θ-ROLE ASSIGNMENT
AUTONOMOUS FROM CASE ASSIGNMENT*

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Since Aoun 1979 noticed the parallelism between Case and θ-role, Chomsky 1981 and other grammarians have been attempting to reduce the Case Filter to the θ-criterion by imposing the Visibility Condition on θ-role assignment, whose essential effect is that a category is visible for θ-marking only if it is assigned Case. In this article, I will cast doubts on the Visibility Condition and claim that a more plausible version of the Visibility Condition should be that a category is visible for θ-marking only if it is [-V]. This is tantamount to adopting Emonds' 1985 assumption that θ-role assignment is autonomous from Case assignment.

0. INTRODUCTION. Chomsky 1981, 1986a, b assumes that a category must be Case-marked if it is to be θ-marked. But if PPs, Ss, and S’s, which need not be Case-marked, are also θ-marked, his assumption is inappropriate in that it can only deal with θ-marking of NPs which must be Case-marked. On Emonds' 1985 assumption that θ-role assignment is autonomous from Case assignment, I will make the following three points. (i) A θ-marked category need not be Case-marked; that is, Case assignment is not a necessary condition for θ-role assignment. Rather, the categorial feature [-V] of a category to be θ-marked is a necessary condition for θ-role assignment. (ii) Not all categories having the [-V] feature are θ-marked. Thus the categorial feature [-V] of a category to be θ-marked is not a sufficient condition for θ-role assignment. (iii) Only [-V]" categories can be θ-marked. This leads us to assume that VP and AP complements do not exist.

1. SOME DEFECTS OF CHOMSKY'S VISIBILITY CONDITION. It is often

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claimed that a clause is assigned a propositional $\theta$-role.\(^1\) The *that*-clauses in the following are relevant examples:

(1) a. She is afraid that she will fail again.
    b. Paul's explanation that he was insane
    c. He complained that he was ill-treated.
    d. I persuaded John that he should go to college.

The ungrammaticality of the examples of 2 shows that the positions of the *that*-clauses in 1 are not Case-marked.

(2) a. *She is afraid death.
    b. *Paul's explanation his insanity
    d. *I persuaded John the importance of going to college.

PPs are assigned such $\theta$-roles as Location, Source, and Goal,\(^2\) as we can see from the following:

(3) a. John put the book on the desk.
    b. John received the book from Bill.
    c. Harry went to the office.

The positions of these PPs are also not Case-marked,\(^3\) as attested by the ungrammaticality of the examples of 4.

(4) a. *John put the book the desk.
    b. *John received the book Bill.
    c. *Harry went the office.

The examples of 1-4 suggest that clauses and PPs are assigned $\theta$-roles even if they are not Case-marked. Chomsky's Visibility Condition 5, where Case assignment is a necessary condition for $\theta$-role assignment, cannot treat $\theta$-marking of clauses and PPs in the same way as that of NPs.

(5) An element is visible for $\theta$-marking only if it is assigned Case.\(^4\)

(Chomsky 1986a: 94)

In fact, Chomsky 1981 suggests that *that*-clauses as in 1 are $\theta$-marked without being Case-marked, i.e. immune to the condition 5 (for this

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\(^1\) See Chomsky 1986a and Stowell 1981.

\(^2\) Terms such as 'Location', 'Source', and 'Goal' are used here in the same sense as in Jackendoff 1972.

\(^3\) Here I adopt Chomsky's 1981 assumption that P is a Case-marker of its object, rather than Chomsky's 1986a assumption that P is a realization of Case assigned to its object.

\(^4\) Stowell 1981: 134 formulates the Visibility Condition in terms of the notion 'chain'. For this notion, see the discussion in section 2.2.2. below. For the present purpose, it suffices to state the Visibility Condition as in 5 and 6.
matter, see Chomsky 1981: 337-8).5 On PP arguments as in 3, he makes no comment. Stowell 1981, who attempts to extend Chomsky’s Visibility Condition to clauses and PPs, introduces a special device to account for θ-marking of that-clauses as in 1 (see section 3.1. below on this point). As for PP arguments, he suggests that ‘the [−N] feature in the prepositional matrix itself counts as a Case feature for the purpose of satisfying’ (Stowell 1981: 144-5) the Visibility Condition.

Here I propose an alternative Visibility Condition stated as in 6, which I think allows clauses and PPs to be θ-marked in the same way as NPs:

(6) A category a is visible for θ-marking only if it is [−V].

In what follows, I will establish the empirical and theoretical adequacy of the condition 6 (what [−V] means will turn out to be clear in the course of discussion).

2. THE NECESSARY CONDITION FOR θ-MARKING

2.1. Are argument categories [−V]? In examining the plausibility of 6, we must make clear whether all the categories that can serve as arguments can be analyzed as [−V].

Clearly, NPs and PPs are [−V], since the former are [+N, −V] and the latter [−N, −V]. What about clausal arguments?

Let us first consider S’ arguments. The question of whether S’ is [−V] or not is reduced to that of whether C(OMP) is [−V] or not (here I assume that S’=CP, following Chomsky 1986a, b). C is realized as that (in finite clauses as in 1) or for (in non-finite clauses as in 7).

(7) a. I’m anxious for him to come.
   b. He longed for her to dance with him.

The complementizer that was historically a demonstrative pronoun belonging to the class of N, which is [−V]. Furthermore, there are cases of present-day English (PE) where that patterns like a preposition, as in 8–11.

(8) a. They agreed {that my plan was better/on the terms of the surrender}.
   b. He complained {that he was ill-treated/of ill-treatment}.
      (cf. 1c and 2c)

(9) a. I assured them {that it was a mistake/of my cooperation}.
   b. He warned me {that the dog was ferocious/about the landslide}.

5 See also Chomsky 1986a: 87-8.
c. I persuaded John \{that he should go to college/of the importance of going to college\}. (cf. 1d and 2d)

(10) a. John was aware \{that Mary was ill/of Mary’s absence\}.
b. He is insistent \{that he is innocent/about his innocence\}.
c. She is afraid \{that she will fail again/of death\}. (cf. 1a and 2a)

(11) Paul’s explanation that he was insane/of his insanity (cf. 1b and 2b)

This might be a further motivation for assuming that that has the feature \([-V]\), which P also has. (Similarities of that-clause to PP, some of which are exemplified by 8–11, will be referred to in section 3.1.) Turning to for, we might assume that it belongs to the class of P, which has the feature \([-V]\). Thus essentially the same consideration as that given to that shows that for also has the feature \([-V]\). From these considerations, we may safely say that C is \([-V]\), and hence that S’ (CP) is \([-V]^{\prime}\).  

Let us next proceed to S arguments to consider embedded Ss in exceptional Case-marking constructions like 12.

(12) a. I believe \[him to be honest\].
b. I’ll show \[it to be false\].
c. They assumed \[her to be guilty\].

If we assume, with Chomsky 1986a, b, that S=IP, the question of whether S is \([-V]\) or not is reduced to that of whether I(NFL) is \([-V]\) or not. As for INFL in a finite clause, Emonds 1985: 76 suggests that ‘INFL has the feature N from agreement with the subject’. Let us assume that he is correct. Then it follows that INFL in finite clauses has the feature \([-V]\), since N is \([+N, -V]\). Turning to INFL of nonfinite clauses as in 12a–c, we may assume along lines suggested by Chomsky 1986b that the relation which Chomsky 1986b: 24 refers to as ‘SPEC-head agreement’ holds between the subject of S (IP) and the AGR element of I, whether or not AGR is present. Thus, we may say that S (IP) is \([-V]\).  

So far we have examined the status of NPs, PPs, S’s, and Ss with respect to the categorial feature \([-V]\). Here the following question arises: can categories which are not \([-V]\), i.e. APs and VPs, not be arguments? I will return to the matter in section 3.2., where the main

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6 For cases like (i) and (ii) where C is phonetically empty, let us assume that it has the same features as a phonetically realized C, the complementizer that or for.

(i) She is afraid she will fail again. (cf. 1a)

(ii) I want you to go.
conclusion is that what are analyzed as VP and AP complements by Emonds 1985 are analyzed as NP and S here, respectively. This implies that the [+V]" categories are not θ-marked and then they cannot be arguments.

2.2. [-V]" CATEGORIES WHICH ARE NOT θ-MARKED. In section 2.1., I have argued that the categorial feature [-V] of a category to be θ-marked is a necessary condition for θ-role assignment, i.e., a θ-role may not be assigned to the categories which are not [-V]". Let us now consider whether or not the categorial feature [-V] of a category to be θ-marked is a sufficient condition for θ-role assignment; that is, whether or not the categories having the [-V] feature are always assigned a θ-role.

2.2.1. THE SISTERHOOD CONDITION. Chomsky 1986b: 13 suggests the condition on θ-marking of 13:

(13) A condition on θ-marking is that the θ-marker and the recipient of the θ-role be sisters, where θ-marker may be a head or a maximal projection.

The notion of 'sister' is informally defined as follows:

(14) α and β are sisters if they are dominated by the same lexical projections.7 (Ibid.)

As it stands, however, 14 cannot cover θ-marking of the subject of a main clause by its verb even if we assume, along lines discussed in Chomsky 1981 and 1986b, that it is mediated through the VP, as shown in the following tree diagram:

(15)  
   S (=IP)  
   /   
  NP  I'  
     /   
    I    VP

In 15 there is no lexical projection that dominates both the subject NP and the VP of the main clause. For this reason, I modify 14 to 16, under which the subject NP and the VP of a main clause are clearly sisters.

(16) α and β are sisters if there is no lexical projection γ that dominates one of them but not the other.

Given 13 and 16, we can provide an answer for the question of whether or

7 I interpret 'lexical projection' as 'projection of a lexical category (N, A, V, P)'. Chomsky 1981 and 1982 assumes that a θ-role is assigned under government, not under 14. I will not enter into differences between the two alternatives.
not the categorial feature \([-V]\) of a category to be \(\theta\)-marked is a sufficient condition for \(\theta\)-role assignment. In sections 2.2.2. and 2.2.3. we will see when NPs, PPs, S's, and Ss are \(\theta\)-marked and when they are not.

### 2.2.2. \(\theta\)-Marked NPs, PPs, S's, and Ss

Let us first consider \(\theta\)-role assignment to NPs as in 17.

(17)  a. John killed the cat.
     b. The cat_i was killed t_i.
     c. Who_i does John love t_i?

17a contains two 'visible' categories (those having the \([-V]\) feature), John and the cat. The object NP the cat is assigned a \(\theta\)-role by the V killed, which is a sister to the NP the cat since there is no lexical projection that dominates either the V killed or the NP the cat but not both. The subject NP John is \(\theta\)-marked by the V killed, mediated through the VP killed the cat, which is a sister to the subject NP John since there is no lexical projection that dominates either the subject NP John or the VP killed the cat but not both. These \(\theta\)-relations are represented diagrammatically in 18.8

(18) \[ S (=\text{IP}) \]
    \[ \text{NP} \]
    \[ \text{I} \]
    \[ V \rightarrow \text{NP} \]
    \[ \text{killed the cat} \]

(The arrows are used to make clear the direction of \(\theta\)-role assignment.) Turning to 17b and 17c, where movement has taken place, we assume (following Chomsky 1981, 1982, 1986a, b) that a trace left behind by movement and its antecedent form a chain. A moved element (antecedent) receives a \(\theta\)-role by virtue of its binding9 the trace in a \(\theta\)-marked position and forming a chain with it. In 17b the passive participle killed cannot \(\theta\)-mark its subject because it is in a \(\bar{\theta}\)-position as generally assumed in the literature on passive constructions. The subject NP the cat receives a \(\theta\)-role by virtue of its forming a chain with its trace t_i, which is both a sister to killed (since there is no lexical projection

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8 In 18 V' is omitted, as suggested by Chomsky 1986b: 4. Whether V' is present or absent, the V killed and the object NP the cat can be sisters.

9 I use the notion 'binding' in the same sense as in Chomsky 1981.
that dominates either killed or \( t_i \) but not both) and in a \( \theta \)-position. The following diagram shows how this \( \theta \)-role assignment occurs:

\[(19)\]

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S (=IP)
  \[\text{the cat}_i\]
    I' VP
       V VP
         V→NP
            \[\text{killed } t_i\]
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(We assume that the simple passive is of the form \( [\text{VP be } [\text{VP -en ...}]\), following Chomsky 1986b: 76.) The same holds for 17c. The NP who, which is \([-V]\)" and visible for \( \theta \)-marking, has no sister that is a \( \theta \)-marker. But its trace \( t_i \) is in a \( \theta \)-position and a sister to the V love for the reason just discussed, so who receives a \( \theta \)-role from its trace \( t_i \) which is in a position \( \theta \)-marked by love. This is diagramed in 20.\(^{10}\)

\[(20)\]

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S' (=CP)
  \[\text{who}_i\]
    C' IP
       \[\text{does}_j\]
          NP\[\text{I' VP}\]
             \[\text{V→NP}\]
                \[\text{love } t_i\]
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Let us proceed to consider \( \theta \)-role assignment to PPs as in 3, repeated in the following:

\[(21)\]

b. John received the book from Bill.
c. Harry went to the office.

Each example in 21 has the substructure of 22:

\[(22)\]

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V'
  V (NP) PP
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Each V has a \( \theta \)-role to assign to the PP in question and is a sister to it

\(^{10}\) For I-raising to C, see Chomsky 1986b: 68ff.
since there is no lexical projection that dominates either the V or the PP but not both. Thus each PP can be θ-marked by the V in 21. In considering θ-role assignment to PPs, we must take into account θ-role assignment to the NP object of the preposition. Is the NP assigned a θ-role or not? If it is θ-marked, what θ-role is assigned by what? These problems are difficult to solve, and require careful consideration, but here, adopting Fabb's 1984: 23–5 proposal, we assume that the preposition assigns its NP object a θ-role identical to the one assigned to the PP by the verb.¹¹

I now turn to θ-role assignment to S's as in 1, repeated here as 23:

(23) a. She is afraid that she will fail again.
b. Paul's explanation that he was insane
c. He complained that he was ill-treated.
d. I persuaded John that he should go to college.

The examples of 23 have the following substructures, respectively.

    A       S'  N       S'  V       S'  V       NP  S'

Each head of 24, i.e. afraid, explanation, complained, persuaded, has a θ-role to assign to the S' in question, and is a sister to it. So the S' can be θ-marked by afraid in 23a, explanation in 23b, complained in 23c, and persuaded in 23d.

Finally, let us consider θ-role assignment to Ss in such exceptional Case-marking constructions as in 25 (=12).

(25) a. I believe [him to be honest].
b. I'll show [it to be false].
c. They assumed [her to be guilty].

The situation is quite the same as 23, except that the embedded clause is a nonfinite S. Each example of 25 has the following substructure:

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¹¹ Fabb 1984: 24 states that 'a theta-assigner may assign a theta-role to a PP' and that 'the preposition which heads the PP may assign a theta-role to an NP complement'. He proposes the following constraint which requires that the θ-role assigned to the PP be of the same type as that assigned to the NP complement by P within the PP:

(i) P/PP ROLE AGREEMENT
If P carries a theta-role of type A, then if PP is theta-indexed, PP must be part of a theta-chain which carries a theta-role of type A.

(Fabb 1984: 25)

Emonds 1985: ch. 1 captures this kind of parallelism in terms of the notion 'indirect θ-role assignment'.
Clearly the V and the S are sisters in 26 and the former has a \( \theta \)-role to assign to the latter. Thus the S can be \( \theta \)-marked by the V.

### 2.2.3. Non-\( \theta \)-Marked NPs, PPs, S's, and Ss

There are cases where \([-V]\) categories are not \( \theta \)-marked. Let us first consider NPs. English has two expletive NPs, \textit{there} and \textit{it}. Some examples are given below:

\[(27) \]
\[ \text{a. There is a man in the room.} \\
\text{b. It seems that he is telling a lie.} \]

The examples of 27 have the following structure:

\[(28) \]
\[ \begin{array}{c}
\text{S (} = \text{IP)} \\
\text{NP} \\
\text{there} \\
\text{it} \\
\text{I'} \\
\text{VP} \\
\end{array} \]

In 27, \textit{there} and the VP is \textit{a man in the room} are sisters and so are \textit{it} and the VP \textit{seems ... lie}. However, \textit{is} in 27a and \textit{seems} in 27b have no \( \theta \)-role to assign to the subject. Thus the expletive NPs \textit{there} and \textit{it} are not \( \theta \)-marked.

The examples of 29–31 below illustrate some types of non-\( \theta \)-marked \([-V]\) categories different from those in 27.

\[(29) \]
\[ \text{a. I went an enemy, and returned a friend.} \\
\text{b. John left school, a good-for-nothing dropout.} \\
\text{c. He came back quite a changed man.} \\
\text{d. We parted the best of friends.} \\
\text{e. He died a beggar.} \]

\[(30) \]
\[ \text{a. We played baseball in the park.} \\
\text{b. The train left at 4 o'clock.} \]

\[(31) \]
\[ \text{a. I would give a thousand pounds that he may prove the man.} \\
\text{b. What's the matter with you that you are so silent?} \\
\text{c. My publisher sent it for me to comment on (it).} \]

The italicized constituents are optional adjuncts and do not participate in subcategorization of the main verb. Then there seems to be no reason to suppose that the italicized constituents are within \( V' \). Let us
suppose that they are adjoined to V' as in 32.

(32)  
\[
\begin{array}{c}
V' \\
\uparrow \\
V' \{ NP \} \\
\downarrow \\
V \ldots \{ PP \} \{ S' \} \\
\end{array}
\]

In 32 the V' dominates the V but not the NP (PP, or S') in question. (Following May 1985 and Chomsky 1986b, we assume that \( \alpha \) is dominated by \( \beta \) only if it is dominated by every segment of \( \beta \).) The same argument holds of 33, where the NP (PP, or S') is adjoined to VP.

(33)  
\[
\begin{array}{c}
VP \\
\uparrow \\
VP \{ NP \} \\
\downarrow \\
V \ldots \{ PP \} \{ S' \} \\
\end{array}
\]

In 33 the VP, which counts as \( \gamma \) in 16, prevents the V from \( \theta \)-marking the NP (PP, or S').\(^{12,13}\) Suppose then that the NP (PP, or S') is adjoined to I' (as in 34a) or S (as in 34b).

(34)  
\[
\begin{array}{ll}
\text{a.} & I' \{ NP \} \{ PP \} \{ S' \} \\
\text{b.} & S (= IP) \{ NP \} \{ PP \} \{ S' \}
\end{array}
\]

In both 34a and 34b the VP counts as \( \gamma \) in 16, and thus the NP (PP, or S') cannot be \( \theta \)-marked by the V.\(^ {14,15}\)

\( ^{12} \) Note that the omitted V' also counts as \( \gamma \) in 16.

\( ^{13} \) An anonymous EL reviewer suggested that in 33 no VP is a barrier, and then the IP also cannot be a barrier by inheritance from the VP. If so, then it follows that extraction from within the NP (PP, or S') is incorrectly allowed. In the first place, however, I do not accept all the consequences of Chomsky's 1986b grammatical system here. Secondly, if the ECP is reduced to the antecedent government, as Chomsky suggests, it will allow no extraction from within the NP (PP, or S') in 33, since the latter itself is a barrier in any way.

\( ^{14} \) An anonymous EL reviewer also points out that in 34a, b the VP might \( \theta \)-mark the NP (PP, or S') just as it \( \theta \)-marks the subject NP. I think, however, that subject NPs and adjuncts are not \( \theta \)-marked under the same condition, since the former are in the relation of predication with VPs but the latter are not.

\( ^{15} \) One might assume that the NP (PP, or S') is attached to S in the following way:
From the discussions in 2.2.2. and 2.2.3., we can conclude that a category can be \( \theta \)-marked only if it is both \([-V]\) and a sister to a lexical head (or maximal projection in the case of subject NP) which has a \( \theta \)-role to assign to it. In this sense, the categorial feature \([-V]\) of a category to be \( \theta \)-marked is a necessary condition for \( \theta \)-role assignment, but not a sufficient one.

3. The plausibility of 6. So far we have seen that the categorial feature \([-V]\) of a category to be \( \theta \)-marked is a necessary condition for \( \theta \)-role assignment. In this section I examine the plausibility of 6, especially in comparison with 5.

3.1. Some advantages of 6 over 5. The difference between 5 and 6 (repeated below) is that the latter allows what is not Case-marked to receive a \( \theta \)-role in the same way as what is Case-marked, while the former does not:

(35) An element is visible for \( \theta \)-marking only if it is assigned Case.

(36) A category \( \alpha \) is visible for \( \theta \)-marking only if it is \([-V]\).  

36, unlike 35, has the following desirable consequences: (i) We need not introduce a special device to account for \( \theta \)-marking of non-Case-marked that-clauses. (ii) Some similarities in distribution between that-clauses and PPs can be automatically explained. (iii) PRO can be assigned a \( \theta \)-role in the same way as other NPs, and then it is not necessary to complicate the Visibility Condition in order to cover \( \theta \)-role assignment to PRO.

Let us first consider (i). As noted in section 1., Chomsky 1981 suggests that that-clauses as in 1 (repeated below) are \( \theta \)-marked without being Case-marked.

(37) a. She is afraid that she will fail again.
   b. Paul's explanation that he was insane
   c. He complained that he was ill-treated.
   d. I persuaded John that he should go to college.

\[
\begin{array}{c}
S (= IP) \\
\text{NP} \\
\text{NP} \{ \text{PP} \} \\
\text{PP} \\
\text{VP} \\
V \ldots
\end{array}
\]

In this structure the VP counts as \( y \) in 16 and prevents the V from \( \theta \)-marking the NP (PP, or S').
Stowell 1981 proposes the special device of (38) to account for $\theta$-marking of that-clauses as in (37).

(38) $\theta$-role Assignment by Recognition

In the configuration [$\gamma \ a \ldots \ \beta$], $\alpha$ can assign a $\theta$-role $P$ to $\beta$, where

(i) $\alpha$ has the lexical feature [+R], and

(ii) $P$ is the $\theta$-role of PROPOSITIONAL OBJECT, and

(iii) $\beta$ is a clause, and

(iv) $\beta$ is a subcategorized complement of $\alpha$, and

(v) $\gamma = \bar{\alpha}$

(Stowell 1981: 205)

Thus neither Chomsky nor Stowell can account for $\theta$-marking of that-clauses as in (37) without making these clauses exceptional. In contrast, given my Visibility Condition (36), we can account for $\theta$-marking of that-clauses as in (37) without introducing a special device. That-clauses as in (37) are $[-V]^\circ$, as argued in section 2.1., and visible for $\theta$-marking, whether or not they are Case-marked.

Let us next consider the consequence (ii). As pointed out in section 2.1., that-clauses and PPs pattern alike in certain contexts. The relevant contexts are as follows:

(39) a. They can immediately follow N.
    b. They can immediately follow A.
    c. They can immediately follow V which does not assign Case.
    d. They can appear as the second complement to verbs such as assure, convince, persuade, warn.
    e. They can be separated from V by an intervening constituent.

39a is exemplified by (40).

(40)(=11) Paul's explanation that he was insane/of his insanity

39b is exemplified by (41).

(41)(=10) a. John was aware {that Mary was ill/of Mary's absence}.
    b. He is insistent {that he is innocent/about his innocence}.
    c. She is afraid {that she will fail again/of death}.

39c is exemplified by (42).

(42)(=8) a. They agreed {that my plan was better/on the terms of the surrender}.
b. He complained {that he was ill-treated/of ill-treatment}.

39d is exemplified by 43.

(43)(=9) a. I assured them {that it was a mistake/of my cooperation}.

b. He warned me {that the dog was ferocious/about the landslide}.

c. I persuaded John {that he should go to college/of the importance of going to college}.

39e is exemplified by 44 and 45.

(44) a. He complained in a low voice that the room was sordid.

b. Mary insisted tearfully that she was innocent.

(45) a. He paid immediately for the book.

b. She looked in astonishment at the picture.

(Quirk, et al. 1985: 500)

As pointed out in section 1., the positions of the that-clauses and PPs in 40–43 are not Case-marked. Thus within the framework of Chomsky and Stowell the that-clauses and PPs of 40–43 cannot be predicted to be virtually the same in distribution. On the other hand, under my Visibility Condition 36, they are θ-marked in the same way (recall the discussion in section 2.2.2.), and thus can be predicted to be similar in distribution. Let us now turn to 44 and 45. Again, the positions of the that-clauses and PPs are not Case-marked, as shown by the fact that NPs cannot appear in these positions:


b. *Mary insisted tearfully her innocence.

c. *He paid immediately the book.

d. *She looked in astonishment the picture.

Since that-clauses and PPs are not θ-marked in the same way within the framework of Chomsky and Stowell (see the discussion in section 1.), they are not predicted to appear in the same position under Chomsky's Visibility Condition 35. Even under my Visibility Condition 36, however, 44 and 45 are problematic. The adverbials in 44 and 45 are optional and do not participate in subcategorization of the main verb. This means that they are not within V'. The element following what is outside V' cannot be within V'; otherwise, the following structure, where branches cross, is yielded:
Thus it follows that the *that*-clauses and PPs in 44 and 45 which follow the optional adverbials are not within $V'$. If so, they cannot be sisters to the verbs and hence cannot be $\theta$-marked by them. But this incorrectly predicts that 44 and 45 should be ungrammatical in violation of the $\theta$-criterion. Thus the grammaticality of 44 and 45 is problematic to both Chomsky’s Visibility Condition 35 and my 36. An attempt to solve this kind of problem is made by Zubizarreta 1982. She argues, on the basis of analysis of free word-order languages like Japanese, that the grammatical relations and ordering relations should be characterized independently from each other. And she argues that a syntactic analysis of a free word-order language must assume two distinct syntactic representations, i.e. one of the former (‘virtual projection’) and one of the latter (‘actual projection’). She further argues that, in a fixed word-order language like English, the virtual projection is basically identical to the actual one which expresses surface linear order, but that, in the constructions with adverbs, ‘there is a mismatch between the virtual and actual positions of Adverbs’ (Zubizarreta 1982: 38).¹⁶ Under her analysis, 48, the virtual projection of such a construction with a VP-modifying adverb as 44 and 45, corresponds to the three actual projections as in 49 (‘...’ stands for ‘complement to $V$’).

¹⁶ According to Zubizarreta 1982: 38–9, in English, ‘the virtual structure which encodes the core-semantic relations (the semantic relations defined in the Projection Principle) is identical to the actual structure which expresses surface linear order’. But she suggests that ‘the virtual projection which encodes adjunct-relations is not identical to its corresponding actual projection’.
The sentences in 44 and 45 are of the form of 49b, and thus have 48 as their virtual projection. In 49b, an adverb intervenes between the V and its complement, and prevents them from being in a sister relation. Since θ-relations are encoded in 48, the complement can be θ-marked by its sister V. Thus given Zubizarreta’s 1982 analysis, my Visibility Condition 36 can account for the grammaticality of 44 and 45. In contrast, Chomsky’s Visibility Condition 35 cannot predict that they are on a par in the degree of grammaticality, even if he adopts Zubizarreta’s analysis. This is because that-clauses and PPs are not θ-marked in the same way within Chomsky’s framework, as noted.

Finally, let us consider the consequence (iii), θ-role assignment to PRO as in 50.

(50) John tried PRO to swim.

PRO must be ungoverned and cannot be assigned Case, if Case is assigned under government. For this reason, θ-role assignment to PRO cannot be captured in terms of Case and dealt with by Chomsky’s Visibility Condition 35 unless it is relaxed as in 51, or unless the principle of Case theory is formulated to allow PRO to have Case.17

17 Chomsky 1986a: 104 notes that the Visibility Condition can be extended to θ-marking of PRO under the assumption that PRO has an inherent Case. As Chomsky himself notes, however, this move raises more problems than it solves.

Brody 1985: 520 formulates a variant of Case theory to allow PRO to have Case. He supposes that NPs are not assigned Case but have Case inherently, and that the Case on an NP is checked by the following condition:

(i) **Case-linking Condition (CLC)**

*NP unless Case-linked.

NPₓ is Case-linked (to y) iff =_{y}NPₓ has Case iff NPₓ is governed (and governed by y).

(ii) **Case-matching Condition (CMC)**

If NPₓ is Case-linked to y, then y has a Case that matches that of NPₓ. According to his analysis, PRO is Case-linked, since it has neither Case nor a governor. Although PRO is Case-linked, there is no element to which it is Case-linked. Thus it satisfies the CMC vacuously. Here I will not dwell on the consequences of his analysis.
(51) An element is visible for \( \theta \)-marking only if it is assigned Case
or it is PRO.

On the other hand, my Visibility Condition 36 can account for \( \theta \)-role
assignment to PRO in a natural way, since PRO is \([-V]^2\) like all other
NPs. As the following tree diagram shows, PRO in 50 can be \( \theta \)-marked
by the V swim through mediation by the VP swim:

Thus 36 is preferable to 35 in that the former can deal with \( \theta \)-role as-
signment to PRO without complicating the subsystems of the grammar.

In section 3.1. we have seen that 36 is preferable to 35 in that the former
has the three desirable consequences which 35 does not have. Let us
now proceed to the question posed at the end of 2.1.: can categories
which are not \([-V]^2\), i.e. APs and VPs, not be arguments?

3.2. Can APs and VPs Not Be \( \theta \)-Marked? If my Visibility Condition
36 is correct, it follows that APs and VPs, which are not \([-V]^2\), cannot be
arguments. Emonds 1985: ch. 2 argues, however, that AP and VP com-
plements do exist. He analyzes sequences like studying in the library
in 53a as VP complements and those like repressive in 53b as AP
complements.

(53) a. John found Bill studying in the library.
    b. I consider that law repressive.

He suggests that the VP and the AP are \( \theta \)-marked by the V in cases like 53
in the contexts 54a and 54b, respectively.

(54) a. \([_{\text{VP}} \ V \ NP \ \text{VP}]\)
    b. \([_{\text{VP}} \ V \ NP \ \text{AP}]\)

But there is an indication that the VP in 54a and the AP in 54b form a
single constituent with the preceding NP. As for the former, Akmajian
1977 and Declerck 1982 give the following examples which show that the NP and VP in 54a form a single NP constituent:

(55) a. The moon rising over the mountain has been witnessed by many a lover here on Lover's Lane.
    b. The moon rising over the mountain appears to have been seen by many people last night.
    c. The moon rising over the mountain is a beautiful sight.
    d. The NY Philharmonic playing the Internationale is an impossible dream.

In 55a the moon rising over the mountain taken as a unit is fronted by the passive rule, and in 55b it is affected by the rule of raising. In 55c, d the sequence of the NP and VP as a whole serves as a subject. It is generally held that only NPs can be fronted by the passive rule and the rule of raising. If the sequence in question is NP, the fact that it can be fronted by the passive rule and the rule of raising is consistent with the fact that it can be a subject. As for the NP and AP in 54b, the following examples show that the sequence forms a single constituent:

(56) a. John considers Bill foolish, which will, however, turn out not to be the case.
    (Hayashi 1987: 37)
    b. Workers angry about the pay is just the sort of situation that the ad campaign was designed to avoid.
    (Safir 1983: 732)
    c. Max (still) afraid of flying is a laughable thought.
    (McCawley 1983: 286)

In 56a the sequence in question as a whole serves as an antecedent of a relative pronoun. In 56b, c it appears in the subject position as in 55c, d. Singular number agreement of the matrix verb in 56b shows that the subject is not to be analyzed as an NP with an attributive adjective. Moreover, the relevant sequence can contain a sentence adverb, as Hayashi 1987: 39 points out:

(57) a. John considers Bill probably afraid of snakes.
    b. I deem most students evidently eager to learn new things.
    c. They found the dodo unfortunately extinct.

From the fact that the sequence in question as a whole forms a single constituent and that it can contain a sentence adverb, we can conclude that it forms a single constituent S.
In section 3.2, I argued, though tentatively, that VP and AP complements actually do not exist, and that they are analyzed as NP and S, respectively. It is not clear, however, whether the same argument holds for the constructions which involve a V-ing form without an immediately preceding NP (such as John began writing) and those which involve AP without an immediately preceding NP (such as Bill is foolish). I would like to leave open the status of these constructions, awaiting for future research.

4. SUMMARY. To summarize, we have pointed out some defects of Chomsky's Visibility Condition 5 stated in terms of Case, and proposed an alternative Visibility Condition 6 stated in terms of the categorial feature [−V]. Then we have argued that the categorial feature [−V] of a category to be θ-marked is a necessary condition for θ-role assignment, but not a sufficient one. In the last section, we have examined the plausibility of the condition 6. In section 3.1, we have seen that my condition 6 has the three desirable consequences which Chomsky's 5 does not have. In section 3.2, we have argued that what are analyzed as VP and AP complements by Emonds 1985 can be analyzed as NP and S, respectively, and therefore can be θ-marked under my Visibility Condition 6.

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