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Yoshihiro Munemasa

0. Introduction

In the binding theory a large role has been played by the binding conditions. In this theory indices are provided for nouns such as an anaphor, a pronoun, and an R-expression. The potential domains within which an anaphor must find an antecedent, or a pronoun be free are determined by the conditions, to be more precise, condition A and B. And condition C requires an R-expression be free. The role of the binding conditions has been played at S-structure. In the Minimalist Program of Chomsky (1993), however, it is suggested that they are revised to the interpretive conditions at LF interface as in (1) and thus the indexing to nouns is abandoned.

(1) A. If α is an anaphor, interpret it as coreferential with a c-commanding phrase in D (the relevant local domain).
B. If α is a pronominal, interpret it as disjoint from every c-commanding phrase in D.
C. If α is an r-expression, interpret it as disjoint from every c-commanding phrase.

In the Minimalist Program, two linguistic levels are postulated as interface with the performance systems, viz., articulatory-perceptual (A-P) and conceptual-intentional (C-I) systems. Computational systems associated with A-P and C-I are PF component and LF component,

respectively. Thus D-structure and S-structure are eliminable in the Minimalist Program. Given the elimination of the two supefluous structures and the Minimalist consideration that all conditions express properties of the interface levels, reflecting interpretive requirements, many arguments are put forward to claim the binding conditions hold only at the LF interface level. To demonstrate that the binding conditions must apply at LF, a reconstruction operation at LF is required. However, there arise some problems in the interaction between the reconstruction operation and the binding conditions. To solve the problems, the cliticization of an anaphor at LF is introduced. Furthermore, Chomsky suggests the possibility that the effects of condition A follow from the cliticization.

In this paper, focusing on reflexives in English, I point out that the identity relation between a reflexive and its antecedent is explained as a consequence of the cliticization of reflexive at LF based on the Minimalist framework and thus condition A is dispensable in explaining the identity relation.

1. Cliticization

Let us consider the cliticization of a reflexive in the Minimalist Program.

In (2), *himself* can take *John* or *Bill* as its antecedent.

(2) John wondered which picture of himself Bill saw t.

For a derivation to converge, its LF out put must be constituted of legitimate objects: heads, arguments, modifiers, and operator-variable constructions. So the appropriate LF form of (2) requires the operator-variable representations as in (3).

(3) a. John wondered [which x, x a picture of himself] [Bill saw x]]

b. John wondered [which x] [Bill saw [x a picture of himself]]

However, to derive the representations, "reconstruction" operation is required at LF. If we lower the wh-phrase or the part of it to the original place, the operation is not desirable in that most economical convergent derivation is selected. So the LF component applies the copy theory to (2), where the wh-movement is applied, and then converts (2) to the representation (4).

(4) John wondered [$_{wh-}$ which picture of himself] [Bill saw [$_{wh-}$ which picture of himself]]

And the two representations as in (5) are made by applying an operation akin to QR to (4).

(5) a. John wondered [[which picture of himself] [$_{wh-}$]] [Bill saw [which picture of himself [$_{wh-}$]]]

b. John wondered [which [$_{wh-}$ t picture of himself]] [Bill saw [which [$_{wh-}$ t picture of himself]]]

The representations (3a,b) are derived from (5a,b) by applying complementary deletion to (5a,b). By applying condition A to the representations, the interpretation that *himself* in (2) can take *John* or *Bill* as its antecedent is possible.

However, the operations mentioned above pose a problem. If the reflexive in (2) is replaced by a pronoun or R-expression as in (6) and (7), the fact that *he* in (6) cannot take *Tom* as its antecedent (by condition C) and *him* in (7) cannot take *Bill* as its antecedent (by condition B) cannot be explained.

(6) John wondered [which picture of Tom] [he liked t]

(7) John wondered [which picture of him] [Bill took t]

Namely, since (6) and (7) can have the representations as (8) and (9), respectively, *he* in (8a) can take *Tom* as its antecedent and *him* in (9a) can take *Bill* as its antecedent.

(8) a. John wondered [which x, x a picture of Tom] [he liked x]]

b. John wondered [which x] [he liked [x a picture of Tom]]

(9) a. John wondered [which x, x a picture of him] [Bill took x]]

b. John wondered [which x] [Bill took [x a picture of him]]

Therefore, only the LF representations of (8b) and (9b) must be permitted to the sentences of (6) and (7), respectively.

Thus Chomsky supposes that an LF movement approach to anaphora is adopted, assuming that the anaphor or part of it is raised by an operation similar to cliticization (this is called *cliticization* $_{LF}$). This operation distinguishes condition A from condition B and C, and necessarily precedes the "reconstruction" operations as in (10a,b) that provide the interpretations for the LF out put.

(10) a. [[which picture of α] t]

b. [which] [t picture of α]

By applying the cliticization to (2), (11a) or (11b) is derived, depending on whether the rule applies to the operator phrase or its trace.

(11) a. John self-wondered [which picture of t_{self}] [Bill saw [$_{wh-}$ which picture of himself]]

b. John wondered [which picture of himself] [Bill self-saw [$_{wh-}$ which picture of t_{self}]]

And by applying (10) to (11) the four representations can be derived, as shown in (12).

(12) a. John self-wondered [[$_{wh-}$ which picture of t_{self}] t] [Bill saw [[$_{wh-}$ which picture of himself] t]]

a'. John self-wondered [$_{wh-}$ which [t picture of t_{self}] [Bill saw [$_{wh-}$ which [t picture of himself]]

b. John wondered [[$_{wh-}$ which picture of himself] t] [Bill self-saw [[$_{wh-}$ which picture of t_{self}] t]]

b'. John wondered [$_{wh-}$ which [t picture of himself] [Bill self-saw [$_{wh-}$ which [t picture of t_{self}]]

In (12), the underlined positions are deleted by complementary deletion. In (11a), if we select the operation (10b) ($\alpha = t_{self}$), this option requires

deletion of [t picture of t_{self}] in the operator position, which would break the chain (*self* , t_{self}), leaving the reflexive without θ-role at LF. Thus the derivation of (12a') crashes. In (11b), if we select the option (10a), the chain (*self* , t_{self}) would be broken like the case of (12a'), predicting the derivation's crash of (12b). Thus we must select the option (10a) in the case of (11a) and the option (10b) in the case of (11b).

However, if we have an R-expression or a pronoun in place of *himself* as in (6) and (7), there is no cliticization of a reflexive. Thus the two LF representations as in (11) are not derived in (6) and (7). And Chomsky adds the preference principle for reconstruction operation as in (13) to account for (6) and (7).

(13) The Preference Principle

Try to minimize the restriction in the operator position.

By (13) the option (10b) is selected and thus the LF representation of (6) is (8b) and that of (7) is (9b). By condition B *he* in (8b) cannot take *Tom* as its antecedent, and by condition C *Bill* in (9b) cannot take *him* as its antecedent.

2. Absence of Condition A

In the Minimalist Program, a cliticization of reflexive, as mentioned in the former section, is introduced to distinguish condition A from conditions B and C. However, if the cliticization can account for the relation between an anaphor and its antecedent instead of the traditional condition A and can solve the problems it cannot treat, condition A is dispensable. We prove the possibility in this section.

In Romance languages, for example, French and Italian, a reflexive is cliticized to a verb, as shown in (14).

(14) a. French

Jean se_i regarde t_i .

'Jean looks at himself.'

b. Italian

I bambini si_i lavano t_i .

'The children wash themselves.'

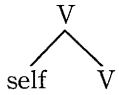
A cliticization of reflexive is not observed in overt syntax in English. However, if the same operation as in French and Italian is operative in English at some grammatical level, the level is the LF interface. Therefore, a sentence like (15a) yields the LF representation (15b).

(15) a. John hates himself.

b. John self-hates [him t_{self}]. (LF)

In (15b) the reflexive is adjoined to the target, viz., V, as shown in (16).

(16)



Since reflexives are referentially defective, the content necessary for their referential interpretation must be assigned. Some linguistic properties make reflexives referentially defective. We assume that the properties are related to the lexical structure of reflexives to which some procedures supply the content necessary for their referential interpretation. As for the lexical structure of reflexives, according to Reinhart and Reuland (1991), we assume that in English a pronoun of reflexive occurs in the SPEC position of NP, though in the case of simplex pronominals nothing hinges on this position, and SELF occurs in the head of NP and has the lexical structure of a relational noun, i.e. its grid has two arguments (cf. Pica 1987), as in (17).[1]

(17) SELF ⟨y,x⟩

And SELF has an identity relation which identifies x with y. SELF is combined with a pronoun in the SPEC position in a SPEC-HEAD relation, as shown in (18).

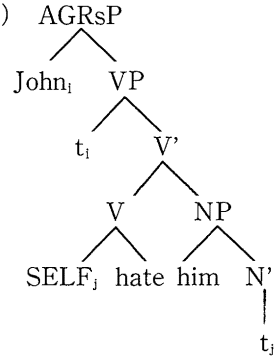
(18) himself

$[_{NP}$ him $[_{N'}$ SELF $\langle y, x \rangle$ $]$

By the combination the pronoun in the SPEC of NP discharges one of the argument positions in the grid (cf. Higginbotham 1983) and thus the argument has saturated. However, SELF still contains one unsaturated argument. Namely, SELF in (18) expresses an identity relation between the pronoun in the SPEC position and another argument which needs to be found. It is this missing argument which is responsible for the defective nature of reflexives in English. To be interpreted, the second unsaturated argument must be identified. We assume the driving force of the cliticization of SELF to a verb is the defective nature of reflexives, and that the unsaturated argument of SELF is identified by forming a SPEC-HEAD relation with its antecedent.

Now let us consider examples like (15). SELF is cliticized to the verb at LF by its defective nature and forms a SPEC-HEAD relation with the trace of the subject which has moved to the SPEC position of AGRsP for its Case and Φ-features to be checked(see Huang 1993, Chomsky 1993, Chomsky 1995), as shown in (19).

(19)



Since the trace in the SPEC-VP is the copy of the subject, the second argument in SELF's grid is identified by the cliticization and thus it saturates, predicting the appropriate identity relation between *John* and *himself*. [2,3]

With this background, let us consider the following examples:

(20) a. *John$_i$ left Mary behind himself$_i$.

b. *John$_i$ dropped his glasses in front of himself$_i$.

c. *John$_i$ located the box beneath himself$_i$.

d. *John$_i$ met the policeman next to himself$_i$.

e. *John$_i$ found a wallet in front of himself$_i$.

When an adjunct clause or phrase dominates a reflexive, it results in ungrammaticality, as shown in (20). Chomsky (1986a) proposes a formulation of the binding theory that does not rely on the notion of "SUBJECT" as in (21)-(23).

(21) For some β such that (i) or (ii), I is BT-compatible with (α, β):

(i) α is an r-expression and (a) if α heads its chain or (b) otherwise

(a) β = E

(b) β is the domain of the head of the chain of α

(ii) α is an anaphor or pronominal and β is the least CFC containing τ for which there is an indexing J BT-compatible with (α, β)

(22) I (Indexing) is *BT-compatible* with (α, β) if:

(A) α is an anaphor and is bound in β under I

(B) α is a pronominal and is free in β under I

(C) α is an r-expression and is free in β under I

(23) β is a *Complete Functional Complex* (CFC) if all the grammatical functions compatible with a head dominated by β are contained in β

Under the framework of Chomsky (1986a), PP is a CFC, since all the grammatical functions associated with its head are realized inside it. Thus the minimal CFC containing a reflexive in (20) and its governor is the PP. The reflexive in (20) must meet its binding requirement in the minimal CFC (the PP). However, it cannot be bound in the PP, so it

must look for the next higher CFC with a potential binder in it, which is the root sentence. In the root sentence the reflexive is bound by its antecedent *John* and thus condition A is satisfied, predicting the grammaticality of the sentences in (20) (cf. Lees and Klima 1963, Kuno 1987, Wilkins 1988, Johnson 1988, Hestvik 1991, Pollard and Sag 1992, Reinhart and Reuland 1993, etc.). But the reverse is the case.

The binding theory of Chomsky (1986a) faces such an empirical problem. However, our approach based on cliticization has a desirable consequence which enables us to account for the ungrammaticality of the examples like (20).

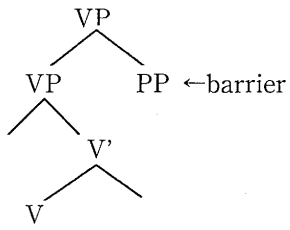
When a reflexive is moved by the operation of cliticization and form its chain, it is the case of Move α, though applying in the LF component. Thus constraints of movement are imposed on the operation, that is, a cliticization beyond a barrier is blocked. The notion of barrier is defined by using the notion of L-mark in Chomsky (1986b), as shown in (24). And the θ-mark in (24) reads in (25).

(24) α L-marks β iff α is a lexical category that θ-governs β.

(25) α θ-governs β iff α is a zero-level category that θ-marks β, and α, β are sisters.

With this background, let us see the examples in (20) again. In (20), the PP which contains a reflexive is not the verb's argument, thus it adjoins to the VP, as illustrated in (23).

(23)



Since the PP is not L-marked by the verb, it becomes a barrier for the elements it dominates. Therefore, in (20), the reflexive crosses the

barrier by the cliticization of SELF, yielding the ungrammaticality of the sentences in (20).

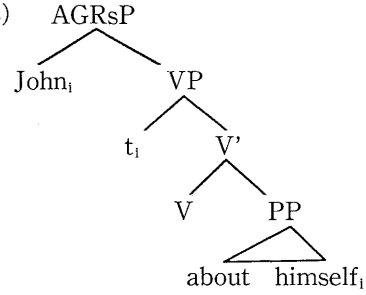
On the other hand, when a reflexive is contained in an argument selected by a verb, a grammatical sentence generates, as shown in (27).

(27) a. $John_i$ talked about $himself_i$.

b. $John_i$ always relies on $himself_i$.

In (27), unlike (20), the PP's θ-role is stipulated in the argument structure of the verb and it is realized as PP by Canonical Structural Realization. Thus the configuration of (27) is as follows:

(28)



In (28), PP is not a barrier, since it is L-marked by V. SELF is cliticized to V at LF by its defective nature and forms a SPEC-HEAD relation with the trace of the subject *John*. Since the trace in the SPEC-VP is the copy of the subject, the second argument in SELF's grid is identified by the cliticization and thus it saturates, predicting the appropriate identity relation between *John* and *himself*. Therefore, the sentences in (27) are ruled in.

Let us see the following examples, where verbs of *put*-class take both an NP and a PP as their internal arguments.

(29) a. John pulled the blanket over himself.

b. John put the box behind himself.

c. John pushed the girl away from himself.

d. The children drew circles around themselves.

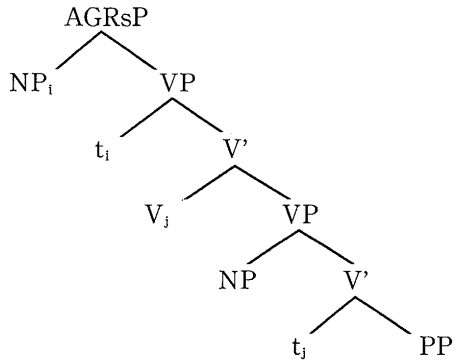
The verbs of this class in (29) have the argument structure as in (30) and

PP of the examples is a verb's argument.

(30) V: [Agent, Theme, Location]

The configuration of the examples is as follows:

(31)



In (31), since PP is L-marked by the trace of the verb moved to the head of the upper VP by morphological necessity (see Chomsky and Lasnik 1993, Chomsky 1993, Chomsky 1995), it is not a barrier. Thus the cliticization of reflexive is not blocked, predicting the appropriate identity relation between a reflexive and its antecedent in (29).

Let us see other intriguing examples like (32).

(32) a. *John believes that Mary hates himself.

b. John believes that himself, Mary hates.

In (32a), the identity relation between *himself* and *Mary* is impossible. However, when *himself* is topicalized and adjoined to the left of *Mary*, the identity relation between the reflexive and an NP in a main clause is possible, as shown in (32b). Under our framework, the reflexive must be cliticized to a verb at LF. If it were cliticized to the verb in the subordinate clause, it would be lowered and thus would violate the Proper Binding Condition. Therefore, there is no other way than to adjoin the reflexive to the verb of the main clause by cliticization.

If so, the operation is like a clitic climbing observed in Romance languages, for example, Italian. See the following examples:

(33) a. Gianni verr a parlar*ti* di psicologia.
John come to speak to you about psychology
'John will come to speak to you about psychology.'
b. Gianni *ti*verr a parlar di psicologia.
John to you come to speak about psychology
'John will come to speak to you about psychology.'

In Italian, it is possible that a clitic *ti* in a subordinate clause adjoins not only to a verb of a subordinate clause but to a verb of a main clause. And this clitic climbing is sensitive to a barrier. In a sentence which contains a subordinate clause with negation, for example, when a clitic in a subordinate clause adjoins to the verb in the main clause, it induces an ungrammaticality, as shown in (34).

(34) Italian
a. Gianni vuole non verder*li*.
John wants NEG to see them
b. *Gianni*li* vuole non vedere.
John them wants NEG to see

Kayne (1989) argues that though negatives in Italian are zero-level categories, they cannot obtain the property of L-marking, since they are not lexical categories. If so, negatives cannot L-mark their complement and thus it becomes a barrier. In this case, it is impossible to extract an element from the complement. In (34b), the clitic moves up to the verb of the main clause across the complement of the negative head (a barrier), inducing an ungrammaticality.

With this background, let us consider (32b) again. In (32b), there is no barrier between the reflexive in the left of the subject in the subordinate clause. So SELF in the reflexive can be cliticized to the verb of the main clause. By this cliticization SELF in the reflexive forms SPEC-HEAD relation with the trace of *John* in the SPEC-VP of the main clause and the second argument in SELF's grid is identified, predicting an

appropriate identity relation between the reflexive and *John*.

3. Conclusion

In this paper, I have argued that an identity relation between a reflexive and its antecedent is accounted for as a consequence not of condition A but of a cliticization of the reflexive's head to a verb at LF. In the case where a reflexive is contained in NP, for example, picture noun reflexives, the cliticization of a reflexive's head may be operative within the NP, i.e., SELF is cliticized to the NP's head. I will argue about it in another paper, however. Lebeaux suggests that a distribution of reciprocals in English can be treated by a movement theory. If he is correct, all the condition A's effects found in anaphors' distribution in English follow from a movement theory.

Notes

1. In English, some elements can intervene between a pronominal of reflexive and SELF, as shown in (i).
   (i) a. her usual self
   b. my stupid self
   This fact supports the claim that a pronominal occurs in the SPEC position of NP and SELF occurs in the head of NP.
2. Under the traditional binding theory, the ungrammaticality of the following example is due to the fact that the reflexive in examples like (i) cannot be bound by its antecedent, since the antecedent lies in the SPEC position in NP and thus cannot c-command the reflexive.
   (i) *John's sister saw himself.
   Under our approach, however, the reflexive's SELF is cliticized to V and forms a SPEC -HEAD relation with the trace of the subject in SPEC-VP, which is not the trace of *John* but that of *John's sister*,

blocking the second argument's saturation in SELF. Thus the identity relation between the reflexive and its antecedent crashes, predicting the ungrammaticality of (i).

3. In the case where a reflexive occurs in a subject position, it induces ungrammaticality, as follows:

   (i) *John believes that himself will win the race.

   It seems that this ungrammaticality is due to not a binding relation between the reflexive and its antecedent but a failure of the feature checking of the subject in the sense of Chomsky (1993;1995). The reflexive moves to the SPEC of AGRsP to have its Case and ϕ-features checked. Given a historical fact that reflexives have never borne nominative case, the reflexive in (i) is drawn from the lexicon with a Case other than nominative case. In the Minimalist Program, case feature and ϕ-feature of a subject are checked by AGRs and T which form a complex (a bundle of N-feature and V-feature) . The Case which AGRs and T can check is nominative case. Thus there arises a feature discrepancy between the reflexive in the subject position and AGRs and T, predicting the derivation's crash of (i). So (i) is ruled out (cf. Lebeaux 1983).

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