A-Movement and the Binding Theory

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0. Introduction

In the current GB theory, traces of both A- and A'-movement are assumed to be regulated by the binding theory as well as the ECP. Thus, traces of A-movement are subject to the principle A of the binding theory, whereas traces of A'-movement are subject to the principle C of the binding theory. Principle A has ensured the strict locality of A-movement in languages like English (TSC and SSC effects) and principle C has been employed to explain some properties of the chains formed by A'-movement such as improper movement and strong crossover.

However, in recent years studies have been done which question the validity of the binding theory as a regulating principle for movement. Most of all, it has been noted that the effects of the binding theory for traces of movement overlap with those of the ECP to a great extent and therefore, no harm is done even if traces are exempt from binding theory. Most of the ungrammatical constructions which involve super-raising belong to this case.

Specifically, this paper is devoted to the discussion on the validity of the binding theory for A-movement. In addition to data of the aforementioned kind, in this paper, I will present data which will crucially invalidate of the validity of the binding theory as a regulating principle for A-movement, namely, long-distance A-movement in some languages. To be short, my claim is that traces of A-movement are not subject to the binding theory, as is commonly assumed in the current GB theory, and thus the binding theory has to be reserved only to the referential dependencies of lexical anaphors.[1]

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[1] Although my claim in this paper is limited to A-movement, it is my belief that the same can be said for A'-movement. See footnote 6.

The organization of the paper is as follows. In section 1, I take a brief look at the history of the evolution of the binding theory, how it came to be applied to movement. In section 2, I review the data which show that the effects of the binding theory for movement in general overlap with the ECP and that there are no known cases where the ill-formedness of the chain is accounted for only by the binding theory. Finally, in section 3, I present the data involving long-distance A-movement in some languages.

1. Evolution of the Binding Theory

When we consider the history of the evolution of the binding principles and how these came to be generalized to traces, it becomes clear that there is no intrinsic reason why the distribution of traces should be regulated by the binding theory. That traces should be governed by the binding principles was an empirical generalization. As we all know binding principles impose a locality condition and an asymmetric c-command condition on the relation between antecedents and anaphors. When it was found that the distribution of NP-traces was largely similar to that of lexical anaphors in English, the proposal was made that one could extend the binding principles to traces.[2]

(1)   *John$_i$ believes [that himself$_i$ is smart]
       *John$_i$ believes him [t$_i$ is smart]
       *John$_i$ is believed [t$_i$ is smart]
       He thinks that John is smart.
       Who$_i$ does John$_i$ think [Mary likes t$_i$]

The underlying intuition behind this extension is the methodology that Chomsky pursued explicitly in *Lectures on Government and Binding* and *Some Concepts and Consequences of Theory of Government and Binding*, that the typology of empty nominal categories should mirror those of lexical nominal categories.

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[2] See Reinhart & Reuland (1993) for a different view. Although they agree with Chomsky (1973) in that A-movement and anaphor binding are closely related, their account for this is different. In their view the parallelism between A-binding and A-movement is the result of the chain condition governing the referential binding relations as well as movement rather than of the binding theory being extended to A-movement. Since the data I present in section 3 defies this parallelism itself, their claim does not affect my claim in this paper.

The point I would like to make here is that although the binding conditions are taken as one of the criterial well–formedness conditions on traces and other empty nominal categories, they are empirical generalizations based on the data and that there is no a priori reason why traces should be intrinsically connected to the binding principles.

2. Redundancy between the Binding Theory and the ECP

It has been observed repeatedly that the effects of the binding theory in regulating A–movement largely overlap with other principles like the ECP, the theta criterion, etc., and that it is difficult to find an instance of ungrammaticality attributable solely to the binding theory (Harbert 1984, Barss 1986, Bouchard 1987, Lasnik & Saito 1992).

As an example, let us consider the following ungrammatical sentences (Data from Harbert 1984).

(2) *He$_i$ was likely [for Mary to try [t$_i$ to win]].

(3) *He$_i$ was expected [for it to be certain [t$_i$ to win]].

(4) *He$_i$ was likely for Mary to be hurt t$_i$.

The preceding examples all violate principle A of the binding theory; however, they also violate another principle of the grammar, namely the ECP. The only case Harbert (1984) discusses as being ruled out solely as the violation of principle A of the binding theory is the following example (Harbert 1984: 109).

(5) a. e was likely [$_{CP}$ for e to be hurt John].
    b. It was likely for John to be hurt.
    c. *John$_i$ was likely for it to be hurt t$_i$.

Note, however, that under the conjunctive formulation of the ECP, the direct movement of *John* to the matrix subject position will violate the ECP, since CP is a barrier for antecedent government; therefore, (5c) can also be ruled out as an ECP violation. Therefore, the role of the binding theory in accounting for illegitimate A–movement is largely redundant and no harm is done even if we exempt the traces of A–movement from the binding theory.

Moreover, the following sentence discussed in Chomsky (1986b), Lasnik & Saito (1992) and Rizzi (1990) shows that the binding theory alone is not enough to rule out improper A-Movement (cf. Harbert 1986).

(6) *John seems [that [it is likely [t to win]]]

The reasoning they used to arrive at this conclusion is that since a sentence minimally different from (6) with a lexical anaphor is not as severely ungrammatical as (6), it is not principle A of the binding theory which makes the sentence (6) ungrammatical, as the ungrammaticality of (6) is quite severe.

(7) ʔThe men believe that it is important for each other to succeed.

In short, the preceding discussion shows that the role of the binding theory for movement, especially A-movement, is insignificant, being redundant with the independently required principle, i.e., the ECP. At this point, the next question we can ask ourselves is whether we still need the binding theory for movement, or to put it slightly differently, whether we can still say that traces are subject to the binding theory. From the preceding facts alone, it might be possible to say so, if we set aside the consideration of economy of grammatical system as a whole. However, I will show in the next section that such a conclusion cannot hold when we consider long-distance A-movements manifested in languages like Korean, Quechua, Niuean, etc.

3. Long-Distance A-Movement

In the standard GB theory, it is commonly believed that A-movement is strongly local, being necessarily clause-bounded as in English. Clause-boundedness of A-movement is expected if the traces of A-movement are subject to the principle A of the binding theory.

(8) *John$_i$ seems [that Mary likes t$_i$]
(9) *Mary$_i$ is believed [that John loves t$_i$]
(10) *John$_i$ seems [that it is likely [t$_i$ to win]]

However, contrary to this belief, a closer look into crosslinguistic data reveals that there are languages such as Korean, Quechua, Kipsigis, Nieuan,

etc. which allow non–clause–bounded A–movement. Non–clause–bounded A
–movement such as raising out of finite clauses and long passivization has
een reported for these languages (Jake & Odden 1979, Jake 1983, Massam
1984, Seiter 1980, Lefebvre & Muysken 1988, Yoon 1991, etc.). In this sec-
tion, we will briefly look at the data and their implications to our discus-
sion. If traces of A–movement are subject to BT–A, non–clause–bounded A
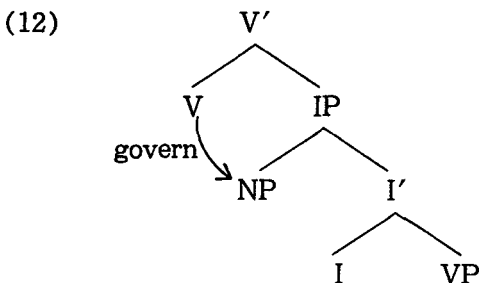–movements are bound to violate the BT–A and therefore must not be
allowed.

3. 1. ECM vs. Raising

The proper analysis of sentences shown in (11), so–called ECM (excep-
tional case–marking) constructions, has generated a lot of attention within
GB theory, primarily because of the importance of such constructions for
the projection principle.

(11) a. John believes [**him**/*he to be smart].
     b. John believes [**he**/*him is smart].

The feasibility of an ECM analysis, as opposed to a raising (to object) anal-
ysis, is taken to be evidence for the projection principle and the attendant
assumption that complement positions are obligatory thematic positions.

Since ECM in English type languages is string–vacuous and restricted to
subjects of infinitival clauses without overt complementizers, the analysis of
ECM in English is amenable to a node–pruning type analysis without the
need to assume real "raising".

(12)

$$
\begin{array}{c}
V' \\
\diagup \quad \diagdown \\
V \qquad IP \\
govern \diagdown \quad \diagup \quad \diagdown \\
NP \qquad I' \\
\diagup \quad \diagdown \\
I \qquad VP
\end{array}
$$

ECM–like constructions in some languages, however, are not amenable to
this kind of analysis since, among many reasons, the clauses embedded in
the ECM context are finite CPs.

3. 2. Raising out of Finite Clauses

Unlike English, when we examine a broader range of ECM constructions across languages, we find out that there are languages which have constructions which are not amenable to the ECM-type analysis and for which we have to assume actual "raising". As noted in previous research (Massam 1985, Jake & Odden 1979, Cole and Hermon 1981, Jake 1983, Hermon 1985, Lefebvre and Muysken 1982, 1988, Yoon and Yoon 1990, Yoon 1991, etc.), ECM-like constructions in languages like Korean, Quechua, Kipsigis and Niuean exhibit properties that are quite different from the analogous English construction shown in (11) and clearly show that some kind of movement is involved and that the movement involved is A-movement, i.e., raising. (We will continue to use the word ECM for expository purposes.)

3. 2. 1. Evidence for Movement

The foremost evidence for movement is that ECM in the languages in question may not be string vacuous, unlike ECM in English. First of all, ECMed NPs in these languages are usually found outside the embedded clause it has originated from. For example, in Quechua, an ECMed NP is most often positioned in front of the matrix verb, separated from the remainder of the embedded clause. [3]

Imbabura Quechua (Cole & Hermon 1981)
(13) a. Maria-ca yacha-n [Francisco$_i$-ϕ cay-pi ca-j-ta].
          Maria-Top know-3 Francisco-Acc this-in be-Prs. Nml-Acc
          'Maria knows that Francisco is here.'
      b. Maria-ca   Francisco$_i$-ta yacha-n [t$_i$ cay-pi ca-j-ta].
          Maria-Top Francisco-Acc know-3   this-in be-Prs. Nml-Acc
          'Maria knows that Francisco is here.'

This is also true in Niuean.

Niuean (Seiter 1980)
(14) a. To nakai toak e   au [ke kai [he pusi] e   ika]
          Fut not let Erg I   sub eat Erg cat Abs fish
          'I won't let the cat eat the fish.'

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[3] The basic word order of Quechua is SOV.

b. To nakai toak e   au [e   **pusi**] [ke kai t₍ᵢ₎ e   ika].
   fut not   let   Erg I   Abs cat   Suj eat   Abs fish
   'I won't let the cat eat the fish.'

Since Niuean has an ergative case system, subjects of transitive verbs are marked with Erg case (he), whereas subjects of intransitive verbs and objects of transitive verbs are marked with Abs case (e). The Abs case marking on *pusi* 'cat' in (14b) shows that it is ECMed by the matrix verb. In sentence (14b), the ECMed NP *e pusi* appears before the embedded complementizer *ke*, showing that it is outside the embedded clause.

Another set of data which illustrate the non–string–vacuousness of ECM in the languages in question is the one involving ECM to non–subjects. That is, unlike English, these languages allow ECM not only to an embedded subject but also to non–subjects. The following examples illustrate this.

Imbabura Quechua (Jake & Odden 1979)

(15) a. chai   jari–ca   crin   [yachachij   warmi–man
        that   man–Top   believe–3   teacher   woman–Dat
        wawa–ta   cara–ju–y–ta].
        baby–Acc   serve–Prog–Prs–Acc
        'The man believes the teacher is handing the baby to the woman.'

   b. chai   jari–ca   **wawaᵢ–ta**   crin   [yachachij
      that   man–Top   baby–Acc   believe–3   teacher
      warmi–man   tᵢ   cara–ju–y–ta].
      woman–Dat   serve–Prog–Prs–Acc
      'The man believes that teacher is handing the baby to the woman.'

   c. chai   jari–ca   **warmiᵢ–ta**   crin   [yachachij
      that   man–Top   woman–Acc   believe–3 teacher
      tᵢ   wawa–ta   cara–ju–y–ta].
           baby–Acc   serve–Prog–Prs–Acc
      'The man believes the teacher is handing the baby to the woman.'

Kipsigis (Jake & Odden 1979)
ECM to embedded object

(16) a. moce   Muːsa   [ko   –til–an   Kiplagat].
        wants   Musa(S) 3s.Sub–cut–1s.Obj.   Kiplangst(S)
        'Musa wants Kiplangat to cut me.'

    b. moc-o:n   Mu:sa [ko   −til−an   Kiplagat].

       want−1s.obj Musa(S) 3s.Sub−cut−1s.obj   Kiplangst(S)

       'Musa wants Kiplangat to cut me.'

ECM to Benefactive NP

   (17) a. moce Mu:sa [ko   −til−ci Kiplagat   **ci:to** pe:ndo].

        wants Musa(S) 3s.Sub−cut−Ben Kiplangat(S) man   meat

        'Musa wants Kiplangat to cut the meat for the man.'

      b. moce Mu:sa **ci:to**$_i$ [ko   til−ci Kiplagat t_i pe:ndo].

        wants Musa(S) man   3s.Sub−cut−Ben Kiplangat(S)   meat

        'Musa wants Kiplangat to cut the meat for the man.'

ECM to embedded object in Niuean (Seiter 1980)

   (18) To nakai toak e   au [e   ika]$_i$ [ke kai he   pusi t_i].

      Fut not let   Erg I   Abs fish   Sbj eat Erg cat
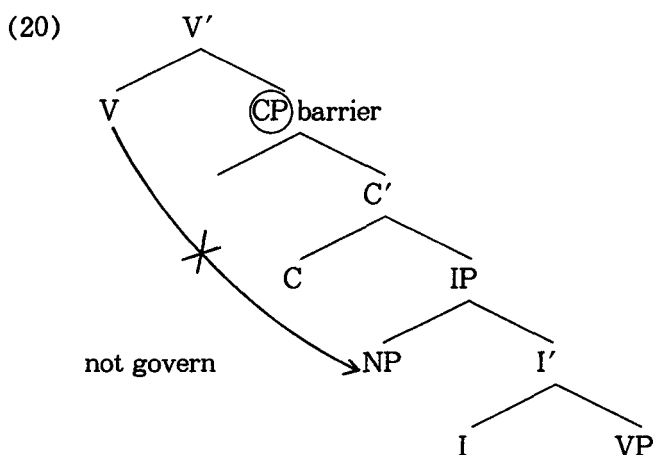
      'I won't let the fish be eaten by the cat.'

ECM to embedded object in Korean

   (19) a. Na−nun [Chelswu−ka ton   −i   /*−ul   manh−tako]

        I−Top   Nom money−Nom/Acc   much−Comp

        sayngkakha−n−ta.

        think−Prs−Dcl

        'I think that Chelswu has lots of money.'

      b. Na−nun [ton$_i$−ul   [Chelswu−ka t_i manh−tako]]

        I−Top   money−Acc   NOM   much−Comp

        sayngkakha−n−ta.

        think−Prs−Dcl

        'I think that Chelswu has lots of money.'

Sentences (15b) and (15c) show ECM to the embedded object and benefac-tive NP in Imbabura Quechua; (16) and (17) from Kipsigis shows the same point; (18b) from Niuean shows that the direct object can be ECMed; Sentence (19b) from Korean shows that the embedded object is ECMed.

    Finally, the fact that ECM in these languages is possible in a finite clause headed by an overt complementizer also suggests that movement is in-volved in the ECM−like constructions, even if there was no word order change on the surface. This is because the presence of an overt complem-entizer suggests that embedded clauses of these constructions are finite CPs. If the ECMed NP does not move to the Spec of CP, it is not possible

for it to be governed and assigned case from the matrix verb.

(20)

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              V′
            /    \
          V      (CP) barrier
           \      /    \
            \        C′
             \      /    \
              ✗   C      IP
                       /    \
    not govern    ↘NP        I′
                           /    \
                         I       VP
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Thus, the position of an ECMed NP *Yenghi–lul* in (21b) below cannot be Spec of IP, if it can be assigned accusative case from the matrix verb, given that case is assigned under local government. This means that even if there doesn't seem to be any word order change on the surface between the non–ECM sentence ((21a)) and the ECMed sentence ((21b)), the ECMed NP in (21b) must have occupied the different position from the non–ECMed NP in (21a), i.e., it has moved to the Spec of CP.[4]

Korean

(21) a. Chelswu–nun   [Yenghi–**ka**   chencay–i–ess–**tako**]   mitessta.
          –Top   –Acc genius–Cop–Pst–Comp believed
        'Chelswu believed that Yenghi was a genius.'

    b. Chelswu–nun   [Yenghi–**lul**   chencay–i–ess–**tako**]   mitessta.
          –Top   –Acc genius–Cop–Pst–Comp believed
        'Chelswu believed that Yenghi was a genius.'

3.2.2. Evidence for A–Movement

In the previous section we have shown that some kind of movement is in-

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[4] I take *ta–ko* in Korean as a complex complementizer. The difference between *ta –ko* and English type complementizers such as *that* is that in *ta–ko*, the two functions of complementizers, namely, the function of indicating the clause type (mood) and the function of indicating whether or not the clause is subordinated (Bhatt & Yoon 1991), are served separately by each morpheme, whereas in English, a single word serves two functions.

volved in the ECM–like constructions in question. Given the strong locality of A–
movement, the next question which comes to mind is whether the movement is
truly A–movement. The fact that these constructions are indeed similar to the
English ECM constructions, i.e., that they really involve raising, an A–move-
ment, not A´–movement such as topicalization or left–dislocation, can be shown
by various kinds of evidence, such as case marking, agreement and the possibili-
ty of further A–movement, etc.

First of all, an obvious reason that the movement involved in ECM–like con-
structions in the languages in question is A–movement is that raised NPs can
undergo further A–movements such as passivization. Sentence (22) from
Niuean (Seiter 1980) illustrates that an ECMed NP can be further raised.

(22) a. [CP1 Kamata   [CP2 ke   toka e ia [CP3 ke   fakaholo
             begin   Suj   let Erg he   Suj   drive

         he au   e   motoka   haana]]].
         Erg I   Abs   car   his
         'He's beginning to let me drive his car.'

     b. [CP1 Kamata   [CP2 ke   toka e   ia   a   au   [CP3 ke
             begin   Suj let Erg he Abs I   Suj

         fakaholo   e   motoka   haana]]].
         drive   Abs   car   his
         'He's beginning to let me drive his car.'

     c. [CP1 Kamata   a   au   [CP2 ke   toka e   ia: [CP3 ke
             begin   Abs I   Suj   let Erg he   Suj

         fakaholo   e   motoka   haana]]].
         drive   Abs   car   his
         'He's beginning to let me drive his car.'

In (22), the subject of the most deeply embedded clause CP3, *he au* 'I' can ap-
pear not only in the intermediate clause CP2 but also in the matrix clause CP1,
by successive cyclic raising. Since A–movement of an NP moved by A´–move-
ment produces an illicit chain of A–A´–A configuration, the preceding fact cru-
cially shows that the movement involved in the ECM–like constructions in ques-
tion is indeed A–movement.

Secondly, case–marking on the raised (ECMed) NPs provides us with direct
evidence that the NPs in question are really raised.

(23) a. Maria–ca   yacha–n   [Francisco–**ta**   cay–pi ca–j   –ta]
        Maria–Top know–3   Francisco–Acc   thi–in be–Prs.Nml –Acc
        'Maria knows that Francisco is here.'

     b. Maria–ca   yacha–n   [Francisco–ϕ cay–pi ca–j   –ta].
        Maria–Top know–3   Francisco–**Nom** this–in be–Prs.Nml –Acc
        'Maria knows that Francisco is here.'

Niuean (Massam 1985)

(24) a. To   nakai   toak e   au   [e pusi], [ke   kai t, e   ika]
        Fut   not   let   Erg I   **Abs** cat subj eat Abs fish
        'I won't let the cat eat the fish.'

     b. To   nakai   toak e   au   [ke   kai [**he pusi**] e   ika]
        Fut   not   let   Erg I   sub   eat **Erg** cat Abs fish
        'I won't let the cat eat the fish.'

In (23), the subject of the embedded clause can be marked with Nom case assigned by the embedded INFL, or Acc case assigned by the fact matrix verb. Sentence (24), a Niuean example, shows the same point. Since Niuean has an ergative case system, subjects of transitive verbs are marked with Erg case, whereas subjects of intransitive verbs and objects of transitive verbs are marked with Abs case. The Abs case marking on *pusi* 'cat' in (24a) shows that it is ECMed by the matrix verb.

Thirdly, although not as direct as case marking, the fact that the NPs in the preceding examples are really raised is evidenced by the fact that they can undergo various syntactic processes which are restricted to objects. In Kipsigis, verbs agree with their objects. As we see in (25b), the ECMed embedded object triggers object–verb agreement in the matrix clause as well as in the embedded clause; in (25b), the fact that the matrix verb as well as the embedded verb a-grees with the embedded object (a first person pronoun), shows that the embedded object is indeed ECMed.

(25) a. moce   Mu:sa   [ko   –til–an   Kiplagat].
        wants   Musa(S) 3s.Sub   –cut–1s.Obj.   Kiplangst(S)
        'Musa wants Kiplangat to cut me.'

     b. moc–o:n   Mu:sa   [Ko   –til–an   Kiplagat].
        want–1s.Obj Musa(S) 3s.Sub   –cut–1s.Obj   Kiplangst(S)
        'Musa wants Kiplangat to cut me.'

Similarly, in Niuean, the ECMed object can undergo various processes such as quantifier floating and instrumental advancement, which are restricted only to subjects and direct objects (Seiter 1980). In Niuean, quantifier floating is clause-bounded and restricted to subjects and direct objects.

(26) a. Kua   fia-momohe   tuai   e   tau   tagata   oti   na.
        Perf   want-sleep, Pl Perf   Abs Pl   person   all   that
        'All of those people have gotten sleepy.'
     b. Kua   fia-momohe   oti   tuai e   tau tagata   na.
        Perf   want-sleep, Pl all   Perf Abs Pl   person   that
        'All of those people have gotten sleepy.'

In (26b), through quantifier floating, *oti* is optionally removed from an NP and cliticized to the verb in the same clause.

We find quantifier floating in ECM constructions also.

(27) Ko e toka e   koe mo ha   e   tau **talo** [ke kai oti e   lautolu]
     Prs let Erg you for what Abs Pl   taro   Sbj eat all Erg they
     'Why are you letting all the taro be eaten by them?'

Since quantifier floating is clause-bounded, in (27) if the object NP *talo* originated in the matrix clause, cliticization of *oti* to the complement verb is not explained. The fact can be explained if we assume that quantifier floating, i.e., cliticization of *oti* to the complement verb, has occurred before the object raises to the matrix clause by ECM-movement.

Niuean also has a rule of instrumental advancement which turns instruments in transitive clauses into direct objects, thus making them eligible for rules like quantifier floating, which is restricted to subjects and direct objects. What is crucial is that instrumental advancement can apply only in clauses which already have a direct object. Keeping this in mind, let us consider the following ECM construction.

(28) To   toka e   au   e   tau   **puaka** [ke   fagai   aki
     Fut let Erg   I   Abs Pl   pig   Sbj   feed   with
     oti e   tau fua loku].
     all Abs Pl   papaya
     'I'm going to let the pigs be fed with all the papayas.'

In (28), the instrument *e tau fua loku* has undergone quantifier floating: the quantifier *oti* has cliticized to the complement verb. Since quantifier floating can apply only to direct objects and subjects, this implies that the instrumental advancement rule has applied to the complement clause, making *e tau fua loku* eligible for quantifier floating. In turn, this means that the complement clause has a direct object, since instrumental advancement is possible only when the clause already has a direct object. Therefore, this shows that ECMed NP, *e tau puaka*, originated from the complement clause as its direct object.

3.3. Implications for the Binding Theory

In the preceding sections, I have shown that some languages allow non-clause–bounded A–movement.[5] What this suggests to us is that traces of movement, specifically A–movement, cannot be subject to the binding theory. This is because if traces of movement are subject to the binding theory, then traces left by raising, an A–movement, are NP–traces and thus are subject to principle A of the binding theory. This means that any non-clause–bounded raising would violate principle A of the binding theory (TSC (Tensed–S Condition) and/or SSC (Specified Subject Condition) effects) and thus must not be allowed. Since this is not the case, i.e., there are languages which allow non–clause–bounded raising, the claim that traces of A–movement are subject to the binding theory must be given up.

3.4. Against the Parameterization of the Binding Theory

Given the data of non–clause–bounded A–movement we saw in the previous section, one way that we can think of to save the binding theory as a regulating principle for A–movement is the parameterization of principle A of the biniding theory. If we adhere to the popular idea that there is an exact parallel between lexical anaphors and NP–traces, we might account for the violation of principle A of the binding thory involved in non–clause–bounded A–movement by parameterizing principle A of the binding theory. This approach appears attractive at first glance, since there seems to be some parallel in the behavior of lexical anaphors and NP–traces in many

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[5] I will not discuss in detail how ECM–like constructions in languages like Korean can be properly analyzed. For the present paper, suffice it to say that they involve raising, an A–movement. See Yoon (1991) for a detailed analysis and various theoretical issues involved besides binding theory.

languages. First, both lexical anaphors and NP-traces in English have to be clause-bounded. Second, just like NP-traces, lexical anaphors in Korean can be long-distance bound.

(29) Chelswu$_i$-ka   [Yenghi$_j$-ka   casin$_{i/j}$-lul cohahan-tako]   malhassta.
        Nom   Nom self-Acc like-Comp   said
    'Chelswu$_i$ said that Yenghi$_j$ likes self$_{i/j}$.'

At least in the data mentioned above, the domains in which lexical anaphors are allowed appear to parallel exactly the domains where A-traces must be bound. If this is the case, i.e., if only the languages which have long-distance anaphors allow non-clause-bounded A-movement, then the non-clause-bounded A-movement will not pose any problem to the validity of binding theory as a regulating principle for A-movement.

However, the strategy of parameterizing relevant principles of the binding theory based on the distribution of lexical pro-forms (anaphors, pronouns) in each language does not work in general. Starting at least with Pullum (1980), the lack of parallels between lexcial pro-forms and their "corresponding" empty categories in various languages have been well-documented.

Moreover, a prediction of this approach is that languages which allow non-clause-bounded A-movement must have long-distance anaphors. This prediction does not seem to be borne out. Quechua does not have long-distance anaphors (Cole 1982), although it allows A-movement out of CPs (ECM-movement). In Imbabura Quechua, reflexivity is expressed by the verbal suffix -ri, and the scope of reflexive is limited to the clause, as the following example shows.

Imbabura Quechua (Cole 1982)
(30) [$_s$ Juan$_i$ ispiju-pi   riku -ri$_{i/*j}$-chun]   muna-ni$_j$.
        Juan   mirror-in   see-refl-suj   want-1
    'I want Juan to see himself in the mirror.'
    not 'I want Juan to see me in the mirror.'

Moreover, although Korean has long-distance anaphors, since there are many different anaphoric forms, some of which clause-bound and some long-distance bound, assuming an exact parallelism between overt anaphors and traces will raise some learnability problems, since the child

will be hard put to single out the right lexical anaphor that NP–traces should parallel.

The preceding discussion shows that we cannot explain the violation of principle A of the binding theory in non–clause–bounded A–movement in some languages simply by parameterizing the binding domain and assuming an exact parallelism between lexical anaphors and NP–traces and therefore, the idea that A–movement is subject to principle A of the binding theory cannot be sustained.

4. Conclusion

In this paper, I have shown that not only is the binding theory redundant as a regulating principle for traces of A–movement but there is convincing data which shows that it cannot apply to traces of A–movement, namely long–distance A–movement manifested in ECM constructions in some languages. Based on this, I claimed that traces of A–movement are not subject to the binding theory, as has been commonly assumed in the GB theory. This means that the binding theory should be restricted to its original role, i.e., a principle regulating **referential** dependencies.[6] I think that this is theoretically desirable in that it eliminates the redundancy between the binding theory and other locality conditions on movement such as the ECP and subjacency. As we have seen, the effects of the binding theory on movement mostly overlap with the effects of the ECP (and subjacency). Although some redundancy may be inevitable as a whole, in a modular theory such as GB, it is desirable that each of the principles that comprises the system have its own domain of application. By restricting the role of the binding theory to referential dependencies, the original domain of the appli-

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[6] Since this paper is devoted to the discussion of A–movement, I have not discussed whether traces of A′–movement can also be exempt from the binding theory. However, I think that they can also be exempt from the binding theory, specifically the principle C of the binding theory. See Yoon (1991) for the discussion of two representative cases which are believed to show the BT–C effects on movement and thus have been handled in terms of BT–C, i.e., improper movement and strong crossover. See Müller & Sternefeld (1993) also for cases of improper movement which cannot be explained in terms of the principle C of the binding theory. Based on this kind of data, they propose an account of improper movement independent of the binding theory.

cation for the binding theory, we reduce the redundancy between the modules of the system.

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ABSTRACT

A–Movement and the Binding Theory

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In current GB theory, traces of movement, both A– and A′–movement, are assumed to be regulated by the binding theory as well as the ECP. However, in recent years it has been noted that the effects of the binding theory for traces of movement overlap with those of the ECP to a great extent and therefore, no harm is done even if traces are exempt from the binding theory. Specifically, my main concern in this paper is the validity of the binding theory for A–movement. In addition to data of the aforementioned kind, which merely suggests the redundancy of binding theory for movement, I present data which, crucially disconfirms the validity of the binding theory as a regulating principle for A–movement, namely, long–distance A–movement involved in ECM (raising)–constructions in some languages. Based on this data, I claim that traces of A–movement are not subject to binding theory, and thus the binding theory should be reserved only for the referential dependencies of lexical anaphors.

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