

A Note on the Semantic Role of THEME

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1. Goal

This is a brief reflection on the deficiencies in the current practices involving the concept of θ -role "THEME" or Fillmorean deep case "Objective" in semantic descriptions of natural languages, based on my naive and simple intuition on the discourse understanding. As is well known, the term of so-called "THEME" θ -role or "Objective" case comprises extremely heterogeneous semantic relations or contents that it could not be seen to form a single coherent semantic category, nor would it be used effectively in semantic analyses of sentences. Thus it follows that in particular it could not provide any significant contribution to the understanding of discourse contexts.¹

Originally, the case grammarian's fundamental motive for setting up the deep cases, as in Fillmore (1968) etc., is to build a syntax on the basis of semantic relations which hold between a verb or a predicator and its argument(s) or complement(s) in simple sentences.² Naturally, case grammarians have paid little attention to the ways how the case roles do contribute to the understanding of semantics of a sentence or a discourse. The nature of case roles has come to be formalistic, nearly void of any useful semantic content appropriate enough to analysis of the relevant situation or discourse. It is not surprising that Chomskyan Government and Binding (GB) theory³ makes use of θ -roles as a purely formal tool for the postulation of the abstract θ -criterion.⁴ We can hardly see any serious attempt in the literature on GB syntax to establish the proper set of θ -roles and to attain the exact characterization of each θ -role. The exact nature of a given θ -role is not the GB theorists' concern. Their direct concern is confined to the question of whether or not a θ -role is assigned to an argument and an argument is assigned a θ -role, which is irrelevant to the question how many θ -roles are required to describe the semantics of natural languages, or how their exact qualifications could be obtained. This might be seen in some respect as one of natural consequences of the case grammar which is syntactically oriented. And yet, we wonder if it could indeed be possible to posit a principle governing the general behaviours of θ -roles, without knowing the real nature and the range of θ -roles or case roles. In a sense, this is the reason why so many problems remain unresolved in this field of research.

Among others, here we will focus on the so-called THEME with minimal commitments to other semantic roles,⁵ and suggest some subdivision of semantic relations involved in THEME into several distinct categories of roles, along the spirits of Allerton (1982). It seems that this concept is a typical example which shows the difficulties and insufficiencies involved in some current syntactic treatments of semantic roles.

2. A Question of Nomenclature

First of all, it should be pointed out that not only the form but also the

content of the term "THEME" is extremely equivocal and misleading, so that it is to cause severe confusions with other linguistic concepts, like "topic" or "theme" which appears in a syntactic analysis of sentences or in a discourse analysis with respect to information.

The notion of "topic," or that of "theme" in the sense of Kuno (1973), could be thought to be prerequisite to the syntactic and/or semantic descriptions of "topic prominent languages" in the sense of Li and Thompson (1976), and much the same could be said to be true to the semantic and/or pragmatic descriptions of "subject prominent languages."⁶ And, if we take the notion of "theme" as the one which is presented in Carlson (1985), i. e. as a notion to designate the elements which bear old information from a viewpoint of discourse analysis in a sentence, then we can expect that the two concepts will play very important roles in syntactic, semantic or pragmatic descriptions of natural languages. If this kind of suggestion is reasonable to assume, it is undesirable and inappropriate to concoct a new term confused with the already existing term(s), at least in form. Even if we can agree that an appellation is entirely dependent upon the writer's arbitrary will, this situation is bad enough.

On the other hand, the name of "Objective" as a deep case in Fillmore's (1968, 1970, 1971, etc.) terminology is at least ill-chosen and, contrary to Fillmore's (1968) expectation, it is likely to be misunderstood as the grammatical function "object" in transitive verb constructions. Although Fillmore (1968) have warned that the "Objective" as a deep case should not be confused with the surface "object," it is obvious that the results are not so good. Cook's (1979) term "object" directly conflicts with the surface grammatical function "object."

One might say that the question of terminology is not so important in linguistic literature. Of course, what matters in linguistic practices is the content or concept that the term in question designates. However, note that when the content of a term is not well established, the equivocal term makes the situation worse. Such symbol of θ as used in Chomsky's and GB syntacticians' works could be seen to represent this worse situation. Without recourse to the exact definition of the term and concept, it is widely and wildly used in setting up the important grammatical principles, e.g. θ -criterion and θ -role assignments, etc.⁷ Whatever contents the term may have, the principles could be defensible, for the contents of θ -roles are highly abstract and nearly empty.

Recently, Rappaport and Levin (1988) makes some refinement of the term. They divide the original THEME into "THEME" and "Locatum," following a move made by Hale and Keyser (1987).⁸ However, the term "THEME" remains intact. Cook (1979) also proposes the subdivision of semantic roles contained in Fillmore's "Objective." And yet, the symbol "O" which represents "Object" is still used. Although he uses another symbol "Os" to represent a stative "Object," the situation is in large unchanged.

3. Incoherent contents of THEME and "Objective"

Even the nature of THEME is vague enough to be confused with other concepts in linguistics, especially with that of topic in some respect.⁹ According to Gruber (1965), there is a noun phrase functioning as THEME in every sentence, which could be referred to as "Gruber's Principle", or "one THEME per clause principle". Let's state this principle like the following:

(1) Gruber's Principle(= one THEME per clause principle)

In every sentence, there is an NP which functions as THEME.

In Gruber(1965), the typical examples of THEME are the NPs understood as undergoing movement in sentences with the verbs of motion. And, with the verb of location, the NP whose location is being asserted is also defined as THEME. Consider the following:

(2)a. The rock moved away.

b. John rolled the rock from the top to the bottom.

(3)a. The rock stood in the corner.

b. Herman kept the book on the shelf.

c. Max owns the book.

d. Max knows the answer.

If THEME is to be defined as an entity undergoing movement, then it is obvious that in (2a) and (2b) "the rock" belongs to the semantic category of THEME. However, even without invoking the semantic nature of THEME, "the rock" in (2a) could be characterized as THEME, in terms of the principle (1). For there is only one NP in (2a); from (1) we can infer that the NP is THEME. The same applies to (2b), since, when we say that in (2b) "from the top" is an expression of Source, "to the bottom" Goal,¹⁰ and "John" Agent, the only remaining argument that is not assigned a "thematic" relation is "the rock," In (3a) and (3b), "the rock" is also THEME, because its location is asserted. But, in this, "the rock" can also be THEME by (1). Whereas (3a) and (3b) have to do with physical location, (3c) and (3d) involve possessional location. This also is taken to have to do with the assertion of location. Thus it follows that "the book" in (3c) and "the answer" in (3d) are to be qualified as THEMES. If in (3c) and (3d), "Max" can be seen not erroneously to be location, "the book" in (3c) and "the answer" in (3d) could be THEME by (1). It is because that at any rate there must be an NP in a sentence which bears a "thematic" relation THEME.

Now we can raise some questions. First of all, the most important one is the question concerning why the principle that determines the "thematic" relation of an argument in a sentence is not based on the semantic characterization, but on the abstract principle like (1).¹¹ We believe that this is not the proper way of explaining or interpreting the semantic relations which hold intra- or inter-sentences. At this point, it should be made clear that the nature of the overriding principle like (1) is not well motivated. It could not be regarded as a guide-line of interpretations on the semantic relations which hold in a sentence, not to mention the inter-sentential relations. It not only lacks any empirical motivation, but it also cannot be justified a priori.

From a purely logical point of view, the Gruber's Principle and the procedures of setting up "thematic" relations associated with the principle remind us of the wrong syllogism that major and minor premises are both negated. If we were confronted with two unidentified arguments in a sentence(e.g. "John is a man."), both of them are probably to be referred to as THEMES, simply because any appropriate thematic relations are not yet prepared for them.¹² Obviously, this is not the case. As Jackendoff (1987) clearly points out, "there cannot be a "default" thematic relation in the sense that there is [...] a thematic relation that an NP is assigned

when it has nothing else."

Another point is related to the semantic role of an NP whose location is asserted. We do not understand why the NP should belong to the "thematic" relation THEME. Is this due to the principle (1)? Probably "the rock" in (3a) might be so, because "in the corner" is in general an expression of location. However, even though we were relying on the principle (1), we could not agree to the treatment as is done in (3c) and (3d). The concept of "possessional location" is too vague and inclusive. According to Gruber (1965) and Jackendoff (1972), there might be a danger to interpret "weeping" as an event which takes place in "John's" psychological or physiological location in the example like "John wept all day long." Unless the concept in question has a strict and exact nature, we can not attain the goal of adequate semantic categorization.

Furthermore, Gruber (1965) and Jackendoff (1972) argue that the subject entity of the example like (4) below has dual function to perform, that is, Agent and THEME:

(4) Max rolled down the hill.

For Gruber (1965) and for Jackendoff (1972) as well, (4) is ambiguous between the readings attributed to "Max." On one reading, "Max" is THEME, so "Max" may be asleep and not even be aware of his motion. On the other reading, "Max" is Agent, so he is rolling down of his own will. On these readings, there does not arise such a case that "Max" in (4) has dual function. Jackendoff (1972) sees that on the Agent reading with respect to "Max" in (4), "Max" still undergoes the motion implied by the THEME reading. Thus "Max" is both Agent and THEME. However, we do not agree that "Max" in (4) has dual function in the Agent reading. Because, if the movement is thoroughly controlled by his own will, there is no room for the reading of THEME to intervene in the Agent reading to "Max." And we see that this interpretation has to do with pragmatic aspects of motion. It is natural to assume that if an Agent is involved in continuing actions, the Agent might experience the action more or less irrespectively of his own volition or will, especially in the course of action. We think that this is a pragmatic aspect of a motion or an action. We find that unvolitional action might be involved even in the typical examples of action. And, we propose that contingent pragmatic aspects of meaning concerning the real world should not be taken into consideration in the semantics of lexical items, though it is generally conceived that the boundary between the lexical meaning and the pragmatic one is entirely unclear. However, it is not so difficult to distinguish the lexical meaning from the pragmatic aspects of semantics about "contingent" real world.

Now consider the following:

- (5)a. Fred bought some flowers from Mary for 5 dollars.
- b. Mary sold some flowers to Fred for 5 dollars.

For Jackendoff (1972), (5a) describes two related actions. The first is the change of "some flowers" from "Mary" to "Fred." The subject is both Agent and Goal, which explains that it is "Fred" who takes the initiative in transaction. The direct object entity is THEME. "Mary" is a simple Source, which in turn explains that "Mary" does not take the initiative in

transaction because it lacks Agenthood. "5 dollars" is "secondary THEME" that is transferred in the secondary action. The secondary action is concerned with the changing of the money that goes in reverse direction. In the secondary action, "Fred" is Source; "Mary" is Goal; "5 dollars" is THEME. The "thematic" relation in (5b) is in large identical to (5a) except the question about who takes the initiative in transaction.

Although this analysis shows some detailed consideration about what is going on in transaction, it seems that it goes rather wrong direction. Jackendoff's (1972) secondary action could be explained by the entailment relation involved in the first action. In general, the so-called transaction is carried out in such ways as suggested in Jackendoff (1972), that is, if there is one thing to be transferred from someone to someone else, there is to be another thing to be transferred from the latter to the former. It is different from the unidirectional action toward others like *endowment, contribution, collection, delivery, theft, or robbery* etc.

Further question is related to the problem what role "for 5 dollars" has in the interpretation of the primary action, and what role "some flowers" has in that of the secondary action. What is strange in the primary action is that "5 dollars" functions as the secondary THEME. However, the secondary THEME is to be understood to perform a role in the secondary action. It remains intact at least in the analysis of the primary action. Likewise, in the secondary action, "some flowers" remains intact. It is strange to say that the secondary THEME is involved in the primary action, and it is also strange to say that the secondary THEME is entirely intact in the primary action. We think this complication is due to the fact that Jackendoff (1972) did not get the exact nature of the role of "5 dollars" in (5a). We tentatively propose the role of Paid. With this or something like this, it can be naturally explained what is going and coming in transaction.

In addition, the problematic is to posit the dual function of the subject in (5a) and (5b). The subjects of both examples are supposed to bear some other roles in addition to the "thematic" relation of Agent. Goal in (5a) and Source in (5b) are the added roles to Agent. Here we can think of two possible solutions.

One is to suppose that the two thematic relations imposed on one argument are not of equal value and one of them can be derived from the other. In this case, since Agent has wider applicability than Source or Goal and it has the inherent function to indicate the instigator of an action, Agent might be taken to be more basic than the other, and the additive role of Source or Goal associated with the verb can be thought to be derived from the semantics of the verb and the Agenthood of subject. This is to say that Agents in sentences with the verbs of *giving, selling*, and so on, are to be supposed to have the role of Source redundantly, and in much the same way, Agents in sentences with the verbs of *receiving, buying*, etc. come to have the redundant role of Goal. This solution has some advantages, particularly in that it can omit the need to impose two thematic relation on an argument, and it gives natural explanation about the initiative problem in transaction. But, this not only seems somewhat trivial, but invokes another complications, one of which is the problem of inference. This could be thought to transfer the difficulties in one area to another.¹³

The other is to propose that the semantic roles of Source and Goal

should be limited to designate the starting points and ending points involved in spatial movements and extensions.¹⁴ Indeed, the two terms "Source" and "Goal" have been widely used in *giving* and *receiving* contexts since their appearances in Fillmore (1971), so we are apt to take for granted that the roles of Source and Goal are involved in *giving* and *receiving* contexts as well as in *moving* contexts. However, it is noted that those involved in *giving* contexts in particular are possessional Source and Goal. As is noted above related to (3c) and (3d), once we include the possessional Source and Goal in the proper Source and Goal, it is inevitable to include highly abstract ones.

- (6)a. John informed the news to Mary.
- b. John tells his secret to his friend.
- c. John teaches English to his students.
- d. John found out the answer from the book.
- e. John hits Mary.

It may well be said that (6a) expresses an event in which "the news" comes from "John" and goes to "Mary." "John" can be said to be Source and "Mary" may be said to be Goal. And the same might be seen to hold in (6b). But what is expressed in (6a) or (6b) is not same as what is expressed in *giving* contexts. The following dialogues clearly show what is at stake in the relevant contexts.

- (7)a. SPEAKER A: John gave the money to Mary.
- b. SPEAKER B: Now who has the money?
- c. SPEAKER A: What? I have told you. Mary has.
- (8)a. SPEAKER A: John informed the news to Mary.
- b. SPEAKER B: Now who knows the news?
- c. SPEAKER A: Of course, at least John and Mary know.

Compared with (6a) and (6b), (6c) and (6d) express more abstract events. In (6c) it might be thought that something, maybe knowledge about English to be transferred from someone to someone else. In (6d), it might be said that "the book" becomes Source of "the answer." Strictly speaking, however, what is moved in (6c) or (6d) is not the one expressed by the object. In the case of (6c), it is something about "English," and in (6d) it is something related to "the answer." Although (6e) is generally construed as a typical example of action, Source and Goal interpretation ultimately might be applied to this.¹⁵ It could be seen that an action comes from "John" and then goes to "Mary." At highly abstract level of reasoning, this kind of interpretation might have some validity. But in the ordinary world of dialogues we need not that abstraction. To meet the ordinary life's need, it is sufficient to attribute the semantic role of "Recipient" to the suspicious "Goal" in *giving* contexts.

The "thematic" relation of THEME in Gruber (1965) and Jackendoff (1972) has strong affinity in nature with the deep case "Objective" of Fillmore (1968). Both of them typically comprise the entities being affected and being located. For Fillmore (1968), "Objective" is the semantically most neutral case which represents all that can be expressed by a noun whose role in the action or state identified by the verb is identified by the semantic interpretation of the verb itself. He adds that "conceivably the

concept should be limited to things which are affected by the action or state identified by the verb," and then gives advice that "the term is not to be confused with the notion of direct object, nor with the name of the surface case synonymous with accusative."

Although Fillmore(1968) defines "Objective" with considerable care,¹⁶ we unfortunately could not get the exact semantic nature of the case role of "Objective." What is meant by "semantically neutral case"? Why does Fillmore (1968) classify the action-related role and state-related one into one and the same role? What is the exact content of the "action or state" identified by the semantic interpretation of the verb itself? We cannot but say the concept is vague and cloudy. To these problems, we can only say that Agent also is the semantically most neutral case in a sentence that expresses a human action, and that it forms a part of the verb meaning. Likewise, in the case of a verb requiring location, Locative also is a part of its meaning, and so on. What is implicit in Fillmore (1968) comes to be stated more explicitly in Fillmore (1971). There "Objective" is defined as an entity undergoing movement or change. And yet, he still treats the "Objective" case as a "waste basket." The exact nature of "Objective" is not yet established even for Fillmore (1968,1971). Owing to this, Fillmore's "Objective" happens to include numerous heterogeneous relations or contents, like the entity affected by action, the moved entity, the subject entity of adjectival predicate, and the others that were not yet known at that time.

It is strange enough that the so-called semantic analysis could be carried out without establishing the relevant semantic category. We could not understand even the reason why an entity undergoing movement and an entity affected by action should be categorized into one, not to mention the subject of a sentence with the "simple adjective predicates." If Fillmore's (1968,1971) interests were not on syntax but on semantics of natural languages, his arguments could not go any further at this point.

Cook (1979) has made some improvements in dealing with "Object." Cook (1979) specifies the contents of "Object" like the following:

(9) Cook's (1979) "Object"

- a. in contexts which exclude the E-case, the B-case, the L-case (i) the case required by a state verb, which specifies the object that is in the state, or (ii) the case required by a process verb which specifies the object which undergoes a change of state.¹⁷
- b. with experiential verbs, the case which specifies the content of or the the stimulus for, the experience.
- c. with benefactive verbs, the case which specifies the thing possessed or the thing transferred.
- d. with locative verbs, the case which specifies the object in a location, or undergoing change of location.

These can be used as useful criteria to identify the "Object" in practical examples. But, we can raise a fundamental question about what the real nature of "Object" is. From the specifications like (9), we cannot get any idea about what common nature there would be postulated with respect to "Object." It is not too excessive to say that "Object" is nothing but a stack of semantically incompatible contents. And yet, (9) is suggestive,

because it gives some information about what the relevant semantic categories should be when we try to subdivide or decompose semantic roles unduly comprised in THEME or "Objective."

4. Some Proposals for Semantically Coherent Categories

So far, we have examined the shortcomings involved in the concept of "thematic" relation of THEME and Fillmorean deep case "Objective." It is noted that these concepts comprise highly heterogeneous contents that they cannot be seen to make semantically coherent categories.

We will suggest some alternatives concerning semantic roles related to THEME or "Objective." What is crucial is the names and contents of relevant semantic categories. Since the traditional terms have been more or less sanctioned, it seems difficult to alter old names or create new terms. However, it is absurd to stick to the inadequate terms at all times.

4.1 Semantic Roles in Action

What is important is to disuse the terms like THEME, "Objective," "Object," and the like. The terms are not only far from clear, but also are on suspicion to be used for the purpose of equivocations.

In this connection, some proposals can be made about the subdivision or decomposition of the semantic roles unduly comprised in THEME. It could be generally agreed that there exist conceptual distinctions between the entity affected by an action and the entity moved by an action. Firstly, these two are to be set up as separate semantic roles. Similar but not same proposals are found in Hale and Keyser (1987) (cf. Rappaport and Levin (1988)) and Rappaport and Levin (1988). In particular, Rappaport and Levin (1988) tentatively divides Gruber's (1965) THEME into two classes:¹⁸ one is "THEME" which refers to an entity undergoing a change of state and the other is "Locatum" which refers to an entity undergoing a change of location.¹⁹ In Andersen (1977), the term "THEME" has been used in such a sense to indicate the affected entity. Allerton (1982) uses the term "affected entity" with some wide applicability.

To differentiate the physically affected entities by way of action from others, we will introduce a term like PAF (= Physically Affected) to name the entity which can be a counterpart corresponding to the variable Y in the most felicitous answer to the question of (10a) below. Likewise, in the case of (10b), we will introduce a new term SMD (= Spatially Moved) to name the entity which can occur in the position corresponding to X position in the answer to (10b).

- (10)a. What did X do to Y ?
 b. How far was Y moved ?

Now consider the following:

- (11)a. John broke the window.
 b. John moved the rock down the hill.

In the cases of (11a) and (11b), there arises no problem in our terms. "The window" in (11a) satisfies the requirement imposed by the variable Y in the

answer to the question like (10a). In (11b), "the rock" in turn also satisfies the relevant requirement imposed by (10b). Thus "the window" in (11a) can be characterized as PAF, and "the rock" as SMD.

Usually, it is conceived that *giving* and *receiving* contexts involve the semantic role of THEME in the sense of "Moved Entity." However, what is involved in these contexts is not SMD. Let's see the following:

- (12)a. John gave a book to Mary.
- b. Mary received a book from John.

In (12a), "a book" might be seen to come from "John" and then go to "Mary." But, we cannot ask a question like (10b) to (12a). If we ask (10b) to (12a), the question seems to introduce some other perspectives to the described event. But we are dealing with the honest sense of a lexical item. Just as the role of "to Mary" is different from the ordinary or spatial Goal, so is the role of "the book" in (12a) from the ordinary SMD. We need a new term to reflect this peculiarity. Something like CIP (= Changed In Possession) seems to be appropriate for this role. To test or to elicit this semantic role from practical contexts, we can use a question like the following.

- (13) Now who has become a possessor of X ?

As is expected, (13) can be asked to (12a), and felicitously we can get the honest answer containing the information like "X = the book." Generally it is expected that the same relations as in (12a) hold in (12b): "Mary" is Goal, "John" Agent or Source, and "the book" THEME. What problem? However, attention should be drawn to the fact that to (12b) we cannot ask the question like (13). (12b) does not express an event concerning the change of possession. In this respect, the following examples are suggestive.

- (14)a. (*)John gives a letter to Mary.
- b. Mary received a letter from John.
- c. John sends a letter to Mary.

(14a) is odd, in case it is used with the meaning similar to (14c). If it denotes donation, (14a) is flawless. This means that *give* needs the role related to Change in Possession. On the other hand, in (14b) "the letter" is not necessarily related to Change in Possession. "The letter" may be in "Mary's" possession or someone else's. In the latter case, "Mary" is simply keeping "the letter" in her vicinity. Hence it could be said that the near-paraphrase relation as posited in Rappaport and Levin (1988) consists in (14b) and (14c), but not (14a) and (14b). Even though *give* and *receive* form an antonym, the reverse order of the relevant arguments do not form a paraphrase relation. Then, what is the semantic role of "the letter" in (14b) and (14c)? Is it SMD ? At first glance, it appears to resemble SMD. But it has different nature, for it is difficult to ask *how far*-question to (14b) and (14c). We have to coin a new term like TIK (= Transferred In Keeping).

Our CIP (= Changed in Possession) role can be identified in, or extended to the following examples.

- (15)a. John inherited a million dollars.

- b. John acquired a good fame.
 (16) John lost much money in the game.

(15a) is a proper example to express the change in possession. As a matter of fact, the question (13) can be applied to this. Even though the Origin is entirely unclear, "John" newly became a possessor of "a million dollars." In (15b), the object entity has somewhat abstract quality, nonetheless "John" can be thought as a possessor of "a good fame." It is somewhat dubious that (16) is really related to possession. And yet, it is possible to see that (16) has to do with negative aspect of possession. To the question like (13), at least we can answer like this, "Now John has that money no longer."

Contrary to this, the same relation does not hold in the cases of (17) and (18). (3c) is repeated here as (17b) and (3b) as (18) in somewhat different forms for convenience.

- (17)a. The book belongs to John.
 b. John owns the book.
 (18) John keeps the book.

(17a) and (17b) are expressions of simple possession, not that of change in possession. To these, the question (13) which presupposes change of possession cannot be applied. We need a new term like PSD (= PoSsessed) for the semantic role of "the book" in (17a) and (17b). On the other hand, (18a) has nothing to do with possession; "John" is simply retaining "the book" on his own responsibility. We can refer to the semantic role concerned in (18) as LCD (= LoCated). The relevant questions are like these:

- (19)a. Who owns X ?
 b. Where is X located ?

The variable X in (19a) corresponds to the entity which bears the role of PSD, and that of in (19b) is related to LCD.²⁰ However, if a human performs an action with respect to location, it does not belong to LCD.

If a thing comes into being by a certain activity, the entity could be called RSD (= ReSulted), along the lines of traditional nomination.

- (20)a. John drew a circle.
 b. John wrote a poem.
 c. John built a house.

To (20a)-(20c), we cannot ask a question like (10a). The entity which appears in the object position in (20a)-(20c) is not the affected by some action, but comes into being as a result of a certain activity. Hence we can postulate following contexts to identify the semantic role RSD.

- (21)a. What happened next ?
 b. X comes into being.

After the question (21a) to some event, if an answer as (21b) is possible, then the entity which occurs in the position of X can be characterized as RSD. Now let's see the following examples.

- (22)a. Our hen laid 2 eggs yesterday.
- b. Mary gave birth to a boy.
- c. John broke the window into small pieces.

(22a) and (22b) express certain activities. And, it seems that (21a) and (21b) are also applicable to (22a) and (22b). In the case of (22a) and (22b), one might wonder whether what is expressed in (22a) and (22b) is a proper action or not. However, as we have suggested above, if we don't limit the contexts involving RSD only to human- and animal-related "action," "2 eggs" in (22a) and "a boy" in (22b) can be characterized as RSD. (22c) manifests somewhat different contexts. In respect of "small pieces," we can ask a question like (21a) and then get an answer like the type of (21b). If (21) is a defining contexts for the role of RSD, it is a matter of fact that the role "small pieces" in (22c) is to be termed RSD. And yet, the semantic relations which holds in (22c) is different from those involved in (22a) and (22b), in that the RSD in (22c) has the explicit Origin, contrary to the cases of (22a) and (22b). This role could be called RDA (= Resulted from Affection).²¹

Now consider the following:

- (23)a. I read a book.
- b. We discussed the pollution problem at the meeting.

"A book" in (23a) is not an entity affected by a physical action, but an entity to which "my" attention directs. Its role is different from PAF in that it does not permit the question like "What did X do to Y?" of (10a). We can term the semantic role of "a book" as MFD (= Mentally Focused).²² For the identification of this role, a question like the following forms a relevant context. MFD occurs in the position corresponding to "where" in the answer to (24).

- (24) Where did X's attention direct to ?

According to Allerton (1982), "the pollution problem" in (23b) as well as "a book" in (23a) belong to the semantic role of "Mental Focus." Since (24) appears to apply to (23b), this may be plausible. However, it is noted that (23b) expresses linguistic activity. Moreover, it might seem that the question (10a) could be applicable to this.

- (25)a. SPEAKER A: What did you do to the pollution problem (at the meeting) ?
- b. SPEAKER B: ?We discussed the pollution problem at the meeting.

One might say that (25b) sounds more or less odd in the above context. But, it could be recognized that (25a) and (25b) do not form such an incoherent context. Furthermore, for (23b) some questions like (26) below hold.

- (26)a. What is the topic of your meeting ?
- b. What is the topic of the discussion ?

Therefore, it seems to be necessary to distinguish LFD (= Linguistically Focused) from a simple MFD. The following question is useful to establish

the semantic role of LFD. A possible candidate to "what" which occurs in the answer to (27) will be LFD.

(27) What is talked about ?

On the other hand, the examples like the following form a different context.

- (28)a. John knows the answer.
- b. John feels fear.
- c. John has a nap.

For (28a), (24) is not workable. This is due to the fact that (28a) is not an expression of dynamic mental activity. In (28a), "the answer" is simply contained in the consciousness of "John." We will call the role of "the answer" in (28a) as MCT (= Mental Content). Similarly, the verb "feel" in (28b) lacks its contents. In this case, the role of "fear" in (28b) could be called as ECT (= Emotional Content). The relevant questions for these roles will be something like (29).

- (29)a. What is in X's head ? ("what" = Mental Content)
- b. What is in X's mind ? ("what" = Emotional Content)

Though "has" in (28c) is not directly concerned with mental or emotional activities, (28c) shows some similar characteristics to (28a) and (28b) in one respect. This is related to the content for the empty verb. Since the content of the verb in (28c) is nearly empty, the verb cannot form a significant meaning unit in isolation. The role associated with the empty verb in question could be called as CTE (= Content for Empty verb). In this case, relevant questions should not be postulated.

Now consider the following:

- (30)a. John disturbs me.
- b. The book pleased John.
- c. The judge sentenced Harry to death.

While in (30a) "me" is a mentally affected entity, in (30b) "John" is an emotionally affected entity. The latter is a typical example of so-called Experiencer. If we limit this term to the context of (30b), the term could have more specific content. To evade confusion, however, we will term the role of "me" in (30a) as MAF (= Mentally Affected), and "John" in (30b) as EAD (= Emotionally Affected). On the other hand, (30c) manifests linguistic affection; thus the semantic role of "Harry" in (30c) could be named as LAD (= Linguistically Affected).

Naturally, we can propose the following relevant context for each semantic role concernrd.

- (31)a. Who is mentally affected ?
- b. Who is emotinally affected ?
- c. Who is linguistically affected ?

So far, we have examined some typical examples and some test contexts

to identify the semantic roles in question, and suggested some new terms. Though many subtle problems remain untouched, we think this is the right way to deal with semantics of a sentence in contexts.

4.2 Adjectival Predicates and Characterization

Now consider the following:

- (32)a. The studio is hot.
- b. It is hot in the studio.
- (33)a. The girl's eyes are beautiful.
- b. The sky is blue.

For Fillmore (1968), "the studio" in (32a) is "Locative," just like the way "the studio" in (32c) is Locative. On the other hand, "the girl's eyes" in (33a) and "the sky" in (33b) are characterized as "Objective," because the roles "in the action and state identified by the verb are identified by the semantic interpretation of the verb itself." As mentioned above, this definition means nothing, so that it can apply to any constituents which occur in contexts of action and state. There is no reason why in (32a) and (32b) "the studio" is to be excluded from the "Objective." First of all, it should be pointed out that what one says that "the studio" in (32a) is Locative is not different from what one asks a question like (34a) below to (32a) and then answer like (34b).

- (34)a. What is "the studio" ?
- b. It is a place.

The question like (34a) asks what is the intrinsic nature, that is to say, the property of a thing. Of course, there are many ways to answer to (34a). (34b) can be one candidate. What is important to be noted here is that "the studio" in (34a) is not contained in contexts. (34a) is a question about a thing itself. If Fillmorean deep case is of this nature, nothing could prevent us from identifying the semantic relations with selection restrictions (as is expounded in Radford (1988)). However, we know that this is not intended even in Fillmore (1968). For illustration's sake, let's see the following:

- (35) My head is hot.

"My head" in (35) is unmistakably not a location, hence not a Locative. This is the line of thinking attested in Fillmore (1968) related to the examples like (32) and (33) at least. This is due to the fact that "head" as a thing itself is not to be thought as Location. If so, then the deep case has nothing to do with relation.

Contrary to this, the contexts manifested in (32) and (33) are taken to satisfy the following type of question.

- (36) In what way is X characterized ?

In (32a), "the studio" is characterized as "hot," and in (32b) "it" is characterized as "hot," whatever the content of "it" may be. The same is

true to the examples of (33a) and (33b). Thus, we will call the semantic role concerned as CHD (= CHARACTERIZED), so far as other specific aspects of meaning are not taken into account.

In this respect, consider the following:

- (37)a. John is happy.
- b. The sweater is warm.
- c. The movie was sad.
- d. Apples are healthy.

According to Fillmore (1971), "John" in (37a) is Experiencer, while "the sweater" in (37b) and "the movie" in (37c) are taken to be Instrument.²³ And, though Fillmore does not give the name to the case-role of "apples" in (37d), it is easy to guess that he would call its role as Instrument. However, it should be noted that to all of the examples of (37), it is also possible to ask the question like (36). After that, we can get the answers like the following:

- (38)a. John is characterized as "happy."
- b. The sweater is characterized as "warm."
- c. The movie was characterized as "sad."
- d. Apples are characterized as "healthy."

We think that the relevant contexts are perfectly acceptable. This means that the entities which occur in subject positions belong to the semantic role of CHD. And yet, one might object that in the cases of (37) something is different from the characterization which is carried out in each case of (32) and (33). To this, we can say that what constitutes the differences is that in (32) and (33) the characterization is carried out with respect to the external aspects of the relevant things, whereas it is carried out with respect to the internal aspects, such as psychological or perceptual feelings or physiological effects, of the things in question. If in these cases, there arises a need to treat some of them differently from the ordinary external predication, it might be possible to give a specific name, e. g. CHE (= CHARACTERIZED with respect to Experience) to the entity whose emotional aspect is at issue as in (38a) or (38c), and CHF (= CHARACTERIZED with respect to physiological effect) to the entity whose physiological aspect is at stake as in (38d), and so on. This kind of nominations takes account of the lexical meanings of relevant predicates. If the semantic role is not the classification of lexical meanings of relevant predicates, the extension like these should be limited to the case in which other linguistic behaviours of the relevant construction deserve special treatments. Otherwise, this is not allowed. And we know that the examples in (37) show ordinary adjectival predications. Except the semantic contents, there seems to be no syntactic peculiarity.

In this connection, see the following:

- (39)a. John is happy, but he does not feel so.
- b. Apples are good for health.

If "John" is truly an Experiencer in (37a), (39a) must be odd. But, (39a) is not odd. This means that (37a) does not necessarily describe "John's"

emotional feeling. Of course, it can apply to the emotional state of feeling happiness, and we could also agree that it is commonly used so. However, it is important to note that the relational meaning is of different character. Now suppose that (37d) and (39b) are completely synonymous. In this case, if "apples" in (37d) are taken to have the case-role Instrument, then "apples" in (39) also should be characterized as such. But this seems not to be so. For it is clear that "good" (or "be good") does not assign Instrument to its subject entity.

In the following example, "good" (or "be good") does not assign Instrument to its subject entity, either.

(40) This spade is good to dig the earth.

It might be said that in (40) "this spade" bears the semantic role of Instrument. However, Instrumenthood is related to the verb "dig," not to the adjective "good." Likewise, "careful" (or "be careful") in (41a) below cannot be thought to assign Agent to its subject entity, contrary to Cook's (1979) analysis.

- (41)a. John is careful.
- b. John acts carefully.
- c. John is careful to treat him.

For Cook (1979), (41a) and (41b) are as completely synonymous. Hence, just as "John" in (41b) is Agent, so is "John" in (41a). However, this cannot be justified, because what is related to Agenthood of "John" in the example (41c) is the verb "treat," not the adjective "careful." The adjective denotes the manner of "John's" doing something. Although the adjective is closely related to an action, it does not directly express an action itself.

It is interesting to note the following examples:

- (42)a. John is afraid of him.
- b. John fears him.
- c. John feels fear for him.

In (42a), "John" might be seen as Experiencer who undergoes a certain emotional experience. However, what (42a) expresses about "John" differs from those of (42b) or (42c). While (42b) or (42c) expresses some psychological processes going on in "John's" mind, (42a) expresses a certain state which might be seen to be manifested in "John's" attitude. Of course, it is not so easy to distinguish a man's attitude towards something or someone from the inner process of the mind which works inside him.

Therefore, so far as the ordinary adjectival predicates are concerned, we can safely conclude that the subject takes the semantic role of CHD (=Characterized). Pragmatically, some aspects of meaning like Agenthood, Instrumenthood, or Experiencerhood, and so on might be involved in the interpretations of the semantic roles in sentences with adjectival predicates, the semantic relations which hold between the adjectival predicates and the subject entities are more or less of abstract nature. In fact, it could be said that simple adjectival predicates have nothing to do with real actions.

4.3 Semantic Roles in Copular Sentences

The semantic relations which hold in copular sentences are much similar to the ones which hold in adjectival sentences. It might be said that the semantic relations which hold between the copular verb and its arguments have been badly misunderstood from the beginning of the case grammar. From the outset, case grammarians as well as transformational grammarians in general have taken the copula as void of any significant semantic function. Thus, they have directed their attention only to the predicate nominals. The proper function which the copula performs has been nearly neglected. Fillmore's (1968) discussion of copular verbs is mainly concerned with the examples like the following:

- (43)a. Don't be a fool.
 b. He's being a bastard again.

What Fillmore concludes from examination of examples like (43a) and (43b) is that the predicate nominals need Agents in their case-frames. At first glance, it might seem that what is involved in (43a) or (43b) is an action. First of all, however, it should be noted that the phenomena involved in (43a) and (43b) are extremely exceptional, compared with the ones involved in other ordinary nominal clauses. Generally, nouns used after copula do not show such characteristics as (43a) or (43b). Hence, it could be said that (43a) and (43b) show lexical idiosyncracies (or, perhaps, some pragmatic factors might be involved additionally).²⁴ Ordinary nominal clauses have nothing to do with Agent.

- (44)a. John is a boy.
 b. That is John.

These are typical examples of copular sentences. Here it is sufficient to say that a copula functions to connect two noun phrases in a consistent relation of CHD (= CHaracterized) and CHA (= CHAracterizing). The subject entities in (44a) and (44b) are CHDs and the so-called predicate nominals are CHAs. To CHD in copular constructions, (36) may well be applied straightly, which is repeated here as (45a) for convenience. A more elaborated context will be as (45b), where X represents CHD and Y CHA.

- (45)a. In what way is X characterized ?
 b. As what Y is X characterized ?

With respect to X, (45a) forms more inclusive context than (45b). (45b) is appropriate for the identification of the semantic role of CHA.

One might suggest that the relation that holds in (44a) should be distinguished from the one in (44b). It may be due to the fact that whereas "a boy" in (44a) does not have specific reference in the actual utterance situations, "John" in (44b) does, on the one hand, and whereas (44a) expresses characterization relation, (44b) the identity relation, on the other hand. However, it is noted that referential specificity is related to the pragmatic aspect of meaning. It is not the case that "a boy" itself does not have a referent. At least, it has a conceptual referent in (44a). And, if identification is a sort of characterization, (44b) could

be seen as a special case of (44a).

In this connection, it is useful to note following examples.

- (45)a. SPEAKER A: As what is "John" characterized ?
- b. SPEAKER B: "John" is characterized as "a boy."
- (46)a. SPEAKER A: As what is "That" characterized ?
- b. SPEAKER B: "That" is identified/??characterized as "John."
- (47)a. SPEAKER A: What is John?
- b. SPEAKER B: #John is a boy.
- (48)a. SPEAKER A: What is that?
- b. SPEAKER B: #That is John.

(45b) is perfectly felicitous as an answer to the question of (45a). Contrary to this, in (46b) the "be characterized as" context shows some oddity. However if we concede that identification relation is conceptually subsumed under characterization relation, (46b) seems to be acceptable as an answer to (46a) with respect to characterization. On the other hand, to *what*-question, they alike show oddity, as shown in (47b) and (48b). If *what*-question can be thought to ask the intrinsic properties of the relevant things in the contexts like (45a) and (45b), the oddities of (47b) and (48b) seems to lend somewhat weak supports for the assumption that there are some common semantic peculiarities which "a boy" in (44a) and "John" in (44b) can share. At least, (44a) and (44b) do not express the intrinsic properties of "a boy" and "John."

Of course, the semantic roles like CHD and CHA are not involved in every use of the verb "be." Among others, the uses of "be" in passive structures and in adjectival and existential sentences are not related to these semantic roles. By way of illustration, let's see the following:

- (49)a. There is a man in the garden.
- b. John is in the street.
- (50)a. The window is broken.
- b. The window is broken by her husband.

(49a) is an example of the so-called existential sentence, where the verb "be" with the expletive "there" introduces an Existent/Existents into a discourse. "A man" in (49a) could be said to have the semantic role of EXT(= EXisTent). On the other hand, generally (49b) is not thought to belong to the existential sentence. However, it could be seen that (49b) is also related to the expression of Existent in a location. (49a) and (49b) do not show any difference in that they require some existence of an entity or entities in question. The difference between (49a) and (49b) lies in the fact that while (49a) can be used discourse-initially, (49b) cannot be so.

(50a) is ambiguous: it may be an expression of state or an expression of process. In the former reading, "broken" can be seen as a sort of adjective, as is widely recognized, thus "the window" is CHD. However, in the latter reading, "the window" is interpreted to have the semantic role of PAF (= Physically Affected) just like the one in (50b). At any rate, the verb "be" has nothing to do with copular function in either case. Now consider the following:

- (51)a. John is in the state of hunger.
 b. John is in the process of feeling fear.

(51a) and (51b) cannot be seen to express "John's" being in location. As the expressions like "state" and "process" explicitly indicate, (51a) can be seen as an expression about some state of "John," and likewise (51b) can be thought as an expression about some process of "John." Hence, "John" in (51a) is to be characterized as CHD and "John" in (51b) as EXP (=EXPeriencer).

On the other hand, in spite of intrinsic difficulties involved in the following example, we can suggest that it is wise to take the key word in description into account.

- (52) John is in the state of doing an action.

It is not clear whether "John" in (31) is to be interpreted as Agent or CHD. Yet since the key word is "state," "John" would be CHD. The action is contained within a state.

5. Conclusion

So far, we have examined the problems involved in the term of THEME and the like. It is pointed out that the term itself has not only the danger of confusing with other useful linguistic terms, but it also has very vague contents. Thus it is claimed that the equivocal terms like THEME, "Objective," or "Object" should not be used in linguistic literature and the heterogeneous contents should be decomposed into detailed and semantically coherent categories.

We have suggested some semantic roles like PAF (= Physically Affected), SMD (= Spatially MoveD), TIK (= Tranferred In Keeping), CIP (= Changed in Possession), LCD (= LoCateD), PSD (=PoSsessed), RSD (= ReSulteD), RDA (= Resulted from Affection), MFD (= Mentally Focused), LFD (= Linguistically Focused), MCT (= Mental ConTent), ECT (= Emotional ConTent), CTE (= ConTent for Empty verb), MCT (= Mental ConTent), MAF (= Mentally Affected), EAD (= Emotionally Affected), LAD (= Linguistically Affected), and CHD (= CHaracterized), EXT (= EXisTent), EXP (=EXPeriencer) etc.

For the identification of semantic roles, we have suggested some question-answer type contexts. Other or some more refined discourse contexts are needed and full range of data should be examined in this perspective. These remain for further works.

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Notes

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¹ We could hardly see any interest in discourses on the part of case grammarians. Although this is the general tendency in the transformational camp, anyone who interests in the proper semantics seems to be unable to escape from the discourse problem. Since the main concern of case grammarians was largely limited to the role and status of a constituent in a sentence, they could not afford to deal with the discourse contexts. Yet their concern was not to analyze the minute meaning of a lexical item meticulously. Naturally, the role of a constituent was not of semantic nature, but of syntactic. Contrary to this, Allerton (1982) introduces some discourse contexts for the identification of semantic roles to the limited cases.

² Here the term "predicator" is due to Rappaport and Levin(1988). They strictly distinguish "predicate" from "predicator." "Predicate" means the verb phrase, whereas "predicator" indicates the verb. However, it is not clear what range of verbs is to be contained in the "predicator." For example, we do not know how they treat the copular verb.

³ If they like it, this may be called "Principles and Parameters" Approach. Chomsky (1987) points out the inappropriateness of use of the term "Government and Binding (GB) theory." and recommends the use of the term mentioned above. However, popularly it is called GB theory. We will use it.

⁴ The example which seems to violate Chomsky's θ -criterion already appeared in Gruber (1965). We can find similar examples in Jackendoff(1972, 1987), Allerton (1982) and Broadwell (1988) etc. Here we do not intend to raise questions about the adequacy of θ -criterion, we are simply asking the empirical bases of θ -criterion.

⁵ In this paper, we will use the term "semantic role," rather than "thematic role," " θ -role," or "deep case."

⁶ This is a more or less rough generalization. If a Topic occurs as a syntactic constituent of a sentence even in the "subject prominent languages", then it will be subject to syntactic analysis. As to the "topic prominent languages," we assume it has the syntactic status as a topic itself. Although a topic could be thought of as a adverbial constituent of a sentence in the "topic prominent languages, especially in Korean and Japanese. it is to be conceded that it has a special status, compared with other ordinary adverbial constituents. Contrary to the suggestions made by Li and Thompson (1976), we assume that Korean and Japanese belong to "topic prominent languages."

⁷ In stating this, we have in mind the general tendency which is prevailing in GB syntax. Related to the issues like Control, Reflexivization, and Pronominalization etc., some GB syntacticians partly have paid attention to the concrete semantic roles involved in the constructions concerned. However the roles are limited in number, and are of symbolic value.

⁸ For the contents of these terms, see section 4.1.

⁹ It is generally believed that a sentence can take only one topic. Cf. Kuno (1973). However, I do not agree to this. Except the primary topic, a secondary or derivative topic can occur even in one sentence. From this point of view, it is noted that Kuno's (1973) distinction between topic *wa* and contrastive *wa* is too exaggerated.

¹⁰ For Chomsky (1981), the NP preceded by a preposition is assigned its

θ -role in composition of the Verb and Preposition. In principle, this process might be preferred to the PP-first interpretation in which the function of P plus the following NP is taken into consideration first. However, in practices, the former method should work with a vast number of constructions of V plus P. In most cases, it has to deal with the P recurring with the same function in different contexts. This violates the economic principle. Thus, in ordinary cases, it is preferable to treat P in combination with the following NP first. And, if a P has a special function in conjunction with a verb, the semantic relation of V plus P can be treated with compositionally.

¹² For the semantic roles in copular sentences, see section 4.3.

¹³ At the time of presentation of this paper, I thought this solution is preferable to the other. I never thought of the enormous difficulties brought about by this proposal. Although it is conceded that the relevant inference itself is simple, its consequence over the entire system of semantic roles is not trivial, because other roles might be thought to be able to be inferred from the semantics of the relevant verbs. Ultimately this amounts to the abolition of semantic roles.

¹⁴ As to temporal movements and temporal extensions, the terms like Source and Goal are used. However, their contexts is different from the cases of spatial ones. *When*-question is possible only to temporal relations, whereas *where*-question is possible only to spatial ones.

¹⁵ This kind of approach is embodied in Nilsen (1972).

¹⁶ In particular, this means the fact that Fillmore uses too many of words in the characterization of the role of "Objective," compared with the one given to other roles. In a sense, this reflects some weakness hidden in the concept. If not, so many words are not necessary.

¹⁷ In (7a), E-case means Experiential case, B-case Benefactive case, and L-case Locative case.

¹⁸ In practice, Rappaport and Levin (1988) takes the method of Lexical Decomposition. Their approach is similar to the one taken by Jackendoff (1983, 1987). It could be said that the method of Lexical Decomposition is similar in nature to semantic role classification, in that they both try to approach semantics of predicates and sentences. However, the real nature of the two is different. Semantic role classification is to group a range of semantic relations which hold between predicates and their arguments into a certain categories of meaning, whereas Lexical Decomposition is to analyze the lexical meaning of an individual predicate. Rappaport and Levin (1988) tries to capture the nature of semantic roles in terms of variables which appears in lexical conceptual structures. However, their examples are limited to the expressions of locative-alternatives. It is necessary to analyze vast range of verbs for Lexical Decomposition to be successful. Moreover, since Jackendoff-style decomposition is heavily relying on English prepositions, it hurts universality.

¹⁹ This term is due to Clark and Clark (1979). cf. Rappaport and Levin (1988: fn 15). However, the term is particularly troublesome, in that it brings about confusion with the name of case role "locative."

²⁰ One might wonder whether the variable X in (19b) may comprise a human, when a human is located at some place, contrary to its will. A possible candidate to this is "Harry" in the example like "Harry is in jail." However, this is a pragmatic aspect of meaning. It is because that in this interpretation works the lexical meaning of "jail."

²¹ To our great regret, we couldn't have dealt with the semantic roles that a proposition in a clause may have. As a result, we do not take account of the danger of conflictions which might arise between the names of argument semantic roles and those of propositional semantic roles. If the name of result clause were at stake, a simple name like RST (= ReSult) would be recommendable.

²² We have somewhat altered the term of Allerton(1982), firstly so as

to reflect the difference between mentally focused elements and linguistically focused elements.

²³ Fillmore's (1971) Instrument includes 'stimulus.' Blansitt (1978) set up Stimulus as a separate and distinctive role.

²⁴ Lexical idiosyncracies are related to the fact that "a fool" and "a bastard" can imply certain states. What is pragmatically related is that the states in question are changeable in time. It is due to these facts that such a command as in (43a) and such a progressive form as in (43b) is possible.