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Oh Anaphor Movement

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0. Introduction

Since it was suggested by Lebeaux (1983) and Chomsky (1986a) that anaphors should move at LF, there have been made various specific proposals on anaphor movement at LF. For example, Battistella (1987) argues that Chinese reflexive ziji moves to AGR in the manner of successive cyclic head movement, Broadwell (1987) argues that Choctaw reflexives and reciprocals move to V in the same manner, Pica (1987) argues that only X^0 anaphors like Danish sig move to INFL whereas XP anaphors like English himself move to XP, Huang and Tang (1988) argue that Chinese reflexive ziji optionally moves to IP in the manner of topicalization or quantifier raising, and Cole, Herman, and Sung (1988) argue that Chinese reflexives ziji and ta ziji obligatorily move to INFL and IP, respectively.

They all agree that anaphor movement applies in the successive cyclic manner like wh-movement and they all, except Huang and Tang (1988), also agree that the non-compound anaphor, or X^0 anaphor, like Chinese ziji or Danish sig undergoes head movement like verb raising and may only adjoin to or substitute in a head, whereas the compound anaphor, or XP anaphor,

like Chinese ta ziji or English himself undergoes XP movement like wh-movement and may only adjoin to or substitute in a maximal projection, which complies with the structure-preserving hypothesis.[1]

By assuming that X^o anaphors undergo successive cyclic head movement to INFL, they argue, we can account for the fact that X^o anaphors may be long-distance bound and subject-oriented.[2] In other words, assuming that an X^o anaphor may move through C (= head of CP) just as a wh-phrase may move through the SPEC of CP, we can account for the fact that X^o anaphors may be bound from beyond the so-called local binding domain; and assuming that an X^o anaphor moves to and lands on INFL, we can account for the fact that X^o anaphors may be bound only by a subject.[3]

On the other hand, by assuming that XP anaphors may be adjoined only to a maximal projection, they argue, we can account for the fact that most XP anaphors are locally bound and not subject-oriented. In other words, according to Chomsky's (1986b) adjunction constraint that adjunction is impossible to argument maximal projections, an XP anaphor may not adjoin to CP or NP and thus may not move beyond the minimal complete functional complex (CFC), which would result in local binding; and under the assumption that an XP anaphor is not required to land on INFL or IP but allowed to land on any non-argument maximal projection, an XP anaphor need not be bound only by a subject.[4]

As the above overall review of current proposals on anaphor movement clearly indicates, there have been generally recognized two types of anaphor movement: head movement for X^o anaphors and XP movement for XP anaphors.[5] The two types of movement, head movement and XP movement, have been substantially motivated in the current GB theory. But there has been also recognized some distinction between the two types of movement. That is, head movement is normally involved in the process of morphological incorporation (cf. Baker 1988). Indeed, some X^o anaphors like clitic anaphors in Romance languages and the verbal affix anaphor in Choctaw are involved in some real process of morphological incorporation, and other X^o anaphors that are not involved in some real process of morphological incorporation are assumed to be so in some abstract sense at LF. But then it would be rather strange that the head of an XP anaphor is never subject to such abstract head movement at LF, once it is recognized that the abstract head movement is obligatory at LF at least for X^o anaphors that have not undergone head movement at S-structure.

On the other hand, once it is recognized that all XP ana-

phors are subject to the abstract XP movement at LF, it would be natural to assume that the X^o anaphors that have not undergone head movement at S-structure are also subject to XP movement at LF since they are syntactically XP's though they are morphologically X^o's, just as we assume that in (1) what is subject to XP movement at LF though it is morphologically an X^o.

(1) He knows who did what.

In fact, Huang and Tang (1988) claim that Chinese X^o anaphor ziji is subject to XP movement at LF.

The purpose of this paper is to present some significant pieces of evidence and argument to the effect that both X^o anaphors and XP anaphors are subject to both head movement and XP movement at LF, which is rather a natural consequence of the Move-alpha thesis. In section 1, we will discuss reflexive movement, in section 2 reciprocal movement, and in section 3 residual problems.

1. Reflexive Movement

It is a language-universal fact that when an anaphor is allowed to be bound by an element outside of its minimal S the binder has to be a subject rather than any c-commanding NP,[6] as we see in the following English examples (2a, b), Chinese example (3), Korean example (4), and Italian example (5):

(2) a. John_i told Bill_j that [$_S$ a picture of $\text{himself}_{i,*j}$ appeared in the morning paper].

b. They_i told them_j that [$_S$ each other's$_{i,*j}$ pictures were on sale].

(3) John_i xiangxin Bill_j dui Tom_k shuo [$_S$ $\text{ziji}_{i,j,*k}$
believe to say self
taoyan Mary].
hate

(John_i believes that Bill_j said to Tom_k that $\text{self}_{i,j,*k}$ hated Mary.)

(4) John_i-i Mary_j-lɨl [$_S$ Tom_k-i $\text{caki}_{i,k,*j}$ -lɨl
-NM -AC -NM self -AC
sumki-ess]-tən pang-e katu-əss-ta.
hide -PAST -COMP room-LOC keep-PAST-DEC

(John$_i$ kept Mary$_j$ in the room where Tom$_k$ hid self$_{i,k,*j}$.)[7]

(5) Gianni$_i$ ha convinto Maria$_j$ che la propria$_{i,*j}$ casa
convinced that self's house
è la più bella.
is the best

(Gianni$_i$ convinced Maria$_j$ that self's$_{i,*j}$ house is the nicest.)

The best available way to capture this language-universal fact under the current assumptions on the head movement of anaphors as reviewed earlier would be to allow not only X^o anaphors but also XP anaphors to undergo head movement to INFL. As mentioned earlier, the assumption that the head of an XP anaphor also undergoes head movement at LF, just like an X^o anaphor does, is quite natural.

One might counter-argue that if we allow both X^o anaphors and XP anaphors to undergo head movement we have to abandon the hope to predict the local-nonlocal distinction of anaphors or even governing categories of individual anaphors in terms of the applicability of head movement for anaphors. In fact, Cole, Herman, and Sung (1988) argue that the local-nonlocal distinction of anaphors can be predicted in terms of the applicability and nonapplicability of head movement for X^o anaphors and XP anaphors respectively, along with lexical and nonlexical nature of INFL for languages like Chinese and languages like English respectively. Pica (1987) claims that governing categories of individual anaphors can ultimately be predicted in terms of the applicability of head movement and other relevant conditions.

Indeed it has long been recognized that there is some kind of relation between the local-nonlocal distinction and the X^o-XP distinction for anaphors since Yang (1983), who argues that only XP anaphors are strictly local. This observation might be translated into the prediction of local-nonlocal distinction of anaphors in terms of the applicability of head movement under the assumption that only X^o anaphors are subject to head movement, which can make use of adjunction to C as an escape hatch for moving beyond the local domain.

There are, however, some serious problems with the theory that is to predict the local-nonlocal distinction of anaphors in terms of the applicability of head movement for the anaphors.

First of all, typical strict local anaphors like English himself are bound from outside of the minimal S and even subject-oriented outside of the minimal S, as we see in (2a, b), which would remain as a big puzzle under the assumption that only X^0 anaphors are subject to head movement at LF, let alone that the locality of such XP anaphors is predicted in terms of applicability of head movement.

The governing category as defined in Chomsky (1986a) that needs to be posited for English anaphors is so peculiar that it is very unlikely to be exactly predicted by any interplay of general principles or conditions related to anaphor movement at LF including the ECP, the Subjacency condition (cf. Huang and Tang 1988), etc. We might manage to come up with some complex adjustments of general principles and conditions related to anaphor movement to derive the governing category for English anaphors, but it would have little explanatory value without a motivated resolution of the above-mentioned puzzle related to (2a, b). A natural resolution of it is to posit the governing category as defined in Chomsky (1986a) and let XP anaphors also undergo head movement as discussed above.

Another serious problem with the theory to predict the local-nonlocal distinction of anaphors in terms of the applicability of head movement for anaphors is that some X^0 anaphors that are supposed to undergo head movement are not uniform with respect to the nonlocal nature of binding. For example, X^0 anaphors in languages like Chinese, Korean, Japanese, etc., have no fixed binding domain at all as we see in (3) and (4), whereas X^0 anaphors in languages like Russian, Hindi, etc., have the fixed binding domain that may be defined as the first finite clause dominating the anaphor as we see in the Russian examples (6) and the Hindi examples (7), and X^0 anaphors in languages like Icelandic, Italian, etc., have the fixed binding domain that may be defined as the first indicative clause dominating the anaphor as we see in the Icelandic examples (8) and the Italian examples (9):[8]

(6) a. Vanja$_i$ znaet chto Volodja$_j$ ochen' ljubit sebja$_{j,*i}$.
know that love very much self

(Vanja$_i$ knows that Volodja$_j$ loves self$_{j,*i}$ very much.)

b. Professor$_i$ poprosil assistenta$_j$ [PRO$_j$ chitat'
asked assistant read

svoj$_{i,j}$ doklad].
self's$_{i,j}$ report

(The professor$_i$ asked his assistant$_j$ to read self's$_{i,j}$ report.)

(7) a. Ashok$_i$ ne kəha kii Lalita$_j$ əpne$_{j,*i}$ liye cha
said that self for tea
kəreegi.
make
(Ashok$_i$ said that Lalita$_j$ would make tea for self$_{j,*i}$.)

b. Ashok$_i$ ne Lalita$_j$ se [PRO$_j$ əpne$_{i,j}$ liye cay
with self for tea
bənane ko] kəha.
to make asked
(Ashok$_i$ asked Lalita$_j$ to make some tea for self$_{i,j}$.)

(8) a. Jón$_i$ skipaði Harold$_j$ [að PRO$_j$ raka sig$_{i,j}$].
John ordered Harold to shave self
[+infinitive]
(John$_i$ ordered Harold$_j$ to shave self$_{i,j}$.)

b. Jón$_i$ segir [að Maria$_j$ viti [að Haroldur$_k$
John says that Mary knows that Harold
[+indicative] [+subjunctive]
vilji [að Billi$_l$ meiði sig$_{i,j,k,l}$]]].
wants that hurts self
[+subjunctive] [+subjunctive]
(John$_i$ says that Mary$_j$ knows that Harold$_k$ wants that Bill$_l$ hurts self$_{i,j,k,l}$.)

(9) a. La signora$_i$ dice che io giaccia presso di sè$_i$.
the woman says that I lie near self
[+subjunctive]
(The woman$_i$ orders that I lie near self$_i$.)

b. La signora$_i$ me dice di giacere presso di sè$_i$.
the woman me say to lie near self
[+infinitive]
(The woman$_i$ orders me to lie near self$_i$.)

c. *La signora$_i$ dice che io giaccio presso di sè$_i$.
the woman says that I lie near self
[+indicative]
(The woman$_i$ says that I am lying near self$_i$.)

In order to capture such differences in the binding domain between X^0 anaphors across languages in terms of the theory of head movement, we have to make head movement of X^0 anaphors somehow sensitive to such factors as [+finite], [+indicative], etc., but it would impose undue constraints on head movement and buy us little since what would rather be posited as parameters on the governing category is simply shifted to head movement.

Cole, Herman, and Sung (1988) attempt to account for variations in the binding domain between anaphors across languages in terms of the ECP along with the theory of anaphor movement. That is, they argue that INFL in languages like Chinese, Korean, Japanese, etc., is lexical and L-marks VP whereas INFL in languages like English, Russian, Hindi, etc., is nonlexical or functional and cannot L-mark VP, and propose to account for the nonlocality of anaphor-binding in the former group of languages and the locality of anaphor-binding in the latter group of languages in terms of the ECP; namely, in the former group of languages the anaphor movement is free since VP is L-marked and not a barrier, whereas in the latter group of languages the anaphor movement is blocked since VP is not L-marked and is a barrier.

This account of the local-nonlocal distinction of anaphors

in terms of the ECP, however, contains some unclear points. First, they assume that XP anaphors like English himself undergo XP movement; then, the barrierhood of VP would be no problem to the anaphor movement in languages like English since the barrierhood of VP may be nullified by adjunction of XP anaphors to VP. Second, the difference in the binding domain between English and languages like Russian and Hindi is yet to be accounted for. For this problem, Cole, Herman, and Sung (1988) propose to prune the CP and IP nodes of the lower untensed clause, and thereby eliminate unwanted barriers for proper anaphor movement. But apparently the pruning of the CP and IP of an untensed clause should not be allowed in languages like English. Therefore, their account buys us little, since what would rather be posited as parameters on the governing category is simply shifted to tree pruning.

Huang and Tang (1988) simply assume that the unbounded anaphor-binding in Chinese is due to successive cyclic IP-to-IP movement of ziji without any mention on how to deal with local anaphor-binding in other languages.

To sum up, according to Chomsky's (1986b) adjunction constraint we can predict that XP anaphors may not move beyond the minimal S whereas X^0 anaphors may, which has been quite attested. But any further prediction on the locality or the governing category of individual anaphors in terms of anaphor movement and related principles and conditions has not been satisfactorily motivated or attested. Therefore, we would rather retain at least some parameters for the governing category for an anaphor, and account for the earlier-mentioned language-universal fact on the subject-orientation of anaphors outside of the minimal S by assuming that both XP anaphors and X^0 anaphors are subject to head movement.[9]

On the other hand, there is some evidence to the effect that not only XP anaphors but also X^0 anaphors are subject to XP movement. As we discussed earlier, XP anaphors are non-subject-oriented, namely, can be bound by any c-commanding NP, within the minimal S[10] since they may adjoin to any non-argument XP's in the successive cyclic manner so that they will have a chance to be locally bound by each of all the c-commanding NP's within the minimal S. This is attested by the following English example (10), Italian example (11), and Dutch example (12):

(10) John$_i$ told Bill$_j$ about himself$_{i,j}$.

(11) Gianni$_i$ rivelato Mario$_j$ a se stesso$_{i,j}$.
revealed to oneself
(Gianni$_i$ revealed Mario$_j$ to himself$_{i,j}$.)

(12) John$_i$ raadde Peter$_j$ zichzelf$_{i,j}$ aan.

recommended prt

(John$_i$ recommended Peter$_j$ to himself$_{i,j}$.)

But then some X^0 anaphors are also non-subject-oriented in the minimal S, as we see in the following Italian example (13), Icelandic example (14), and Korean example (15):

(13) Gianni$_i$ ha ricondotto Maria$_j$ alla propria$_{i,j}$ famiglia.

brought back to self's family

(Gianni$_i$ brought back Maria$_j$ to self's$_{i,j}$ family.)

(14) Jón$_i$ sendi Haroldi$_j$ föt á sig$_{i,j}$.

sent clothes for self

(John$_i$ sent Harold$_j$ clothes for himself$_{i,j}$.)

(15) John$_i$-i Mary$_j$-lɨl caki$_{i,j}$-ɨy bang-e katu-əss-ta.

-NM -AC self -'s room-in keep-PAST-DEC

(John$_i$ kept Mary$_j$ in self's$_{i,j}$ room.)

A natural way to account for these cases would be to allow such X^0 anaphors to undergo XP movement. But other X^0 anaphors are subject-oriented in the minimal S, as we see in the following Italian example (16), Russian example (17), Malayalam example (18), and Chinese example (19):

(16) Gianni$_i$ ha intrattenuto Maria$_j$ su di sé$_{i,*j}$.

entertained about self

(Gianni$_i$ entertained Maria$_j$ about self$_{i,*j}$.)

(17) Milicioner$_i$ rassprashival arestovannogo$_j$ o sebe$_{i,*j}$.

Policeman questioned suspect about self

(The policeman$_i$ questioned the suspect$_j$ about self$_{i,*j}$)

(18) Jooṇi$_i$ meeṟiye$_j$ swan̲tami$_{i,*j}$ wiiṭṭil wecca umma weccu.

John-NM Mary-AC self's house-LOC at kiss placed

(John$_i$ kissed Mary$_j$ at self's$_{i,*j}$ house.)

(19) Mali$_i$ gaosu Zhangsan$_j$ ziji$_{i,*j}$ de fenshu.
Mary told John self's grade
(Mary$_i$ told John$_j$ self's$_{i,*j}$ grade.)

Therefore, these X^o anaphors in (16) - (19) should not be subject to XP movement. In other words, they should not be granted an XP status with respect to anaphor movement for some reason. One such reason would be that the anaphor is a clitic or a clitic-like N so that it is too fossilized as a head to carry any implicit arguments. For example, Italian X^o anaphor sé is more clitic-like than another Italian X^o anaphor propria, and indeed the former is subject-oriented in the minimal S as we see in (16) whereas the latter is non-subject-oriented in the minimal S as we see in (13).

However, we cannot find any reason why Russian X^o anaphor sebja, Malayalam X^o anaphor swa, and Chinese X^o anaphor ziji are subject-oriented in the minimal S as we see in (17), (18), and (19). Thus, at the moment, we have to assume that X^o anaphors like Russian sebja, Malayalam swa, and Chinese ziji are specified as [+clitic] in the lexicon with respect to anaphor movement so that they may not be subject to XP movement.

There is some apparent redundancy in our theory of anaphor movement. For example, in the English example (10), the coreference between the object Bill and the reflexive himself is licensed only once by the XP movement of the reflexive, but the coreference between the subject John and the reflexive himself is doubly licensed, namely, by the X^o movement as well as the XP movement of the reflexive since the subject can be licensed as the antecedent of the reflexive by the reflexive adjoined to IP and by the head of the reflexive adjoined to INFL. In other words, the subject can locally bind both the anaphor adjoined to IP and the head of anaphor adjoined to INFL.[11]

Such double licensing of an anaphor in cases like (10) is not really redundant, since for most speakers of English the coreference between the subject and the reflexive is much stronger than the coreference between the object and the reflexive.

2. Reciprocal Movement

The English reciprocal each other behaves in the same way as the reflexive himself with respect to subject-orientation, as we see in (20) and (2b):

(20) They$_i$ introduced them$_j$ to each other$_{i,j}$.

(2) b. They$_i$ told them$_j$ that [$_S$each other's$_{i,*j}$ pictures were on sale].

That is, each other is non-subject-oriented in the minimal S, as we see in (20), and is subject-oriented when it is allowed to be bound by an element outside of the minimal S, as we see in (2b). This is exactly what we expect from our theory of anaphor movement, given the fact that each other is an XP anaphor.

There is, however, one crucial cross-linguistic difference between reciprocals and reflexives with respect to subject-orientation: reciprocals are never subject-oriented in the minimal S whether they look like XP anaphors or X^o anaphors, as we see in the following Russian example (21), Danish example (22), and Korean example (23):

(21) Milicionery$_i$ rassprshivali ix$_j$ drug o druge$_{i,j}$.
policemen questioned them each about other
(The policemen$_i$ questioned them$_j$ about each other$_{i,j}$)

(22) De$_i$ fortæller dem$_j$ om hinandem$_{i,j}$.
they tell them about each other
(They$_i$ tell them$_j$ about each other$_{i,j}$.)

(23) Kɨtɨl$_i$-ɨn kɨtɨl$_j$-ɨl səlo$_{i,j}$-eke sokæha-əss-ta.
they-TOP they-AC each other-DAT introduce-PAST-DEC
(They$_i$ introduced them$_j$ to each other$_{i,j}$.)

Note that the Russian reciprocal drug o druge in (21) and the Danish reciprocal hinandem in (22) are morphologically complex and can be considered as XP anaphors, but that the Korean reciprocal səlo in (23) is morphologically simplex and looks like a X^o anaphor, and that they are all non-subject-oriented in the minimal S.

Remember that there are X^o reflexives that are subject-oriented in the minimal S as in (16)-(19), which we have argued is because they cannot be granted an XP status for some reason. That is, only part of the X^o anaphors may become subject-oriented

in the minimal S according to our theory of anaphor movement. Then, the cross-linguistic fact that reciprocals are never subject-oriented in the minimal S implies either that reciprocals are all XP anaphors even when they look like X^0 anaphors or that they are X^0 anaphors which never fail to undergo XP movement. The latter implication is rather odd in view of the fact that there are X^0 reflexives that do fail to undergo XP movement. Thus, we would better take the former implication, namely, that reciprocals are all XP anaphors.

In fact, recently Heim, Lasnik, and May (1988) have provided semantic motivation for the position that reciprocals are XP's whether they look like XP's or not on the surface. They have shown that semantically a reciprocal consists of two parts, which they call 'distributor' and 'reciprocator'. For example, in English reciprocal each other, they claim, each plays the role of the distributor and other the role of the reciprocator. They have also demonstrated that often the distributor is implicit but must be syntactically represented in order to properly capture scope ambiguities due to different positions of the distributor at LF.

Specifically, Ahn (1988) also argues that Korean reciprocal səlo, though it looks like a X^0 anaphor, must be considered as an XP anaphor consisting of səlo and an implicit distributor.

Thus, we can conclude that reciprocals are inherently or semantically XP's even if they may be morphologically X^0's. Now, the cross-linguistic fact that reciprocals are never subject-oriented in the minimal S naturally follows from our theory of anaphor movement.

3. Residual Problems

Katada (1988) claims that Japanese XP reflexive zibun-zisin is subject-oriented in the minimal S, citing an example like (24):

(24) $John_i$-ga $Bill_j$-ni zibun-$zisin_{i,*j}$-no koto-o
-NM -DAT self -'s matter-AC
hanasi-ta.
tell-PAST
($John_i$ told $Bill_j$ about $self_{i,*j}$.)

The same phenomenon can be attested in the Korean counterpart (25) of (24):

(25) John$_i$-i Bill$_j$-eke caki-casin$_{i,*j}$-e tæhaya
-NM -DAT self about
malha-əss-ta.
tell-PAST-DEC
(John$_i$ told Bill$_j$ about self$_{i,*j}$.)

From examples like (24)-(25), however, we cannot draw the conclusion that Japanese XP reflexive zibun-zisin or Korean XP reflexive caki-casin are subject-oriented in the minimal S, since there is some evidence to the effect that the dative postposition, Japanese -ni and Korean -eke, does count as a constituent for c-command relation, as discussed in the note 7.

However, there is evidence to show that Korean or Japanese XP reflexive caki-casin or zibun-zisin is subject-oriented in the minimal S. Consider the Korean example (26):

(26) John$_i$-i Bill$_j$-ɨl caki-casin$_{i,*j}$-ɨy pang-e
-NM -AC self-'s room-LOC
katu-əss-ta.
keep-PAST-DEC
(John$_i$ kept Bill$_j$ in self's$_{i,*j}$ room.)

Indeed, in (26) Korean XP reflexive caki-casin cannot take the object as its antecedent though the object c-commands the reflexive. The same would be true for the Japanese counterpart of (26).

Now if the Korean and Japanese compound reflexives caki-casin and zibun-zisin are really XP anaphors, they would be counterevidence to our theory of anaphor movement. But if we follow the definition of an XP reflexive as suggested in the note 1, namely, that an XP reflexive is a compound reflexive consisting of a personal pronoun and a morpheme indicating 'self', then Korean caki-casin and Japanese zibun-zisin cannot be XP reflexives.

In fact, there are genuine XP reflexives in Korean and Japanese, namely, Korean kɨ-casin and Japanese kare-cisin, which are non-subject-oriented in the minimal S, conforming to our theory of anaphor movement. Then, what are the earlier-discussed compound reflexives, Korean caki-casin and Japanese zibun-zisin?

I assume they are emphatic forms of caki and zibun, respectively. Indeed, they are used only as emphatic forms. It is generally recognized that emphatic forms may behave a little erratic, and the unusual behaviour of caki-casin and zibun-zisin might be accounted for in a similar context.12

Huang and Tang (1988) claim that the theory of anaphor movement for subject-orientation does not work, citing Chinese example (27):

(27) Zhangsan$_i$ gaosu Lisi$_j$ taziji$_{i,*j}$ de shenshi.
tell himself 's life-story
(Zhangsan$_i$ told Lisi$_j$ about his$_{i,*j}$ own life.)

Indeed, taziji is an XP reflexive according to our definition of it and is subject-oriented in the minimal S.

But there seems to be a reason for the exceptional behaviour of taziji. Remember we had to assign the feature [+clitic] to ziji in the lexicon for its exceptional behaviour that it is never subject to XP movement and is always subject-oriented. Suppose that once the feature [+clitic] is assigned to an X^o anaphor it blocks undergoing XP movement even after the X^o anaphor is combined with a pronoun to become a XP anaphor.

Thus, we may posit the following condition:

(28) An anaphor that contains the feature [+clitic] may not be subject to XP movement.

NOTES

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[1]We assume that a reciprocal is inherently a 'compound anaphor' or XP anaphor and that a reflexive consisting of a pronoun and a morpheme indicating 'self' is another case of 'compound anaphor' whereas a reflexive consisting of a morpheme indicating 'self' alone is a 'non-compound anaphor' or X^0 anaphor. We will discuss further distinctions between them later.

[2]According to Broadwell (1987), Choctaw reflexives undergo successive cyclic head movement to V but that is closely related to successive cyclic movement to INFL.

[3]According to Chomsky (1986a), the moved anaphor must be governed by and adjacent to its antecedent and it is the trace of the moved anaphor that must obey the binding principle (A). But Cole, Herman, and Sung (1988) claim that the moved anaphor has only to be locally bound by its antecedent, thereby satisfying the binding principle (A) and that the trace of the moved anaphor has only to satisfy the Empty Category Principle. On either approach, it can be assumed that the anaphor adjoined to INFL may be interpreted as coreferential only with the subject since it is locally bound only by the subject.

[4]But Cole, Herman, and Sung (1988) assume that Chinese XP reflexive ta ziji is required to land on IP just as Chinese X^0 reflexive ziji is required to land on INFL, apparently because both Chinese reflexives ziji and ta ziji are subject-oriented.

[5]The only exception to this generalization is Huang and Tang (1988), who claim that Chinese X^0 anaphor ziji undergoes XP movement.

[6]Another widely-discussed case where an anaphor may have its antecedent outside of its minimal CFC is the so-called psych-verb case as in the English examples (ia,b) and the Korean example (ic):

(i) a. [$_{NP}$This picture of himself$_i$] disappointed John$_i$.

b. [$_{NP}$Each other's$_i$ pictures] pleased the boys$_i$.

c. [$_S$ Mary-ka caki$_i$-lɨl miwəha-nɨn] kəs-i John$_i$-ɨl
-NM self -AC hate -ASP COMP-NM -AC

silmang-sikhi-ɘss-ta.

dismay -CAUS-PAST-DEC

(That Mary hates self$_i$ disappointed John$_i$.)

In (ia, b, c) the anaphors are not c-commanded or bound by their respective antecedents; and, indeed, the antecedents are not subjects, but they are at least 'prominent arguments', i.e. experiencer NP's, in the sense of Giorgi (1984). Therefore, we may modify the language-universal generalization stated in the text as (ii) to cover cases like (ia, b, c):

(ii) When an anaphor is allowed to have its antecedent outside of its minimal S or CFC, the antecedent cannot be any c-commanding NP but a subject or a prominent argument.

If we assume that the experiencer NP c-commands the anaphor in sentences like (ia, b, c) at some level of the structure as Rizzi and Belletti (1988) argue, then it might be possible that we need not modify the language-universal generalization as (ii). But in this paper we do not discuss this possibility along with examples like (ia, b, c).

The abbreviations for the glosses of Korean examples are as follows: NM = Nominative Marker; AC = Accusative Marker; DAT = Dative Marker; LOC = Locative Marker; TOP = Topic Marker; COMP = Complementizer; ASP = Aspect Marker, PAST = Past Tense Marker; CAUS = Causative Marker; DEC = Declarative Marker.

[7]In Korean grammar it is generally recognized that the pure case markers, -i/-ka(Nominative Marker) and -ɨl/-lɨl (Accusative Marker) do not count as a constituent for c-command relation. Thus, in (4) both the subject John and the object Mary c-command the reflexive caki.

But the Dative Marker -eke is not considered as a pure case marker but as a postposition, like English to. Thus, in (i) the dative Mary cannot bind the reflexive caki because the former does not c-command the latter.

(i) John$_i$-i Mary$_j$-eke caki$_{i,*j}$-ɨy chæk-ɨl cu-ɘss-ta.

-NM -DAT self-'s book-AC give-PAST-DEC

(John$_i$ gave Mary$_j$ self's$_{i,*j}$ book.)

So, sentences like (i) cannot be used as evidence for the claim that Korean caki is subject-oriented. In fact, we will argue later that Korean caki is not subject-oriented within its minimal S.

[8]For further variations on the binding domain of X^o anaphors across languages, refer to Yang (1983).

[9]Huang and Tang (1988) argue against the head movement of Chinese X^o anaphor ziji, assuming that a head may not move out of such structures as relative clauses and adverbial clauses whereas an XP may, with respect to the fact that ziji may be bound from outside of a relative clause or an adverbial clause that contains it. But, as Cole, Herman, and Sung (1988) argue, even if we assume that ziji moves to IP instead of to INFL, as Huang and Tang (1988) do, we still have the same problem since we cannot move an element out of a relative clause and adjoin it to IP, as we see in (i):

(i) *Mary, Tom saw the man who criticized t.

Therefore, we need some kind of condition(s) to allow long-distance anaphors to move out of a relative clause or an adverbial clause.

[10]There are some exceptions to this generalization. We will discuss them in section 3.

[11]This view is shared by Cole, Herman, and Sung (1988). Huang and Tang (1988) also assume that the subject can be the antecedent of an anaphor adjoined to IP.

[12]Cole, Herman, and Sung (1988) argue that in Korean caki is not a reflexive but a pronoun while casin is the genuine reflexive, and thus caki-casin fits the definition of an XP reflexive. A problem with the claim that caki is not a reflexive but a pronoun is the fact that caki has no ability to refer to a discourse or contextual entity unlike a pronoun.

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