

# Some Concepts of the Predication Theory

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After the publication of predication theory in Williams (1980) many articles have emerged in the literature of linguistics discussing this topic. The theory has raised many interesting issues such as the question of the existence of PRO in the infinitival construction, and made it possible to eradicate the structural explanation of the phenomenon in favor of a coindexing.<sup>(1)</sup>

Kawahigashi (1987) has proposed some modification of the theory so that it can account for the problems of theta role assignment and so forth. The introduction of P-role has made it possible to account for the relationship between what is predicated and the predicate itself. This relation is formally captured through the assignment of P-role instead of coindexing of both the NP and the predicate. The predicate assigns its P-role to the NP that it predicates and the dependency is represented by the P-role.

The scope of the present paper is to discuss some cases which could be further illuminated by this theory and moreover to pursue the possibility of refining the theory.

## 1. *Be-Verb* Constructions.

The equational *be*-verb possesses many peculiarities in terms of semantic interpretation. Its complement can be any of the maximal projection of the four major categories. If the complement, however, is an NP, its distribution of referent is quite different from common NPs. The complement NP, the predicate nominal, can be either referential or non-referential, while common NPs are always referential.<sup>(2)</sup> This characteristic behavior of predicate nominals in a *be*-verb construction can be accounted for by the predication theory in a quite systematic way. Consider the following sentences.

1. a. Mary is a student.
- b. Mary is a president.
- c. Mary is the president.

d. Mary is the girl that I met at the party.

In both la. and lb., the predicate nominals are non-referential expressions. They simply denote the sets and do not refer to an identifiable individual but rather they represent the properties and attributes that the sets can define. This referential status is quite different from that of other NPs. NPs are referential whether the referent exists or not.<sup>(3)</sup> The referential NP denotes the individual that is identifiable in the set that the NP represents.

Occurrence of non-empty non-pronominal NPs is highly restricted in English. In the GB framework they must be governed and have Case; their position is theta-marked so that the Projection Principle holds.

These conditions, however, cannot hold for non-referential NPs. It is possible to consider the position to be governed by the verb *be*, but no theta-role can be assigned to that position. The NPs may have Case and the only possible case assigner is the verb. Although the complement NPs are non-reflexive, disjoint reference does not hold even if we consider them to be referential.

Subject position can receive Case through the agreement features in INFL, and for other positions involving a regular verb, Case can be given only to the positions that are governed and satisfy a certain condition.<sup>(4)</sup> Otherwise, ungrammatical sentences might be generated. This means that if it is possible for the verb *be* to assign Case to the predicate nominal then the verb must govern its complement position.

In spite of the first generalization that predicate nominals are non-reflexive, the position appears to allow a referential expression as in lc. and d., in which the predicate NPs have referents. This suggests that the theta-role assignment should be undertaken in some way since otherwise it would be against the Projection Principle.

Note, however, that the referent of the predicate nominal and that of the subject are always one and the same. This is not the case with regular verbs. The subject and the object generally refer to different individuals. Otherwise the object is syntactically marked with a reflexive form.

Another point to be noted is that the complement of the verb *be* allows maximal projection of all major categories including NPs, which is exceptional compared with complements for other structures. We can consider the position to be strictly subcategorized, but if this is so, its categorial status is specified in most cases. Although the verb plays a central role in the semantic interpretation in spite of a simply equational function, the category of the complement can be free. This suggests that the relation of equation is quite different from

the regular function-argument relation that holds for common verbs.

The third point is that the subject of the construction does not carry any theta-role. The subject carries the P-role, as is discussed in Kawahigashi(1987), but it does not transfer any theta-role that is specified by the verb. The verb does not seem to have any theta grid at all. Rather the predicate as a whole lacks any kind of theta grid in most cases.

The subject of this construction also behaves very strangely compared with the subject in other constructions. This is the only example of AP or PP subject as Safir discussed.<sup>(5)</sup>

Therefore, two types of subject have to be distinguished: one with a theta-role and another without it. The former corresponds to common verb constructions and the latter to *be*-verb constructions. This provides further evidence demonstrating that a simple theta-theory cannot cover all constructions in English.

Some subjects with a *be*-verb have a theta-role, since some adjectives are relational.<sup>(6)</sup> For example,

2. a. Jane is fond of ice cream.
- b. Mary is sure that he will win.
- c. Doug is tired of waiting for a telephone call.

The adjectives in these sentences are relational and have theta-roles to assign to their complements and compositionally to the subjects, although as they cannot give Case to the complements *of* is inserted in front of the NPs as a Case assigner.

The verb *be* is also used in passives, whether lexical or transformational ones.

3. a. The door was unopened.
- b. The door was opened by a man in a weird costume.

In b., the subject NP receives its theta-role through co-indexing by means of “move alpha” with the empty category generated at the complement of the verb. In a., however, there is no empty category that could account for the theta-role assignment. The predicate as a whole assigns the P-role to the subject just as in the case of a relational adjective, and the theta-role is attached to this P-role.

## 2. Extended Projection Principle.

A sentence must have a syntactic subject in the English language. The subject can be construed as a specifier in X-bar theory, which means that categories other than S may have a subject. This is well illustrated in the case of NPs. Determiner behaves just like a subject

for the NP. Yet the obligatory existence of a subject in a clause cannot be inferred from X-bar theory. Nor is it a property that can be deduced uniquely from Projection Principle. For, even a non-theta-marked subject is required at the D-structure for cases such as passives and raising constructions. That is, it cannot be reduced to the properties of the thetè-role assignment. This is further confirmed by the following examples.

4. a. It seems that John is honest.
- b. It is obvious that John is honest.
- c. It is easy to be kind.

The subject *it* does not carry any theta-role. Projection Principle does not require the dummy subject “it” to be generated in the subject position, although the position must be generated and filled phonetically.

It might be possible to propose a solution in which AGR features must always be expressed so that the subject always exists as a feature carrier. Yet this cannot be concluded automatically from the theory. It can only be postulated.

In the following constructions the embedded Ss appear to be the extraposed subjects, but this is not necessarily true.

5. a. \*That John is honest seems.
- b. It is natural for Tony to object.
- c. For Tony to object is natural.

The fact that 5. a. is ungrammatical means that the extraposed *that*-clause is actually not extraposed from the subject position.<sup>(7)</sup> Rather the *that*-clause is generated post-verbally in a D-structure in the case of the verb “seem.” On the other hand, the infinitival clause can be extraposed from the subject position as in 5. b. and it is not clear whether the post-adjectival position is Base-generated or not. This suggests that the existence of a subject for the verb “seem” must be accounted for not in terms of movement of the *that*-clause but rather in terms of other requirements. Note also that if the embedded S of “seem” is tenseless its subject must be moved to the matrix subject position so that there is no dummy subject as in:

6. a. John seems to be honest.
- b. \*It seems for John to be honest.

The predication theory requires a subject for every predicate so that there must always be a P-role carrier. It assumes that every predicate has a P-role to assign. This appears to be a natural consequence, but consider the following examples.

7. a. There comes a bus.

b. There is a girl sitting on a bench.

In 7. a. and 7. b. the NPs 'a bus' and 'a girl' carry the agent theta-role of the verb 'come' and 'sit' respectively.<sup>(8)</sup> The verbs agree with those NPs in number. Yet, these sentences are not interpreted as predicated of 'a bus' or 'a girl' respectively. Rather the predicates do not seem to have a P-role to assign at all.

The Projection Principle guarantees the existence of NPs that bear theta-roles, but it does not guarantee the existence of 'there.' For, 'there' is a non-referential expression and does not carry any theta-role. Yet we cannot delete 'there' in this construction as in :

8. a. \*Comes a bus.  
b. \*Is a girl sitting on a bench.

These may be ruled out simply because the verbs are in the sentence-initial position. There may be a constraint in English forcing the verb to be the second main element in a sentence.<sup>(9)</sup> However, even non-inverted verb-second constructions are also ungrammatical as in :

9. a. \*A girl is.  
b. \*A bus comes there[-stress].

The most reasonable way to explain this phenomenon is to assume that 'there' is actually the subject and it agrees with the verb, i. e. the agreement is expressed in 'there' although its forms are morphologically the same.

Note here that the subject is not the same as the topic. The subject does not necessarily function as a topic in English. Other elements such as objects or oblique NPs can also be a topic, which is quite different from other languages in which a topic is a syntactic notion, e. g. as in Japanese.<sup>(10)</sup>

In sentence 7a, the NP 'a bus' is a referential expression, although it is indefinite. It receives the theta-role of *Agent* and the Case from the verb 'come.' As a categorial node can be generated only in Base, the categorial node that dominates 'there' must be also generated in Base. This means that it is necessary to generate the subject at Base in order for the predication theory to hold at a later stage of derivation. Of course NPs can be moved by transformation so that an empty subject can be filled at a later stage. But existential 'there' constructions must be characterized at the D-structure. This further means that it is not crucial to the discussion whether the lexical insertion of 'there' occurs before D-structure or later on. The construction is quite different from surface inversions.

The theory of P-role accounts for existential constructions as well. P-role must be assigned to the subject, and in this construction 'there' is the only possible P-role bearer.

The P-role for this type of construction is non-referential so the distinction in P-role in addition to that of the theta-role can distinguish three types of construction as follows:

10. a. a referential P-role with a theta-role : common subject  
       Tony wrote a letter to the President.
- b. a referential P-role without a theta-role : subject of subjective complement construction  
       Tony is a student.
- c. a non-referential P-role without a theta-role : existential sentence  
       There comes a bus./There is a bus.

This classification covers all types of constructions in English.<sup>(1)</sup>

### 3. Qualification of P-role carrier.

We have discussed the existence of two kinds of P-roles. The referential P-role can be carried only by particular NP. Semantic properties of the predicate can affect grammaticality of the sentences. Consider the following examples.

11. a. The car cost three thousand dollars.
- b. She weighed two hundred pounds.
- c. Mary resembles Sue very much.

The subjects do not cause any problems in these examples, but the OBJ NPs cannot carry P-role which means the corresponding passive sentences are ungrammatical.

12. a. \*Three thousand dollars were cost by the car.
- b. \*Two hundred pounds were weighed by her.
- c. \*Sue is resembled by Mary very much.

Referents of the NPs possibly exist for 11.a and 11.b and in the case of 11.c, this is quite certain. Their grammaticality has nothing to do with the existence of the referent, since a non-existing thing can be the subject.

13. a. A cake is being baked.
- b. A novel is being written by Kate.

The ungrammaticality of these sentences can be explained by the mismatch between the P-role and the theta-role that should be carried by the P-role. The verbs do not have theta-role that can be transferred through P-role to the subject. Therefore, the passives are ungrammatical although non-passivized counterparts are grammatical.

There may be more than one P-role just as there are several theta-roles. The mismatch between the theta-role and the assignee results in ungrammatical sentences in terms of selectional restriction. In the same way, the mismatch between P-role and the assignee would result in another type of ungrammatical sentences.

#### 4. Final Remarks.

The theory of P-role can account for some ungrammaticality problems. As all the characteristics of P-role have not been defined explicitly as yet, next task is to study other consequences of the P-role theory.

#### NOTES

- (1) Control phenomenon can also be explained in the predication theory. Cf. Culicover & Wilkins (1984). Coindexing of the predicate and the NP makes it unnecessary to assume a PRO which is controlled by the NP and represents the subject-predicate relationship.
- (2) NPs in idiomatic phrases can be non-referential as in :
  - i. This doesn't do any harm.
  - ii. John keeps tabs on the situation.
- (3) Natural language is different from formal logic, and the existence of referents is not limited to this world. It includes an imaginary world.
- (4) Stowell claims that adjacency is the crucial factor for Case assignment. cf. Stowell (1981).
- (5) Safir gives examples like :
  - i. Under the bed is a cozy spot.
  - ii. Angry/Unwanted is a terrible way to feel.
 cf. Safir (1983).
- (6) The semantic relations that hold in adjectival sentences may not be theta-roles. As the construction is always stative, those relations do not correspond to notions such as AGENT, etc. The semantic representation at LF may be different from that of non-stative constructions.
- (7) Case conflict may block 5. a. since *that*-clause cannot bear Case. cf. Stowell(1981).
- (8) In a sentence like 7. b. the NP and the participle are analyzed to constitute a small clause. Cf. Williams(1984a).
- (9) Consider the following examples.
  - i. a. \*A bus comes.
  - b. A bus is coming.
  - ii. a. \*There is coming a bus.
  - b. There is a bus coming.
 This fact suggests that aspectual properties may affect the grammaticality of these sentences. Note also that the progressive form of 7. a. (=ii. a.) is ruled out, while a non-inverted progressive form ii. b. is acceptable. This means the verbal structure is more complex than it appears.
- (10) Japanese possesses the syntactic Topic marker '-wa,' and this of course entails the existence of a syntactic notion in Japanese. On the other hand, English does not possess a syntactic device

to express the Topic.

- (1) The predication index is used differently in Culicover and Wilkins(1984), and an arbitrary interpretation ensues if the index subject is non-referential. This point is beyond the scope of the present paper. cf. Culicover and Wilkins(1984), 55 ff.

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