

## Movement, Control, and the $\theta$ -Theory

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# Movement, Control, and the $\theta$ -Theory

Yubun Suzuki

## 1. Introduction

This article aims at showing that the syntactic theory developed in Williams (1994) (henceforth, W) is not a real alternative to the standard PP (Principles and Parameters) approach (or its descendants) at its present stage of evolution.<sup>1</sup> The most conspicuous departure of W's framework from the standard PP theory lies in the significance of the  $\theta$ -theory. W attempts to derive much from the  $\theta$ -theory including the locality of NP-movement and Wh-movement, some aspect of the superiority effect, some subcases of control, and anaphor binding.<sup>2</sup> In the present paper, W's viewpoint regarding these phenomena will be examined, while referring also to other related facts, and it will be shown that his strategy, in its present shape, is not necessarily superior to the standard approach.

## 2. The $\theta$ -Assignment

The central mechanism of W's  $\theta$ -theory is the locality of the  $\theta$ -role assignment. The  $\theta$ -relation is represented as the coindexation of two arguments of distinct lexical items. The locality of this coindexation is achieved by resolving it into two local relations of syntactic categories; strict sisterhood and projections.

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- 1 I would like to thank Brian Quinn, Sean Matthews and John Kimball for patiently acting as informants. I am also indebted to Brian Quinn for his stylistic suggestions. The author is solely responsible, however, for any remaining inadequacies in this article.
  - 2 I postpone to a future research the discussion of the relation between the binding theory and  $\theta$ -theory.

Let us take  $\theta$ -relations in *John bought books* for illustration. *W* considers that the two arguments of *bought* are coindexed with some arguments in the argument structure of *John* and *books* rather than assigned to *John* and *books* themselves. This “some argument” is an external argument (called *R* in Williams (1981)) of the head N.<sup>3</sup> *W* argues that since an external argument is assigned XP-externally, the index of this *R* argument percolates from the head N to its maximal projection to be assigned outside the NP. Then, in the case of *books*, the strict sisterhood of *bought* and its object NP is sufficient to establish the required coindexation. In the case of *John*, however, one more step is needed. The index of the external subject argument of *bought*, not satisfied VP-internally, ascends to VP, and then the strict sisterhood of VP and its subject NP (this sentence structure will be discussed in section 3.4.) enables the required coindexation to take place.

The architecture of the  $\theta$ -role assignment mechanism along this line is presupposed in *W*'s explanations of various facts we observe in the following sections.

### 3. Weakening Movements

The most striking consequence of *W*'s  $\theta$ -theory is the reduction of NP-movement to the  $\theta$ -role assignment. *W* regards NP-movement as non-existent and ascribes its restrictions to the locality of the  $\theta$ -role assignment. In his theory, NPs (and their traces) are base-generated in “post-movement” positions at the syntactic level named *the NP-structure*, a term dating back to van Riemsdijk and Williams (1981). There is no level corresponding to the D-structure in the sense of a pure representation of the  $\theta$ -role assignment to NPs in “pre-movement” positions.

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3 *W* assumes that an external argument, if any, is marked as such with an underline in the notation of argument structure, as in (agent, theme), and that an argument structure has one external argument at most. His notion of an external argument is absolute: it is not the case that some superior argument in an argument structure happens to be counted as “external”.

Unlike NP-movement, Wh-movement is real, mapping the NP-structure to the S-structure. In fact, this is virtually the only movement in W's framework.

LF-movements like the raising of a wh-in-situ and quantifier raising have no status. The syntactic level LF is also absent. The properties of "LF-movement" are captured by  $\theta$ -theoretic constraints and interpretational rules.

Head-movement is also attenuated. W distinguishes S-internal V-movement from V-movement out of S. The former is false while the latter is real.

In conclusion, the syntactic picture W demonstrates involves only two syntactic levels (the NP-structure and the S-structure) and the sole real movement is the one relating these two levels (namely, Wh-movement). If W is right, this organization of a syntactic theory certainly makes a large contribution to the simplicity of grammar. We will see, however, that his arguments are not fully conclusive.

### 3. 1. NP-Movement

NP-movement is not invoked in W's approach. Representations like (1) are base-generated at the NP-structure (no trace is existent in (1a)):

- (1) a. John seems [to be sick].  
 b. John was [seen t].

In the "raising" structure (1a), the external argument of the adjective *sick* must somehow be assigned to *John*. The index of this external argument, which is not satisfied AP-internally, raises from the adjectival head to AP. This index is then transmitted to the matrix VP through the embedded VP and the embedded clause (IP) under the definition of a relativized head in (2), where "F" stands for a feature and "the absolute head" is an X-bar theoretic head:

- (2) X is the head with respect to F of Y if X is marked for a value of

F, and either X is the absolute head of Y, or the absolute head of Y is not marked for F. (Williams (1994:46))

The embedded VP in (1a) dominates its absolute head *be* and its complement AP. Since in W's analysis *be* is a functor and is not marked for an external argument index, the complement AP is the relativized head of the embedded VP with respect to an argument index and the external argument index possessed by the AP percolates up to the embedded VP. In a similar vein, the functor status of *to* and *seem*, as W argues, lets the index reach the matrix VP. The matrix VP and its subject NP (*John*) are sisters in W's sentence structure (Cf. (20a)), hence the coindexation of the *R* argument of *John* and the external argument of *sick*.

We should notice that this manner of the  $\theta$ -role assignment makes redundant the existence of NP-movement, a movement from a  $\theta$ -position to a  $\theta'$ -position. There is no  $\theta'$ -position in W's implementation of the  $\theta$ -theory. In fact, there is no embedded subject position in examples like (1a). Every NP is located in a  $\theta$ -position and is assigned a  $\theta$ -role through argument index percolation.

Verbal passive sentences like (1b) are not in alignment with (1a) in having an NP-trace. According to W, this trace is required because internal arguments of  $X^0$  must be assigned XP-internally. This trace acquires the argument index from the passive participle under their strict sisterhood. This is not the end of the story, however, since "Caseless NPs cannot satisfy  $\theta$ -roles" (Williams (1994:119)). The assignment of argument indices is one thing, their satisfaction is quite another. The index assigned to the NP-trace is sent up through the projection of the passive participle to the VP headed by *was* to be satisfied by the subject NP.

In these raising and verbal passive examples, the predication relation between the matrix subject (occupying a  $\theta'$ -position in the standard theory) and the matrix predicate includes a  $\theta$ -relation, thus reducing some redundancy between predication and the  $\theta$ -role assignment.

The replacement of NP-movement with the  $\theta$ -role assignment, however, seems to pose some problems. Given that restrictions on "NP-

movement” come from the locality of the  $\theta$ -role assignment, the status of “NP-movement” sentences hinges on whether or not an external argument on any head blocks the argument index ascension. W accounts for the contrast in (3) in this way:

- (3) a. John was believed [to be sick].  
 b. \*John was wanted [to leave].

W assumes that the complement clause of *want(ed)*, but not *believed*, has its own external  $R$  argument to satisfy the internal argument of the matrix verb. This means that *want(ed)*, but not *believed*, takes its complement clause as an argument and that the external  $R$  argument index of the clausal head must climb to its maximal projection to be in a sister relation to the matrix verb, preventing the subject index on the embedded VP from raising through the clausal node.

This distinction of lexical items, though, does not seem to be well-motivated. It is a stipulation that the passive participle *believed* in (3a), unlike *wanted*, ought to be regarded as a functor because of its failure to take its complement as an argument: it is not clear why the participle in question has no  $\theta$ -role for its complement clause unlike its active counterpart in an exceptional Case-marking construction even if they are no different in having a propositional complement signifying “what is believed”. Furthermore, it seems that the same participle takes an argument NP in a simple passive sentence. It is unlikely that a verb assigning a  $\theta$ -role to its complement NP has no role when its complement is clausal.

The strangest situation arises in sentences like (4):

- (4) John was believed [to be sick] by everyone.

If *believed* is a functor lacking a  $\theta$ -role to be assigned to the embedded clause in (4), then *everyone* violates the  $\theta$ -Criterion unless it receives a Believer role from *believed*. If it does, a cumbersome difficulty emerges,

where a verb has a Believer role while lacking a What-Is-Believed role.<sup>4</sup> A similar argument applies to (5), in which *seem* does not bear a What-Is-Experienced role although it should have an Experiencer role to be assigned to *me*:

- (5) John seems to me [to be happy].

These problems are overcome in the standard PP theory. Verbs *believe*, *want* (including their passive participles) and *seem* do carry appropriate  $\theta$ -roles for their clausal complements as well as a believer, an agent and an experiencer arguments. The source of the contrast in (3) could be the categorial difference of the complement clause, IP in (3a) and CP in (3b), in the light of the possibility of a lexical complementizer as evidenced in (6):

- (6) a . We want very much [for John to win].  
 a'. \*John believes [for Mary to go].  
 b . What we want is [for you to stay right here].  
(Inada (1989:54))  
 b'. \*What we believe is [for you to stay right here]. (ibid.)

There have been quite a few proposals as to how the presence of CP precludes NP-movement out of it in examples like (3b). One way is to resort to some condition against improper chains: a chain formed by NP-movement, its head and tail being A-positions, should not involve an A'-specifier of CP, which is, however, independently needed to antecedent-govern the original NP-trace.

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4 One might object that [to VP] alone does not provide a propositional content that deserves a propositional  $\theta$ -role. This constituent, however, bears an index to be ultimately assigned to a subject in a higher clause. Since this index corresponds to the NP-trace in the standard framework, the constituent in question ought to be given a propositional interpretation.

## 3. 2. Wh-Movement

Unlike NP-movement, Wh-movement is real in W's theory. However, some of its characteristics are dealt with in terms of the percolation mechanism independently needed in the  $\theta$ -theory. One of its bounding restrictions is taken up in this subsection; the contrast between an argument wh-phrase and an adjunct wh-phrase when they are extracted out of a weak island.

An adjunct wh-phrase can not move out of wh-island, a weak island, while the extraction of an argument wh-phrase does not elicit severe ungrammaticality as exemplified in (7):

- (7) a. \*Where does John wonder [what Bill bought t ] ?  
 b. What does John wonder [when Bill bought t ] ?

W adopts *the Scopal ECP (SECP)* as a condition by which movements are licensed (p.56):<sup>5</sup>

- (8) The Scopal ECP (SECP)  
 a. Analogue of antecedent government holds; or  
 b. The movement of the phrase and the scope assigned to the phrase coincide.

Since wh-island hampers the antecedent government of a wh-trace in it, the traces in the embedded clauses in (7) must be licensed by the second clause of the SECP, the analogue of lexical government in the standard ECP. The scope of a wh-phrase is determined on the basis of the percolation of a scope index from its trace position.<sup>6</sup>

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5 The phrasing of the first clause is partly adapted. W does not offer any particular definition of antecedent government. It is sufficient for our purpose to suppose that a weak island obstructs antecedent government.

6 We should notice that the scope relevant here is a scope as a quantified argument or an adjunct, but not a scope designating which interrogative clause a wh-phrase belongs to.



The scope index of *where* in (7a) fails to percolate up from its adjunct trace position with the help of the mechanism of a relativized head, because “[t]he notion of a relativized head applies only to the complement relation” (Williams (1994:47)). This renders impossible the coincidence of the movement domain of *where* and its scope, hence the ungrammaticality of (7a).<sup>7 8</sup>

The scope index of *what* in (7b), on the other hand, is successfully passed up to the matrix clause, the movement domain of this wh-phrase, owing to the mechanism of a relativized head. There is no other index standing in the way of the index ascension from the trace of *what*. The scope index of the wh-phrase in Comp, *when*, is no menace, since there is no index percolation from an adjunct position as we saw in the case of (7a).

Although this account of the contrast in (7) appears attractive at first glance, its empirical coverage is too narrow. The SECP draws a line between an adjunct and an argument, but not between a subject and other arguments. Sentences like (9) indicate that a subject of an interrogative clause can not escape this clause (wh-island) in contrast with (7b):

(9) \*Who did you wonder [how t fixed the car] ?

(Browning (1987:249))

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7 It is not problematic that the movement domain of *when* in (7b) (the embedded clause) does not coincide with its scope as an adjunct (the embedded VP), because its trace is antecedent-governed.

8 *W* provides some arguments for the exclusion of an adjunct from the mechanism of a relativized head. In order to rule out (i), two things must be made certain. Firstly, *raining* should lack a  $\theta$ -role to assign to *John*. Secondly and more importantly, the argument index of *singing*, an adjunct, must be prohibited from ascending so that the failure of *John* to be assigned an argument index might cause the violation of the  $\theta$ -Criterion:

(i) \*John was raining singing.

Another argument is based on examples like (ii), where the adverb *always* can not modify the matrix event and therefore its scope index must not be permitted to percolate up:

(ii) Someone thinks that Bill always lies.





dence requirement in favor of the hierarchical constraint we propose later in this subsection while agreeing with him on the inutility of the LF-movement of a *wh*-in-situ as far as the superiority effect is concerned.

A typical pair of examples showing the putative superiority effect is shown in (12):

- (12) a. Who  $t$  saw what ?  
 b. \*What did who see  $t$  ?

This contrast is often attributed to LF Wh-movement and the standard ECP. The trace of LF Wh-movement of *what* in (12a) is lexically governed (or  $\theta$ -governed) by a verb while that of *who* in (12b) is neither lexically governed (or  $\theta$ -governed) nor antecedent-governed. In (12b), the lack of lexical government is ascribed to the functional category status of C. The lack of antecedent government there derives from the Comp-indexing mechanism making Comp acquire the index of the *wh*-phrase that enters it first, *what*, but not *who*.

Many other pairs, however, stand in an uneasy relation with this ECP account. There is a phenomenon shown in (13) dubbed the pure superiority effect in which a *wh*-in-situ, lexically governed (or  $\theta$ -governed) by a verb, is expected to observe the standard ECP:

- (13) a. Who did you tell  $t$  to read what ?  
 b. \*What did you tell who to read  $t$  ?

W regards the superiority effect as an instance of crossover, observing that a *wh*-phrase is forbidden to move over another *wh*-phrase which is dependent on it for its scope as a *wh*-phrase. He proposes a condition based on the precedence relation between two  $\theta$ -positions (or NP-structure positions) shown in (14), which is meant for dependencies in general (p.246):<sup>11</sup>

- (14) Leftness Condition

If A  $\theta$ -commands B, role A cannot depend on role B if the position to which A is assigned precedes the position to which B is assigned.

In (12)-(13), roles A and B correspond to those assigned to *who* and *what*, respectively. There, the  $\theta$ -position of *who* precedes that of *what*. This means that the Leftness Condition requires *who* not to be dependent on *what*. In the (b) examples of (12)-(13), however, *who* is a wh-in-situ dependent on *what* for its scope as a wh-phrase, producing ungrammaticality. In the (a) examples of (12)-(13), it is *what* that is dependent, hence their felicitous status.

Although the Leftness Condition correctly explains the contrast in (12)-(13), it has a few flaws. First, it fails to reject multiple-wh-questions like (15) involving an adjunct wh-phrase:

(15) \*How did who leave t ?

Since the Leftness Condition, being a constraint on the relation between two  $\theta$ -positions, has nothing to say about cases involving nonargument wh-phrases, (15) vacuously satisfies the condition. W's attempt to expand the range of the  $\theta$ -theoretic account is thus frustrated here.

Second, the Leftness Condition, containing a precedence relation,

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- 11 (i) suffices for the definition of  $\theta$ -command:  
 (i) For two  $\theta$ -roles X and Y, X  $\theta$ -commands Y if X is a coargument of Y; or if X  $\theta$ -commands B, B is linked to Z, and Z  $\theta$ -commands Y. (Williams (1994 :225))

The first conditional clause in (14) is only necessary when noncoarguments undergo inspection in cases like (ii):

(ii) Who did [pictures of who] please t ?

The clause rules (ii) in even if *who*-in-situ is dependent on the trace of the fronted *who*, since the former does not  $\theta$ -command the latter. The subject argument, a coargument of the fronted *who*, is linked to the *R* argument of the subject NP, a coargument of *who*-in-situ, but not vice versa. Thus, the fronted *who* asymmetrically  $\theta$ -commands *who*-in-situ.

would be unable to rule in double complement pairs like (16) with two  $\theta$ -positions that are hierarchically as high as each other:

- (16) a. Where did you put what t ?  
 b. What did you put t where? (Fiengo (1980:122))

When two *wh*-phrases are sisters in a strict sense, the whole construction seems to be well-formed regardless of their linear order.<sup>12</sup> The definition of the Leftness Condition would wrongly expel (16a) from the area of well-formedness.

Third, the Leftness Condition can not handle cases like (17)-(18) having the same precedence relation and a different hierarchical relation:

- (17) a. \*Whom did John buy what for t ?  
 b. For whom did John buy what t ? (May (1985:130))  
 (18) a. \*What did you tell who about t ?  
 b. What did you talk to whom about t ? (Fiengo (1980:124))

12 The superiority effect emerges in double "object" constructions like (i):

- (i) a. Who did you give t what?  
 b. \*What did you give who t ? (Hornstein (1995:127))

This might favor analyzing a double object construction as constituting a structure where the indirect object asymmetrically *c*-commands the direct object. If this is the case, the generalization can be made that strict sister *wh*-phrases exhibit no superiority effect. Sentences like (ii) could be adduced for the asymmetrical *c*-command relation where the second object should not *c*-command the first:

- (ii) a. I showed John himself in the mirror.  
 b. \*I showed himself John in the mirror. (Barss and Lasnik (1986:347))

We have to notice that the ungrammaticality of (iib) does not come from any precedence requirement demanding an anaphor's being to the right of its antecedent. This is evident in examples like (iii):

- (iii) a. ?John talked about herself to Mary. (Williams (1987:162))  
 b. Pictures of himself upset Bill.

One way to have the asymmetrical *c*-command relation is a small clause analysis or Larsonian VP-shell analysis of double objects. We would not discuss this topic any further.

In (17), the  $\theta$ -position of *what* precedes that of the fronted wh-phrase (*whom* in (17a) and *for whom* in (17b)). In (18), the  $\theta$ -position of *who* (*m*) precedes that of *what*. The Leftness Condition would predict that all the sentences in (17)-(18) are uniformly ungrammatical. W's account is deficient in that it lacks reference to  $X'$ -theoretic hierarchy. Although a wh-in-situ is crossed over in each example, the (a) examples of (17)-(18) differ from the (b) examples of (17)-(18) in that the wh-in-situ is structurally higher in an intuitive sense than the trace of the moved wh-phrase in the former sentences while the same is not true of the latter.

The condition we propose under the standard PP theory is a condition on wh-dependency with reference to hierarchical relation (structural c-command) given in (19):

- (19) A wh-phrase that asymmetrically c-commands and precedes the trace of another wh-phrase must not depend on it.<sup>13</sup>

With this condition, the three problems above can be resolved. In (15), *who*, the specifier of IP, c-commands the trace of *how* and the latter does not c-command the former, as long as *how* is dominated by VP.<sup>14</sup> The former now asymmetrically c-commands the latter, rendering it impossible for the former to be dependent on the latter. In (16), since *what* and *where* are sisters and c-command each other, either one of them can depend on the other. In the (a) examples of (17)-(18), the object of a verb c-commands the object of a preposition, but not vice versa, the former asymmetrically c-commanding the latter. The condition in (19) requires the former not to be dependent on the latter. The object NP in

13 Reference to precedence, as well as hierarchy, is necessary to rule in examples like (i), where the following wh-in-situ might asymmetrically c-command the preceding wh-trace:

(i) What did you find t where?

14 *How* might be adjoined to VP and c-command the specifier of IP under the definition of c-command in terms of domination by every segment. Even in this case, *who* is structurally higher than the trace of *how* in an intuitive sense. Slight change in the definition of c-command might be in order.

(17b) mutually *c*-commands the PP complement and the object of the first PP complement in (18b) does not *c*-command the trace in the second PP complement in the first place, canceling the application of the condition in (19).

We hope we have shown in this section that *W*'s treatment of the superiority effect is no better than a possible standard account. Our solution, though, is temporary at best, since our condition might derive from deeper principles (Cf. Nakamura (1991)).<sup>15</sup>

### 3. 4. Head-Movement

*W* supposes that S-internal V-movement (or the lowering of an inflectional element onto V) is false while V-to-Comp movement out of S (e.g. subject-auxiliary inversion and verb second) is real on the ground that the latter movement, but not the former, needs a V-trace to preserve the directionality of  $\theta$ -assignment, which requires V (or its trace) to assign a subject  $\theta$ -role to the left. In *W*'s framework, V is introduced in an inflected form at the NP-structure and there is no node corresponding to the Infl head in the standard sentence structure. In fact, the standard sentence structure in (20b) is not a possible substitute for his structure in (20a):



(20b) is incompatible with *W*'s framework, because the *external* argument index of V that *I'* bears is assigned to the subject NP *internal* to its maximal projection.

(20a), though, does not appear to be harmonious with the X-bar theory. *W* licenses (20a) as a coordinate structure headed by a bivalent functor [*Nom*, *Tense*], S being [<sub>*NomP*</sub> *nom NP*] [<sub>*TenseP*</sub> *tense VP*], just as he analyzes a usual conjoined structure as headed by a bivalent functor [*0*,



and], *XP and YP* being *XP* [*andP and YP*].

This coordinate structure analysis of a clause encounters a difficulty with respect to the Coordinate Structure Constraint. It is usually impossible for a proper subpart of a conjunct to be extracted out of the whole

- 15 Problems still remain. To give just one example, (19) fails to capture cases like (i):

(i) \*Why did who leave ?

If (19) is responsible for (i), who is expected to asymmetrically c-command the trace of *why*. *Why*, however, is a sentential adverbial and is best analyzed as affiliated to IP. Rizzi (1990:46) suggests that *why* can even be base-generated as the specifier of CP. This means that *why* does c-command *who*, preventing the latter from asymmetrically c-commanding the former. We should also notice that the ungrammaticality of (i) is not the result of the fact that the wh-in-situ is a subject, since examples with a wh-in-situ subject like (ii) are not ruled out (under the interpretation in which *who*-in-situ has the matrix scope):

(ii) a. Who wonders whether who fixed the car ? (Tiedman (1990:663))

b. Who knows where who went? (Williams (1994:194))

The logical conclusion is that *why* is the source of the ungrammaticality of (i).

As a solution, we might pay attention to the observation in Sano (1991) that *why*, in multiple-wh-questions, favors a non-pair-list answer while adjunct wh-phrases in general favor pair-list answers. The latter point is verified in (iii), where a non-pair-list answer is not expected in (iii**b**) and (iii**c**).

(iii) a. Who hit whom?

b. Who was fired when?

c. Who was fired for what reason?

This means that *why* is generally impossible in multiple-wh-questions, because its preference for a non-pair-list answer is inconsistent with the preference shown by adjuncts in general for a pair-list answer. This consideration also explains that *why* alone, among adjunct wh-phrases, can not be a wh-in-situ as exemplified in (iv):

(iv) Who left \*why/how/when?

Examples like (v), however, appear to be counterexamples.

(v) Why did Bill buy what?

Notice that Hornstein (1995) claims that the exceptional well-formedness of examples such as (v) is illusory and suggests that (v) "can be heard as a sort of echo or focus question" (p.148). He defends the exceptional status of (v) by observing that embedding (v) degrades the whole sentence as in (vi):

(vi) \*I wonder why you bought what.

coordinate structure, whereas a subconstituent of VP, a conjunct in W's analysis, can usually move out of the dominating clause as in the case of Wh-movement of an object NP. W suggests that a subpart of the second conjunct is extractable when the positions of the two conjuncts are not exchangeable. (21a) is an instance of pure coordination where the positions of the conjuncts are switchable while changing the positions of the two conjuncts in (21b) alters its meaning affecting the chronological order of the events they denote:

- (21) a. \*What is ten [two times five] and [half of t] ?  
 b. What did John [go to New York] and [buy t] ?  
 (Williams (1994:18))

A clause is parallel to (21b): a subject NP (the first conjunct) can not be preceded by its predicate VP (the second conjunct) and a movement out of the second conjunct is possible.

A tougher problem is the immobility of a conjunct itself. A subject NP, supposed to be a conjunct in W's theory, can move quite freely in contrast with a true conjunct, as we can observe in (22):

- (22) a. \*Who did John kiss [ t ] [and Mary] ?  
 b. Who do you think [ t ] [opened the box] ?

This contrast is indicative of the nonconjunct status of a subject. W, to evade this delicate situation, argues that "perhaps movement cannot move one of two categorially identical conjuncts" (p.19) and that the categorial discrepancy between the two conjuncts in a sentence structure (*NP and VP*) makes (22b) felicitous. But his conjecture is not empirically correct. We have counterexamples like (23), where the first conjunct, like the subject of a sentence, is categorially different from the second:<sup>16</sup>

- (23) \*How careful of his health is John [<sub>AP</sub> t ] [<sub>PP</sub> and in a perfect

condition] ?

We thus consider that the contention that a sentence constitutes a coordinate structure is somewhat preposterous.

In defense of his claim that an S-internal V-movement is false, W attempts to capture the difference between the English pair in (24) and the French one in (25) without recourse to V-to-I movement:

- (24) a. John often kisses Mary.  
       b. \*John kisses often Mary.
- (25) a. \*Jean souvent embrasse Marie.  
           Jean often kiss-pres-3s Marie  
           'Jean often kisses Marie'  
       b. Jean embrasse souvent Marie.

In the mainstream of the recent development of Generative Grammar, a V-movement is invoked in the analysis of this paradigm. Chomsky (1993), in the spirit of Pollock (1989), avails himself of a parametric difference with respect to the strength of V feature in Agr:<sup>17</sup> the V-feature of French Agr is strong and that of English Agr is weak. The former must perform its duty to check the raised V and disappear in overt syntax so that it might not remain in PF, where a strong nonphonological feature like the strong V-feature of Agr is a visible illegitimate object, whereas the latter, weak and invisible at PF, does not have to, in fact must not, attract V for checking and disappear within the overt syntax (this operation should be postponed to the covert syntax, where operations are less costly). Therefore we reach the conclusion that, in French,

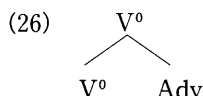
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16 (23) underwent examination by three informants. Notice that *and* is category-neutral and *andP* inherits the categorial status of the complement of *and* under the notion of a relativized head. This is why *andP* is PP in (23). Notice also that the example (23) is not an instance of a pure coordination, since being careful leads to health but not vice versa.

17 It does not matter in this article whether Agr is a node or a subpart of Infl.

V must move to Agr across a VP-adverb, which is fixed at the left periphery of VP, while this must not occur in English.

W can not accept this kind of explanation as long as he denies the existence of V-movement to an inflectional head. He proposes, instead, a morphological solution. His distinction between (24) and (25) relies on whether a language allows the morphological structure (26) or not:



According to his account, the V-adv sequence results not from V-movement across an adverb lying in the leftmost position of VP but from some morphological process generating structures like (26). In French, but not in English, a structure where a modifier is adjoined to  $X^0$  seems to be needed in general, as confirmed by another example of English-French pair in (27):

- (27) a. \*the destruction rapid [of the city]  
 b. la destruction rapid [de la ville]

If it is correct to assume that the bracketed portions in (27) are sister to the nominal head, the intervening adjectival modifier would be either sister to N or adjoined to N. Provided that the first possibility is blocked in a theory of grammar, we are left with the second possibility, which, W presumes, is open to French but not to English.

This morphological solution, however, is not without doubt. "V-adv complex" in French rejects movement to Comp, as evidenced in (28b):

- (28) a. Il [<sub>V</sub> [vembrasse] [<sub>Adv</sub> souvent]] Marie.  
 b. \*[Embrasse souvent] il t Marie?

This makes spurious the  $V^0$  status of the V-adv sequence. If it is really  $V^0$ , it should be able to undergo the verb raising to Comp.

Many other facts of word orders involving adverbs and negative markers are captured by W with their subcategorization specifications varying from language to language. This way of explanation, though, seems to be merely a description rather than a principled account. In this regard, the feature-based explication of the verb movement issue in the recent developments of the standard PP theory does not seem to compare unfavorably with W's morphological account.

#### 4. Control

W holds that some subcases of control (in a traditional sense) are subject to the  $\theta$ -theory, reducing the function of the Control theory and scaling up the coverage of the  $\theta$ -theory. He resorts to direct predication for these cases without utilizing a controlled PRO subject.

One such case is some type of infinitive clauses without any overt subject. Other types of infinitival clauses have a controlled PRO subject in them. Argument infinitive clauses belong to the latter category: they have an external argument corresponding to the  $R$  argument in NPs and this external argument, lying in Comp, blocks the argument ascension from the internal predicate through the S complement of Comp, so that the argument index of VP in argument infinitives can not be directly assigned to any NP external to the infinitives. Thus, it is impossible in (29a) for the external argument of the embedded verb to be directly satisfied by the matrix subject. A PRO subject is necessary to satisfy this argument, as represented in (29b):

- (29) a. John tried [C [to win]].  
 b. John tried [C [PRO to win]].

One type of adjunct infinitives, however, is subject to direct predication. Adjunct infinitives are divided into two groups, those constituting  $S'$  with a PRO subject and those constituting S (*to*P, to be more precise) without it. In the former,  $S'$  satisfies the argument index of some predicate,

because W assumes that “Comp always has an external argument ” (p.99) whether its maximal projection is an argument or an adjunct, this external argument preventing an index for a subject to be satisfied  $S'$ -externally. In the latter, the argument index of the embedded predicate ascends and is directly satisfied by the “controller”, an instance of direct predication. The property making it easy to discern one group from the other is Logophoric Control, where the controller must be [+human]. Now the contrast in (30) is intriguing:

- (30) a. \*The cabin<sub>i</sub> contains a brush<sub>j</sub> [OP<sub>j</sub> [PRO<sub>i</sub> to be scrubbed t<sub>i</sub> with t<sub>j</sub>]] .

(Williams (1994:100))

- b. I bought the shelf<sub>i</sub> [to hold the books]<sub>i</sub>. (ibid. p.101)

The adjunct clause in (30a) needs an  $A'$ -position to accommodate the moved operator base-generated as the object of *with*. Therefore, the adjunct clause is  $S'$  and it has its own external argument, rendering impossible the direct predication analysis of the argument index  $i$  of the predicate inside the adjunct clause. PRO, then, must fill the subject position. The lack of direct predication is a trigger of the Logophoric Control effect rejecting the nonhuman controller *the cabin*. (30b), unlike (30a), exhibits no effect of Logophoric Control. The nonhuman object *the shelf* is the “controller” of the adjunct clause. This implies that the infinitival clause is bare S (*toP*) without an  $S'$  layer. This is one instance of “control” covered by the  $\theta$ -theory.

This way of explanation, however, is contingent upon the validity of the stipulation that C always has its own external argument. When infinitives are arguments, the  $\theta$ -role of the subcategorizing head is linked to the external argument of the infinitives. But there is no direct motivation for the existence of the external argument of an adjunct infinitive clause in examples like (30a). Furthermore, the  $R$  argument of an adjunct clause does not seem to be satisfied.<sup>18</sup> Although we have no alternative explanation for the Logophoric Control phenomenon, the difficulty over the  $R$

argument does not arise in the standard PP approach.

Another flaw is the positional status of the adjunct clause in (30b). Since this is an instance of direct predication, the “controller” *the shelf* and the adjunct clause must be sister to each other, the latter being no different from a complement in the light of structural positions despite its function as an adjunct. This might conflict with the well-formedness of the following example:

- (31) The shelf<sub>*i*j</sub> were [<sub>VP*i*j</sub> bought<sub>*j*</sub> t<sub>*i*j</sub> [to hold the books]<sub>*i*</sub> ].

The external argument index of the predicate in the infinitive clause *i* must be ultimately satisfied by the matrix subject, since PRO is not posited within the embedded clause to receive it. This index is assigned to the NP-trace owing to the sisterhood relation of the trace and the infinitive clause, and then ascends to the matrix VP to be satisfied by the matrix subject. This index ascension, however, is blocked by the ascension of the internal argument index of the matrix verb assigned to the NP-trace, since W’s assumption that “every maximal projection can have exactly one index” (p.33) makes it impossible for the matrix VP to bear the two indices *i* and *j* at the same time. We should notice that these two indices can not be identified by the across-the-board index ascension, which is only allowed in a coordinate structure like [<sub>VP*i*</sub> VP<sub>*i*</sub> and VP<sub>*i*</sub>]. W seems to be mistaken in giving a  $\theta$ -theoretic explanation to adjunct clauses.

This poses no threat, however, to the standard Control theory: the adjunct infinitive clause in question simply has a PRO subject making it

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18 The lack of satisfaction might not necessarily lead to ungrammaticality in W’s theory, where one clause of the  $\theta$ -Criterion is defined as in (i):

(i) The “subject argument” of every verb must be assigned to some NP.

(Williams (1994:28))

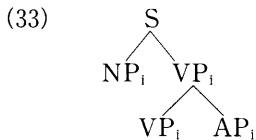
If we interpret this clause quite literally, the external argument of a complementizer (not a verb) need not be satisfied. This, however, is more or less a stipulative conjecture.

unnecessary for the argument index in the clause to ascend out of it.

Another subcase of “control” to be accounted for in terms of direct predication is adjunct predicates as exemplified in (32):

- (32) a. The device arrived [(while) still spewing forth sparks].  
 b. The device arrived [(while) still explosive].  
 (Williams (1994:84))

These adjunct predicates, under W’s approach, do not constitute a clause containing a PRO subject. They, instead, have an external argument to be directly assigned to their subjects, to which they have to be sufficiently close for the purpose of the  $\theta$ -role assignment.<sup>19</sup> W simply accepts usual VP constituency tests, claiming that adjunct predicates are VP-internal. He postulates the structure in (33) (AP stands for Adjunct Predicate), where the external argument of AP is directly satisfied by the subject NP through the mediation of the across-the-board index ascension in the predicate structure which can be licensed by the assimilation to a conjoined predicate structure like *John* [<sub>VP<sub>i</sub></sub> *sang<sub>i</sub>* and *danced<sub>i</sub>*]:



This, even if adequate for subject-oriented adjunct predicates, might not work in the case of object-oriented ones. Since direct predication is carried out in the configuration where the argument assigner and its assignee are strict sisters, an object-oriented adjunct predicate must be immediately dominated by  $V'$  just as its subject NP (an object of a verb)

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19 The absence of the Logophoric Control effect in adjunct predicate constructions (“subjects” can be [-human]) can also be adduced in favor of the direct predication analysis of adjunct predicates.



is. This structural status of object-oriented adjunct predicates is problematic at least in two respects.

First, the fixed ordering in which an object-oriented secondary predicate (*hot*) is definitely preceded by a selected adverbial (*flat*) in (34) would not be warranted, since both of these two adverbials are immediately dominated by  $V'$  :

- (34) a. Mary hammered the metal flat hot.  
 b. \*Mary hammered the metal hot flat. (McNulty (1988:38))

Either of the two word orders shown in (34) should be allowed if the two words are truly sisters dominated by the same projection.

Second, an object-oriented secondary predicate is an island as (35) shows:

- (35) \*Who did John meet people<sub>i</sub> [angry with t ]<sub>i</sub> ?

If the bracketed adjunct predicate is sister to  $V$ , (35) would be wrongly predicted to be grammatical, unlike adjunct island cases like (36):

- (36) \*Who did they leave [before speaking to t ] ?

It would be difficult to find any other account of (35) in  $W$ 's theory than considering that the adjunct predicate in (35) is also an adjunct in a structural sense, precluding the antecedent government of the *wh*-trace and its index ascension.

In the standard PP theory, the two problems above can be evaded if we consider object-oriented adjunct predicates to be VP-internal true adjuncts. Suppose they are adjoined to  $V'$ . Then, they constitute islands and can not intervene between a verb and its sister selected adverbial.

This undermines  $W$ 's treatment of adjunct predicates in terms of the  $\theta$ -assignment based on strict sisterhood. These adjunct issues insinuate that the strict sisterhood is too strong as a prerequisite of the  $\theta$ -assign-

ment. The non-X-bar sentence structure in (20a) also comes from the strict sisterhood requirement. The standard PP approach is looser in tolerating the non-strict-sister relation of an object and its adjunct predicates or of a subject NP and its predicate VP in (20b).

## 5. Concluding Remarks

W's theory presents a lot of intriguing insights. They are, however, not fully endorsed in the presence of numerous counterarguments. In this article we attempted to show that Williams's (1994) attempt to expand the coverage of the  $\theta$ -theory involves so many debatable aspects that its present form does not serve as an appropriate substitute for the standard Principles and Parameters theory. We do not deny, however, that his approach appears to be a stimulating competitor of the standard strategy and might develop into a more promising and insightful framework of a syntactic theory.

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