

On Some Differences between Control and Predication*

Young-Sun Kim

1. Introduction

In this paper, we argue that the control theory cannot be replaced by the predication theory. Williams (1980) includes obligatory control as a case of predication. Browning (1987) explains most control cases in terms of her predication theory. However, there remain several cases which cannot be explained in her predication theory. Here I suggest that despite some redundancies between control and predication, these are two different rules, showing different characteristics.

2. Control vs. Predication

2. 1. The Distinctions between Control and Predication

Before we make distinctions between control and predication, let us consider the possible gaps in the following purposive constructions.

- (1) a. It is time [for us to give a present to Bill]
- b. It is time [__ to give a present to Bill]
- c. I bought a book [for us to give __ to Bill]
- d. I met someone [for us to give a book to __]

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- e. I bought a book [__ to give __ to Bill]
- f. I met someone [__ to give a book to __]
- g. *I bought someone a present [for you to give __ to __]
- h. *I bought someone a present [__ to give __ to __] (Chomsky, 1986 : 112)

In (1a) the embedded clause appears in full. The examples (1b-1d) show that any one of the three NPs can be missing, with an appropriate choice of its antecedent in the main clause. However, any pair with the subject may be missing, as shown by (1e-1f), but neither the other two NPs nor all three NPs, as shown by (1g-1h).

The subject, which can always be missing, is assumed to be PRO, and exactly one other NP, which can be missing by Move- α , may place one operator in the preclausal position. Here I propose that the antecedent of PRO should be determined by the control theory and the antecedent of the empty operator should be determined by the predication theory.

First of all, we can raise the question of whether control and predication are two different rules or whether one is a subset of the other. Williams (1988) makes some important distinctions between control and predication. First, he points out that the antecedent of PRO should be [+human], but that of predication need not be, as we see in (2-3).

- (2) *The rock Ved [PRO to roll]
- (3) The device arrived [broken]

Williams (1988) argues that there would be no such verbs that are allowed in the position of verb in (2), since PRO is always [+human], whereas in (3) the subject or antecedent of *broken* need not be human. So he assumes that the humanness restriction is the intrinsic property of PRO. Here I think the humanness restriction should be loosened, as the following example shows.

- (4) John brought *the chicken* home [PRO to eat]

In (4) *the chicken*, which is not [+human] is the controller for PRO.¹ Thus

¹ The two interpretations such as (i) and (ii) can be obtained from (4):
 (i) John brought *the chicken*_i home [PRO_i to eat]
 (ii) *John*_i brought the chicken home [O_i[PRO_i to eat t_i]]

the controller should be [+animate].

Second, according to Williams (1988), predication has the property of locality, while control does not. Here locality means the relation of the immediate sisterhood or the immediate domination. But I suppose that locality should be the relation of local m-command, which means there is no other argument m-commanding the predicate between the antecedent and the predicate. In this respect, the relation of the controller and PRO is local, since there is no other available argument as a controller between the controller in question and PRO. Thus, the locality restriction is not so crucial in distinguishing control and predication.

Third, what Williams (1988) points out is the restriction of obligatoriness. Predication is characterized by obligatoriness, whereas control is not. This is also related to the problem of implicitness. For example, the subject of the predicate is obligatorily determined, but does not allow an arbitrary interpretation or implicit argument to be its antecedent. Consider the following examples.

- (5) John met Mary [drunk]
- (6) a. John asked [what [PRO to do]]
- b. It is fun [PRO to play baseball]

In (5) *drunk* obligatorily takes the antecedent of *John* or *Mary*, but never gets the arbitrary interpretation. As we see in (6), PRO gets arbitrary interpretation. The important difference between control and predication is that the former allows an implicit controller, but the latter is not linked to the implicit argument.

2.2. The Redundancies between Control and Predication

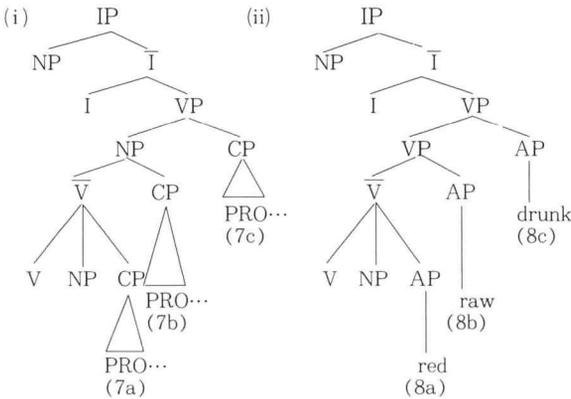
Let us turn to the relation between the control structure and the so-called predicate-linking structure.

- (7) a. John persuaded *Mary* [PRO to leave]
- b. John sent *his sons* to a boarding school [PRO to live in a community]
- c. *John* sent his sons to a boarding school [PRO to have some peace]
- (8) a. John painted *the car* [red]
- b. Bill ate *the carrots* [raw]

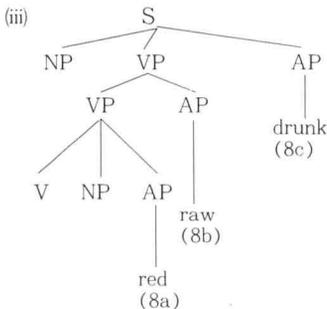
c. *John met Mary [drunk]*²

The structures of (7a-c) are parallel to those of (8a-c). Y. S. Kim (1989) suggests that the controller is the argument whose theta-assigner m-commands PRO. In (7a) *Mary* is the argument whose theta-assigner, *persuade*, m-commands PRO. In (7b) V m-commands PRO so that the argument *his sons*, which is theta-assigned by the verb, controls PRO. On the other hand, in (7c) VP m-commands PRO so that the argument *John*, which is theta-assigned by the VP, controls PRO. According to Rothstein's (1985) rule of predicate-linking, in (8a) the resultative predicate *red* is linked to *the car*, in (8b) the predicate *raw* is linked to *the car*-

² The structures of (7a-c) will be represented as in (i) and those of (8a-c) will be as in (ii).



In Rothstein (1985), the structures of (8a-c) are represented in a different way as in (iii), but the relative order between predicates is preserved both in (ii) and (iii).



rots and in (8c) *drunk* is linked to *John*, since they meet the mutual c-command condition respectively³. This mutual c-command condition seems to work for control theory, but it is too restrictive to be applied to the control relationship between the implicit controller and PRO, as we see in (9b).

- (9) a. The boat was sunk by *John* [PRO to collect the insurance]
 b. The boat was sunk *e* [PRO to collect the insurance]

In (9a) *John* and PRO do not c-command each other, but nevertheless *John* controls PRO. In (9b) PRO is controlled by the implicit argument, which is ultimately theta-assigned by the VP that m-commands PRO since the control clause is a VP-external rationale clause. The subject theta-role, theta-assigned by the VP which m-commands PRO, is transferred to the *by*-phrase. It serves as a controller for PRO, whether the *by*-phrase is explicitly realized or not.

Williams's (1980) Predication and Rothstein's (1985) Predicate-Linking theories based on the c-command relationship between an argument and a predicate cannot account for the following examples, if we assume these are cases of predication.

- (10) a. Baseball cannot be played barefoot.
 b. The game was played nude
 c. Football should not be played unhelmeted

Y. S. Kim (1989) explains the predicate-linking relationship in terms of control relationship, because they show some similarity. But here I suggest that the examples in (8) and those in (10) should be treated in a different way. In (8) the arguments linked to the predicate are [−human] and cannot be incorporated into the control theory. Moreover, if this is the case of predication, there is no way to block the predicate from being linked to the subject. But in (10) the predicates are linked to the implicit arguments, which are not a property of predication, but of control. Following Roeper (1987), I assume that (10) should be analyzed as in (11).

³ In (8c) *drunk* can be linked to either *John* or *Mary*. When *drunk* is attached to a VP-internal position, it is linked to *Mary*, since it is the argument locally m-commanding the predicate. But when *drunk* is attached to a VP-external position, it is linked to *John*, since it is the argument locally m-commanding the predicate.

- (11) a. Baseball cannot be played *e* [PRO barefoot]
 b. The game was played *e* [PRO nude]
 c. Football should not be played *e* [PRO unhelmeted]

In (11) PRO is controlled by an implicit argument. Roeper (1987) also points out that the examples in (10) cannot be accounted for under a predication analysis based on c-command condition, but he does not provide any alternative theory of control. By assuming that the instances of (10) are in the realm of control, the predication theory is made simple. The local m-commanding condition is enough to explain the cases of predication.

2.3. Is Control a Subset of Predication?

Williams (1980) distinguishes two cases of control, obligatory control (OC) and non-obligatory control (NOC). He defines obligatory control as a case of predication in that it shows the properties of predicate structure.⁴

Williams (1987) suggests that there are three species of theta role assignment, internal theta role assignment, external theta role assignment (vertical binding) and predication. According to him, all these theta role assignments are governed by the strictest structural condition. In the case of internal assignment and predication, the condition is sisterhood and in the case of the vertical binding of the external argument, it must be bound by the immediately containing phrase. He assumes that all three of these restrictions can be reduced into a single theta role assignment restriction (TRAC), as in (12).

- (12) TRAC: No phrase at all can intervene between an assigner and an assignee.

Browning (1987) interprets the TRAC as the mutual c-command requirement on predication. Thus it can be rephrased as follows.

⁴ The properties of obligatory control are given as follows:

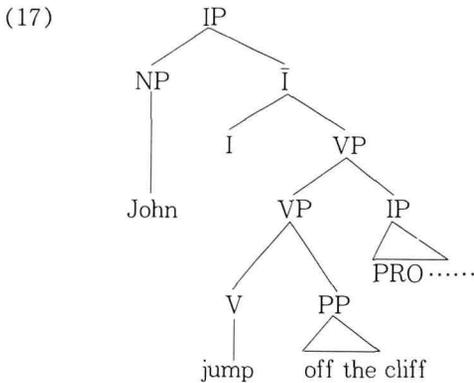
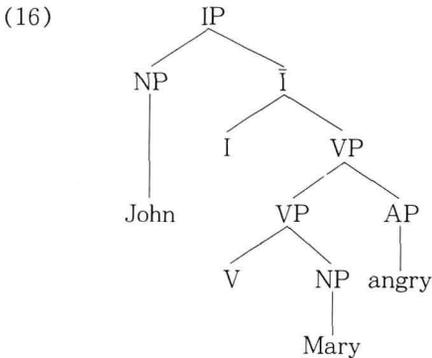
- (i) OC1. Lexical NP cannot appear in the position of PRO.
 OC2. The antecedent precedes the controlled PRO.
 OC3. The antecedent c-commands the controlled PRO.
 OC4. The antecedent is thematically or grammatically uniquely determined.
 OC5. There must be an antecedent.

- (13) TRAC: No maximal projection can intervene between an assigner and an assignee.

Let us consider how Browning's (1987) TRAC work.

- (14) John met Mary drunk
 (15) John would jump off the cliff [PRO to impress Mary]

The tree diagrams of (14-15) will be represented as in (16-17).



As we see in (16-17), VP intervenes between a theta-assigner and a theta-assignee. However, the sentences (14-15) are grammatical, contrary to prediction, since they violate the TRAC. Thus, Yang (Fall lecture. 1988) revised the TRAC to solve the problem as follows.

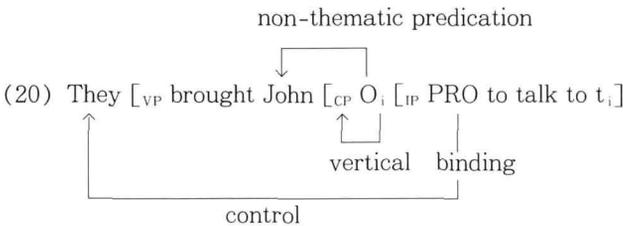
- (18) Revised TRAC: No barrier can intervene between a theta-assigner and a theta-assignee.

The examples of (14-15) violate the TRAC, but satisfy the revised TRAC. However, the revised TRAC does not account for the following example.

(19) John_i [_{VP} is [_{AP} easy [_{CP} O_i [_{IP} PRO to please t_i]]]

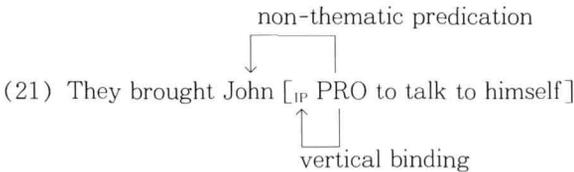
Example (19) also violates the revised TRAC, but it is grammatical. As we have seen, the first problem with Browning's (1987) TRAC is that it does not account for the examples of (14-15) and (19). The second problem is that Browning's predication theory applies to two different things. Not only does it determine the antecedent of the empty operator, but also it determines the controller of PRO in some cases. In other words, the controller of PRO is determined in two ways; in object gap purpose clause constructions, where empty operator is involved, the controller of PRO is determined by the control theory. On the other hand, in the rationale clause and subject gap purpose clause constructions, where no empty operator is involved, the controller of PRO is determined by the predication theory.

First, let us consider the object gap clause.



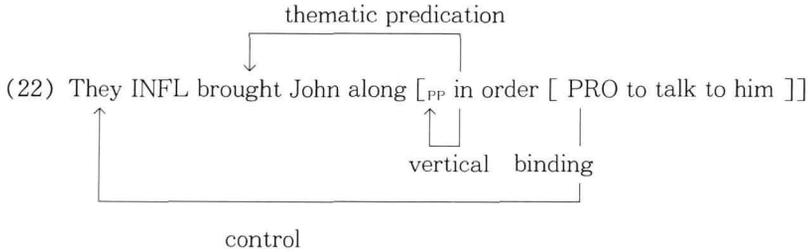
In terms of Browning (1987), in (20) the empty operator is linked to *John* through CP vertical binding and predication. But here the controller of PRO is determined by the separate control theory.

Next, consider subject-gap purpose clause construction.



In (21), PRO is ultimately linked to *John*, through the processes of spec-head agreement, head-projection agreement and predication. This process is

also applied to the rationale clause.



According to Browning (1987), in (22) the rationale clause is predicated of the event as an element of **INFL**, but a separate control theory is required to determine the controller of **PRO**. The third problem with Browning is that her control theory is not well established. She suggests that **PRO** in rationale clauses is controlled by the matrix agent. To show that the operative notion for determining the control is agency, but not the structural subject, she gives the following example.

- (23) The bridge was blown up (by the guerillas) [in order [PRO to demonstrate the power of the resistance.]]

(23) is grammatical without the *by*-phrase. Whether *by*-phrase is explicit or not, it controls **PRO** in rationale clauses. But it should be noted that a *by*-phrase which can be a controller for **PRO** is not always agency. Let us consider the following data from Jaeggli (1986: 599)

- (24) a. Bill was killed *by Mary*. (Agent)
 b. The package was sent *by John*. (Source)
 c. The letter was received *by Bill*. (Goal)
 d. That professor is feared *by all students*. (Experiencer)

As we see in (24), the important factor in determining the controller for **PRO** in rationale clauses is not the agency, but theta-role given by the VP, whatever the theta-role is. Y. S. Kim (1989) proposes that the controller is the argument whose theta-assigner m-commands **PRO**. Y. S. Kim accounts for all the **PRO**s from (20) to (23) by a unified control theory in a principled way. But the predication theory is required to determine the antecedent of the empty operator as well as the predicate-linking argument. M. K. Kim (1989) also observes that the antecedents of the empty operators are

determined by the rule of predication, which says to coindex c-commanding NP to predicate XP. But with her theory, the examples of (10) cannot be accounted for, unless they are treated in the control theory.

3. The Rule of Predication and Local Binding

3.1. Empty Operator and its Antecedent

Here I suggest the rule of predication as follows;

- (25) The predicate XP is obligatorily linked to the argument which locally (no other m-commanding argument between) m-commands it.

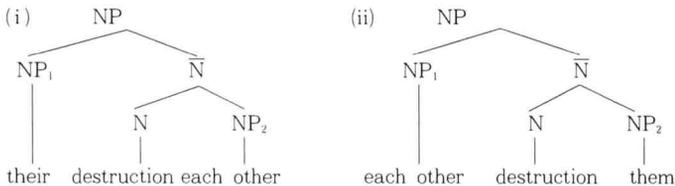
It seems that an empty operator is in the relation of local binding with its antecedent, if 'c-command' in binding is replaced by m-command⁵. Consider the following examples.

- (26) a. John_i is too stubborn [O_i [PRO to talk to t_i]]
 b. Bob_i is hard [O_i [PRO to convince t_i]]
 c. The food_i is ready [O_i [PRO to eat t_i]]

In (26a), *O* is an empty operator and *t* the variable that it binds. Chomsky (1986) mentions that the variable must be associated with an antecedent in a structurally appropriate position that assigns it a value. I suggest that the

⁵ The definition of local binding is as follows:

X binds Y if X c-commands and is co-indexed with Y. X locally binds Y if X binds Y and there is no Z such that X binds Z and Z binds Y (Chomsky, 1986: 164-5). In local binding, if 'c-command' is replaced by 'm-command', the contrast between (i) and (ii) is not shown. (from a personal communication by Soo-Hyun Suh)



In (i) NP₁ c-commands NP₂, but is not c-commanded by NP₂. In terms of 'm-command,' NP₁ and NP₂ m-command each other and no asymmetry between NP₁ and NP₂ in (ii) is given.

structurally appropriate position in question is that of local m-commanding. In all the cases of (26), where there are two missing gaps with one available argument as an antecedent, it is the empty operator that obligatorily takes the overt antecedent. That is why ‘obligatorily’ is inserted in (25). Thus, *John* in (26a), *Bob* in (26b) and *the food* in (26c) m-command the embedded clause and serve as an antecedent of the empty operator. But PRO in (26) has an arbitrary interpretation.⁶

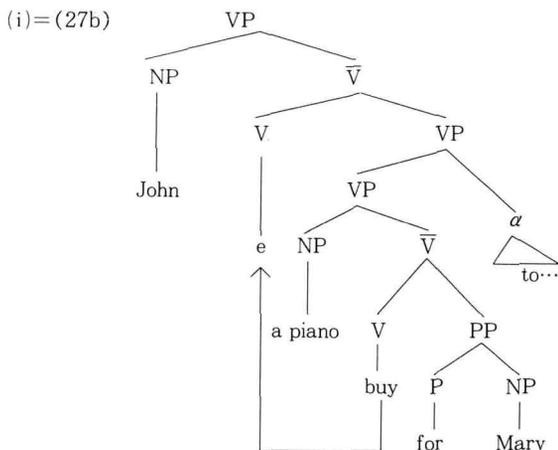
The following examples show how the antecedent of PRO and the antecedent of the empty operator are determined in different ways.

- (27) a. *John_i* bought a piano_i [O_i [PRO_i to practice on t_i]]
- b. John bought a piano_i for *Mary_i* [O_i [PRO_i to practice on t_i]]
- c. John bought *Mary_i* a piano_i [O_i [PRO_i to practice on t_i]]
- d. *John_i* bought a piano_i from Mary [O_i [PRO_i to practice on t_i]]⁷

In (27a) the argument which locally m-commands the empty operator is *a piano*, but it is also the argument available as a controller for PRO, since it is the argument whose theta-assigner m-commands PRO. But PRO and *t* may not have the same index in accordance with the Condition C of the

⁶ Roeper (1987) assumes that all instances of PRO are instances of PRO controlled by implicit arguments. I think it is possible to insert a *for*-phrase following the adjective. In other words, the adjectives in (26) take an implicit benefactive argument, and PRO is controlled by this implicit argument. Thus, this PRO controlled by the implicit argument should be distinguished from a purely arbitrary PRO.

⁷ Larson’s (1988) analysis for (27b) and (27c) is as follows:

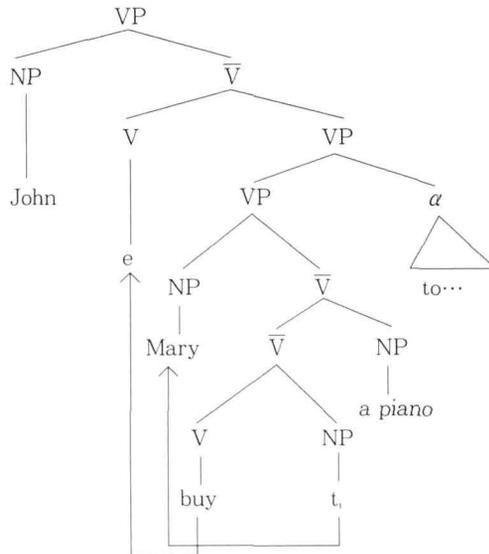


Binding Theory. Also, *a piano* is excluded as a controller for PRO, because it is not [+human]. But this is not crucial in this structure, since in (28) *a comedian* is excluded as a possible controller, even though it is [+human]. Thus in (27a) the only argument available as a controller is *John*. In (27b) the antecedent of the empty operator is *a piano*, which is the argument locally m-commanding it, whereas the controller of PRO is *Mary*, which is the argument whose theta-assigner m-commands it. *A piano* is excluded as a controller for PRO for the same reason as given in (27a). In (27c) PRO is controlled by the argument *Mary* whose theta-assigner m-commands it. In (27d) *a piano* is the only argument which locally m-commands the embedded clause, and *John* is the controller for PRO. Here *from Mary* is an adjunct PP to a verb and is not an argument theta-assigned by the verb. Consider the following example.

(28) John sent *Mary*, a comedian, [_O [_{PRO} to entertain _{t_i}]]

7 continued

(ii) = (27c)



Larson (1991) assumes that the closest NP which c-commands the infinitive at D-structure is a controller, but in both (i) and (ii) *Mary* fails to c-command the infinitive. In his analysis, we can say the argument directly theta-marked by the verb is the controller. Thus in both (i) and (ii), *Mary* is the controller.

Browning (1987) argues that the purpose clause with null operator chains is only licensed when it is predicated of the Theme of the verb. In (28) *t* is licensed by the Theme argument, *a comedian* and thus, *Mary* is left available as a controller for PRO. In my approach, in (28) *a comedian* is the argument locally m-commanding the embedded clause and serves as an antecedent of the empty operator. *Mary* is available as a controller for PRO, among the arguments directly theta-assigned by the verb.

The passive of (27) changes neither the antecedent of the empty operator nor the controller of PRO.

- (29) a. A piano_i was bought t_i by *John*_i [O_i [PRO_i to practice on t_i]]
 b. A piano_i was bought t_i for *Mary*_i (by John) [O_i [PRO_i to practice on t_i]]
 c. *Mary*_i was bought t_i a piano_i (by John) [O_i [PRO_i to practice on t_i]]
 d. A piano_i was bought t_i from *Mary* by *John*_i [O_i [PRO_i to practice on t_i]]

3.2. VP-external and VP-internal Participial Clause

Williams (1988) made a distinction between ‘open’ and ‘closed’ adjunct. Consider the following examples.

- (30) a. John hit me [without PRO using a bat]
 b. John hit me [without hurting me]
- (31) a. I was hit [without PRO using a bat]
 b. *I was hit [without hurting me]

The ‘closed’ adjunct (30a), which identifies means or instrument, can occur with the implicit controller as in (31a), whereas, the ‘open’ adjunct (30b), which specifies something about attendant circumstances or consequences, cannot as in (31b). Thus Williams (1988) argues (30a) and (31a) are examples of control, whereas (30b) and (31b) are examples of predication. Moreover, the ‘open’ adjunct is not restricted to [+human] as in (32).

- (32) The rock fell on me [without hurting me]

Let us consider the participial clause.

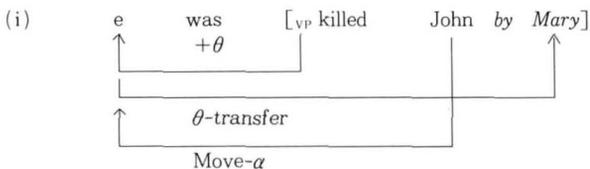
- (33) a. [While PRO recovering from his/*her illness], *John* constantly irritated *Mary*
 b. [While PRO recovering from her/*his illness], *Mary* was constantly irritated by *John*
- (34) a. [PRO lying idly in the sun], *John* watched *Mary*
 b. [PRO lying idly in the sun], *Mary* was watched by *John*

In (33) and (34), since the participial clause is considered to be a VP-external clause, the argument theta-assigned by the VP, which m-commands PRO is always *John*, whether the main clause is passivized or not⁸. Thus PRO should be controlled by *John* in (33-34). But contrary to our expectation, in (33b) and (34b), PRO is controlled by *Mary*, not by *John*. Lee (1989) argues that following Williams (1989), these are cases of predication and should be accounted for in the predication theory. If we assume that PRO is not involved in the participial clause, this clause is linked to the argument which locally m-commands it. In all the cases of (33-34), the subject is the argument which locally m-commands the participial clause and serves as an antecedent of the clause. Also, these are no longer counter-examples to our control theory, since they are not instances of control.

When the clause is preposed, no ambiguity arises whether the clause is a *wh*-clause or not. But when the clause is not preposed, some differences between *wh*-participial clauses and non-*wh*-participial clauses are shown.

- (35) a. *John* constantly irritated *Mary*, [while recovering from his/*her illness]
 b. *Mary* was constantly irritated by *John*, [while recovering from her/*his illness]

⁸ In Chomsky (1986: 122), the theta-role of the implicit subject in a passive structure is transferred to an associated *by*-phrase, as in (i).



In (35) the *while* clause takes the structural subject as its antecedent, whether the main clause is passivized or not. But in (36), unlike (34), both *John* and *Mary* serve as an antecedent of the clause.

- (36) a. *John* watched *Mary* [lying idly in the sun]
 b. *Mary* was watched by *John* [lying idly in the sun]

In (36) either *John* or *Mary* is possible as an antecedent of the participial clause. But in (36a) *Mary* is preferable and in (36b) *John* is preferable. The reason is that when the clause is interpreted as a VP-internal clause, the closest argument is preferable as an antecedent of the participial clause.

Compare the following examples.

- (37) a. *John* left/found/saw *Mary* cursing himself/herself
 b. *John* left/found/saw *Mary* while cursing himself/*herself

In (37a) the participial clause can be interpreted either as a VP-internal or as a VP-external clause, and ambiguity arises. The reason that *Mary* is not possible with *wh*-participial clause as in (37b) is that the *while*-clause cannot be interpreted as a VP-internal clause. When the participial clause in (37a) is preposed, no ambiguity arises, as in (38).

- (38) Cursing himself/*herself, *John* left *Mary*

If we assume that only phrases outside VP are preposable, (38) can be interpreted as a VP-external clause, where *John* is the antecedent of the participial clause. Even though no *wh*-participial is involved, the object is not linked to the clause in (39).

- (39) *John* insulted/scratched/kissed/married/helped/scolded/pinched
Mary/cursing himself/*herself

Mohanan (1983) notes that object control is restricted idiosyncratically to a few verbs, while subject control is possible with all verbs. I think this also shows that object control is possible when the participial clause is interpreted as a VP-internal clause. This means that VP-internal clauses are more dependent semantically on the verb than VP-external clauses and thus object control is more restricted, as in (39).

4. Conclusion

We have considered some differences between control and predication and argued that these are two different rules despite some similarities and redundancies. If we assume that the problematic control cases in participial adjunct clauses are instances of predication, and the examples of predication whose predicates are linked to the implicit arguments are instances of control, these two theories are made simple. In short, the control is the theta-domain relation between PRO and its controller, whereas the predication is the structural local m-command relation between the predicate and its argument. Moreover, the local m-command relation based on predication is also inferred from the relation between the empty operator and its antecedent.

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ABSTRACT

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The present paper suggests that control and predication are two different rules and cannot be incorporated in one. The antecedent of PRO is determined by the control theory and the antecedent of the empty operator is determined by the predication theory. This predication theory also applies to linking predicates to their antecedents. If the realm of control is clearly distinguished from that of predication, both theories are made simple. The control is the theta-domain relation between the controller and PRO, whereas the predication is the structural local m-command relation between the predicate and its argument or between the empty operator and its antecedent.

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