

PREDICATION THEORY IN SMALL CLAUSE CONSTRUCTIONS

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本稿では、Edwin Williams (1980) の Predication 理論を改訂し拡張した。そのなかで中心的な役割をはたしている Predication index の概念は、より洗練され、「P-role」という新しい概念に昇華されている。この「P-role」は、単なるインデックスではなく、 θ -role の抽象的な担い手として機能することができ、その結果、拡大プロジェクション原理における主語の存在の仮定は不用となり、プロジェクション原理はより単純化され、文法システムは、よりエレガントなものとなる。さらに主語に対する θ -role 付与のパラドックスが解決される。

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Edwin Williams has proposed the Predication Theory, in which the subject-predicate relation is captured formally without assigning the constituents a sentential structure. The theory appears to conflict with the GB theory at first glance, but rather it gives a significant insight into the problems of the theta theory. The goal of the present paper is to refine the notion of the predication role and further revise the theta theory so that the predication role can be incorporated in the GB framework and the grammar can adopt a more coherent perspective.

1. The term "small clause" was first used in Williams (1975) to refer to the sequence of an NP and a participle that contains subject-predicate relation. Categories other than V were not considered as the possible predicate of the small clause in the discussion.

Later, however, the term was expanded to include other sequences with subject-predicate relation. For example,

(1) NP+bare infinitive, NP+AP, NP+PP, NP+Predicate nominals, adjuncts.

The examples of these cases are:

- (2) a. NP+bare infinitive: I saw them help the people out of the crashed airplane.
- b. NP+AP: I consider John smart.
- c. NP+PP: I saw John in anger.
- d. NP+predicate nominal: I consider John a fool.
- e. Adjunct to Subject: She lay across the rumpled white sheets of bed, naked.
- f. Adjunct to Object: I ate the fish raw.

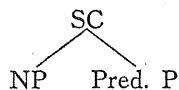
The crucial point in these constructions is the existence of semantic dependency between the NP and the predicate, and this can be considered to be the same as that which exists between the subject and the predicate in a tensed clause.

It might be possible to account for the dependency in terms of a syntactic structure, e.g. by assigning constituency to the sequence of the NP and the predicate. Yet we don't have enough syntactic evidence for this analysis and it is quite doubtful whether the NP and the predicate phrase actually form a constituent. In fact some linguists proposed that they would not form a constituent. (e.g. Akmajiam (1977))

Although there is no empirical reason to assume a constituent structure between the subject and the tenseless predicate, until now the only means that we had to express the dependency formally was to employ a constituent structure, and this is the most prominent reason for the analyses that assign a constituent structure to the small clause constructions.

Three types of analyses have been proposed to account for the dependency, two of which use the constituent structure, and one of which doesn't. The first one is the small clause analysis taken in Chomsky (1981), etc. Like:

(3) Analysis I

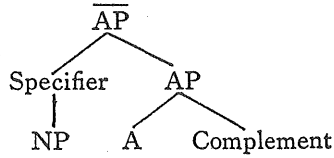


The basis of this analysis is the Extended Projection Principle, which requires the subject for an expression of category S.

The second one is to consider the subject as the specifier of the predicate phrase, and this is proposed in Stowell (1981).

Like:

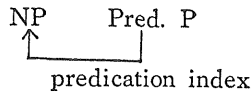
(4) Analysis II



The basis of the analysis is the \bar{X} -theory, which assumes the existence of a specifier at the X' level.

The third one is proposed in Williams (1980) and (1983), and this does not assign a syntactic constituent structure for the sequence.

(5) Analysis III



We will discuss the bases of the analysis in detail later.

The analysis proposed in the present paper is the expansion and the revision of the third analysis. Let us first see the problems of the other two analyses.

In either of these two analyses the construction is considered to form a constituent but the theoretical bases of the approaches differ. In Analysis I, the Extended Projection Principle accounts for the existence of the subject for the small clause, which necessarily means that the category of the small clause is S. In Analysis II, the \bar{X} -theory guarantees the existence of the specifier, which makes the subject.

There are many problems in these analyses.

Analysis I: the small clause constituent is a kind of S. But if S is a projection of INFL, then why is it that the S occurs where there is no INFL node? If S is a projection of V, then the same problem arises, when there is no projection of V at all.

Analysis II: the small clause constituent is a maximal projection. Why can the small clause subject be assigned the Case? (cf. Stowell (1981) p.256) Why can it be governed externally? Also only the strictly subcategorized element can have a categorial status, and this means that the adjuncts cannot have a categorial status, since it is not subcategorized. This results in the lack of a categorial label of adjuncts.

2. The distribution of the small clause

Although there are many types of small clause constructions, their distributions are restrained according to the types of the constructions which contain the small clause. NP+VP (bare infinitive) is strongly restricted and it can occur only in the complement of perception verbs and causative verbs. This is also the case for NP + Predicate Nominal constructions. NP+AP sequences can occur relatively freely, but it rarely comes into the subject of the matrix S¹.

Adjunct small clauses seem to be analyzable as a clause with an empty subject. But this empty subject is always controlled and there is no example of arbitrary interpretation for the empty subject of the small clause.

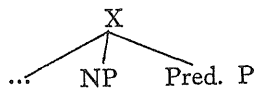
3. Analysis in the Predication theory

Let us consider the Predication theory proposed in Williams (1980). In this theory the relation between the subject and the predicate is captured through the predication index. The process that assigns the predication index is defined as follows:

- (6) Assign the predication index to the predicate phrase and its sister NP.

This is illustrated in the following structure:

- (7)



This process formally captures the relation between the subject and the predicate without using constituency and gives a representation to it.

- (8) NP_i Pred. P_i

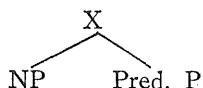
As the definition contains a condition that refers to a syntactic property, i. e. the NP and the predicate phrase are sister to each other, the relation that is represented is dependent upon the syntactic structure of the construction. Yet the property of the relation is not purely syntactic but rather semantic and it plays a significant role for the interpretation of the construction in LF.

Chomsky's standard definition of subject is a derivational one and not a primitive in the grammar. As the subject is defined as a node under an S, the subject-predicate relation could have a meaning only in the category S, so there is no need to assume a notion of subject as a primitive, as far as it can be always determined in the category S. Conversely, this demands that the S should always have a subject. This requirement is formalized in the Extended Projection Principle.

The subject-predicate relation is significant in LF for interpretation, although the existence of subject is generally a syntactic requirement. The crucial function that depends on this relation is the assignment of the theta role to the subject, and the theta role is determined by the whole predicate in most cases. This may seem to conflict with the basic observation of the grammar that a sentence in a language such as English always has a subject, but the subjects in these languages are allowed not to have a theta role in some cases.

The existence of subject is a universal property of language, and it is quite natural to assume a principle to characterize this property. Yet, this is not necessarily a syntactic one; more specifically, there is no need to define a subject in terms of syntactic domination. If we define the subject using a syntactic structural notion like [NP, S], then we have to construct a grammar based upon structural notions when we refer to the properties of subject. So if we would assign the subject theta role to the NP in a structure like:

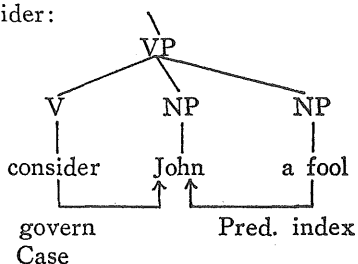
(9)



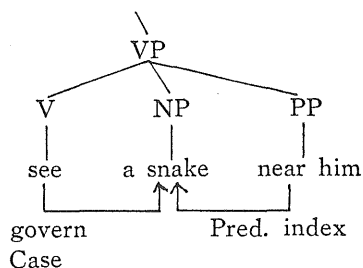
it simply means that in LF the NP should be interpreted as the subject of the predicate phrase. The structure here is used only to ensure that the interpretation of subject is correctly carried out. If there is another means to do this, there is no need to assume this kind of structure for the small clause. In LF the significant notions are the theta roles and if they are assigned correctly through other means there is no theoretical reason for the structural explanation for the theta role assignment processes. The assumption of the constituent structure for the small clause constructions is not based upon the empirical consideration but rather on the definition of subject. Theory-internal requirement needs this analysis. As long as the theta roles are correctly assigned there is no need to assume the constituent structure for the small clause.

Let us consider some examples and see how the Predication theory explains the theta role interpretation.

(10) consider:



(11) see:

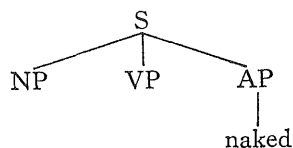


In (10) the verb “consider” subcategorizes only the predicate phrase, in this example, the predicate NP “a fool.” The object NP “John” is governed by the matrix verb and it receives Case from it, and at the same time it receives the predicate index from the predicate, “a fool” and the correct interpretation comes out.

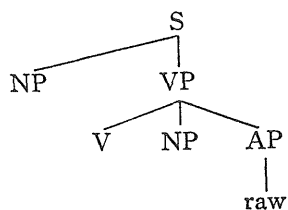
In (11) the verb “see” subcategorizes the NP and the PP is an adjunct to this object NP. The object NP is governed by the V and receives a Case from the V and it further receives the predicate index from the PP. This structure for the perception verb is consistent with the analysis proposed in Akmajian (1977). An empirical argument for the non-constituency of the complement of the perception verbs is given in it.

In the case of pure adjuncts like:

(12)



(13)



the predication indices are assigned to the appropriate subject and it further shows that there is no example of arbitrary PRO in the small clause construction, since there is no empty NP in the structure.

4. Expansion and revision of the Predication theory

There are some problems in the predication theory, as Williams himself has noticed. The first one is that the theory is not compatible with the Projection Principle in the GB framework. More precisely, it contradicts the assumption that only the strictly subcategorized element can receive a theta role. In (10) the verb “consider” does not subcategorize the object NP, yet it governs it and assigns it a Case.

The second one concerns the definition of the predication index. Its properties are not well defined at the moment and it is not clear whether it is similar to other indices such as referential indices.

The third one is whether there arises an example of double theta role assignment. Double assignment of theta roles is completely prohibited in the GB framework, but in an adjunctive construction the subject seems to carry one theta role from the adjunct and another from the matrix verb or predicate.

Let us consider these problems in detail. The first one, the strict subcategorization problem, can be dealt with fairly easily. The solution is simply to assume that the verb “consider” does not subcategorize the NP at all. This solution does not work if we still consider that the PS-rules make the base structure of sentences. If we take Stowell’s proposal, however, in which there is no PS-rule, it works quite well.

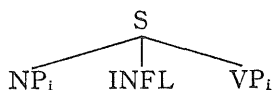
The argument goes like this: the verb “consider” subcategorizes only the predicate phrase but the Extended Projection Principle (we will discuss this later) demands that there should be a subject for the predicate phrase, so the subject NP is generated as a sister node to the predicate phrase.

The subject is governed by the matrix verb and thus it can receive a Case. But of course, the V does not assign a theta role, as it does not have a theta role to assign other than the one to the predicate. The NP receives a theta role from the predicate. Government and the predicate index assignment work independently, although the crucial claim of Stowell (1981) that only governed NPs can receive a theta role is satisfied.

The next problem is the definition of the predication index. Williams claims that

it is the same as the referential index, but this is not the case. For, in the following structure

(14)



the indexing does not obey the Binding condition (Name must be free), since even in non-small clause constructions the subject receives the predication index and it is bound in this structure.

Williams suggests in some other places that the predication index is similar to the subject theta role. For example, in (15)

(15) I saw the soldiers wade across the river.

the object NP “the soldiers” carries the subject theta role of the predicate phrase “wade across the river.” This seems to suggest that the predication index is a kind of theta role, but in the case of adjuncts this would result in a double theta role assignment. This means that the predication index is similar to the theta role but is clearly different from it.

Let us compare the properties of these two notions:

- (16) theta role: i) V assigns them under government (exception: SU theta role)
 ii) lexical (lexical head determines them. exception: SU theta role)
- Predication index: i) predicate phrase assigns it under mutual-command.
 ii) phrasal/compositional

Note here that the subject theta role is quite different from the other theta roles and that it rather resembles the predication index. This means that a different process of theta role assignment is necessary for the subject. This is the reason for assuming two processes for theta role assignment in Chomsky (1981): one under government and the other by non-lexical AGR.

The difference is crucial in the argument. So let us see the subject theta role assignment more closely. Consider the following example:

(17) John is angry.

The subject NP “John” is to have a theta role of some kind. But this does not

come from what the *be*-verb has in its theta grid lexically. For, “is” is the same *be*-verb in the following sentence:

(18) It is certain that John will win.

In this sentence, the subject “it” does not have a theta role. The adjective “certain” directly assigns a theta role to *that*-clause². If we assume that “it” receives a theta role from “is certain,” an example of double theta role assignment would result in a sentence like:

(19) John is certain to win.

since the surface subject of “is certain” has received a theta role from “to win.”

It is clear that the *be*-verb does not have a subject theta role in its theta grid. In that case the theta role that “John” has in (17) should come from “angry” as there is no other lexical element. It must be the one that the adjective “angry” has for its external argument. The VP “be angry” carries over the theta role and then assigns it to its subject. That is, this is a special example of theta role assignment in which the element other than the head assigns it.

Consider another example:

(20) John is a fool.

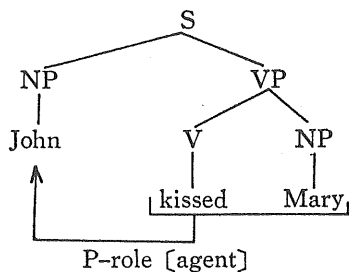
In this sentence there is a problem whether the predicate nominals have a theta role or not, but other than that if the subject theta role is determined by a non-head lexical element when there is no head to assign it, this example indicates that the predicate nominals have an external argument, which is quite unnatural.

This suggests that the theta theory in the GB framework is not coherent and it contains two different principles within itself. Considering that the subject theta role assignment process is quite similar to the one that assigns the predication index, we can divide the theta theory in two parts: the theta theory (narrow version) and the predication theory. That is, the theory that assigns theta roles and the theory that assigns the predication index. We abbreviate and change the word “the predication index” to “the P-role” henceforth and define the notion more clearly.

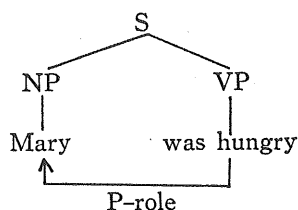
The first idea to be proposed is that the P-role can be a carrier of a theta role. This means that a theta role can be attached to the P-role. When the verb has an external argument such as the agent, then the subject theta role percolates up to the predicate. And then the predicate assigns the P-role to which the theta role is attached to the subject. If the verb does not require an external argument such as

a *be*-verb, the predicate only assigns the P-role with no theta role attached to it. This is illustrated in the following examples.

(21) a.



b.

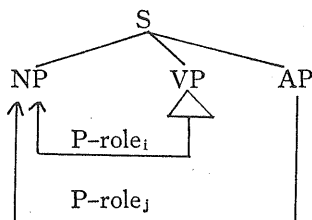


The subject theta role is not directly assigned to the subject in any case. So we can dispose of the exceptional theta role assignment for the subject completely.

An NP can have more than one P-role, but the P-roles assigned by the different predicates can be differentiated. This guarantees the theta criterion which claims that the theta role should be uniquely assigned. Different P-roles are treated differently, and uniqueness applies to the NPs which directly carry a theta role and the P-roles. The subject NP is not associated with the uniqueness condition, since it never carries a theta role directly.

In the case of adjuncts the subject has two different P-roles, one from the matrix predicate and the other from the adjunct. The theta roles are not directly assigned to the subject NP, but rather by means of the P-roles, so that the theta criterion is not violated. This is also the case for the object adjunct.

(22)



The most important principle of the predication theory is the P-criterion:

(23) P-criterion: Each P-role is associated with exactly one subject.

There is no biuniqueness condition for the P-roles, and the criterion applies only from left to right.

With this we can get rid of the assumption of subject in the Extended projection principle. So the system looks as follows:

- (24) theta theory: theta criterion
 predication theory: P-criterion
 Projection Principle

The assumption of existence of subject in the Extended Projection Principle has two crucial points which should be eliminated. The first one is that it refers to the derivative notion subject. Primitive structural notions such as domination and linear precedence play a crucial role in other parts of the grammar, but the subject is referred to as a significant concept only in the Extended Projection Principle.

The second one is that other part of the Extended Projection Principle refers to the mapping conditions for the syntax and the LF, but the assumption of existence of subject does not have the same property. It is not a condition of mapping. It could be stated as a well-formedness condition on the Base, but it is closely related to the interpretation of the theta role that the subject carries. This is more neatly represented if we take this alternative way of ensuring that always the subject is generated.

5. Final remarks

The predication theory thus leads us to the abandonment of the assumption of existence of subject in the Extended Projection Principle and simplifies the Projection Principle. And also the theta role assignment problem in subject position is solved, particularly in the *be*-verb construction and the adjuncts.

The next step will be to see how the P-role works in LF more extensively.

(NOTES)

1. Safir gives some examples of small clauses that occupy the matrix subject position. But this is quite exceptional and the matrix verb is severely restricted. cf. Safir (1983).
2. Stowell gives an analysis for the theta role assignment processes for clauses. cf. Stowell (1981).

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