The Subjects of Event and State Predicates*

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1. Introduction

It is generally agreed that the syntactic category of subject is semantically heterogeneous. While most subjects express the Agent of the action, there are those that express the Experiencer, the Instrument, the Patient or the Theme. The reason for taking case categories into consideration is that they can give information on what is called "argument selection", for instance, the selection of the sentence subject. In order to explain the heterogeneity of subject, Fillmore (1968) has proposed the subject selection hierarchy which states that case categories are ordered in respect to the subject as in the following:

(1) Agent < Instrument < Recipient/Experiencer < Theme/Patient < Location

The point is that the highest (=leftmost) role on this hierarchy is mapped to the grammatical subject. If the sentence includes an Agent, it becomes the subject; otherwise, the subject is the noun phrase in the case next in line. Numerous attempts have been made to show the proper order of cases in the hierarchy, yet there has been little consensus on it.

Schlesinger (1995), however, casts doubt upon the validity of this approach, examining some examples, which defy any description in terms of a hierarchy:

(2) a. This key will open the door.
    b. The door will open with this key.

The acceptability of the two sentences above strongly implies that the selection of the sentence subject is not relevant to any version of subject selection hierarchy. Thus, the hierarchy in which the Instrument stands higher than the Patient wrongly predicts that (2b) is unacceptable, and vice versa if the place of these two cases in the hierarchy is reversed.

Further, the following difference in acceptability is also beyond the notion of subject selection hierarchy:

(3) a. The meteor collided with the moon.
    b. *The moon collided with the meteor.

An explanation in terms of a selection hierarchy does not make explicit the reason

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why *the meteor*, but not *the moon*, should be in subject position, though they are equally understood to be "responsible" for the collision.

According to Schlesinger, the inadequacy of the hierarchical approach lies in that it implicitly presupposes the assumption that the corresponding noun phrases in two syntactically different sentences are necessarily assigned the same case, when the two sentences describe the same situation. This is tantamount to say that case categories exist in cognition independently of language, presumably also prior to language. Based on this view, there is a single cognitive-semantic level that is mapped into the level of formal syntactic constructions. Schlesinger rejects the view of cases as direct mapping from cognitive space into syntactic structures, and argues that identical situations do not require identical case assignments. Thus, *this key* in (2a) is not assigned the same case as *this key* in (2b). One fundamental tenet behind his analysis is that cases belong not to the cognitive level, but to the semantic level. On this view, grammar consists in a mapping from the cognitive level to the formal syntactic one via the semantic level. That is, there is a clear distinction between the semantic level and the cognitive level. The other tenet is that cases are viewed as primarily as linguistic constructs, and that a conceptual distinction is to be admitted as a case if and only if it subserves the statement of some linguistic regularity. The idea would be that thematic roles should be identified by syntactic tests alone, and that arguments fall into classes according to their syntactic behavior, and terms like Agent and Theme are just labels for these classes.

Throughout this paper, I will focus on Schlesinger's analysis of the relation between grammatical subject and semantic categories, and will examine the validity of the view that there is a distinction between the cognitive and the semantic levels. This paper is divided into two parts. The first part of this paper consists of reviewing Schlesinger's analysis of the subject of Event predicates, and of discussing some related topics. Some proposals are made in order to give a sufficient solution to those problems which are left unsolved. The second part is devoted to the clarification of the difference between the subjects of Events and States, focusing on different behaviour the middle and the *tough*-constructions display.

The organization of this paper is as follows. Section 2 deals with the details of Schlesinger's notion of the Agent case. In light of his idea, we discuss some related phenomena including "causative alternation", "middle alternation", and "reflexive alternation". I argue that the notion of pre-existence is required to explain these phenomena convincingly. In section 3 we first review Schlesinger's analysis of the subject of State predicate. We further investigate what status should be given to the subject of that predicate which may ambiguously refer to either a State or an Event.

Section 4 is devoted to presenting independent evidence in support of the idea that the subjects of Event and State predicates are assigned different cases, with special reference to different behavior of *for*-phrases in the middle and the *tough*-construction. Section 5 makes some concluding remarks.

2. Defining the subject of Event predicates

Schlesinger (1995) makes an observation that the subject of Event predicates is agentive, whereas the subject of State predicates is frequently non-agentive.

(3) a. The little boy threw the ball.
b. John resembles Uncle Paul.

It is generally said that the predicate in (3a) describes an event, whereas (3b) a non-eventive situation. The semantics of subjects is roughly divided into two groups: the agent-like subject and the subject whose attributes are designated by the predicate. He argues that the former is assigned the Agent-case, and the latter Attributee case, and that both of the cases are linked to grammatical subjects. What is suggested here is that there are really only two thematic-role-like concepts involved in the selection of subject. I will first look at his concept of the Agent case, which is defined in a way that differs from the common-sense notion, and as a result many of the subjects that have previously been assigned various cases categories turn out to be Agents. The issue of the Attributee case will be dealt with in section 3.

2.1. The Agent case

Schlesinger's proposal differs from previous ones in viewing the subject as semantically much more homogeneous. Thus, when a given entity appears in subject position of Event predicates, it will be conceived of as more agent-like than when it is encoded as a noun phrase in some other syntactic function. In other words, there is a "drift" toward more central members of the category; a subject noun phrase of the Event predicate will be "saturated" by the semantic features of the prototypical agent. This view is akin in spirit to Dowty's (1991:572) Proto-Role approach.

The idea behind his analysis is that the notion of the Agent is regarded as a cluster concept defined in terms of more primitive features, but not discretely defined one. Thus, Schlesinger characterizes the Agent case in terms of three features: CAUSE, CONTROL, and CHANGE. He thinks that a prototypical Agent will have all three features, and the subject of (3a) is regarded as a typical Agent because it refers to an entity that is in motion, causes the activity and controls it. The notions of CAUSE, CONTROL, and CHANGE seem to correspond roughly to those of "causing", "volitional", and "movement", respectively, which Dowty (1991:572) thinks of as "contributing properties for the Agent Proto-Role".

Interesting is the idea that a noun phrase that has any one of the three features can be a candidate for being assigned the Agent case, and hence for becoming the subject. It is in this respect that his concept of Agent is different from the way the term is commonly used. Consider the following example:

(4) a. The butter melted in the sun.
b. The axe cut the wood.

The subjects in (4a) and (4b) are customarily assigned to the Theme and the Instrument cases, respectively. Schlesinger argues, however, that these subjects have only one or two of the characteristic agentive features. *The butter* in (4a) is assigned the feature CHANGE, since it undergoes a change of state, and *the axe* in (4b) is understood to have the feature CAUSE, since *the axe* causes *the wood* to change by its sharp edge coming into contact with the latter. Since these noun phrases have at least one agentive feature, they are qualified as the Agent case. He uses the term Agent-case, instead of Agent, in order to allay the feeling of discomfort some may feel at such a stretching of the term.

In support of his analysis of the instrumental subject as the Agent, Schlesinger presents the fact that not all instruments may be realized as sentence subjects:

(5) a. Burt ate spaghetti with a spoon.
a'. *A spoon ate spaghetti.
b. They built the house with bricks.
b'. * Bricks built the house.

The instruments in (5) cannot become subjects because they lack CAUSE, and hence are not eligible for the Agent case. In (5a), *a spoon* is not the cause of eating, but only of bringing food to the mouth. Likewise, in (5b) *bricks* are not the cause of building; they are just an ingredient of the object (*the house*). Assignment of CAUSE to a noun phrase depends on the verb. Thus, while bricks cannot build a house in (5b'), they can break a window as in *Brick broke the window*.

2.2. When can the two noun phrases be conjoined?

It has been argued that two noun phrases can be conjoined if they bear the same semantic role. This idea seems to be incompatible with Schlesinger's claim that the instrument in subject position is in the Agent case. Consider the following:

(6) a. Jack and Jill cut the cake with the knife.
b. The knife cut the cake.
c. *Jack and the knife cut the cake.

Fillmore (1968:22) explains the unacceptability of (6c) by assuming that *the knife* in (6b) plays a different role from *Jack* in (6a), and (6c) runs afoul of the principle that two noun phrases in different cases cannot be conjoined. Thus, the ungrammaticality

of (6c) seems to make it dubious that *the knife* and *the Jack* are in the same case.

Schlesinger doubts the existence of the principle proposed by Fillmore, presenting cases where the two noun phrases do not play a different role, and nevertheless cannot be conjoined:

(7) a. The prisoner won the appeal with a highly paid lawyer.
b. A highly paid lawyer won the appeal.
c. ?? The prisoner and a highly paid lawyer won the appeal.

According to Schlesinger (1995:104), the unacceptability of (7c) is not due to the difference in case categories; the two noun phrases are clearly in the same case (the Agent), yet they cannot be conjoined. Further, consider the following:

(8) Floods and guerrilla forces ravaged the area.

Fillmore's principle would predict that the two noun phrases, *Floods* and *guerrilla forces*, play different semantic roles (the Cause and the Agent), and should therefore be inadmissible. The fact is contrary to this prediction.

Schlesinger explains the unacceptability of the sentences in (6c) and (7c) in terms of the difference in degree of CONTROL. Thus, he states that *Jack* in (6a), denoting an animate entity, has more CONTROL over the activity of cutting than *the knife* in (6b), and the difference in strength of this feature is so large that these two noun phrases cannot be conjoined. Likewise, the prisoner and a highly paid lawyer in (7) differ in the degree of CONTROL they exercise.

The same account is applied to the admissibility of conjoining in (8). He thinks that independence is one of the elements that determine the degree of CONTROL. That is, to the extent that an element can perform the activity without the intervention of a human agent, it will be assigned more CONTROL. His explanation for (8) is the following: *floods* is conjoined with *guerrilla forces* because *floods* is "conceived of as functioning independently, and hence bear a high degree of CONTROL" as much as *guerrilla forces*.

I cannot agree with the idea that independence enhances the degree of CONTROL, since his idea blurs the notion of CONTROL. From a different viewpoint, we can say that *floods* and *guerrilla forces* in (8) do not have the same degree of CONTROL, since they differ in volitionality, as *Jack* and *the knife* in (6) do.

(9) a. {Guerrilla forces/*Floods} tried to ravage the area.
b. {Jack/*The knife} tried to cut the cake.

I argue, therefore, that *the knife* in (6) and *floods* in (8) differ not in controllability but only in independence. It is better to think that the notion of independence is related to the property of causation. Inanimate entities having CAUSE can be divided into two types: one includes an entity that causes the event without intervention of another

participant and the other includes an entity that has no ability in itself to actualize the event independently. The former corresponds to natural forces like *floods* in (8) and the latter corresponds to instrumental subjects like *knife* in (6). It may be argued that two noun phrases can be conjoined in subject position if they function independently in the event described by a verb. I propose the following constraint:

(10) Two noun phrases cannot be conjoined in subject position if they are in the relation of dependency.

This constrain accounts for the inadmissibility of (6c) and (7c); *Jack* and *the knife* are in the relation of dependency in the sense that an instrument cannot participate in the event without the presence of its user in the real world. Likewise, whether the prisoner wins the appeal or not is highly dependent upon his lawyer.[1]

Notice, however, that there seems to be an additional restriction imposed on conjoining of two noun phrases in subject position. Consider the following examples, which are quoted from Levin (1993:59).

(11) a. The car collided with the bicycle.
b. The car and the bicycle collided.

(12) a. The car collided with the fence.
b. *The car and the fence collided.

It appears that the presence/absence of symmetrical relation between the conjoining noun phrases would affect the difference in acceptability between (11b) and (12b), as indicated by the following examples:

(13) a. The bicycle collided with the car.
b. *The fence collided with the car.

It is important to note that the symmetrical relation between (11a) and (13a) is purely syntactic. Semantically, they are not symmetrical in the sense that they do not describe the same situation. In (11a) both *the car* and *the bicycle* are in motion, though the former is preferably understood to move faster than the latter. In (13a), on the other hand, it is interpreted as such that *the bicycle* which is in motion collided with *the car* which is not in motion.

Following Schlesinger, however, we can alternatively argue that the unacceptability of (13b) is due to the lack of CHANGE in the subject referent; the fence is not understood to be a moving entity in the event of collision, and hence cannot be a candidate for the Agent case and therefore is not eligible for the subject.

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[1] It can be argued that the so-called part-whole relation or possessive relation also includes the notion of dependency, and hence two noun phrase in part-whole relation cannot be conjoined:

(i) a. The car scraped the tree with its fender.
b. The car's fender scraped the tree.
c. ?? The car and its fender scraped the tree.

Given this, the unacceptability of (12b) is possibly explained in the same way as that of (13b). That is, since the fence lacks any one of the agentive features, its appearance in subject position is blocked in any way. Thus, it may be concluded that the inadmissibility of (12b) is not a matter of conjoining.

2.3. Three factors which determines assignment of Agent case?

When an entity has any one of the three agentive features, it may be a candidate for the Agent case. In a given sentence there may be more than one entity having an agentive feature, and then the question arises; which one is to be assigned the Agent case? Schlesinger (1995:45) proposes that "assignment of the Agent case is determined by three factors: (i) the relative strength of features; (ii) their number; and (iii) their differential weights.

2.3.1. Relative strength of features

Features are generally regarded as binary, being either present or absent in a noun phrase. This idea cannot capture the way things are in reality. For example, when a car and a bicycle are in motion, we usually expect that the former move faster than the latter. In this case, it can be said that the car exhibits more CHANGE. Schlesinger thinks that the degree of feature strength is linguistically relevant, because it may affect case assignment. Let us consider the example (3), repeated as (14), which poses a difficult problem for the subject selection hierarchy.

(14) a. The meteor collided with the moon.

b. *The moon collided with the meteor.

Schlesinger's solution to this problem is that "the meteor has a larger strength of CHANGE", since the former moves faster than the latter. Hence the meteor, not the moon, gets the Agent case and is eligible for the subject.

As for the difference in acceptability between (14b) and (13a), however, one might wonder why the latter is not unacceptable as the former when taking it into the consideration that a car appreciably moves faster than a bicycle. An answer to this question is already ready; as was pointed out in explaining (13a), the car in this case is not understood to move faster than the bicycle; it is described as being parked or stopping. Thus, in (13a) the bicycle is considered to be the only noun phrase that has the agentive feature CHANGE. Likewise, in (14b), we are forced to interpret the moon as moving faster than the meteor because of the syntactic ordering. The interpretation never corresponds to the way the moon is in reality. Thus, (14b) is said to be cognitively anomalous.

2.3.2. Number of features

According to Schlesinger, case assignment is also affected by the number of features. This idea is well motivated by the following example:

(15) a. The knife cut the cake.
b. Jack cut the cake with the knife.

As we can see, in (15b) the two noun phrases are admitted as candidates for the Agent case: one is *Jack* in the subject and the other is *the knife* in the oblique object. In this case, *Jack* is the only candidate, since it has CAUSE and CONTROL, whereas *the knife* has only CAUSE.

2.3.3. Differential weight of features

As for (15a), we should not overlook the fact that both *the knife* and *the cake* have a qualification for the Agent case since they are assigned CAUSE and CHANGE, respectively. A mere count of features, however, does not suffice to explain the fact, because they do not differ in the number of features. Schlesinger argues that in assigning cases, differential weights of the features must be taken into consideration, and proposes the rule that CAUSE has more weight than CHANGE when these two features compete. Hence in (15a) *the knife* precedes *the cake* with respect to subject selection. This idea is reminiscent of a subject selection hierarchy, which also stipulates that the Theme stands lower than the other "participant roles".

As Schlesinger (1995:48) notes, however, there is an apparent exception to this rule. Consider the following examples.

(16) a. The king died from poison.
b. Poison killed the king.

Both (16a) and (16b) are said to refer to the same state of affairs. Here *poison* is understood to bear CAUSE, while *the king* has only CHANGE. (16b) does nothing against the rule of differential weight of features. The acceptability of (16a) is really problematic when we consider that CAUSE has more weight than CHANGE, since the oblique noun phrase, but not the subject noun phrase is assigned the Agent case, contrary to the fact.[2]

To deal with the difficulty, Schlesinger (1995:49) introduces an additional principle, "the Core Argument Principle", which states that the Agent case is to be assigned to a core argument. The term "core" roughly corresponds to "obligatory", and hence core arguments are typically obligatory. Thus, this principle blocks the assignment of the Agent case to the optional noun phrase. In this way, the oblique noun phrase (*poison*) in (16a) is not assigned the Agent case, since it is not specified as a core argument in the lexical entry for the verb *die*. In (16a), for example, only *the king* having CHANGE remains as a candidate for the Agent case, and hence becomes the subject. On the other hand, the lexical entry of the verb *kill* has two

[2] The example (16) also poses a difficulty for the traditional approach which resorts to a subject selection hierarchy, since *poison* should be either higher or lower than *the king* in the hierarchy.

core arguments (for the one who kills and for his victim). In (16b) these are expressed by *poison*, which has CAUSE, and *the king*, which has CHANGE. Owing to their differential weight, *poison*, not *the king*, will be assigned the Agent case.

As Schlesinger argues, the Core Argument Principle also suggests a solution to the problem posed in (2), repeated here as (17) for convenience:

(17) a. This key will open the door.
b. The door will open with this key.

According to him, the verb *open* must have two different lexical entries: one for the transitive sense, as in (17a), and the other for the intransitive sense, as in (17b). The former has two core arguments: one with role of "opener" and the other with role of "thing that is opened", and the latter has the only one core argument with role of "thing that opens". Thus, the instrument in (17b) is barred from being the Agent case, since it is not selected as a core argument of *open* in (17b).

2.4. Internal versus external causation

Although I acknowledge that Schlesinger's analysis dependent upon the Core Argument Principle is descriptively correct, it seems to me that it is a tentative, but not an ultimate, solution to the problem. In particular, I find it dubious that *the door* in (17a) bears the same feature composition as *the door* in (17b); both have CHANGE alone. I think that they are different with respect to the presence or absence of the CAUSE. The approach that I will propose here makes it possible to explain the example in (17), without saying that *open* has two distinct meanings. Let us consider first the following examples:

(18) a. John jumped up.
b. John kicked the ball.

Schlesinger (1995:32) argues that "the feature CAUSE is taken here as encompassing any source of an activity, event, or situation". That is, the feature is assigned not only to subjects of transitive verbs like (18b), but also to those of intransitive verbs like (18a). It is important to note, however, that the subjects of (18a) and (18b) differ in the nature of causation: the former is said to have the "internal" cause, whereas the latter the "external" one. I will refer to them as internal CAUSE and external CAUSE, respectively. (See Levin and Rappaport (1995:90-98) for the discussion of external versus internal causation.)

I find of much importance the internal/external distinction in causation, and propose that the subject of (17b), *the door*, is also assigned internal, but not external, CAUSE. In this respect, it contrasts clearly with *the door* in (17a). Given this, we can explain the problem posed by (17b) without reference to the Core Argument Principle, but only with reference to the feature composition. Thus, *the door* in (17b)

surpasses *the door* in (17a) in number of agentive features; the former bears internal CAUSE and CHANGE, whereas the latter only external CAUSE, and hence the former is regarded as the best candidate for the Agent case.

One further implication of the analysis is that events described by intransitive verbs, in general, do not include an external causation. It is ultimately from this general fact, I argue, that the Core Argument Principle comes. Notice, however, that not all intransitives describe a situation which includes internal causation. This will be discussed in the next subsection, in relation to the notion of pre-existence, and the idea that *the door* in (17b) has internal cause will also be made clearer.

2.5. Introducing pre-existence as an agentive feature

In Kusayama (1998), I introduce the notion of pre-existence as one of the defining characteristics of the Agent.[3] Here it is suggested that PRE-EXISTENCE should be included in the features which define the Agent role. The feature PRE-EXISTENCE is closely related to the other agentive features in the sense that an entity that bears the feature CAUSE or CONTROL should have the feature PRE-EXISTENCE. In fact, any entity that causes or controls the event must be present in advance of the occurrence of the situation described by the verb; otherwise it could not even participate in the event. Thus, PRE-EXISTENCE is considered to be a precondition for CAUSE or CONTROL.

In contrast, the feature CHANGE does not necessarily co-occur with PRE-EXISTENCE. Consider the following:

(19) a. The door opened.
b. The glass broke.
(20) a. A star appeared in the sky.
b. An explosion occurred.

The subjects in (19) and (20) are thought to be equally assigned the feature CHANGE, but they differ in that the former is understood to exist before the event described by the predicate starts, whereas the latter is regarded as coming into existence after the described event, thus lacking the feature PRE-EXISTENCE. It can thus be argued that entities having CHANGE split into two groups with respect to the absence or presence of PRE-EXISTENCE, while entities having CAUSE or CONTORL intrinsically have PRE-EXISTENCE. This leads us to say that the subjects of (19) surpass those of (20) in the number of the agentive features; the former has CHANGE and PRE-EXISTENCE, whereas the latter has CHANGE alone.

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[3] In characterizing the notion of pre-existence, I follow Nakau's (1989) definition: "an entity is pre-existent, and the expression describing that entity forms a pre-established (or inherently anaphoric) domain if and only if it is perceived, with respect to the associated situation, to be present there in advance of the occurrence of that situation".

Although this fact has not received particular attention, it is arguably relevant to an essential difference between (19) and (20). As I argued above, PRE-EXISTENCE is a feature that any entity should have in order to be a causer or a controller of the event. This implies that the subject of (19), not that of (20), satisfies a precondition for getting CAUSE or CONTROL.

In this connection, Kageyama (1996,1997) makes an interesting observation that the subject of the former should be regarded as the causer as well as the changing entity. As Levin and Rappaport (1995:122)) point out, intransitive verbs can be divided into two with respect to the ability to participate into the so-called "transitive or causative alternation": intransitives in (19) have transitive variants, whereas those in (20) do not. (To distinguish them clearly, I will refer to the former as "alternating intransitives" and the latter as "unaccusatives".)

(21) a. The wind opened the door.
b. The explosion broke the window.

(22) a. *The darkness appeared a star in the sky.
b. *The gas leak occurred an explosion.

Kageyama (1997:81) argues that verbs like *open* and *break* "fundamentally have a causative semantic structure in both transitive and intransitive usages". As for the transitive usage, the causer is realized by an entity which is distinct from the changing entity, that is, the Theme, as in (23a). As for the intransitive usage, on the other hand, the causer is identified with the Theme, which is suppressed by 'anticausativization' in the Lexical Conceptual Structure (LCS), as in (23b). That is, the intransitive variant is said to mean that the Theme causes a change of state by its own internal property. A similar observation is made in O'Grady (1980:58), who says that alternating intransitives "express potentially 'self-originating' events".

(23) a. John broke the window.
[x CAUSE [BECOME [window BE BROKEN]]
b. The window broke.
[x_i ^ CAUSE [BECOME [$window_i$ BE BROKEN]]
(x^ = suppressed by anticausativizaiton)

The point is that *the window* in (23a) plays a different role from *the window* in (23b) in that the former is understood to be a changing entity, while the latter is considered to cause the event by its own strength.

Kageyama further argues that unaccusatives like *appear* and *occur* do not have a causative semantic structure, as in (24), contrasting with the LCS in (23b).

(24) A star appeared in the sky.
[BECOME [star BE AT-sky]]

The LCSs in (23b) and (24) show that there exists a clear contrast between alternating intransitives and unaccusatives in that subjects of the former are regarded as a causer of the event, whereas those of the latter are not. In terms of feature composition, we can say that subjects of alternating intransitives are assigned internal CAUSE as well as CHANGE, while only the latter is assigned to the subjects of unaccusatives. Thus, *a star* in (24) has the same feature composition as *the window* in (23a); both carry the feature CHANGE alone.

As evidence in support of his analysis, Kageyama (1996:151) presents the fact that phrases like *all by itself* occur with alternating intransitives, but not with unaccusatives, as in the following:

(25) a. The glass broke all by itself.
b. *The accident occurred all by itself.

The unacceptability of (25b) indicates that subjects of unaccusative verbs are not understood to be the causer, but just the changing entity. From this observation, it is safe to conclude that the subject of alternating intransitives has internal CAUSE, whereas that of intransitives does not. It is proposed that this fact has a close relation to the fact that an entity with only CHANGE can either be pre-existent or not.[4]

The discussion so far gives a plausible explanation of why it is that entities without PRE-EXISTENCE cannot be found in any subject position of alternating intransitives, as in the following:

(26) a. John suggested a solution to the problem.
a'. *A good solution suggested.
b. John wrote a new novel.
b'. *A new novel wrote.

As (26) shows, verbs of appearance and creation such as *suggest* and *write*, whose objects are understood to come into existence after the denoted action has finished, do not undergo causative alternations. In explaining this fact, it can be said that the subject of alternating intransitives must be pre-existent, since it is interpreted as having internal CAUSE. A question arises here: why is it interpreted as such?

In Kusayama (1999), I show that the subject of transitive predicates is a position that is invariably understood to be pre-existent. This is because the causer of the event always occupies this position. This property is also carried over by the subject

[4] It is important to keep in mind, however, that having PRE-EXISTENCE is not equal to having CAUSE, though the reverse is the case. The subject of *disappear* or *vanish*, for example, has the feature PRE-EXISTENCE, and yet nevertheless do not bear internal CAUSE, as is shown by the fact that phrases like *all by itself* do not occur with these verbs, as in **My wallet disappeared all by itself*, which is quoted from Kageyama (1996:151). Thus, it should be emphasized that PRE-EXISTENCE is only a precondition for CAUSE, but not a sufficient condition.

of alternating intransitives. This is what Schlesinger (1995:95) calls "semantic saturation". That is, subject position in transitive predicate is saturated by the semantic features it prototypically has. It is because of this semantic saturation that the subject of both transitive and intransitive variants in causative alternation must be pre-existent. The analysis based on semantic saturation presupposes the assumption that specific linguistic structures in which some messages are encoded influence the hearer's conception of the messages.

The semantic saturation account also plays an effective role in the middle alternation in English. The middle construction is typically formed from transitive predicates which take as subject argument an entity with PRE-EXISTENCE and CAUSE. Through the semantic saturation process, the subject of the middle should also have the same feature. That is, there exists a semantic similarity between the subject positions of the middle and the corresponding transitive sentence. Given this, it is rightly predicted that an entity without PRE-EXISTENCE cannot appear as the subject of the middle, as in the following:

(27) a. This kind of thesis {reads/*writes} easily.
b. This kind of cake {cuts/*makes} easily.
(28) a. These problems solve easily.
b. *This kind of solution suggests easily.

This topic will be discussed again in section 4, in relation to the *tough*-construction.

What is more intriguing here is the fact that verbs like *suggest* and *write* can participate in the "reflexive alternation", though not in the middle alternation.

(29) a. A solution immediately {suggested/presented} itself.
b. The scientific paper practically wrote itself.

As shown in (29), the "reflexive construction" expresses such a self-originating situation as described in alternating intransitives, though the presence of a reflexive pronoun as object is obligatory. Levin (1993:259) argues that the subject of these constructions "bears the same semantic relation to the verb as the object in the ordinary transitive use". I do not agree with this idea, however. For concreteness, let us compare *a solution* in (26a) with *a solution* in (29a). Unlike the former, the latter is understood to be pre-existent, and to be the causer of the event, because of the presence of the reflexive pronoun. The existence of reflexive pronoun forces us to interpret *a solution* in (29a) as an actor who suggests itself, and thus as being pre-existent, though the subject of this construction is often metaphorically interpreted, as indicated by the frequent occurrence of adverbs like *practically* as in (29b). In this way, the subject of the reflexive construction will get PRE-EXISTENCE essential for being the subject of a transitive sentence, and hence the presence of reflexive

pronoun is needed. What is indicated here is that the subject of reflexive constructions plays the same role as the subject of ordinary transitive sentences. More specifically, *a solution* in (29a) is in the same semantic relation as *John* in (26a), rather than *a solution* in (26a). It is in this respect that Levin and I differ decisively.[5]

It should be noted that the subject of (29a) is semantically distinct from that of unaccusatives as in (30a), yet shares some property with that of (30b):

(30) a. A solution immediately occurred to me.

b. An idea {struck/hit} me.

Although (29a) and (30a) describe an identical situation, I argue that they differ in the way the situation is perceived or conceptualized. While *a solution* in (29a) is conceptualized as the causer, *a solution* in (30a) is regarded as the changing entity. In (30b), on the other hand, the subject is conceptualized in the same way as that of (29a); it is semantically the causer of the event, though it is not identified with the object, and hence has external, but not internal, CAUSE. Thus, in terms of the feature composition, *a solution* in (30a) is considered to be different from *a solution* in (29a) and *an idea* in (30b): the former is assigned CHANGE alone, whereas the latter is assigned three agentive features: PRE-EXISTENCE, internal or external CAUSE, and CHANGE. Given this, we may say that the former is more prototypical Agent than the latter, since the former surpasses the latter in the number of agentive features.

Finally, the semantic saturation account is useful in explaining why unaccusatives cannot participate in the causative alternation, as observed in (22). The subject of unaccusatives, especially *appear* and *occur*, does not bear PRE-EXISTENCE, and hence through the process of semantic saturation, the feature NON-PREEXISTENCE is never detached from subject position of *appear*. The subject of these verbs is thus characterized as a position that cannot bear CAUSE, since it does not satisfy the precondition for this feature. It is for this reason that verbs of this type disallow the causative use.

This idea is particularly interesting when associated with the fact that unaccusatives like *disappear* and *vanish* do causativize under certain circumstances.

(31) a. The government *disappeared* him. (Rosen (1996:203))

b. *Disappear* fear. (ibid.)

c. The magician may speak of *disappearing* or *vanishing* a card. (*OED*[2])

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[5] The merit of the proposed analysis is that it can capture the linguistic similarity between the subjects of the reflexive construction and its related ordinary transitive sentences. In the semantic level, the subject of reflexive constructions as in (29) is interpreted as a pre-existent and causer. In the cognitive level, which Schlesinger considers is not directly related to the syntactic level, it can never be interpreted as such, but as the way it is in reality. Thus, a linguistic expression does not change the situation in reality, but affects the way we perceive it.

Rosen (1996:203) says that sentences like (31a) have "become commonplace in certain political arenas", and (31b) is a bumper sticker Rosen found. Levin and Rapapport (1995:296) also acknowledge the existence of such uses of *disappear*.

Based on the observation that some intransitive verbs such as *smile*, *cry*, and *laugh* are not causativizable, Rosen proposes that non-delimited events never causativize, as in *Bill smiled John*. As Rosen notes, this approach does not give a clear explanation of why *appear* and *disappear* differ in the possibility of causativization, since both denote delimited events. Under the analysis proposed here, it is not so surprising: the subject of *disappear* is considered to be pre-existent, and therefore satisfies the condition for getting CAUSE. Given this, we can conclude that unaccusatives are grouped into two types in terms of the absence/ presence of PRE-EXISTENCE; unaccusatives with PRE-EXISTENCE are more likely to participate in the causative alternation than those without PRE-EXISTENCE.[6, 7]

3. Difference between subjects of State and Event predicates

As was seen at the beginning of section 2, Schlesinger (1995) distinguishes between two kinds of predicates: Events and States, whose subjects are assigned different cases, the Agent case and the Attributee case, respectively. Here we will discuss the difference between the Agent case and the Attributee case.

3.1. Attributee case

To begin with, let us consider the State predicates in (32).

(32) a. John deserves a medal.
b. Two and two equal four.
c. The rotting plants smelled.

Predicates referring to a State like those in (32) consistently designate attributes of their respective subjects. Based on this regularity, Schlesinger proposes that a new case, that is, the Attributee case, should be introduced for the subject of a State predicate. Unlike the Agent case, the Attributee case is defined by a single feature.

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[6] It should be emphasized again that to say that the subject of *disappear* and *vanish* has PRE-EXISTENCE does not mean that it has CAUSE. The lexical entry of these verbs does not include an argument with CAUSE, internal or external. Thus, in ordinary usage, they do not causativize, as in **Melvin disappeared John* (Rosen (1996:201)). See also note 4. The subject of these verbs is a position which just satisfies the precondition for CAUSE. Of more importance is the fact that verbs like *appear* and *occur* never causativize in any context.

[7] The verb *die*, unlike *disappear*, never undergoes the causativization as in **The white man died the buffalo*, though its subject has PRE-EXISTENCE and describes a delimited event. As Rosen (1996:202) points out, one possible explanation for the failure of causativization of the verb *die* is that the causative use is blocked by the existence of a more specific lexical item (i.e. *kill*). This is what is called "lexical blocking".

Thus, the term "Attributee" represents both a feature, ATTRIBUTEE, and a case, and the Attributee case is assigned to any noun phrase that has the feature ATTRIBUTEE. Schlesinger (1995:131) states that "a noun phrase can be an Attributee if it is intended to tell us something new about its referent, to attribute something to it". The subjects of (32) are called the Attributee of their predicates since the predicates express some attribute of the subjects.

3.2. State-Event ambiguity

As Schlesinger points out, some predicates may ambiguously refer to either a State or an Event. This is illustrated by the following examples:

(33) a. John is a heavy smoker.

b. John smokes like a chimney.

(33a) is intended to mean more or less the same as the (33b), and then its predicate refers to a State. Although they are treated as generic statements of the subject, they differ in the selection of verb types; the former takes a stative verb, whereas the latter an agentive verb. Each subject is assigned the Attributee case, yet the Agent case as well is assigned to the subject of (33b), since it is also the subject of a Event predicate. Thus, there are cases in which a noun phrase may be assigned more than one case.

Interestingly, the same holds for the subjects of the middle and the *tough*-construction (hereafter MC and TC, respectively):

(34) a. The book is easy to read.

b. The book reads easily.

As we can see, both TC and MC describe some generic property of their subject with respect to easiness or toughness of an event's actualization. One of the crucial differences between the two is that the TC selects a stative verb like *be* as its main predicate, whereas the MC does not select a stative verb but invariably a non-stative verb as its main predicate, though the middle sentence as a whole describes a stative situation in the sense that it receives a generic interpretation. Based on this observation, Schlesinger argues that the Attributee case is assigned to the subjects of both middle and *tough*-sentences, since they involve State predicates and their subjects are "characterized" by the predicates. In addition to the Attributee case, however, the Agent case is assigned to the subject of the MC, since it is the subject of Event predicates and is interpreted as having (internal) CAUSE in the sense that some property of the subject is understood to be "responsible" for the action of the verb, as is pointed out by Van Oosten (1977, 1986).

Van Oosten (1986:108) claims, however, that the subject of TC also bears responsibility for the occurrence of the predicate. Kim (1996) also suggests that the subject of TC carries the Cause argument. If this were true, the subjects of MC and

TC would be equally assigned CAUSE, and both would be in the Agent case, contrary to Schlesinger's analysis. One idea behind this analysis is that there is no distinction between the subjects of Event and State predicates. Van Oosten (1977:460-61) just says, with no implication of Event/State distinction, that "when the patient is made the subject of the sentence it, or a property it has, is understood to be responsible for the action of the verb". Another idea would be that the subjects of MC and TC are cognitively synonymous, and the same case assignment is thus required. As is clear from what has been discussed so far, such an approach will undesirably result in overlooking the existence of some linguistic regularity which lies in the semantic and the syntactic domains.

Admittedly, in the cognitive domain the two sentences in (34) describe an identical situation, nonetheless I would suggest that they have different semantic representations. Here also I take the standpoint of Schlesinger, who emphasizes the importance of the distinction between the cognitive and the semantic levels, (See also note 5.) The point is that at the cognitive level, the subjects of MC and TC alike are understood to be responsible for the action of the verb, yet at the semantic level, only the former is interpreted as such; the latter is just understood to have some attribute which makes the action easy or tough. Thus, the view of TC's subject as having CAUSE will be rejected here.

In the next section, I will provide some pieces of evidence in support of the Schlesinger's analysis of the MC and TC, focusing on the phenomenon where *for*-phrases of MC and TC differ in ability to get the responsibility interpretation.

4. Evidence from the MC and the TC

Based on Schlesinger's analysis of the subject of MC and TC, it is possible to build up two working hypotheses, as in the following:

(35) a. The subjects of MC and TC are both assigned the Attributee case.
b. The subject of MC is in the Agent-case, whereas that of TC is not.

I will refer to the hypothesis in (35a) as the Attributee-Hypothesis and the one in (35b) as the Agent-Hypothesis. The Attributee-Hypothesis is concerned with the study of common properties shared by the MC and the TC, while the Agent-Hypothesis is related to the study for clarifying their different properties.[8] Here I restrict my attention to the Agent-Hypothesis, and discuss its linguistic relevance. I presume that the Agent-Hypothesis gives a clear account of why the MC is more restrictive

[8] Takami's (1996,1997) functional study is the one which contribute to confirming the Attributee-Hypothesis. In order to capture the property shared by the TC and the MC, he proposes the Characterization Condition, which states that the subjects of MC and TC must be characterized to such an extent that we can easily imagine their attributes from the rest of the sentence.

than the TC in several respects.

One of the linguistic facts that support the Agent-Hypothesis is that the subject of MC must be pre-existent, whereas that of TC is free from the restriction. The existence of such a restriction is supported by the following examples:

(36) a These cabinets {are difficult to build/*don't build easily}.

b. This kind of idea {is easy to suggest/*suggests easily}.

As is clear from the contrast above, entities without PRE-EXISTENCE can appear in the subject of TC, but cannot in that of TC. The reason for the unacceptability of the MCs above is attributed to the Agent-Hypothesis. Given that the subject of MC plays an agentive role, it follows that a noun phrase must have some agentive features. Based on the fact that the MC is formed from transitive predicates, its subject must have CAUSE, due to the semantic saturation. Thus, the unacceptability of the MCs above is due to the fact that the subjects in (36) lack the feature PRE-EXISTENCE that is essential for getting CAUSE. On the other hand, the acceptability of the TCs above indicates that the subject of TC need not bear CAUSE. This fact is also attributed to the Agent-Hypothesis, which stipulates that the subject of TC is not in the Agent case. From this observation, it is concluded that the subject of MC must have CAUSE, whereas that of TC need not. This fact stems from the Agent-Hypothesis. (See Kusayama (1998) for a detailed discussion).

4.1. The status of for-*phrases in MC and TC*

Next, we will discuss some other different behavior which exhibited by the two constructions. I will show that this difference can be thought as further evidence in support of the Agent-Hypothesis.

It has been observed that most middles need to be accompanied by some modifiers, but not all adverbials are admitted in middles. In the same way, *tough*-sentences include some adjectives, but some are excluded from them. The TC and the MC cannot occur with those modifiers which specify the manner of an actor:

(37) a. This blouse washes {easily/like a dream/*slowly/*carefully}.

b. This blouse is {easy/like a dream/*careful/*slow} to wash.

The examples above indicate that the TC and the MC are constructions which typically defocus an active subject and focus a certain property of the object. This shared characteristic comes from the Attributee-Hypothesis; the TC and the MC both characterize some property of the patient-like object, and thus modifiers that designate attributes of the active human subject are preferably excluded from them.

Further, the range of verbs compatible with the MC and the TC is restricted to those which take the human agent subject when used transitively. The verb *rot*, for example, selects for only the inanimate external argument, and therefore cannot form

both the MC and the TC:

(38) a. {All that sugar/*His mother}rotted John's teeth.
b. *John's teeth rot easily.[9]
c. *John's teeth are easy to rot.

This fact is relevant to the fact that the MC implicitly involves a human actor, which cannot be expressed by a *by*-phrase, but by a *for*-phrase. This characteristic is shared with the TC as in the following:

(39) a. This book reads easily {for/*by} John.
b. This book is easy to read {for/*by} John.

The *for*-phrase in the MC, however, behaves differently from that in the TC. This difference is on the focus of our study. We will first examine the property of *for*-phrases in the MC.

4.1.1. The for*-phrase in the MC*

It is generally agreed that the subject of MC should be recognized to surpass the actor in specificity. Thus, the implied actor in the MC is usually paraphrased into 'people in general' or 'one', which is generic and nonspecific:

(40) a. This car drives easily.
b. {People in general/(Any)one} can drive this car easily.

As Stroik (1992) and Rosta (1992) point out, however, human agents implied in the MC can be specific, and may be lexically present in the form of *for*-phrase:

(41) a. The book reads easily *for John*. (Stroik 1992:131)
b. The car drives easily *for me*.

These middle sentences would be paraphrased into the following, accompanied by a specific or non-generic subject:

(42) a. John can read the book easily.
b. I can drive the car easily.

It is important to note that the adverb *easily* can modify some property of the subject as well as that of the object. That is, *easily* has two modifying functions: it serves as either an actor-oriented or a patient-oriented modifier. In (42a), for example, we have two readings: one in which *John* or his comprehensive faculty is responsible for facilitating the action of reading and the other in which the easiness of the object (*the book*) is responsible for facilitating the event's actualization.

Of more importance is the fact that this ambiguity disappears when the nonspecific agent is selected: in (40b) above, the adverb *easily* cannot characterize the

[9] The sentence in (38b), though unacceptable as a middle, can be interpreted as a simple generic statement formed from an ergative (*John's teeth rotted*); it can mean that the event of John's teeth rotting may be provoked by the slightest cause.

non-specific subject, but the specific object alone, and thus the sentence cannot have the interpretation where the subject is responsible for facilitating the action. It follows from this fact that non-specific entities cannot be understood to be responsible for the described action. Based on this observation, we can roughly characterize the relation between responsibility and specificity as in the following condition.

(43) A noun phrase must be specific in order to have the responsibility.

The condition of (43) also plays a role in explaining the following contrast:

(44) a. John can read a paper carefully.

b. ??{People in general/Anyone} can read a paper carefully.

The adverb *carefully* specifies the manner of an actor, and therefore in modal sentences including it, an actor is primarily regarded as responsible for the action of careful reading. (44b) is felt to be odd due to the violation of (43).

What is the most intriguing here is the fact that there is a difference in interpretation of *easily* between the middles and their corresponding transitive sentences. To illustrate this, let us examine again the following sentences:

(45) a. The book reads easily for anyone.

b. The book reads easily for John. (=(41a))

(46) a. Anyone can read this book easily. (cf. (40b))

b. John can read this book easily. (=(42a))

We see no difference in interpretation between the middle in (45a) and its corresponding transitive sentence in (46a): in both sentences *the book* is the only candidate for having the responsibility, due to the condition of (43). When the actor is specific as in (45b) and (46b), the difference arises. In (46b), the two readings are possible: either the actor (*John*) or the patient (*book*) can have responsibility. In contrast, (45b) does not have the reading where *John* in the *for*-phrase has responsibility. This is shown by the following contrast:

(47) John can read this book easily because...

a. it is simple enough in style for younger children.

b. he is a man of great understanding.

(48) This book reads easily for John because...

a. it is simple enough in style for younger children.

b. ?? he is a man of great understanding.

The reason clauses of (a) above relate to a certain property of the book, whereas those of (b) to some attribute of the reader. The inadmissibility of (48b) shows that a noun phrase in the *for*-phrase of MC, irrespective of whether it is specific or not, does not have the responsibility reading. Based on this fact, it could be argued that a noun phrase in the *for*-phrase of MC does not bear the same semantic relation as a noun

phrase in the subject of the corresponding transitive sentence. Given that the subject of the transitive sentence is undoubtedly in the Agent case, then, what case should be assigned to the *for*-phrase of MC? One thing is clear; *John* in (47) can have the feature CAUSE, while *John* in (48) cannot, since the latter does not have responsibility in any context.

In this connection, Zribi-Hertz (1992:587) makes an interesting observation that *for*-phrases do not bear an agent role, and that they are "point-of-view" adverbials, which occur in such evaluative statements as (49), contrasting with (50).

(49) a. That book is {*heavy/expensive*} for Mary.
b. The concert lasted too long for Mary.

(50) a. ?*That book is French for Mary.
b. ?*That dress is blue for Mary.

What is intriguing here, however, is not the contrast between (49) and (50), but the difference between (49a) and (49b). Comparing *Mary* in (49a) with *Mary* in (49b), we can see that the former is more likely to be viewed as an actor than the latter, since in (49a), the adjective can easily remind us of an eventive situation where *Mary* is practically recognized as an actor. For example, with *heavy*, we can easily imagine the event of, say, Mary's carrying the book, and with *expensive*, the activity of buying the book. In (49b), on the other hand, it is difficult to imagine *Mary* as playing an actor role in a certain event. From this observation, it follows that the status of the *for*-phrase, being actor or not, is strongly dependent upon the context. That is, it might be by accident that the *for*-phrase of MC is likely to be interpreted as an actor.

4.1.2. The status of a for*-phrase in the TC*

Turning now to the case of the TC, we can get a *tough*-sentence with the *for*-phrase expressing an actor, as in the following:

(51) a. This book is easy to read for anyone.
b. This car is easy to drive for John.

I suppose that these *for*-phrases can be classified as a kind of evaluative adverbial as in (49). As in the case of the MC, when the expressed actor is generic or non-specific as in (51a), the sentence is exclusively understood to mean that the matrix subject (*book*) helps to make the action easy. When the *for*-phrase is specific as in (51b), the TC shows a clear contrast with the corresponding MC in (45b). That is, the *for*-phrase in the TC can have responsibility reading. This is exemplified by the following, contrasting with (48).

(52) This book is easy to read for John because...
a. it is simple enough in style for younger children.
b. he is a man of great understanding.

In this respect, the *tough*-sentence is parallel to the corresponding transitive sentence. Why is it that the *for*-phrase of TC can bear a responsible entity, whereas that of the MC cannot? It is puzzling why it is so, if we suppose that the *for*-phrases in the TC and the MC both can be viewed as playing an agentive role.

It might be argued that the *for*-phrase of TC is lexically different from that of the MC in that the former bears the Agent role, whereas the latter does not. I do not agree with this idea, however. I suppose that *for*-phrases, in general, are lexically not specified with respect to the semantic relation, and they are fixed in interpretation, dependent upon the context in which they appear, contrasting with *by*-phrases which are said to be the Agent marker. (As for the analysis of the *by*-phrase, see the discussion of Schlesinger (1995:106-9)) This implies that the different interpretation between the *for*-phrases of the TC and that of the MC should not be attributed to the difference in semantic functions they each bear, but to the difference in contexts in which they appear.

A question arises, then: what is the difference in context between the MC and TC? The answer lies in the Agent-Hypothesis. Given that the subject of MC is in the Agent case, a noun phrase in the subject must have CAUSE in order to get the Agent case. If a noun phrase cannot bear CAUSE, it is excluded from that position. Thus, a noun phrase in subject position of MC always surpasses the other noun phrases in responsibility; otherwise it cannot get the feature CAUSE. It is for this reason that the *for*-phrase of MC cannot have the responsibility reading. As for TC, on the other hand, a noun phrase in subject position need not have CAUSE, since the subject of TC is not in the Agent case. This is the reason why the *for*-phrase in the TC can have the responsibility. Thus, we may safely conclude that the Agent-Hypothesis plays a decisive role in explaining the difference between the *for*-phrases of MC and TC.

5. Concluding remarks

In this paper, we first reviewed Schlesinger's analysis of the subject of Event predicates. I proposed that PRE-EXISTENCE should be introduced in addition to the proposed agentive features. I showed that the analysis based on the notion of pre-existence makes it possible to explain a variety of phenomena including the causative alternation, the middle alternation, and the reflexive alternation. I suggested that the notion of semantic saturation is also of relevance to these phenomena, and that the subject of transitive predicates is a position which consistently bear the feature CAUSE, internal or external, whereas that of intransitives need not bear the feature. It is expected that the analysis proposed here will make

explicit the nature of the subject of Event predicates.

We further focused on the difference between the subjects of Event and State predicates, with special reference to the subjects of MC and TC. I showed that different behavior exhibited by the *for*-phrases of the MC and TC may be attributed to the difference between the subjects of MC and TC. That is, the subject of MC is in the Agent case, whereas that of TC is not. The analysis proposed here contributes to the clarification of not only the difference between the subjects of Events and States , but also the semantic property of *for*-phrases.

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