# The Semantics of Subject Reconsidered[*]

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## 1. Fillmore (1968) vs. Schlesinger (1995)

Since Fillmore (1968), it has been generally agreed that semantic roles assigned to NPs remain constant even when the surface syntactic grammatical status of a particular NP may vary. Consider the following examples:

(1) a. John opened the door with the key.

b. The key will open the door.

Fillmore (1968:25) argues that *the key* remains the Instrument whether it is presented as subject or in the *with*-phrase. Based on this analysis, it turns out that all semantic roles are entity-dependent in meanings, but they never have event-dependent or discourse-dependent meanings. Thus, according to this view, semantic roles themselves give no information on argument selection; they just help to identify the roles played by some particular argument in the event described by the sentences. In order to account for the issue of argument selection, especially of subject selection, Fillmore proposes the subject selection hierarchy, which states that roles are ordered in respect to the subject as in the following:

(2) 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 role next in line. The analysis based on (2) indicates that the syntactic category of subject is semantically heterogeneous; while most subject express the Agent of the action, there are those that express the Experiencer, the Instrument, or the Patient.

Challenging the view of the subject as being heterogeneous, Schlesinger (1995) argues that, 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 syntactic 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. Like Dowty (1991), Schlesinger

regards the notion of the Agent as a cluster concept defined in terms of more primitive features, but not discretely defined one. Thus, Schlesinger characterizes the Agent in terms of three features: CAUSE, CONTROL, and CHANGE. He thinks that a prototypical Agent will have all three features, and the subject in (1a), for example, is regarded as a typical Agent because it refers to an entity that is in motion, causes the activity and controls it.[1] His point is that a noun phrase that has any one of the three features can be a candidate for being assigned the Agent, 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.[2] Consider the following examples:

(3)  a.  The axe cut the wood.
     b.  This wood cuts easily.
     c.  The mine blew up.

The subject of (3a) is customarily assigned the Instrument, while those of (3b) and (3c) assigned the Theme or the Patient. Schlesinger argues, however, that these subjects are regarded as the Agent, since they have at least one agentive feature: the subjects of (3a) and (3b) are assigned CAUSE, while the subject of (3c) is assigned CHANGE.

In this way, Schlesinger completely denies Fillmore's insight that an entity can be seen to play a constant semantic role within an event, independent of the syntactic function of the NP that encodes it. Thus, Schlesinger's proposal seems to be radically different from previous ones in viewing the subject as semantically much more homogeneous. We should note, however, that what Schlesinger suggests for the semantics of subject is essentially the same as what the hierarchical approach proposes. In fact, he claims that assignment of agentive features like CONTROL, CAUSE, and CHANGE is dependent upon our knowledge of the world, and therefore is not affected by syntactic coding of an entity. For example, Schlesinger (1995:49) argues that the feature CAUSE is assigned to *the key* in (1a) as well as *the key* in (1b). Although Schlesinger rejects the view that the syntactic category of subject is semantically heterogeneous, we can say that his notion of Agent is also heterogeneous. Thus, Schlesinger and Fillmore differ only in what they think as the Agent; the former just extend the boundary of the Agent.

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[1] The notions of CAUSE, CONTROL, and CHANGE correspond roughly to those of "causing," "volitional," and "movement," respectively, which Dowty (1991:572) thinks of as "contributing properties for the Agent Proto-Role." Notice, however, that unlike Dowty (1991), Schlesinger does not include "sentience" among the characterizing features of the agent, since he thinks that the three features are enough for the delimitation of the agent.

[2] Schlesinger uses the term Agent-case, instead of Agent, just to allay the feeling of discomfort some may feel at such a stretching of the term. Here we will use the term Agent.

Given this, it is not so surprising that Schlesinger and Fillmore have a lot in common. As for (1a), for example, he explains the reason for *John* being selected as the subject by saying that he has CONTROL as well as CAUSE, whereas *the key* and *the door* have only one agentive feature, CAUSE and CHANGE, respectively. As for (1b), *the key* and *the door* may not be differentiated in the number of features. In order to solve the problem, Schlesinger proposes the rule which says that CAUSE has more weight than CHANGE when these two features compete. The idea, however, is reminiscent of a subject selection hierarchy, which also stipulates that the Patient or Theme (a changing entity) should stand lower than the Agent and the Instrument. Given that the notion of CONTROL subsumes that of CAUSE, we can say that Schlesinger's analysis also presupposes a hierarchical nature of agentive features as in the following:

(4) CONTROL > CAUSE > CHANGE

It may be right to say that Schlesinger just turns Fillmore's view of the hierarchical nature of semantic role accessibility to subject position into a hierarchy of accessibility of agentive features to the Agent.

Therefore, it is obvious that Schlesinger's approach faces the same conflicts as the hierarchical approach does.

(5) a. The wind broke the vase.

   b. The vase broke with the wind.

If one posits the hierarchy where CAUSE (or Instrument) stands higher than CHANGE (or Theme), only (5a), but not (5b), can be explained, and vice versa if the place of these two features or semantic roles is reversed.[3]

Converse verbs like *give* and *receive* as in (6) also has been the puzzle for a subject selection hierarchy, since they lexicalize the same relation (or almost the same) with different argument configurations.[4]

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[3] To solve this problem, Schlesinger proposes an additional rule which stipulates that the Agent is to be assigned only to obligatory arguments. However, such a rule does not give a sufficient explanation of the fact; it only describes what the fact is like.

[4] However, if one analyzes *John* in (6b) as Source, but not as Actor, the syntactic realization of (6b) can be explained by saying that Recipient (possessional Goal) is higher than Source. Such a view is found in Jackendoff (1990:261), who suggests that the thematic hierarchy in which Beneficiary (corresponding to Recipient here) is higher than Theme and Goal. This approach seems to deny Fillmore's insight that semantic role remains constant, independent of syntactic realization. To counterbalance this, Jackendoff (p. 126) proposes that semantic roles fall into two distinct but related tiers, called the Thematic Tier and the Action Tier, the former "dealing with motion and location," and the latter "dealing with Actor-Patient relations." He argues that in Thematic Tier, *give* and *receive* share the same semantic relation, yet in the Action Tier they do not, accounting for their differences in syntactic configuration. This approach, however, would leave unexplained why it is so and the problem of how to deal with the puzzle in (5).

(6) a. John gave Mary the book.

    b. Mary received the book from John.

Schlesinger (p. 57) also permits that the syntactic realization of (6b) cannot be captured by his theory, and argues that this is really an exceptional case.

The root of this problem lies in that hierarchical approaches including Schlesinger do not find (or even try to seek) a semantic feature that is shared by NPs appearing in subject position. In this paper, I introduce the notion of "independent involvement" as an essential feature that an entity ought to have in order to be eligible for subject position. The purpose of this paper is to show that the notion plays a decisive role in explaining the problem of subject selection.

## 2. The Semantics of Independent Involvement

The notion of independent involvement is considered to be a semantic feature of the subject. It is assumed that the feature INDEPENDENT INVOLVEMENT is shared by all subject entities, irrespective of those of Event predicates or State predicates. (Hereafter the feature is represented as IND-INVOL).

(7) a. John threw the ball.

    b. John knew the truth.

(7a) and (7b) describe an eventive and a stative situations, respectively. Despite their difference in the type of event, *John* in both (7a) and (7b) may be seen to have independent involvement in the described event or state. In (7a) we can say that both *John* and *the ball* participate in the action of throwing, but it is *John* alone that is assigned IND-INVOL, because he is understood to engage in the event without the assistance of another. The reason for not assigning IND-INVOL to *the ball* is due to the fact that it is held by the hands of the thrower (*John*) during the action of throwing and it moves just as his hands do; it is after the action is finished that *the ball* can be independent of the thrower. As for (7b), it is also the subject (*John*), but not the object (*the truth*) that is accorded IND-INVOL, since the state described by the sentence refers to *John*'s state rather than that of the object. In other words, *John* is involved in the described state independently of other entities. Thus, the subject in (7b), as well as that of (7a), is considered to have IND-INVOL.

Based on these observations, it can be argued that there are two environments where the feature IND-INVOL is assigned to an entity:

(8) **No Assistance Condition (NAC):**

    An entity is assigned IND-INVOL when the entity is 'cognitively' seen to be involved in the process described by a predicate without the assistance of another 'human' entity.

(9) **Exclusive Specification Condition (ESC):**

An entity is seen to have IND-INVOL when the meaning of a predicate specifies the 'state' pertaining to the entity, and when the 'state' pertaining to other entities is not explicitly specified.

As the phrase "without the assistance of another human entity" indicates, the No Assistance Condition (hereafter the NAC) is human-centered. That is, as will be readily apparent, we tend to understand an entity moving or changing without the intervention of a human entity to move or change of its own accord, even though in fact it moves with the help of natural forces or the like.

As for the Exclusive Specification Condition (hereafter the ESC), it should be noted that the term 'state' is used in a broader sense. I tentatively assume that there are roughly six types of state that may be specified or lexicalized by predicates:

(10)  a.  He is in the action.   ['actional state']

b.  He is in motion/change. ['motional state']

c.  He is in despair.   ['psychological state']

d.  He is in possession of a diamond. ['possessional state']

e.  He is in the location.   ['positional state']

f.  He is cleaver.   ['attributive state']

With these two conditions in mind, let us consider again the examples of (7a) and (7b). The subject in (7a) is assigned IND-INVOL, owing to the NAC. Yet the subject (*John*) is not understood to satisfy the ESC, since *John's* actional state (actional) is specified, but not exclusively specified; the state (motional state) of the object (*the ball*) is also explicit. That is, the sentence in (7a) describes the states of two entities: *John* is in the action of throwing and *the ball* is in motion. On the other hand, in (7b) *John* is considered to satisfy the NAC and the ESC, since he is seen to be involved in the situation without the assistance of another human entity, and the sentence specifies his possessional state alone, as stated just above.

As for the subjects of the following sentences, unlike those of (7), we cannot tell whether or not they satisfy the NAC, yet it is apparent that they satisfy the ESC:

(11)  a.  The car has a flat tire.

b.  John resembles Tom.

In (11a), the sentence modifies the state of *the car*, but not of *a flat tire*, thus the former alone is understood to satisfy the ESC. Likewise, in (11b), it is *John*, but not *Tom* that is assigned to IND-INVOL, since the sentence refers to some 'attributive state' of *John* rather than that of *Tom*. One might argue, however, that the attribute of *Tom* in (11b) is also specified, and hence should be assigned IND-INVOL, since if John resembles Tom, then Tom resembles John, and therefore (11b) tells the

attributive state not only of John but also of Tom. However, I suppose that (11b) focuses on John's state, but not Tom's, and the implication of symmetrical resemblance is derived from pragmatic considerations. In fact, resemblance is not always symmetrical; for example, the sentence *These clouds resemble an elephant* states something about the clouds, but not about *an elephant*; it does not imply that an elephant resembles the clouds, since one would hardly ever compare an elephant to a cloud (See Tversky (1977) on the asymmetry of judged similarity).

Although the NAC and the ESC both characterize the notion of independent involvement, they differ in what they are based on. As the term 'cognitively' in (8) indicate, the NAC is based on the way we understand the world. For example, in the sentence *The wind broke the vase*, the reason for assigning IND-INVOL to its subject is that our knowledge of the world tells us that the wind has some power to actualize the event of its own. On the other hand, the ESC is based on the way the real world event or situation is linguistically 'encoded' or 'packaged.' In fact, the notion of 'specification' is dependent not on our cognitive knowledge, but on our linguistic knowledge. Thus, it can be argued that the notion of independent involvement has both cognitive and linguistic bases. This is why the notion should be defined by the two conditions.

To summarize, the feature IND-INVOL is split into two types, as in (12). One is defined by the NAC and the other is by the ESC. I will refer to the former type as INVOL$_{NAC}$ and the latter type as INVOL$_{ESC}$:

(12)　　　　　　IND-INVOL

INVOL$_{NAC}$　　INVOL$_{ESC}$
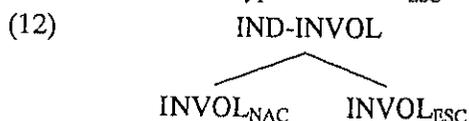
What I would like to show is that the following condition plays a crucial role in subject selection, in general.

(13) **Independent Involvement Condition (IIC)**

For an entity to be subjectivized, it must have IND-INVOL.

Based on the Independent Involvement Condition (hereafter the IIC), we can assume that the subject must satisfy either the NAC or the ESC. The rest of this paper is dedicated to confirming this assumption.


## 3. Ordering Rules

It must be noted that INVOL$_{NAC}$ and INVOL$_{ESC}$ are ordered with respect to the subject, and the order of priority varies with syntactic and semantic contexts. That is, there is a rule that determines which features are primarily relevant to subject selection. I will call such a rule 'Ordering Rule.' Here I propose three Ordering Rules.

*3.1. The Ordering Rule in Causative Events*

One of the ordering rules is based on the notion of causation.

(14) **Ordering Rule in Causative Event:**

If a given predicate describes a causative event in the real world, an NP in subject position must be understood to have $INVOL_{NAC}$.

Notice that the notion of causation here includes the 'intrinsic' or 'internal' causation as well as the 'extrinsic' or 'external' causation. Thus, intransitive verbs like *laugh* and *cry*, having an internal causative meaning, are analyzed as belonging to the class of causative verbs. Thus, the subject of these verbs must be understood to satisfy the NAC. Another way of saying this is that for an entity to be a causer or a controller of the event, it must be understood to have $INVOL_{NAC}$. Consider the following examples:

(15) a. The doctor burped.

  b. *The nurse burped the doctor.

  c. The baby burped.

  d. The nurse burped the baby.

(Levin and Rappaport 1995:115)

Like *laugh* and *cry*, the verb *burp* describes an internally caused causation, and in the normal context, the bodily process described by the verb cannot be externally controlled, but can be controlled only by the person engaging in it, as (15b) shows. The unacceptability of (15b) can be reduced to the fact that the subject (*the nurse*) cannot satisfy the NAC (as well as the ESC). The acceptability of (15a) and (15c) is due to the fact that the subjects satisfy the NAC as well as the ESC; they are seen to be involved in the process by themselves and the meaning of the verb specifies exclusively the actional states of the subjects. However, there remains a question why (15d) is acceptable. As Levin and Rappaport (1994:68) observe, babies are often incapable of burping 'by themselves,' "so that the person caring for the baby must assume control of the burping." Thus, (15d) is possible only when *the baby* cannot get $INVOL_{NAC}$, and *the nurse* is understood to have $INVOL_{NAC}$. It is for this reason that the verb *burp* can be used transitively only when babies are involved.

Notice, however, that *the nurse* in (15d) is not understood to have $INVOL_{ESC}$ since the verb *burp* specifies the state only of the person (*the baby*) who directly engages in the process; the verb does not give any specific information about what *the nurse* did to *the baby*. Given this, in (15d) there exist two entities that satisfy the IIC and hence are understood to have IND-INVOL; *the nurse* has $INVOL_{NAC}$, whereas *the baby* $INVOL_{ESC}$. The question then arises: which one is to be eligible for subject position? The ordering rule in (14) plays a pivotal role in explaining such a problem. Based on the rule in (14), we can argue as follows: since the sentence in (15d)

expresses a causative event, an entity with INVOL$_{NAC}$ alone can be subjectivized, and thus *the nurse* is the only candidate for the subject of this sentence. In other words, since *the baby* is understood to lack INVOL$_{NAC}$, it cannot be a causer or a controller of the burping. It should be emphasized again that the presence/absence of INVOL$_{NAC}$ is strongly affected by the way we understand the situation, and thus assignment of the feature is not entity-dependent, but context-dependent; *the baby* in (15c) bears INVOL$_{NAC}$, whereas in (15d), he/she lacks the feature.

Transitive causative verbs such as *break* and *move* also can express a situation including two entities that are considered to have IND-INVOL.

(16) a. The wind/John broke the vase.

b. John moved the table.

Here it is the subject NPs, but not the object NPs that are understood to have INVOL$_{NAC}$, yet the objects NPs are also regarded as having INVOL$_{ESC}$, since *break* and *move* do not specify the actional state of the subject entity. It might be argued however, that without some action on the part of *John* in (16), the described processes could not have occurred. Yet the sentence cannot explicitly tell what kind of action *John* participated in, since clearly the changes on the part of the object NPs could have been caused in any number of ways: *John* could have kick them, he could have pushed them, he could have hit them, etc. There is a strict sense in which the subjects of transitive *move* and *break* are not regarded as an actor, but only as a causer. If this is correct, it is safe to say that transitive causative verbs like *move* and *break* just specify the state of the object NP. As a result, there may be more than one NP having IND-INVOL in each of these sentences. Thus, the selection of the subject relevant to such a situation cannot be determined without recourse to the rule in (14). As we will see later, the fact that there may be more than one NP with IND-INVOL is crucially related to the basis for inducing what is called 'causative alternation' and "lexical doubles", as illustrated in *John broke the vase/The vase broke* and *John frightened Mary/Mary fears John.* [5]

Although a causative verb or construction necessarily involves a causing event that brings about some state, not all causative verbs specify the causing event; that is, the actional state of causative verbs or constructions are not always explicit. However, the notion of whether or not an actional state is specified is somewhat vague, and need to be clarified in some way. I assume that if the meaning of a verb or a construction involves any one of the properties presented in (17), the verb or the construction is

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[5] As for the condition for the causative alternation, Levin and Rappaport (1995:107) also point out that "what characterizes the class of alternating verbs is a complete lack of specification of the causing event.

understood to specify the actional state:

(17)  A.  means
      B.  manner of body-part's motion
      C.  iterative motion
      D.  deliberation/carefulness/purposefulness

I argue that the presence or absence of an actional state is dependent upon whether the meaning described by a verb or a whole sentence involves any one of the properties. I further assume that the more the number of elements increases, the more specificity of actional state increases. With this in mind, consider the following examples:

(18)  a.  Poison/John killed the king. [ $\phi$ ]
      b.  John/??Poison murdered the president.   [E]
      c.  John/??Poison killed the king with the gun. [A, B]

(19)  a.  John hit the wall with a crash.   [ $\phi$ ]
      b.  Sue hit Fred with a stick. [A, B]
      c.  John beat Tom.   [B, C, D]
      d.  John whipped Tom.   [A, B, C, D]

The sentence in (18a) contains no information about the properties in (17), which is represented as [ $\phi$ ], while the sentence in (18b) strongly implies purposefulness (D), due to the lexical nature of *murder*. This fact suggests that *murder* specifies the actional state, while *kill* does not. Notice, however, that when a *with*-instrumental such as *with the gun* is added, as in (18c), the actional state of the sentence including *kill* is more explicitly specified than that of (18a) is, since an instrument strongly requires the existence of a human who uses the instrument by moving he/her body-part. Thus, it can be said that specification of the actional state is not determined solely by the lexical property of a verb.

Turning now to the case in (19), we can say that the verbs *hit*, *beat*, and *whip* describe an event in which someone/something comes forcefully or deliberately into contact with someone/something. As is apparent, *hit* is neutral with respect to specification of the actional state, and unlike the other two, it can describe an event of collision between two entities, as in (19a). In this case, the actional state is absent, since the event of collision does not include any property relevant to specification of an actional state; (19a) implies that *John* is in motion and is in contact with *the wall*, but not that he moves his hand and uses the instrument. This indicates that in (19a) specifies his motional or positional states, but not his actional state (see also (10)). On the other hand, *hit* in (19b) unambiguously contains the actional state, due to the presence of a *with*-instrumental such as *with a stick*; in fact, (19b) describes the situation in which *Sue* moves the instrument with his hand, and causes it to come into

contact with Fred. Unlike *hit,* the verbs *beat* and *whip* specifies the actional state by their lexical nature, and implies 'iteration (C)' and 'purposefulness (D).' Due to these properties, these verbs (especially *whip*) are usually connected to sociocultural frames of "institutionalized punishment" (cf. Faber and Mairal Usón (1999)):

> (20)  The overseer whipped him once (= hit him several times with a whip).
>
> <div style="text-align:right">(Faber and Mairal Usón 1999:161)</div>

As Faber and Mairal Usón (1999) observes, iteration is always present in the sentences including *whip* and *beat,* and "consequently, even when the action is specified as *once,* it does not mean one stroke of the whip or lash, but rather several (in sufficient number to constitute one punishment)." In contrast, iteration is not an inherent part of the meaning of *hit,* and this is reflected in the fact the verb can describe an event of collision.

### 3.2.  The Ordering Rule in Non-Causative Situations

Another ordering rule is concerned with the subject of non-causative sentences:

> **(21)  Ordering Rule in Non-Causative Situation:**
>
> If a given predicate describes a non-causative situation, an NP in subject position must have INVOL$_{ESC}$.

It should be noticed that stative verbs belong to the class of non-causative situation. Thus, the rule in (21) predicts that only an NP with INVOL$_{ESC}$ can be the subject of stative predicates. In fact, the following sentences containing *be, can, have* and some other stative verbs are all understood to have INVOL$_{ESC}$:

> (22)  a.  John is {in her room/ cleaver}.
>
> b.  John can't swim /has blue eyes/deserves a medal.
>
> c.  The car lacks a hand brake.
>
> d.  The apple tastes good.

Although Schlesinger (1995:122) introduces the Attributee as a new semantic role, which is assigned to the subject of a stative predicate, this semantic role is merely a description of the fact. As is readily apparent, the scope of INVOL$_{ESC}$ is wider than that of the Attributee; in fact, the feature INOVL$_{ESC}$ is not related to the subject of stative verbs alone. More importantly, the analysis proposed here makes it clear why the Attributee is eligible for subject position.

Further, let us consider the following pair of examples.

> (23)  a.  Mary came into his inheritance. (non-causative)
>
> b.  Mary came into the room. (causative)
>
> <div style="text-align:right">(Schlesinger 1995:53)</div>

(23b) does not pose any difficulty for Schlesinger's theory, since the subject may have CAUSE, CONTROL, and CHANGE. As Schlesinger (1995:53) himself admits, he

fails to explain why *Mary* in (23a) can be subjectivized, since his theory cannot assign either the Agent or the Attributee to the subject. Of note is that the sentence in (23a) describes a non-causative situation, whereas that in (23b) a causative situation. The analysis presented here can explain the reason for the syntactic realization of (23a) as well as (23b). As for (23a), it is the state of *Mary*, but not of *his inheritance*, that is specified by the sentence: that is, she is in possession of his inheritance, and thus she is accorded INVOL$_{ESC}$. Thus, the subject of (23a) is assigned INVOL$_{ESC}$ in the same way as that of stative verbs like *possess, have, own*, whose meanings also exclusively specify the possessional state of the subject. On the other hand, the subject of (23b) is accorded INVOL$_{NAC}$ as well as INVOL$_{ESC}$. The reason for assigning INVOL$_{ESC}$ to it is that the motional and positional state of the subject is exclusively specified: he is in motion and is at the room. Due to the lack of INVOL$_{NAC}$, *Mary* in (23b) can be interpreted as the causer; due to the absence of this feature, *Mary* in (23a) cannot.

*3.2.1.* Fear *vs.* Frighten

The same line of reasoning explains a seemingly insoluble problem lying between psychological verbs of the *fear* class and those of the *frighten* class:

(24)  a.   Mary fears John.  (non-causative or stative)
      b.   John frightens Mary. (causative)

As Dowty (1982:112) speaks of "the infamous class of psychological verbs," the existence of these two verbs has been a puzzle for the subject selection problem, since almost the same semantic relation is realized with different syntactic configurations. The analysis based on the rules in (14) and (21) can solve this puzzle. Following the idea presented here, we can say that *Mary* and *John* in both (24a) and (24b) bear IND-INVOL with different types: *John* in both (24a) and (24b) is assigned INVOL$_{NAC}$, since he is understood to be as the 'stimulus' in both situations. On the other hand, *Mary* in both (24a) and (24b) is not accorded INVOL$_{NAC}$, since without the stimulus given by *John*, the described psychological state or change cannot occur. However, *Mary* in these two sentences can be seen to have INVOL$_{ESC}$, since the verbs *fear* and *frighten* do not specify the actional state of *John*, but only the psychological state of *Mary*; *John* in both (24a) and (24b) is not understood to have any property pertaining to specification of the actional state. As a result, there are one more entity having the feature IND-INVOL in each of the sentences. The rule in (21) is operative in (24a), since the verb *fear* describes a non-causative event, and thus INVOL$_{ESC}$ takes preference over INVOL$_{NAC}$. This is why *Mary* alone can be subjectivized in (24a). On the other hand, due to the causative nature of the verb *frighten*, the ordering rule in (14) requires the subject to bear INVOL$_{NAC}$, accounting for the syntactic realization in (24b). The point is that the subjects of *fear* and *frighten* are equally understood to have

IND-INVOL, and thus satisfying the IIC in (13), yet they bear different types of IND-INVOL, accounting for the difference in syntactic realization.

### 3.2.2. Give *vs.* Receive

The analysis presented here also plays a role in the explanation of the problem with subject selection of converse verbs like *give* and *receive*. As we have seen in section 1, the existence of these verbs has been the empirical basis for one of the conflicts among previous hierarchical theories, since, like *fear* and *frighten*, these verbs also express almost the same semantic relation with different argument configurations.

> (25) a. John gave Mary the book.  (=(6a))  (causative)
> b. Mary received the book from John.  (=(6b)) (non-causative)

One important difference between these two verbs is that they describe different types of eventualities: *give* describe a causative event, whereas *receive* describe a non-causative situation. Thus, the ordering rules in (14) and (21) require that the subject of *give* must be accorded $INVOL_{NAC}$, whereas that of *receive* must be assigned $INVOL_{ESC}$. With this in mind, let us first look at the case of *give* in (25). Of the three participants (the Giver (*John*), the Theme (*the book*), the Recipient (*Mary*), it is *John* alone that can satisfy the NAC; neither *Mary* nor *the book* can be involved in the event of giving without the intervention of *John*. Thus, the ordering rule in (21) correctly predicts that *John* is the only candidate for the subject of *give*.

Turning to the case of (25b), we can say that *Mary* cannot be seen to be independently involved in the described event, since *Mary* could not have received the book, without some action on the part of *John* in (25b). Here again, it is *John*, but not *Mary* that is assigned $INVOL_{NAC}$. Notice, however, that the feature $INVOL_{ESC}$ can be assigned to *Mary*, since the lexical meaning of *receive* does not explicitly specify some states of the oblique NP (the Giver) and the object NP (the Theme); in (25b) the actional state of *John* is not specified, and in a strict sense, it is the ownership of *the book*, but not *the book* itself, that is transferred to *Mary*; ownership is not relevant to the property or state of *the book*. Thus, it is safe to conclude that the sentence in (25b) only specifies the possessional state of *Mary*, but not the actional and motional states of *John* and *the book*. For this reason, *Mary* is accorded $INVOL_{ESC}$, and the ordering rule in (21) correctly predicts that *Mary* alone can be the subject of *receive*. Due to this fact, *receive* and *give* show different syntactic configurations. Of note is that *Mary* in (25b) is allowed to be the subject in the same way as *Mary* in *Mary possesses the book*; both sentences describe a non-causative situation, and thus their subjects must be understood to have $INVOL_{ESC}$.

### 3.3. The Ordering Rule in Intransitive Constructions

It is observed that intransitives in general specify the state of NPs encoded as the subject, but not specify the state of the other NPs encoded as the object of the preposition. Thus, the subject of intransitive constructions is understood to bear the $INVOL_{ESC}$. Based on this observation, we can propose the following ordering rule:

(26)  **Ordering Rule in Intransitive Construction:**

The subject of an intransitive construction must have $INVOL_{ESC}$.

To establish the validity of this rule, let us consider some examples containing the predicate *bear down*, which is treated as a highly polysemic phrase.

(27)  a.   The packed ice *bore down* on the ship.   (intransitive)

b.   John at last *bore down* all oppositions.   (transitive)

The phrase *bear down* may be used either as the intransitive, as in (27a), or as the transitive, as in (27b). Based on the rule in (26), it can be predicted that the subject of (27a) satisfies the ESC, whereas that of (27b) need not. In fact, the sentence in (27a) specifies quite clearly the motional state of the subject NP (*the packed ice*); it does not tell anything about the state of *the ship* in the prepositional phrase. Thus, we can say that the subject of (27a) is understood to have $INVOL_{ESC}$, being consistent with the ordering principle in (26). In contrast, the subject of (27b) does not have $INVOL_{ESC}$, but only $INVOL_{NAC}$. In fact, *bear down* in (27b), which conveys the meaning of defeating someone, describes an externally caused event; thus the sentence specifies not only the state of the subject NP (*John*), but also the state of the object NP (*all oppositions*). This is reflected in the fact that the adverb *down* in (27a) is considered to be subject-oriented, while that in (27b) to be object-oriented.

### 3.3.1. Intransitive/Transitive break

Further, the ordering rule in (26), together with that in (14), plays a decisive role in explaining the following facts.

(28)  a.   The wind/John broke the vase.   (= (16a))

b.   *The wind/John broke.

c.   The vase broke with the wind. (=(5b))

As we saw in (16a), the subject and the object of the transitive causative *break* are accorded $INVOL_{NAC}$ and $INVOL_{ESC}$ for the reasons stated above. Given this, the ordering rule in (26) predicts that the subject entities (*the wind* and *John*) in (28a,b) cannot appear as the subject of intransitive constructions, since they lack the feature $INVOL_{ESC}$. In fact, the prediction is borne out, as in (28b). Further, the acceptability of (28c) is readily explained by the rule in (26). Due to the presence of $INVOL_{ESC}$ in *the vase* in (28c), the subject can satisfy the requirement of (26). Notice that this line of approach has an advantage of solving the puzzle of why *the wind* in (28a) is

allowed to be the subject, whereas *the wind* in (28c) is not. As we argued in section 1, this problem has not been given a satisfactory explanation by any hierarchical approaches including Schlesinger (1995). The present analysis explains this fact as follows: the preference of *the vase* with $INVOL_{ESC}$ over *the wind* with $INVOL_{NAC}$ in (28c) is due to the fact that the subject of intransitive constructions must satisfy the ESC, as stated in (26), while the preference of *the wind* with $INVOL_{NAC}$ over *the vase* with $INVOL_{ESC}$ in (28a) is reduced to the fact that the subject of a causative predicate must be understood to satisfy the NAC, as stated in (14).[6] Notice that there is a sense in which *the vase* in (28c) may also be seen to have $INVOL_{NAC}$ in addition to $INVOL_{ESC}$, since it is seen to be involved in the described event without the assistance of a 'human' entity.

Interestingly, the verb *break* has a variety of intransitive uses, with a variety of meanings:

(29) a. John broke out from a prison.    (He escaped from a prison.)
    b. The storm broke.    (It began.)
    c. The cold weather broke.    (It ceased.)
    d. John's voice has already broken. (It has changed to a man's voice)
                (Examples (29b-d) are cited from Washio (1999:189))

As Washio (1999:189) observes, these uses have no corresponding transitive use, unlike the intransitive *beak* in (28c). However, the subjects above, like that of (28c), are seen to have $INVOL_{ESC}$ as well as $INVOL_{NAC}$, since the sentences in (29) modify the actional or motional states of the subjects, thus satisfying the requirement of (26).

### 3.3.2. Blow *vs.* Blow off

However, the following examples seem to cast doubt upon the validity of the ordering rule in (26).

(30) a. {The wind/The force of the wind/The explosion} blew my hat off.
    b. My hat blew off.
    c. The wind blew heavily.

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[7] Examples similar to (28c) are given below:
(i) a. The king died from poison.
    b. He choked from the gas.
    c. The balloon burst with the heat.
    d. He shivers with cold.    (Schlesinger 1995: 48)
The syntactic ordering observed above is also problematic for any hierarchical theory that state that the Cause is prior to the Theme, since the NPs in the subjects are seen to have the Theme and the NPs in the oblique phrases are regarded as having the Cause. Again, the distributional facts above do not pose any difficulty for the present approach. On close examination of the meanings conveyed by the sentences above, the subject NPs in (i) all are found to satisfy the ESC, whereas the oblique NPs are not. Thus, the ordering rule in (26) explains the syntactic configurations in (i)

In (30a), the subject NPs (*the wind/the force of the wind/the explosion*) are accorded INVOL$_{NAC}$, but not INVOL$_{ESC}$, since the state of the object (*my hat*) is expressed clearly: it is in some sense "off". In (30a) the predicate *blow off* does not specify any motional state of the subjects, and thus the object NP is regarded as having INVOL$_{ESC}$. Thus, the rule in (26) correctly predicts that when *blow off* is used intransitively, as in (30b), the object NP (*My hat*) in (30a) can be promoted to the subject of intransitive *blow off*. So far so good; yet the acceptability of (30c) seems to be problematic for the rule in (26), since *the wind* in (30a) does not have INVOL$_{ESC}$, and is nevertheless perfectly acceptable as the subject of the intransitive *blow*. However, we should not miss the fact that the predicate in (30c) lacks the adverb *off*. I suppose that *blow* and *blow off* differ in two respects: one is that the former cannot be used transitively, as in (31a), while the latter can be used either transitively or intransitively, as in (30a,b). The other is that NPs such as *the force of the wind* and *the explosion* in (30a) do not qualify as the subject of intransitive *blow*, as in (31b), while NPs such as *the wind* and *breeze* do as in (31c):

(31) a. ??The explosion blew my hat.    (30a)

　　 b. ??The force of the wind/The explosion blew hard.

　　 c.　 The wind/A cold breeze was blowing.    (cf. (30c))

Based on these facts, we can argue that *the wind* in (30c) and (31c) is understood to have INVOL$_{ESC}$, since the intransitive *blow*, by its lexical nature, can specify the motional state of an entity such as *wind* and *breeze*, i.e. the moving of the air or the wind; in fact, (30c) can describe the same state of affairs as a sentence such as *It blew heavily* does. It is for this reason that NPs such as *the explosion* cannot appear as the subject of intransitive *blow* (cf. (31b)); the motional state specified by the verb is not attributable to the nature of such an NP. On the other hand, the transitive *blow off* does not specify the state of a subject NP, but only that of an object NP, and thus a wide variety of NPs can occur as its subject. I suppose that even when an NP such as *the wind* appears as the subject of transitive *blow off*, its state is unspecified; *the wind* in (30a) is interpreted as the causer, just as *the wind* in *The wind broke the vase* is. Thus, it is safe to say that in (30a) the state of the object NP is exclusively specified and it is assigned INVOL$_{ESC}$. This is verified by the fact that even *the wind*, as well as other effective force, is ineligible for the subject of intransitive *blow off*, due to the lack of INVOL$_{ESC}$ as in the following:

(32) a.　 ?The wind blew off.    (cf. (30c))

　　 b. ??The force of the wind/The explosion blew off.

Given this, we can say that the distributional facts as observed in (30)-(32) are well motivated by the rule in (26).

### 3.3.3. Evidence from "Conative Alternation"

Further evidence in support of (26) comes from what is called "conative alternation". The conative alternation is a kind of transitive/intransitive alternation in which the object of the verb in the transitive variant turns up in the intransitive conative variant as the object of the preposition *at* or *on*, as in (33).

(33) a. Margaret cut the bread.

b. Margaret cut at the bread.   (conative construction)

The rule in (26) predicts that the subject of intransitive conative variant must satisfy the NAC, and hence get INVOL$_{NAC}$. This prediction is borne out by the following observation. According to Levin (1993:42), the conative construction describes "an 'attempted' action without specifying whether the action was actually carried out". However, this is somewhat misleading. In a strict sense, the meaning of the verb *cut* specifies two states of affairs: one relates to the actional state in which the cutter engage in, using the instrument, and the other to the changing state of the thing to be cut. Thus it can be argued that the conative expression zooms in on the actional state, leaving the changing state unspecified. Thus, we can say that *Margaret* in (33b) is understood to have INVOL$_{ESC}$ as well as INVOL$_{NAC}$, while *Margaret* in (33b) is assigned INVOL$_{NAC}$ alone. As Pinker (1989:108-109) observes, a sentence such as (33a) describes the situation in which *the bread* was not properly *cut*. It is apparent from this observation that in (33b) the state of *the bread* is not in forefront, but rather how the action is carried out is focalized.

Given that the construction maximizes the focus on the actional-state of the subject NP, we can explain why a conative construction is impossible with transitive expressions focusing exclusively on the state of the object NP.

(34) a. Sam broke (*at) the glass.

b. Sam moved (*at) the cart. (Levin 1993:42)

c. John killed (*at) the elephant.

Further, the verb *hit*, when used to refer to the event of collision, cannot enter into the conative construction, as in the following:

(35) a. Sue hit (at) Fred with a stick.   (cf. (19a))

b. John hit (*at) the wall with a crash.   (cf. (19b))

The reason for this is that (35b) does not specify the actional state, whereas (35a) does (see the discussion in (19)).

Further, the rule in (26) correctly predicts that the intransitive conative variant does not go well with resultative constructions:

(36) a John cut (*at) the bread into pieces.

b. John shot (*at) the elephant dead.

Resultative phrases like *into pieces* and *dead* modify the specific states of the object entities. Thus, if they occur with the conative expressions, the subjects in (36) cannot satisfy the ESC, and hence the rule in (26) explains the results observed in (36).

### 3.3.4. The Objectless Transitive

A meaning shift as observed in the conative alternation is also found in the other transitive/intransitive variants. As Rappaport and Levin (1998:102) observe, manner verbs more readily allow the omission of their direct object than result verbs:

(37)  a.  *John killed.

b.  *Kelly made.

In certain context, however, result verbs can occur without objects, as in (38):

(38)  a.  These are soldiers trained to kill.  (Lemmens 1998:35)

b.  Man makes, God creates.

What is important is the fact that the intransitive sentences above all specify some property or attributes of the subjects, thus satisfying the rule in (26). Thus, the objectless constructions above have a generalizing effect on the subjects. In this respect, Rice (1988:206) makes an interesting observation that "the particular object is fairly unimportant as the pragmatic focus is on the activity itself". Another way of saying this is that when the object is omitted, some state (actional, motional or attributive state) of the subject is pragmatically focalized. I argue that this 'pragmatic focus on the state of the subject' is pivotal to the meaning of the objectless transitive, and that this is attributable to the fact that the subject of an intransitive construction must have INVOL$_{ESC}$. In my view, the reason for the contrast between (37) and (38) is as follows: the lexical meanings of *kill* and *make* specify the resultant state of the object NP. When the generality is reduced, as in (37), the subjects cannot satisfy the ESC, due to the lexical nature of these verbs. Thus, I argue that the oddness in (37) is due to the violation of the ordering rule in (26).

## 4.  Summary and Conclusion

In the preceding sections, I hope to have shown, contrary to hierarchical approach to the subject selection problem, that the syntactic category of subject must have the semantic feature of IND-INVOL. The notion of IND-INVOL is classified into two types: one is based on our knowledge of the world, and the other is based on our linguistic knowledge. As I have argued, there are at least three ordering rules determining which features are essential to the selection of subject. I have shown that the approach presented here an advantage of being able to solve the conflicts among the previous hierarchical approaches in a more principled way.

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