsan thinks Lisi knows Wangwu likes him/himself.'

It has been widely observed in the literature (Pica 1987, Battistella 1989, Cole, Herman, & Sung 1990, Cole & Sung 1994) that LD  $X^\circ$  reflexives are limited to subject antecedents, as illustrated by Chinese *ziji*.

- (6)  $John_i$  gaosu  $Tom_j$   $Mary_k$  piping-le ziji<sub>i/j/k</sub>.  
John tell Tom Mary criticize-Asp self  
'John told Tom that Mary criticized him(John)/herself.'

Unlike several previous approaches (Yang, D.-W. 1989, Lee, C.-M. 1973, Lee, H.-B. 1976, etc.), I agree, following Moon (1995), that Korean  $X^\circ$  reflexives manifest weak subject orientation in the sense that subject antecedents are preferred over object antecedents, but objects are also possible antecedents, as in (3b) and (7a-b).

- (7) a.  $John_i$ -i  $Mary_j$ -eykey [ $Tom_k$ -i caki / casin<sub>i/j/k</sub>-(l)ul coaha-n-ta-ko] malha-yess-ta. ( $i, k > j$ )  
John-Nom Mary-Dat Tom-Nom self-Acc like-Prs-Dec-Comp say-Pst-Dec  
'John told Mary that Tom like him/?her/himself.'  
b.  $Na_i$ -nun  $Mary_j$ -eykey [sensayngnim<sub>k</sub>-i caki / casin<sub>i/j/k</sub>-(l)ul coaha-n-ta-ko] malha-yess-ta.  
I-Nom Mary-Dat the teacher-Nom self-Acc like-Prs-Dec-Comp say-Pst-Dec  
'I told Mary that the teacher likes \*me/her/himself.'

Chinese *ziji* is well-known in the literature (Huang & Tang 1991, Huang, Y 1994, Cole & Sung 1994, etc.) to manifest the so-called blocking effect in that the LD reflexive is blocked when an immediately higher subject differs in person from a lower subject, as in (8). Korean  $X^\circ$  anaphors *caki* and *casin*, on the other hand, do not manifest the blocking effect, as shown in (9).

- (8) Zhangsan<sub>i</sub> renwei wo<sub>j</sub> zhidao Wangwu<sub>k</sub> xihuan ziji<sub>i/j/k</sub>.  
Zhangsan think I know Wangwu like self  
'Zhangsan thinks that I know that Wangwu likes \*me/himself.'

- (9) Chelswu<sub>i</sub>-nun [nay<sub>j</sub>-ka caki<sub>i/j</sub>\*/casin<sub>i/j</sub>-ul salangha-n-ta-ko] sayngkakha-n-ta.  
 Chelswu-Top I-Nom self-Acc love-Prs-Dec-Comp think-Prs-Dec  
 'Chelswu thinks I like him/myself.'

*Caki-tul* and *casin-tul* in Korean, plural forms for *caki* and *casin*, respectively, are shown in (10) to take split antecedents, like Japanese *zibun*: it takes the matrix subject and the matrix object as antecedents.

- (10) Tom<sub>i</sub>-i Mary<sub>j</sub>-eykey [caki-tul / casin-tul<sub>i+j</sub>-uy sacin-tuli ku pang-ey  
 Tom-Nom Mary-Dat self-Pl-Gen picture-Pl-Nom the room-Loc  
 censitoy iss-ta-ko] malha-yess-ta.  
 be on displ-Prs-Dec-Comp tell-Pst-Dec  
 'Tom told Mary that pictures of themselves were on display in the room.'

Korean and Chinese X<sup>0</sup> anaphors may have arbitrary reference, as illustrated in (11-12).

- (11) John-un [caki-ka caki-uy calmoss-ul kochi-eya ha-n-ta]-ko sayngkakha-n-ta.  
 John-Top self-Nom self-Gen faults-Acc correct-should-Prs-Dec-Comp think-Prs-Dec  
 'John thinks that he/one should correct his/ones' faults.'
- (12) Yeye shuo ziji zui liaojie ziji.  
 grandpa say self most know self  
 'Grandpa says that he/one knows himself/oneself best.'

Another interesting property of Korean and Chinese X<sup>0</sup> reflexives is that they may have inherent reference. Korean X<sup>0</sup> anaphors do not need an antecedent when interpreted as having second person features, as shown in (13), and Chinese *ziji* may have first or second person features under a contrastive context, as shown in (14) (Pan 1997).

- (13) Caki-ka chakhay.  
 self-Nom be good  
 'You are good.'
- (14) Ziji weisheme bu renzhengde xiangyixiang ne?  
 self why not carefully think-over Q  
 'Why didn't you/I think it over carefully?'

X<sup>0</sup> anaphors in Korean and Chinese have in common several properties such as arbitrary reference, inherent reference, etc., not shared by X<sup>0</sup> anaphors in such European languages as Icelandic and Italian, and in these regards, X<sup>0</sup> anaphors in these Asian languages are taken to differ from those in such European languages.

### 3. SUBJECT ORIENTATION AND X<sup>0</sup> REFLEXIVIZATION IN KOREAN AND CHINESE

#### 3.1 Head Movement and the Account of Subject Orientation

The Binding Theory is assumed to apply at LF under the Head Movement Analysis, as there is mounting evidence for that. Following Battistella (1989), Cole & Sung (1994) assume that all apparent LD reflexives involve head movement from Infl to Infl. Based on the *Barriers* framework (Chomsky 1986) and work on head movement by Chomsky (1991), Pollock (1989), etc., they assume that X<sup>0</sup> elements can adjoin to X<sup>0</sup> positions, and that X<sup>max</sup> elements can adjoin to X<sup>max</sup> positions. As XP reflexives are not operators, they are not allowed to move through Spec CP. Hence, they remain in-situ, being locally bound in its local domain. In contrast, X<sup>0</sup> reflexives may move from head to head unboundedly, being long-distance bound, so long as the movement does not violate the Head Movement Constraint or the Shortest Movement Condition.

Consider the following example from Chinese.

- (15) Zhangsan<sub>i</sub> renwei Lisi<sub>j</sub> zhidao Wangwu<sub>k</sub> xihuan ziji<sub>i/j/k</sub>.  
 Zhangsan think Lisi know Wangwu like self  
 'Zhangsan thinks that Lisi knows that Wangwu likes him/himself.'

At LF, *ziji* moves from its base-generated position to V, and then to I of its own clause. Then it moves from I to C, C to V, etc. in the same  $X^0$  movement pattern, finally adjoining to the matrix I, in case the matrix subject antecedes *ziji*. Following the *Barriers* framework, Cole & Sung assume that the adjunction of N to I has the effect of making I lexical, and consequently I L-marks VP, voiding the barrierhood of VP. Thus the trace of *ziji* in V is antecedent-governed by the trace left in I. No barrier intervenes all through the movement of *ziji*, thus allowing *ziji* to be long-distance bound. Movement that terminates at  $I_1$ ,  $I_2$ , or  $I_3$  makes the corresponding subject DP an antecedent for *ziji* so long as the reflexive has the same  $\phi$ -features as the subject DP and is coindexed with it. Under the Head Movement Analysis,  $X^0$  reflexives undergo LF movement, thereby being long-distance bound and subject oriented.

It was mentioned in section 2.1 that Korean  $X^0$  reflexives manifest weak subject orientation in the sense that subject antecedents are preferred over object antecedents, but objects are also possible antecedents, as shown in (3b) and (7a-b). Cole & Sung's Head Movement Analysis which is designed to account for strong subject orientation per se cannot give an account of weak subject orientation.

I propose (16) as an account of subject orientation for  $X^0$  reflexives in Korean and Chinese based on "binding" and "chain-binding" in the sense of Barss (1986); I also propose (17) as the LF Condition on chain-binding, to account for the two kinds of subject orientation at hand. I will follow Huang & Tang's approach and claim that Chinese *ziji* has no  $\phi$ -features specified in the Lexicon, and that it acquires its  $\phi$ -features and checks them via Spec-head agreement at LF, assuming absence of AgroP in Korean and Chinese.<sup>2</sup>

(16) Subject Orientation for  $X^0$  reflexives in Korean and Chinese

- A. A DP that directly binds an  $X^0$  reflexive and a DP that chain-binds it are potential antecedents for an  $X^0$  reflexive.
- B. A DP that directly binds an  $X^0$  reflexive is preferred over a DP that chain-binds it in each binding domain.

(17) LF Condition on Chain-binding

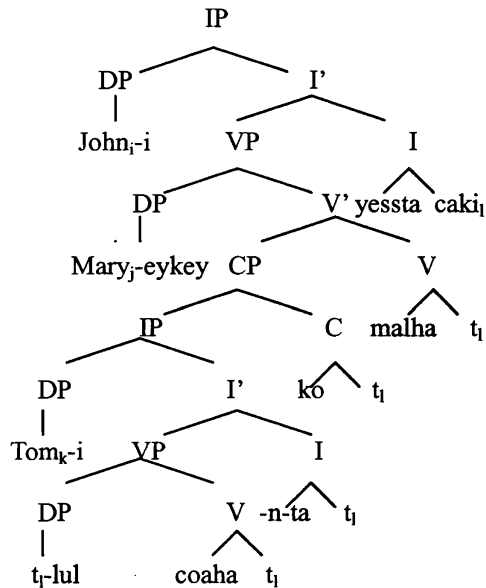
A DP can chain-bind an  $X^0$  reflexive iff all the members of that  $X^0$  reflexive's chain have  $\phi$ -features.

Cole & Sung take the pattern in which LD uses of  $X^0$  reflexive forms are subject oriented and local uses of the same forms are not subject oriented to be general, and they assume that in languages where this pattern occurs, no movement takes place in the derivation of local uses of  $X^0$  reflexives and that both the subject and the non-subject antecedent are possible in local uses of  $X^0$  reflexives. However, their analysis per se is not adequate to explain the fact that local uses of  $X^0$  reflexives in Korean show a preference for subject antecedents, and that Chinese *ziji* manifests a very strong preference for subject antecedents both in the local and the long-distance domain. I thus claim contra Cole & Sung that an  $X^0$  reflexive obligatorily raises and adjoins to I, implying that subject orientation is available to local uses of  $X^0$  reflexives as well as long-distance uses of them.

Consider the LF derivation for (7a) below.

<sup>2</sup> Huang & Tang (1991) argue that *ziji* has no  $\phi$ -features in the Lexicon, that it acquires its  $\phi$ -features in Syntax, and that it gets its R-index at LF.

(18)



When *caki* terminates its LF movement at the embedded I (or Agr), the embedded clause is the binding domain for *caki*, and the embedded subject *Tom* qualifies as an antecedent for *caki*, satisfying the c-command requirement. In case the reflexive goes up the clause and terminates its movement at the matrix I, the matrix clause is the binding domain for the reflexive in which there is an indexing BT-compatible with the reflexive and its governor, the matrix subject. The matrix subject *John* directly binds *caki* adjoined to the matrix Agr and the matrix object *Mary* chain-binds the Korean X<sup>0</sup> reflexive with inherent  $\phi$ -features in line with (17), and the matrix subject is preferred over the matrix object in conformity with Subject Orientation (16B).

Consider the LF derivation for (7b). The embedded subject *sensayngnim* qualifies as an antecedent when *caki* ends its derivation adjoined to the embedded I and is coindexed with it. When *caki* ends its derivation adjoined to the matrix I, however, the matrix subject with the  $\phi$  features of [1<sup>st</sup> person, sg] does not qualify as an antecedent, as *caki* has inherent  $\phi$ -features [3<sup>rd</sup> person] that disagree with those of the subject. Consequently, the object DP that chain-binds the reflexive is the only choice in the long-distance binding domain.

Consider X<sup>0</sup> reflexivization of *casin* under the present approach.

- (19) a. Ney<sub>i</sub>-ka Mary<sub>j-eykey</sub> [casin<sub>ij</sub>-uy sacin-i ku pang-ey censitoy iss-ta-ko] malha-yess-ta  
 you-Nom Mary-Dat self-Gen picture-Nom the room-Loc be on display-Prs-Dec-Comp tell-Pst-Dec  
 'You told Mary that a picture of you/her is on display in the room.'
- b. John<sub>i</sub>-i [Mary<sub>k</sub>-ka [nay<sub>j</sub>-ka casin<sub>ij/k</sub>-ul salangha-n-ta-ko] sayngkakha-n-ta-ko] malha-yess-ta  
 John-Nom Mary-Nom I-Nom self-Acc love-Prs-Dec-Comp think-Prs-Dec-Comp tell-Pst-Dec  
 'John said that Mary thinks that I love him/her/myself.'

The binding possibilities of *casin* in these examples readily follow from the account of Subject Orientation (16). The reflexive *casin* with  $\phi$ -features [+2/+3] in (19a) raises and adjoins to Agr in I at LF, and the subject DP *ne* with [+2] is preferred over the object DP *Mary* with [+3] in line with (16B). *Casin*, when referring to the local subject *na* in (19b), has the form [pro<sub>[+1]</sub> casin] in line with (4B), and the local subject qualifies as antecedent. In other instances, the reflexive which has  $\phi$ -features [2<sup>nd</sup>/3<sup>rd</sup>] raises and adjoins to the intermediate Agr or to the matrix Agr and picks up as an antecedent the intermediate subject or the matrix subject that has the agreeing person feature.

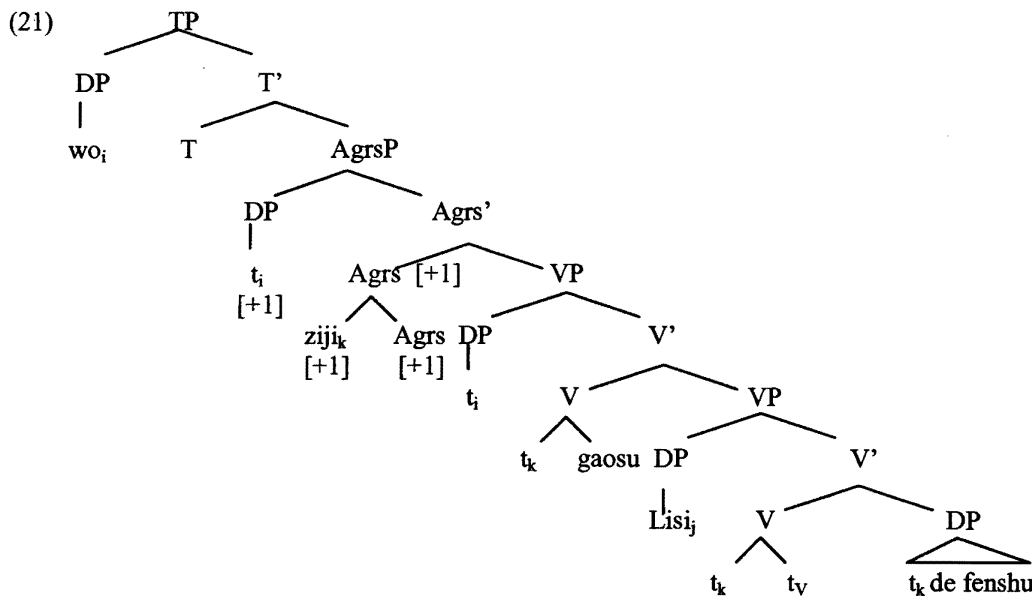
The investigation so far proves that LD anaphora of *caki* and *casin* in Korean is adequately accounted for in terms of the account of Subject Orientation for X<sup>0</sup> reflexives in Korean and Chinese under the Head Movement Analysis.

It was mentioned in section 2 that Chinese *ziji* shows strong subject orientation: antecedents of *ziji* are in

general subjects, as shown in (20).

- (20) a. *Wo<sub>i</sub> gaosu Lisi<sub>j</sub> ziji<sub>i/\*j</sub> de fenshu.*  
 I tell Lisi self 's grade  
 'I told Lisi my own grade.'  
 b. *John<sub>i</sub> gaosu Tom<sub>j</sub> Mary<sub>k</sub> piping-le ziji<sub>i/\*j/k</sub>.*  
 John tell Tom Mary criticize-Asp self  
 'John told Tom that Mary criticized him(John)/herself.'

To account for the possible antecedent in the Bei Phrase and the Ba Phrase for Chinese *ziji*, Cole & Wang (1996) adopt the elaborated phrase structure for a number of functional heads originating with Pollock (1989), claiming that Chinese must be posited to have an Agr projection despite the absence of overt verb agreement. I follow Cole & Wang to assume that the Agr projection is mandated by Principles of UG. I follow Huang & Tang to assume that *ziji* has no inherent  $\phi$ -features, and I claim that *ziji* picks up its  $\phi$ -features and checks them via Spec-head agreement at LF. Spec-head agreement is taken to occur in TP and AgrsP, but not in VP, as no agreement is assumed to take place in the projection of V. Applying a version of the split-I phrase structure to the LF derivation of (20a) yields the following LF representation.



*Ziji* undergoes LF head-movement to adjoin to Agr, and in its position adjoined to Agr, it picks up the person feature [+1] from that of Spec AgrsP via Spec-head agreement. The whole structure in (21) is the binding domain for *ziji* in line with CFC Binding Theory, and the subject *wo* 'I' that c-commands the reflexive becomes the antecedent for *ziji*, assigning its R-index to it. In (21), *ziji* does not get its person feature via Spec-head agreement until it lands at the Agrs node, which means that it has been left unspecified with regard to its  $\phi$ -features before arriving at Agrs. Thus, the object DP *Lisi* cannot chain-bind *ziji* with no specific person feature.<sup>3</sup>

Consider the LF derivation for (20b). *Ziji* undergoes LF head movement to adjoin to the local Agrs (= I), and in its position adjoined to the embedded Agrs, it picks up its person feature from that of Spec AgrsP. And when *ziji* is adjoined to the matrix Agrs, its already given feature [+3] is checked against the feature of the matrix Agrs via Spec-head agreement, and is judged well-formed as it is in agreement with the person feature of the matrix Agrs. As

<sup>3</sup> A DP can chain-bind the LD reflexive *ziji* with a specific person feature, say, [+3], which is equivalent in meaning to 'himself', but it cannot chain-bind *ziji* with no person feature at all, which is equivalent in meaning to 'self' in LF, the level at which interpretation occurs.

for the matrix object, it c-commands the trace of *ziji* left in the matrix V, which has [+3] that was assigned to it via Spec-head agreement in the embedded clause. The matrix object *Tom* apparently seems to chain-bind *ziji* with [+3]. We should note that it is contradictory for a local object not to chain-bind an X<sup>0</sup> reflexive with no inherent  $\phi$ -features, as in (20a), but for a higher object to chain-bind it. The LF Condition (17) uniformly excludes an object from being a possible antecedent for an X<sup>0</sup> reflexive with no inherent  $\phi$ -features. The matrix object *Tom* c-commands the trace of *ziji* adjoined to the matrix V, but the first and the second members of the *ziji*'s chain have no  $\phi$ -features, so the matrix object cannot chain-bind *ziji* in line with the LF Condition (17).

It thus follows from the LF Condition on Chain-binding that a DP can chain-bind a Korean X<sup>0</sup> reflexive with inherent  $\phi$ -features, but that a DP cannot chain-bind the Chinese X<sup>0</sup> reflexive with no inherent  $\phi$ -features. Hence, the two kinds of subject orientation at hand follow from Subject Orientation and its LF Condition on Chain-binding.

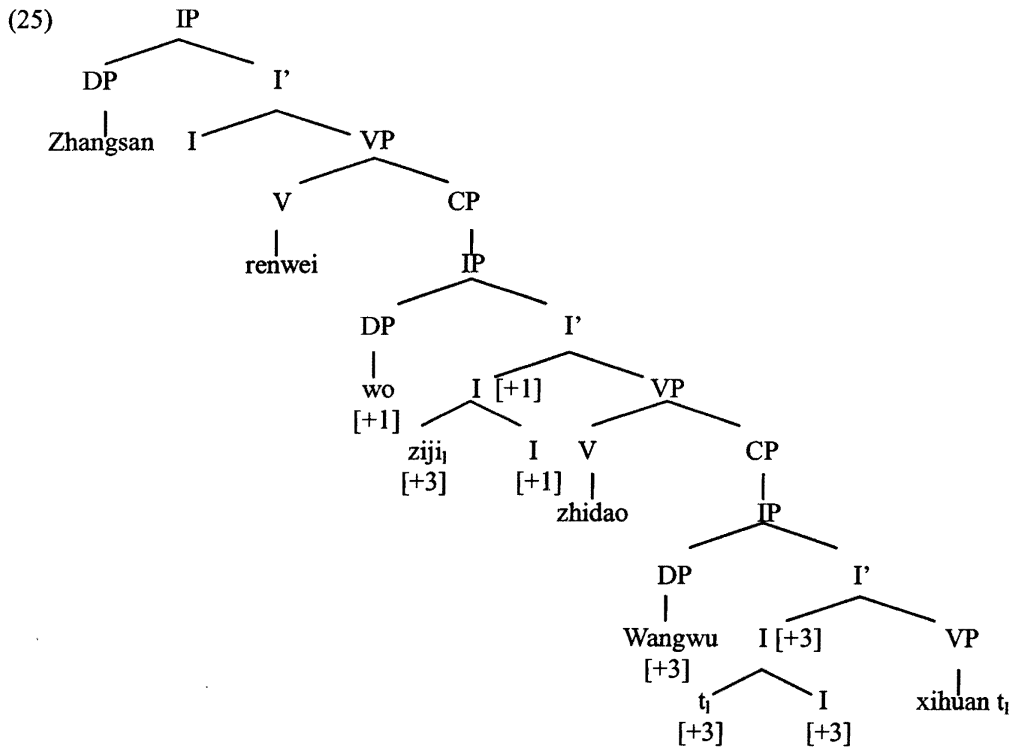
### 3.2 The Blocking Effect

The X<sup>0</sup> reflexive *ziji* in Chinese is well-known to show the blocking effect: in case its next higher clause subject differs in person from its local subject, the LD reflexive is blocked, as shown in (22). Cole & Sung (1994) incorrectly argue that the Korean X<sup>0</sup> reflexive *casin* shows the blocking effect, and further claim that Chinese and Korean lack verb agreement, showing the blocking effect, whereas Italian and Icelandic do have verb agreement, lacking the blocking effect.

- (22) Zhangsan<sub>i</sub> renwei wo<sub>j</sub> zhidao Wangwu<sub>k</sub> xihuan ziji<sub>i/\*j/k</sub>.  
 Zhangsan think I know Wangwa like self  
 'Zhangsan thinks that I know that Wangwu likes \*him/\*me/himself.'
- (23) a. Mary<sub>i</sub>-nun [nay<sub>j</sub>-ka casin<sub>ij</sub>-ul salangha-n-ta-ko] sayngkakha-n-ta.  
 Mary-Top I-Nom self-Acc love-Prs-Dec-Comp think-Prs-Dec  
 'Mary thinks that I love her/myself.'
- b. Mary<sub>i</sub>-nun [nay<sub>j</sub>-ka caki<sub>i/\*j</sub>-lul salangha-n-ta-ko] sayngkakha-n-ta.  
 Mary-Top I-Nom self-Acc love-Prs-Dec-Comp think-Prs-Dec  
 'Mary thinks that I love her/\*myself.'
- (24) John<sub>i</sub>-ga watasi<sub>j</sub>-ga minna-ni Bill<sub>k</sub>-ga zibun<sub>ij/k</sub>-o hihansita koto-o hanasita to omotte-iru.  
 John-Nom I-Nom everyone-Dat Bill-Nom self-Acc criticize the fact that-Acc told that think  
 'John thinks that I told everyone the fact that Bill criticizes him/me/himself.'

As is shown in the above examples, Korean and Japanese in which Infl lacks person features do not show the so-called blocking effect, like Italian and Icelandic, and Chinese is the only language in which the X<sup>0</sup> reflexive is blocked when an immediately higher subject differs in person from a lower subject. In other words, the so-called blocking effect has nothing to do with Infl lacking person features, contra Cole & Sung. Thus, Cole & Sung's Feature Percolation Principles to account for the blocking effect based on whether I is inflected for person features are on the wrong track.

Under the present approach, the so-called blocking effect follows from Spec-head agreement at LF. Let us consider the LF derivation for (22) in what follows.



*Ziji*'s adjunction to the local Agrs assigns it [+3] via Spec-head agreement at LF. It then moves up the next higher clause to adjoin to the intermediate Agrs, and it has its  $\phi$ -features checked against those of the subject via Spec-head agreement. Then, there occurs a feature clash between the intermediate Agrs node and *ziji* adjoined to it. This derivation is thus ruled out as ill-formed. Thus, neither the intermediate subject nor the matrix subject qualifies for an antecedent, and only the local subject can be an antecedent for *ziji* in (25).

The blocking effect manifested in LD anaphora of Chinese *ziji*, accordingly, follows from LF Spec-head agreement that assigns and checks the  $\phi$ -features of *ziji* with no inherent  $\phi$ -features. The absence of AgroP for Chinese also accounts for why the object DP can be neither an antecedent nor a blocker in case of LD anaphora of Chinese *ziji*. The absence of the blocking effect for Korean  $X^0$  anaphors is, on the other hand, attributed to the fact that they have inherent  $\phi$ -features. Inherent  $\phi$ -features of Korean  $X^0$  reflexives are not assigned or checked in terms of LF Spec-head agreement. Korean  $X^0$  anaphors with inherent  $\phi$ -features move up the clauses to choose a DP with matching  $\phi$ -features as an antecedent.

### 3.3 Antecedence of *Ziji* by *Ba/Bei* Nominals

Consider next the sentences in which *ba/bei* nominals are the antecedents for *ziji*.

- (26) a. Zhangsan<sub>i</sub> yiwei wo<sub>j</sub> hui ba ni<sub>k</sub> ling hui le ziji<sub>i/y/k</sub> de jia  
 Zhangsan think I will ba you lead back Asp self de home  
 'Zhangsan thought I would take you back to \*his/my/your home.'
- b. Zhangsan<sub>i</sub> yiwei wo<sub>j</sub> hui bei ni<sub>k</sub> ling hui ziji<sub>i/y/k</sub> de jia  
 Zhangsan think I will bei you lead back self de home  
 'Zhangsan thought I would be taken by you back to \*his/my/your home.'

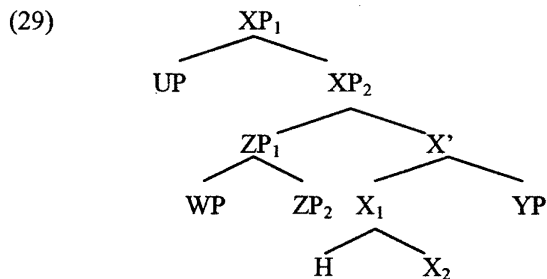
As Cole & Wang noted, the non-subject *ba/bei* nominals as well as the subjects are all potential antecedents for *ziji*, but the *ba/bei* nominals never act as a blocker for a higher antecedent, as shown in the above sentences. As was proposed in 3.1, I adopt the split-I phrase structure for Chinese proposed by Cole & Wang originating with Pollock, and assume, following Huang (1993), that the subject is generated in [Spec, VP] position and moves in syntax to [Spec, T/AspP].



I adopt an adjunction analysis of *bei* and *ba* presented in the appendix in Cole & Wang, under which the nominals following *bei* and *ba* are treated as being adjoined to AgrsP. Considering the word order ‘S-V-O’ in Chinese, I assume that the *ba* nominal originates in the complement position of V and that it obligatorily adjoins to AgrsP in a manner similar to scrambling manifested in Korean, Japanese, German, etc.<sup>4</sup> Cole & Wang argue against the adjunction analysis and claim that adjunction provides no explanation for why the ordering of *bei* + NP and *ba* + NP is fixed, but it is shown to be common that some kind of ordering is established among adjoined elements, as shown in (27-28).

- (27) a. John solved the problem nicely yesterday.  
       b. ??John solved the problem yesterday nicely.
- (28) a. the big red building  
       b. ?(?) the red big building

The manner adverbial must precede the time adverbial in (27), and there exists some kind of ordering among adjoined adjectives in (28). Thus, I do not consider this issue on ordering as a genuine problem for this analysis. Here, I adopt Chomsky’s proposals on “the minimal domain” and “equidistance” to accommodate the movements and Spec-head agreement that occur in the LF derivations of the sentences with *ba/bei* nominals under the current approach.



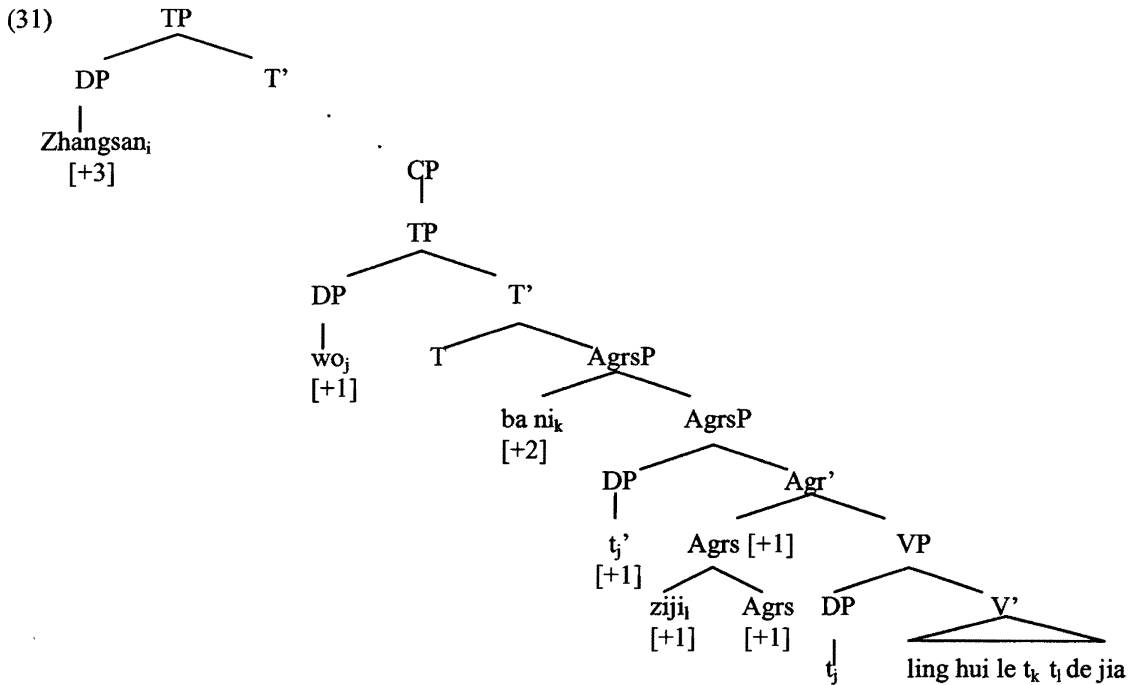
The minimal domain of some head X is taken to be the set of nodes contained in Max(X) that are distinct from and do not contain X. Thus, the minimal domain of some head X in (83) comprises its internal domain, which is YP, and its checking domain, which is {UP, ZP, WP, H}. The definition of shortest movement based on the minimal domain and equidistance is given as follows (Chomsky 1995:184).

- (30) If  $\alpha, \beta$  are in the same minimal domain, they are equidistant from  $\gamma$ .

The LF derivation of (26a) is given below.

---

<sup>4</sup> The obligatory shift of the *ba* nominal might be due to a checking of a Focus feature in Agrs. I will not deal with this issue in detail here, as this is not a major concern of this research.



In the above structure, the minimal domain of V comprises the trace of the subject in Spec VP and the *ba* nominal before movement of the *ba* takes place. Thus, the trace of the subject in Spec VP and the *ba* nominal are equidistant from some XP  $\gamma$ , and as such, the *ba* nominal can cross the trace of the subject in Spec VP to some higher XP position. Furthermore, as this movement aims at adjunction to Spec AgrsP, the *ba* nominal can also cross the trace of the subject in Spec AgrsP, since the adjoined position to Spec AgrsP and Spec AgrsP are in the minimal domain of Agrs. Accordingly, the obligatory shift of the object *ba* nominal does not violate Relativized Minimality or the "Shortest Movement" condition. Head movement adjoins *ziji* to the local Agrs at LF, and in (30), *ziji* in the adjoined position to Agrs can pick up the  $\phi$ -features of either the subject through the trace of the subject in Spec AgrsP or the *ba* nominal in the outer Spec AgrsP via Spec-head agreement. As the *ba* nominal and the subject (or the trace of the subject) are in the minimal domain of Agrs, no potential minimality problem arises with regard to the assignment of the  $\phi$ -features of either the *ba* nominal or the subject to *ziji* via Spec-head agreement at LF. Thus, in this configuration, both the *ba* nominal and the subject are in the governing category of *ziji* in line with CFC Binding Theory, and both qualify for antecedents for *ziji*.

Consider the derivation in which *ziji* gets the person feature [+2] from the *ba* nominal in the embedded clause via Spec-head agreement and moves up the clause in order to adjoin to the matrix Agrs. *Ziji* with [+2] moves next to the embedded T, and it has its  $\phi$ -features checked via Spec-head agreement in the projection of T. As *ziji* contained in the embedded T has a different person feature from that of Spec TP, a feature clash occurs in there, and this derivation is judged ill-formed in terms of Spec-head agreement at LF. *Ziji* must end its journey at the matrix Agrs, but its movement to the embedded T leads to a feature clash via Spec-head agreement, resulting in ill-formedness. Thus, *ziji* cannot move further up the clause to arrive at its required destination, the matrix Agrs, and thus, this derivation is filtered out as illegal in the LF component.

Consider next the derivation in which *ziji* gets its person feature [+1] from the trace of the embedded subject via Spec-head agreement and moves up the clause. *Ziji*'s adjunction to the embedded T is judged well-formed as *ziji* whose person feature comes from that of the subject must agree in person with the embedded subject. In the next cyclic derivation, *ziji* moves up to adjoin to the matrix Agrs, and in that adjunction site, there is a difference in the  $\phi$ -features of the trace of the subject with [+3] and *ziji* with [+1] contained in the matrix Agrs, and thus this movement results in ungrammaticality in terms of Spec-head agreement.

Considering the semantics of the *ba/bei* nominals in (26a-b), we can say that the embedded subject must be distinct from the *ba/bei* nominals with regard to the  $\phi$ -features. Accordingly, *ziji*'s adjunction to a higher Agrs

requires *ziji* to acquire its  $\phi$ -features from the embedded subject via Spec-head agreement, excluding the ill-formed derivation in which *ziji* gets its  $\phi$ -features from the *ba/bei* nominals and causes a feature clash with the embedded subject in the embedded Spec TP. This is, in turn, compatible with the long-standing view that the blocking effect manifested in Chinese LD reflexivization only relates to the  $\phi$ -features of the subjects, but not to the  $\phi$ -features of the objects, the object *ba* nominal, or the *bei* nominal, which provides firm support to the present analysis.

Overall, the blocking effect seen in all the examples so far is correctly predicted under the present inquiry based on LF Spec-head agreement for Chinese *ziji* with no inherent  $\phi$ -features.

#### 4. CONCLUSION

This paper argues for a distinction between X<sup>0</sup> reflexives in Korean and Chinese and those in such European languages as Italian and Icelandic, based on different behaviors such as arbitrary reference, inherent reference, etc. that the X<sup>0</sup> anaphors in these Asian languages show, and has introduced the account of Subject Orientation and the LF Condition on Chain-binding to give a unified account of X<sup>0</sup> anaphora in these Asian languages.

The X<sup>0</sup> reflexives in Korean manifest weak subject orientation and no blocking effect, whereas *ziji* in Chinese shows strong subject orientation and the so-called blocking effect. Under the suggested analysis in this paper, this is attributed to the fact that the X<sup>0</sup> reflexives in Korean have inherent  $\phi$ -features, while the X<sup>0</sup> anaphor in Chinese does not.

Section 3.1 has introduced the Head Movement Analysis proposed by Cole & Sung (1994), upon which the current research in this paper is based. I have shown that weak subject orientation for the Korean X<sup>0</sup> reflexives and strong subject orientation for the Chinese X<sup>0</sup> reflexive are explained in terms of the account of Subject Orientation, whose LF Condition on Chain-binding excludes an object from being an antecedent for the Chinese X<sup>0</sup> anaphor with no inherent  $\phi$ -features.

In 3.2 - 3.3, I have proven that the blocking effect for Chinese *ziji* is accounted for in terms of LF Spec-head agreement, that the antecedence of *ziji* by *ba/bei* nominals is explained in the split-I phrase structure originating with Pollock (1989) in terms of LF Spec-head agreement, and that the absence of the blocking effect for the Korean X<sup>0</sup> reflexives is due to the fact that they have inherent  $\phi$ -features.

In conclusion, X<sup>0</sup> reflexivization in Korean and Chinese has to do with whether the X<sup>0</sup> reflexives in these Asian languages have inherent  $\phi$ -features. Under the current approach, X<sup>0</sup> anaphora in these Asian languages follows from the account of Subject Orientation and LF Spec-head agreement.

#### REFERENCES

- Barss, A. (1986). *Chains and anaphoric dependence: On reconstruction and its implications*. Doctoral dissertation, MIT.
- Battistella, E. (1989). Chinese reflexivization: A movement to Infl approach. *Linguistics*, 27, 987-1012.
- Chomsky, N. (1986). *Barriers*, Cambridge, MA: MIT Press.
- Chomsky, N. (1991). Some notes on economy of derivation and representation. In R. Freidin (Ed.), *Principles and parameters in comparative grammar* (pp. 417-454). Cambridge, MA: MIT Press.
- Chomsky, N. (1995). *The minimalist program*, Cambridge: MIT Press.
- Cole, P., Hermon, G., & Sung, L.-M. (1990). Principles and parameters of long-distance reflexives. *Linguistic Inquiry*, 21, 1-22.

- Cole, P., & Sung, L.-M. (1994) Head movement and long-distance reflexives. *Linguistic Inquiry* 25, 355-406.
- Cole, P., & Wang, C. (1996) Antecedents and blockers of long-distance reflexives: The case of Chinese *ziji*. *Linguistic Inquiry*, 27, 357-390.
- Huang, C.-T. J. (1983). A note on the binding theory. *Linguistic Inquiry*, 14, 554-561.
- Huang, C.-T. J., & Tang, C.-C. J. (1991) The local nature of the long-distance reflexive in Chinese. In J. Koster & E. Reuland (Eds.), *Long-distance anaphora* (pp. 263-282). Cambridge: Cambridge University Press.
- Huang, Y. (1994). *The syntax and pragmatics of anaphora*, Cambridge University Press.
- Katada, F. (1991). The LF representation of anaphors. *Linguistic Inquiry*, 22, 287-313.
- Kuno, S. (1973). *The Structure of the Japanese language*, The MIT Press.
- Lee, C.-M. (1973). *Abstract syntax and Korean with reference to English*, Doctoral dissertation, Indiana University.
- Lee, H.-B. (1976). Notes on pronouns, reflexives, and pronominalization. *Language Research*, 12.2.
- Manzini, M. R., & Wexler, K. (1987). Parameters, binding theory, and learnability. *Linguistic Inquiry*, 18, 413-444.
- Moon, S.-C. (1995). *An optimality approach to long distance anaphor*, Doctoral dissertation, University of Washington, Seattle.
- Pan, H. (1997). *Constraints on reflexivization in Mandarin Chinese*, New York & London: Garland Publishing Inc.
- Pica, P. (1984). Subject, tense and truth: toward a modular approach to binding. In J. Guéron, H.-G. Obenauer, & J.-Y. Pollock (eds.), *Grammatical representation* (pp. 259-291). Dordrecht: Foris.
- Pica, P. (1987). On the nature of reflexivization cycle. In *Proceedings of NELS 17*, GLSA, University of Massachusetts, Amherst. 483-499.
- Pollock, J. Y. (1989). Verb movement, Universal Grammar, and the structure of IP. *Linguistic Inquiry*, 20, 365-424.
- Yang, D.-W. (1983). The extended binding theory of anaphors. *Language Research*, 19, 169-192.
- Yang, D.-W. (1989). On anaphor movement. In *Proceedings of NELS 19*, GLSA, University of Massachusetts, Amherst. 435-452.