

## A Cognitive Approach to the Syntax of English Nominalizations\*

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### 1. Introduction

The main concern of this paper is to account for the syntax of English nominalizations within a cognitive grammar (henceforth, CG) framework, especially one proposed by Langacker (1987a and 1991b, among others). Taylor (1994, 1996), an advocate of Langacker's theory, pays special attention to the notion of possession, which has much to do with nominalizations. This paper develops part of the theory built up by Taylor and tries to give an explicit explanation of nominalizations from a cognitive linguistic viewpoint, specifically, a semantic/pragmatic viewpoint.

The CG framework denies the syntax autonomy assumed in generative framework; it assumes that syntax is symbolic and thus links a semantic structure and a phonological structure directly. All linguistic elements are visible to semantics and phonology. CG accordingly gives semantic definitions of the prepositions *of* and *by* and even case markings.

CG assumes that a base verb and its nominal counterpart, i.e., its nominalization, describe the same cognitive content (i.e., a single objective world or eventuality).<sup>1</sup> They impose different construals on the content (i.e., they code the same eventuality from different perspectives). As Langacker (1987b: 90) puts it, "[a verb] imposes a processual construal on the profiled event, while [the corresponding derived noun] portrays it as an abstract region."

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<sup>1</sup>Taylor (1996) and Hayase (1996) argue that nominalizations with suffixes like *-ion* and *-al* should be distinguished in semantics from ones with *-ing*. Their difference is illustrated by the following contrast: *the city's destruction by the enemy* vs. *\*the city's destroying by the enemy*.

However, not every verb has the former type of nominalization. If a verb does not have the former type, the latter type is used to fill the gap. For example, this is not so bad, if not perfect: *the castle's looting by the burglar*. This paper includes nominalizations with *-ing* unless base verbs have their own nominalized forms.

The assumption that the two categories share the same cognitive content does not necessarily entail that they share the same syntactic characteristics. Some nominals derived from transitive verbs behave like those derived from intransitive verbs.

This paper is organized as follows. In section 2 I will sketch the system assumed in this paper, which is based on Langacker (1987a, 1991b) and Taylor (1994, 1996). The point I will make is how the semantic structures of prepositions *of* and *by* are related to an ERGative/ABSolute system. Through a careful examination of data, I will claim that *by* is not an ERGative marker, contrary to Williams' (1981, 1987) claim. In section 3 I will attempt to account for some interesting though complicated data which Nunes (1993) observes. It will be made clear that the participant/non-participant distinction is crucial to nominalizations. In section 4 I will enlarge the argument into possessive nominals. With a slight modification of the informativity theory proposed by Taylor, which is based on the reference-point model made by Langacker, I will integrate what previous studies have done and make explicit that the participant/non-participant distinction also plays an important role in understanding the semantic/pragmatic nature of possessive nominals. The notion of topicality also bears a great deal of relevance to their nature. Section 5 makes concluding remarks.

## 2. Some Basic Assumptions

### 2.1 Ergative property of nominalizations

Previous studies (e.g., Sadock and Levi 1977 and Williams 1981, 1987) observe that English nominalizations have an ERG characteristic. The object NP corresponding to the object of transitive verbs and the subject NP corresponding to the subject of intransitive verbs are marked the same, namely with the preposition *of*. The subject NP corresponding to the subject of transitive verbs is marked with *by*. Observe:

- (1) a. the disappearance of Houdini...
- b. the discovery of America...
- c. \*the shooting of the lions of the hunters
- d. the shooting of the lions by the hunters

((a-b) from Sadock and Levi 1977:91; (c-d) from Williams 1981: 101)

Williams (1987) proposes a rule which governs the prepositions *by* and *of* to account for such an ERG characteristic as observed in (1).

- (2) The *by* ergative rule:

The agent is assigned to a *by* phrase if there is an active theme; otherwise it is assigned to an *of* phrase.

In (2) "active" means roughly that "overtly realized theme, in either possessive or postnominal position" (Williams 1987: 370). This rule implicitly assumes that the theme can be realized in the *of*-phrase, or in the possessive.<sup>2</sup> We can account for the paradigm in (1). The subject in (1a) and the object in (1b) occur in the *of*-phrase because they are the only expressed arguments. The ungrammaticality of (1c) stems from the violation of the rule in (2). Since the active theme *the lions* appears, the agent *the hunters* should be marked by *by*, but in fact it is not. In (1d), by contrast, the agent is marked by *by*, which results in its appropriateness.

The *by* ergative rule in (2) also accounts for the facts in (3):

- (3) a. the expression \*(of aggressive feelings) by patients
- b. the assignment \*(of unsolvable problems) by the instructor
- c. the destruction \*(of the city) by the enemy (Grimshaw 1990: 52)

The reason why the *by*-phrases cannot occur without the *of*-phrases is that the realization of the *by*-phrases requires the theme arguments in the *of*-phrases in conformity with Williams' rule.

There is a set of examples which poses a problem for Williams' rule. As Chomsky (1957) points out, the example in (4a) has ambiguity between a subject and an object reading. Williams observes that when it receives the subject reading, the preposition *of* can be replaced by *by*, as in (4b).

- (4) a. the shooting of the hunters
- b. the shooting by the hunters

Example (4b) is problematic to the *by* ergative rule, because the agent *the hunters* occurs without an *of*-phrase. Contrary to Williams, I claim that even though *by* has an ERG-like property, it is not an ERG marker.

Chomsky (1957) observes that the base verb has both transitive and intransitive use and when the *of*-phrase receives the subject reading, *shooting* in (4) corresponds to the intransitive verb. One might say that nominals derived from intransitive verbs are not subject to the rule in (2). Williams (1987: 369) states that (2) applies to intransitives.

- (5) a. the arrival of John
- b. \*the arrival by John

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<sup>2</sup>Here we put aside the fact that the theme is realized in the possessive position. We will return to this issue in section 4.

Contrary to Chomsky's observation, Williams (1981: 101) assumes that "*shooting* is always transitive", though (5b) is not touched on in Williams (1987). He does not explicitly mention this assumption in the latter article, but it seems to me that he still grants the assumption. He assigns the following argument structure to (4a) with the subject reading.

- (6) The shooting of the hunters;  
(A<sub>i</sub>, th)

Williams (1987: 370) claims that in (6) "unexpressed themes, ..., do not seem to count for the [by ergative] rule", which results in the *of*-phrase realization of the agent.<sup>3</sup>

If it is indeed the case that (6) is the argument structure for *shooting*, Williams cannot account for (4b). Since the theme argument is not expressed, the agent argument should not be assigned to the *by*-phrase. The point I am making is that the *by* ergative rule faces problems even if either the transitive analysis or the intransitive analysis of *shooting* is adopted. In the rest of this section I will try to make it clear within the CG framework for what reasons the preposition *by* behaves in most cases as if it were an ERG marker.

Before going into my analysis, let us summarize the CG framework. This framework gives semantic definitions of the prepositions *of* and *by*, and even ERG/ABS markings. If these prepositions are ERG and ABS markers, the CG framework has to show how the prepositions' semantic structures are related to the ERG/ABS system. As for the preposition *of*, Taylor (1996) discusses why the preposition functions as an ABS marker. On the other hand, though the meaning of *by* is discussed in Langacker (1982, 1990a), it has not been discussed why *by* has an ERG-like property. I will clarify such a property of this preposition.

## 2.2 Semantic structures of "meaningless" elements

Since it assumes that syntax is symbolic, CG gives semantic definitions of the prepositions *of* and *by* and case markings. Let us summarize their semantic structures.

### 2.2.1 Preposition of

Langacker (1982, 1991a, 1995) observes that the preposition *of* in nominalizations is

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<sup>3</sup>Though Williams does not give details on the argument structure in (6), it might capture an aspect of the conative construction, which we will see in section 2.3. The object of the transitive *shoot* is related to the prepositional object of the intransitive conative variant. If his assumption that *shoot* is always transitive is made to account for this aspect, we should not deny his whole idea.

My position is that even if they share the same cognitive content, the transitive and the intransitive are different from each other at the level of construal. This difference is crucial to nominalizations.

meaningful rather than semantically empty. Schematically, *of* predicates an intrinsic relation between two entities, in which the trajector, corresponding to the head noun, is an inherent and restricted sub-part of the landmark, corresponding to the prepositional object.<sup>4</sup> For example, a jar and its bottom are in an intrinsic relation; a jar and its label are not. Therefore, the contrast between *the bottom of the jar* and *?the label of the jar* (cf. *the label on the jar*).

The reified processes (i.e., the eventualities designated by nominalizations) and their participants are in an intrinsic relation, in the sense that we cannot conceive of processes without conceiving of their participants, just like we have to, implicitly or explicitly, refer to *the jar* to conceive of *the bottom*. This might suggest at the same time that nominalizations which correspond to transitive clauses and thus can be elaborated by two participants, could allow two *of*-phrases, as in (1c), since, as shown in (4a), *of* can mark the subject and the object. We will return to this issue in section 2.2.4.

### 2.2.2 Preposition *by*

Through a careful examination of the passive construction, Langacker (1982, 1991a), following Langacker and Munro (1975) and Hoard (1979), claims that the passive *by* is meaningful like *of*. In order to justify his claim, he gives several examples, which exemplify "numerous clearly meaningful variants of *by* forming an elaborate lexical network" (Langacker 1991a: 139), including the following:

- (7) a. Bill was approached by Alice.  
b. Bragging by officer will not be tolerated.

Each of the *by*-phrases in (7) predicates the responsibility for the execution of the act. Langacker describes the notion of responsibility in terms of contiguity, a spatial relation between two entities, exemplified in a sentence like *The willow tree is by the river*. Though there is a slight difference between them, the two *by*'s in (7) profile a contiguous relation between the activities described and the actors construed as the sources of those activities. The nominalization *by* profiles such a relation and predicates responsibility for the execution of an act. See Langacker (1982, 1991a) for details.

### 2.2.3 ERG/ABS organization

In an ERG/ABS language transitive objects and intransitive subjects are marked by ABS; transitive subjects are marked by ERG. ERG/ABS organization is characterized with reference

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<sup>4</sup>Langacker does not claim that all *of*'s predicate an intrinsic relationship between entities.

to the position of participants on an action chain. It is important to bear in mind that only the participants are subject to the ERG/ABS system.

An action chain is a useful device for describing aspects of eventualities in terms of energetic interactions between discrete entities. To take an example, imagine the situation where Floyd swung a hammer, and thereby destroyed a glass. This train of events involves causal relations between the three participants *Floyd*, *the hammer*, and *the glass*, where the two sub-events, i.e., Floyd swinging the hammer and the hammer destroying the glass, happened in succession. This is sketched in Figure 1:

Figure 1: [Floyd]====>[the hammer]====>[the glass]

- (8) a. Floyd broke the glass with the hammer.  
 b. The hammer broke the glass.  
 c. The glass broke.

A single verb can encode the whole eventuality described in Figure 1, as in (8a). This verb singles out a portion of the action chain as focus of attention, as in (8b) and (8c). In (8b) the profiled portion of the chain is headed by the instrument; in (8c) the patient's change of state is profiled by *break*. The point is, the head and the tail of an action chain are the subject and the object of a canonical sentence, respectively.

The event type involving transmission of energy is prototypical with respect to an action chain. Other event types--for example, spatial relations and possessor--possessed relations, which do not involve physical energy transfer--are also construed as if they involve "transmission of energy". The notion of an action chain is extended from the physical domain to abstract domains to deal with these asymmetric relations (cf. Talmy 1985 and Croft 1991).

Returning to ERG/ABS organization, Langacker (1991a: 242) details the procedure for determining case in an ERG/ABS language as follows: "(i) assign ABS case to the TAIL of the action chain (or its analog); (ii) from this starting point, trace an UPSTREAM path along the chain; and (iii) if a distinct participant is encountered that lies at the endpoint of this path (i.e., if it heads the profiled segment of the action chain), assign it ERG case."

ERG/ABS organization has a close relationship with the notion of conceptual autonomy (cf. Langacker 1991a, Taylor 1996). A conceptually autonomous entity is conceptualized without making necessary reference to other entities, while a conceptual dependent entity needs to refer to others in its conceptualization. This ERG/ABS assignment procedure suggests that ABS is characterized autonomously and the characterization of ERG depends on the other case,

since ERG cannot be marked without the assignment of ABS.

#### 2.2.4 *Of as an ABS marker*

We have seen what semantic definitions are given to the prepositions *of* and *by*, and ERG/ABS markings within the CG framework. Taylor (1996) discusses why the preposition *of* functions as an ABS marker. I will summarize Taylor's argument over the semantic relation between *of* and ABS.

Though they are motivated independently, i.e., in terms of a spatial relation between two entities, on the one hand, and with reference to an action chain, on the other, the semantic structures of *of* and ABS are characterized in terms of the notion of conceptual autonomy. Since the two semantic structures share partially the same conceptual basis, the preposition *of* behaves as an ABS marker (cf. Langacker 1991b: 380).

According to Taylor, it is not surprising that an accusative language like English exhibits an ergative construal in nominalization. Since nominalization causes an event to be reified as a static, atemporal 'thing', "an energetic construal becomes far less compelling, thereby making way for the possibility of ergative marking, based in an autonomous core construal of an event" (Taylor 1996: 252).

We are now ready to consider why transitive nominalizations do not allow two *of*-phrases, as in (1c). In a transitive eventuality, where two participants are involved, one participant is more intrinsic to the eventuality than the other. Again, let us take the sentence *Floyd broke the glass* as an example, which we have seen in section 2.2.3. The eventuality described by this example is decomposed into two parts, namely, Floyd performing an act of breaking and the glass breaking. It is evident from the fact that *\*Floyd broke* does not make sense that the former part is conceptually incomplete. To conceive of this part, we have to refer to the caused event. The caused event does not hinge on its causer, and thus *The glass broke* does work. In this sense, the glass breaking is conceptually autonomous and the affected entity is intrinsic to the verb *break*. In the nominal counterpart of the sentence *Floyd broke the glass* the object is marked with *of*: *Floyd's breaking of the glass*.

#### 2.3 *By as an ERG marker?*

As we have seen in section 2.1, the preposition *by* has an ERG-like property but it is not an ERG marker. We come now to the point at which it is necessary to discuss such a property of the preposition. Adopting Langacker's semantic definitions of *by* and ERG, we can explicate the ERG-like property of this preposition. After that, I will analyze the examples in

(4) from the CG perspective.

The preposition *by* profiles a relation between an activity and the actor construed as that activity; ERG is assigned to the head of an action chain. The head of an action chain is usually construed as an actor. In this case a *by*-marked NP corresponds to ERG. It is not always the case that an actor interacts with participants. This is the *shooting* case.

Let us look deeper into the examples in (4), repeated as (9), which illustrate the point that we have been considering. In my opinion, the head noun in (9b) is derived from the intransitive verb, not from the transitive verb, as Williams claims.

- (9) a. the shooting of the hunter  
b. the shooting by the hunter

The base verb *shoot* can be either transitive or intransitive. It is a common observation that the intransitive *shoot* enters into the conative construction. Compare the transitive sentence in (10a) and the conative variant in (10b):

- (10) a. Someone shot the hunter.  
b. The hunter shot at the elephant.

The conative construction describes "an 'attempted' action without specifying whether the action was actually carried out" (Levin 1993: 42). If it is intransitive, we expect that (9b) can take an *at*-phrase. And it does. Under the subject reading, (9a) also takes an *at*-phrase. The examples in (11) illustrate this point.

- (11) a. the shooting of the hunter at the elephant  
b. the shooting at the elephant by the hunter

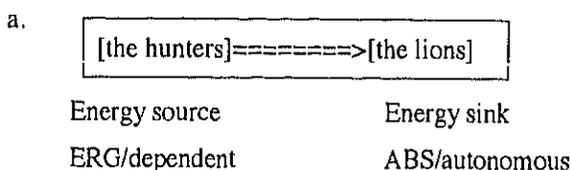
Examples (11a) and (11b) tell us that the intransitive subject can be marked with either *of* or *by*.

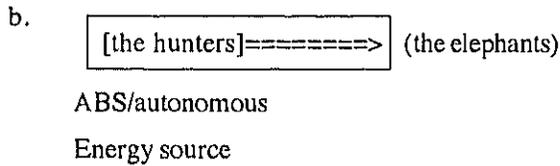
It will become clear how effectively our system works when we consider (11a, b) and (1d) as well. (1d) is repeated as (11c) for convenience:

- (11) c. the shooting of the lions by the hunters

Now let us analyze (11) in terms of the ERG/ABS assignment and an action chain. We can represent the situations described by (11) in simple diagrams as follows:

Figure 2:





Each rectangle in Figure 2 indicates focal portions of the scene the noun *shooting* invokes. In Figure 2a the transitive *shooting* predicates an asymmetrical, energetic interaction between two participants, which are put in square brackets. It describes the scene where the hunters fired their guns at the lions and the bullets caught them. This energetic relation is indicated by an arrow. On the other hand, the intransitive *shooting*, diagrammed in Figure 2b, does not specifically include the target's change of state. This semantic difference is illustrated by the following contrast:

(12) a. \*John shot the elephant, but he missed it.

b. John shot at the elephant, {and he hit it/but he missed it}. (Nakau 1994: 328)

Hence I exclude the target from the rectangle and distinguish it from a participant like *the hunters* by parentheses in Figure 2b.

The names in the rectangles are subject to, in a manner of speaking, the ERG/ABS assignment, because the prepositions *of* and *by* are assigned to participants, as we have seen in sections 2.2. Since ABS is assigned to the tail of an action chain, *the lions* in Figure 2a counts as ABS, marked by *of*; *the hunters* is the energy source and marked by *by*. In this case the energy source coincides with ERG. In Figure 2b the energy source is not referred to as ERG, but ABS. Since it is the only participant in this diagram, *the hunters* counts as the tail of this chain (and the head as well). It is consequently marked by *of*. At the same time, it is the energy source, and thus it is possible that *by* is selected to mark the participant.

It is necessary, at this point, to explain the examples in (3), repeated as (13), in connection with my claim that *by* is not an ERG marker.

(13) a. the expression \*(of aggressive feelings) by patients

b. the assignment \*(of unsolvable problems) by the instructor

c. the destruction \*(of the city) by the enemy (Grimshaw 1990: 52)

The ERG/ABS hypothesis for the distribution of participants in nominalizations could account for the facts in (13) in this way: The lack of the themes prevents the agents from being marked with *by*.

In our position the examples in (13) are supposed to be a reflection of conceptual

autonomy. The objective event related to (13c), for instance, is decomposed into two parts, that is, the enemy performing an act of destroying and the city undergoing a change in state. Since English speakers feel that the former part is conceptually incomplete without the affected entity, the expression \**the destruction by the enemy* is infelicitous. By contrast, if they include the *of*-phrases, the examples in (13) become conceptually complete. The agents cannot be conceived of without reference to the themes.

#### 2.4 Summary

We have seen the semantic structures of the prepositions *of* and *by*, and ERG and ABS markings. The preposition *of* profiles an intrinsic relation between two entities; *by* profiles a contiguous relation between the activities described and the actors construed as the sources of those activities. ERG and ABS are characterized with reference to the position of participants on an action chain. ABS is assigned to the tail of an action chain; ERG is assigned to the upstream participant.

Given these semantic characterizations of *of* and *by* and the ERG/ABS system, we have considered the observation made in the literature that English nominalizations have an ERG property. Taylor argues that the preposition *of* shares the notion of conceptual autonomy with ABS and *of* functions as an ABS marker. As for the preposition *by*, contrary to Williams' claim that it is an ERG marker, I claim that it is not an ERG marker. The superiority of my claim is apparent from the *shooting* case. In the case where energy source and ERG are not coincident, *by* can be used without *of*.

### 3. Analysis

In this section I will make a careful observation of nominalizations which have not been discussed exhaustively.<sup>5</sup> It is generally admitted that there is a parallelism, to a considerable extent, between sentences and nominalizations. Familiar examples are these:

- (14) a. The enemy destroyed the city.  
       a'. the enemy's destruction of the city  
       b. The city was destroyed by the enemy.  
       b'. the city's destruction by the enemy

Not every sentence has the nominalization closely parallel to its syntactic behavior. Some

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<sup>5</sup>It does not mean, of course, that nominalizations I will deal especially with are ignored altogether. Chomsky (1970) makes a short mention of such data, for example.

derived nominals do not enter into what is called the 'passive' nominal construction, while the corresponding sentences passivize. Some nominals derived from transitive verbs behave like intransitives, not transitives. We will focus especially on the second case in this section. The first case will be touched on in section 4.

Nunes (1993) affords a study to give much attention to the case central to our discussion here. She gives a systematic analysis of nominalizations within the role and reference grammar framework. Though I do not enter fully into the details of her analysis, my analysis is compatible with hers. I will seek to deepen her insights within the CG framework and examine the key data in relation to the corresponding sentences.

### 3.1 Data

Let us begin with standard data as follows:

- (15) a. the destruction of the city by the enemy  
(cf. The enemy destroyed the city.)  
b. the avoidance of the cliff by the hikers  
(cf. The hikers avoided the cliff.)
- (16) a. the death of the old man  
(cf. The old man died.)  
b. the arrival of the plane at gate nine  
(cf. The plane arrived at gate nine.) (Nunes 1993: 411)

The nominals in (15) are derived from transitive verbs; those in (16) are derived from intransitive verbs. Recall that the prepositions *of* and *by* mark participants. The referents of the NPs with these prepositions participate in the eventualities described. Our system accounts for (15) and (16) with no difficulty.

Example (15a) describes the eventuality where the enemy carried out an aggressive act against the city and it caused a substantial change in state of the city. To paraphrase this eventuality in terms of an action chain, we can say that energy flowed from the enemy to the city. *The city*, being in the tail of the chain, is marked with ABS; it is then in the *of*-phrase. The action-chain head *the enemy* is marked with ERG, and thus with *by*.

The situation expressed in (15b) involves no transmission of physical energy, in a strict sense. Since it is metaphorically extended to a non-energetic interaction between entities, as mentioned in section 2.2.3, an action chain can describe some interaction between *the hikers* and *the cliff*. It represents the asymmetrical, temporal relation between the two entities. The

hikers intentionally keep certain distance from the cliff. In this situation *the hikers* is picked out as the figure, because moving entities are perceptually more salient than stationary ones. Just as energy source, which is perceived as figure in a scene involving energetic interactions, is the action-chain head, the figure in (15b) is also counted as the head of the action chain, and thus it is marked by ERG. The other entity in (15b) lies at the tail of the chain, and is marked by ABS.

Each of the nominals in (16) has a single participant. An intransitive eventuality contains no other participants upstream from that participant. The sole participant of an intransitive nominalizations is therefore marked by ABS, namely, by *of*.

As I have already mentioned, we do not always find the syntactic parallel between sentences and their nominal counterparts. Nunes provides a number of interesting examples which show syntactic irregularity between sentences and the corresponding nominalizations. There are nominals derived from transitive verbs which behave like intransitives (cf. (11)). Here are some of them:

- (17) a. The toreador entered the arena.  
 b. \*the jubilant entrance of the arena by the toreador  
 c. the jubilant entrance of the toreador (into the arena) (Nunes 1993:396)
- (18) a. The burglar entered the house.  
 b. \*the surreptitious entry of the house by the burglar  
 c. the surreptitious entry of the burglar into the house (ibid.)
- (19) a. The dog attacked the child.  
 b. \*the attack of the child by the dog  
 c. the attack of the dog on the child (Nunes 1993:405)
- (20) a. John resembles his father.  
 b. \*the resemblance of his father by John  
 c. the resemblance of John to his father

The subjects of the transitive sentences in (17-20) are mapped into the *of*-phrases, not the *by*-phrases, of the corresponding nominalizations in the (c) examples, unlike the *destruction* case. These facts complicate the issue of so-called "argument linking" in nominalizations.

In the next section, adopting an insight into "metric" verbs such as *weigh* and *cost* afforded by Langacker (1991b), I will reveal that the objects in (17-20) are marginal members of the direct-object category with respect to passivization and object omission. I claim, then,

that the objects in (17-20) are not construed as participants.

### 3.2 Participant/non-participant distinction

Langacker (1991b: 343-345) observes that "metric" verbs cannot passivize:

- (21) a. My cat weighs eleven pounds.  
 b. \*Eleven pounds {is/are} weighed by my cat.

It is widely assumed that the failure of a verb to enter into the passive construction is taken as evidence that the post-verbal NP is something other than a direct object (cf. Rice 1987a, b). Given this assumption, Langacker (1991b: 344) supposes that "'metric' verbs are intransitive because their landmarks [i.e., grammatical direct objects] are not construed as participants". The same observation applies to the examples in (17-21).

Intransitive-like behavior observed in (17-21) seems to stem from the low transitivity of the corresponding sentences. Sentence transitivity is not necessarily a function of valency. The postverbal NP can be something other than a direct object. Following Langacker (1991b) and Rice (1987a, b), we assume that the omission of objects and the failure of objects to passivize reflect low transitivity of sentences.

The verbs *enter* and *attack* (except *resemble*) allow the direct objects to be omitted:

- (22) a. The police entered (the building) through/by the side door. (CIDE: 460)  
 b. Army forces have been attacking (the town) since dawn with mortar and shell fire. (CIDE: 76)

The verbs *enter* and *resemble* (except *attack*) do not passivize unless special attention is paid to their objects, as in (23-24):

- (23) a. The two customers entered the store.  
 b. \*The store was entered by the two customers. (Bolinger 1974: 72)
- (24) a. Tommy resembles the milkman.  
 b. \*The milkman is resembled by Tommy. (Rice 1987: 430)

We recognize from the examples in (22-24) that the nominals in the direct object position are not prototypical direct objects, or participants. Since only the participants are subject to the ERG/ABS assignment, non-participant entities are excluded from this assignment. In each event described in (17-20) the subject entity is considered the only participant. Naturally, *of* is assigned to them.

We conclude from what we have seen that nominalizations are more sensitive to transitivity than sentences in that non-participants never appear in the *of*-phrase, which is

generally assumed to correspond to the direct-object position of clauses.

### 3.3 A note on stimuli

According to Nunes (1993: 397-399), nominals derived from psychological state verbs behave like intransitive nominalizations. The *of*-phrases in (25) are associated with the subjects.

- (25) a. The love of the child for the puppy is unshakable.  
 b. The admiration of Sam for the dean is sincere.

Nunes observes that the *love* subclass allows the object NP to be marked by *of* as well as *for* when the subject NP occurs in the prenominal genitive position.

- (26) a. The parents' love of the child is unshakable.  
 b. The student's admiration of Sam is sincere.

Nunes observes that derived nominals of this class are ambiguous between an experiencer reading (cf. (25)) and a stimulus reading (cf. (26)) without any prepositional phrases other than *of*-phrases.

- (27) a. The love of the child is unshakable.  
 b. The admiration of Sam is sincere.

We might infer from (25-27) that both experiencers and stimuli are, to the same extent, intrinsic to derived nominals of the *love* class. On the contrary, I will argue, in what follows, that the stimulus role is less intrinsic than the experiencer.

First, if they were the same in intrinsicness, the *love* class could allow two *of*-phrases to which the experiencer and stimulus roles are related. But it cannot take two *of*-phrases at the same time.

- (28) \*the love of Jess of the puppy<sup>6</sup>

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<sup>6</sup>Nunes (1993: 398) gives the following examples, where the experiencers and the stimuli are both marked by *of*:

- (i) a. the knowledge of Sue of the Bible  
 b. the envy of Jess of Ralph's car

She argues that the two *of*'s are semantically distinct. The first *of* is possessive; the second is a direct-object marker. The first *of*-phrase can thus be paraphrased as the following:

- (ii) a. the knowledge Sue has of the Bible  
 b. the envy Jess has of Ralph's car

It is important to notice that the verb *have* in these examples does not strictly imply ownership. Furthermore, Hamamatsu (1995: 6) points out that *destruction* and *the city* stand in a kind of possessive relation, as in the following:

- (iii) the destruction that the city had

(28) tells us that the two roles are different in intrinsicness.

Second, nominals of the *love* class may select prepositions other than *of*.

- (29) a. love {*of/for/towards*} the children  
 b. fear {*of/for/in face of*} the enemy (Taylor 1994: 228)

Other nominals derived from psychological state verbs do not allow *of*.

- (30) a. desire {*\*of/for*} chocolate  
 b. need {*?of/for*} chocolate  
 c. admiration {*\*of/for*} the performance (ibid.)

These facts lead to the conclusion that some stimuli stand in a less intrinsic relation to nouns derived from psychological state verbs than experiencers.

Recall that intrinsicness is a function of conceptual autonomy. Intrinsicness is a gradable notion. We can assume that the stimulus is intermediate in intrinsicness between participants and non-participants. Some stimuli are construed as participants, while others are not regarded as participants. If it counts as an intrinsic entity, a stimulus is marked by *of*. Otherwise, it is marked by a preposition other than *of/by*. The fact that nominals like *love* and *fear* allow *of* might reflect how we construe the mental world invoked by them. As in the case of *the hiker's avoidance of the cliff*, we may recognize some abstract interaction between experiencers and stimuli which can easily be captured by an action-chain schema.

### 3.4 Summary

In this section I have expanded the argument on the "argument linking" issue in nominalizations. Entities marked with *of* or *by* are construed as participants in an event, while entities marked by other prepositions are not regarded as participants. This participant/non-participant distinction is very crucial to nominalizations. If it is not construed as a participant, even an entity mapped onto the direct object position in a clause is not marked by *of*, nor by *by*.

The participant/non-participant distinction influences the syntax of possessive nominals, which we will see in the next section. I simply point out here that non-participants cannot serve

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If we deal with *the city* in (iii) as an argument of *destruction*, it is reasonable to say that the first *of*-phrases in question in (i) are also arguments. At present, however, I cannot say for certain what suggestion examples (ii) and (iii) make. I leave this matter open.

The point to be emphasized is that the second *of* in (i) can be replaced with other prepositions. They can be replaced with *about* and *toward*, respectively. This may suggest that the experiencer is more intrinsic than the stimulus. When it is marked by *of*, the stimulus may be construed as a participant; when it is marked by a preposition other than *of/by*, it may be construed as a non-participant.

as PossNPs even if well-arranged contexts are given.

#### 4. Possessive Nominals

##### 4.1 Data

Our attention has so far been confined to the issue on how a subject and an object are linked to the *of*- and *by*-phrases. As I mentioned at the beginning part of section 3, we sometimes find seemingly syntactic irregularity between sentences and the corresponding nominalizations. As for possessive nominals, some objects cannot enter into the 'passive' nominal construction, even if the corresponding sentences can passivize.

- (31) a. the city's destruction by the enemy  
 b. \*the cliff's avoidance by the hikers

By contrast, subjects can be possessive with no difficulty.

- (32) a. the enemy's destruction of the city  
 b. the hikers' avoidance of the cliff

Interestingly, more objects can enter into the 'passive' nominal construction if they undergo pronominalization, as in (34). This does not mean that all the objects that undergo pronominalization can be possessive, as in (36).<sup>7</sup>

- (33) a. \*music's pursuit  
 b. \*the conviction's expression

- (34) a. Men with the greatest insight into music use one life in *its pursuit* and lack another in which to command words in a way that effectively communicates their musical judgement  
 b. This conviction of the superhuman ... found *its visible expression* in offerings, sacrifices to the spirits or deities. (Taylor 1994: 223)

- (35) a. \*gate nine's arrival (*of/by* the plane) (Nunes 1993: 411)  
 (cf. the plane's arrival at gate nine)  
 b. \*the room's entry (Hayase 1996: 265)  
 (cf. the burglar's surreptitious entry into the house)

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<sup>7</sup>Of course, I do not intend to say that the prepositional object of *arrive* is categorized as the same class as the object of typical transitive verbs. What has to be noticed is that even the object of *enter* is mapped into the prepositional phrase headed by *into*. As we have seen in section 3, some grammatical objects in clauses are construed as non-participants. Such objects should be dealt with as a prepositional object such as that of *arrive*.

- (36) a. \*its arrival (*its* = "gate nine")  
 b. \*its entry (*its* = "the room")

What we have to account for below is (i) for what reason it is easier for subjects to be PossNPs than for objects to be (i.e., (31) vs. (32)), (ii) what leads to the contrast between (31a) and (31b), (iii) why some require pronominalization for being PossNPs (cf. (33) vs. (34)), and (iv) why some are never PossNPs (cf. (35) and (36)). The first question is answered by Langacker's semantic definition of subjects and objects. The second has been approached by many linguists. In recent years Hayase (1995, 1996) explores this phenomenon. The third question is raised by Taylor and solved in terms of topicality. But the fourth question has not been answered, to my knowledge. In what follows I will explicate what previous studies imply and integrate them under the notion of 'cognitive saliency' assumed in a reference-point model proposed by Langacker (1991b, 1993, 1995). We shall summarize in section 4.2 what previous studies say on the first three questions raised above.

As Langacker (1991b) suggests, to characterize PossNP in terms of cognitive saliency is vacuous unless we say specifically what kind of salience is supposedly involved. Developing Langacker's framework, Taylor (1996) explores the notion of possession, and in this large context he considers the semantic and pragmatic nature of possessive expressions which includes 'possessors' in the pronominal genitive position of nominalizations and in the *of*-phrase as well. He imposes two requirements on PossNPs on the reference-point model. The requirements are that (i) PossNP should be topical and that (ii) PossNP should provide reliable cues for the identification of the target. These two requirements are involved in 'cognitive saliency'. Taylor supposes that informativity is a notion relevant to the second requirement. I will however argue that some of the data which seem crucial to informativity can be accounted for by other notions, specifically, intrinsicness and topicality. This suggests that informativity is derivative from these two notions. It will be concluded that the cognitive saliency relevant to PossNP is a function of topicality and intrinsicness.

## 4.2 Previous studies

### 4.2.1 PossNP as a reference point

Langacker (1991b, 1993, 1995) characterizes the possessive NP within a reference-point model. The reference-point model is based on "the idea that we commonly invoke the conception of one entity for purposes of establishing mental contact with another" (Langacker 1995: 58). The reference point is hence required to have "a certain cognitive salience, either

intrinsic or contextually determined" (Langacker 1993: 6). According to Langacker, PossNP functions as a reference point for establishing mental contact with the head noun following it. An entity which functions as PossNP thus has to have a certain cognitive salience.

The reference-point model cannot, however, fully account for every aspect of PossNP in nominalizations. Taylor (1996: 241-242) points out that we expect from the reference-point analysis that the subject and the object of a transitive verb could equally be possessive. But in fact, as Langacker himself suggests, the subject is chosen as PossNP preferentially, as we have seen in (31-32), repeated here as (37) and (38), respectively:

- (37) a. the enemy's destruction of the city  
       b. the hikers' avoidance of the cliff  
 (38) a. the city's destruction by the enemy  
       b. \*the cliff's avoidance by the hikers

Langacker (1995: 60) explains why the subject is preferentially used for PossNP. The subject easily discharges the reference-point function because the subject is, by definition, of great salience within a scene (see Langacker 1987a: 231). Such a status that the grammatical subject has is closely related to its role in discourse. It is generally agreed that there is a tendency for the grammatical subject to correlate with the discourse topic (cf. Chafe 1987). We say that the subject is topical, inherently and contextually.

#### 4.2.2 *Affectedness constraint*

In this section we shall consider the second question: What leads to the contrast between (38a) and (38b)? Semantic analyses of this issue have been attempted since Anderson (1979), who proposes the familiar notion of "affectedness". Hayase (1995, 1996) develops this notion within a CG framework established by Croft (1991), which is compatible to Langacker's. Adopting an energy-dynamics-based model of events, called a causal chain, analogous to an action chain, she makes the following generalization: A passive nominal construction is appropriate when the object is the only participant that is involved in the BECOME(-STATE) segment of a causal chain. To put it another way, the object which undergoes, at least, change of state/location serves as PossNP.

Hayase's theory accounts for the contrast between (38a) and (38b) in the following way. The object NP *the city* in (38a) has undergone a drastic change of state, such that subsequent to the enemy's destructive act the city is not categorized as a CITY. This means that the object is involved in the BECOME-STATE segment of the causal chain. (38a) is thus appropriate. By

contrast, the object NP *the cliff* in (38b) looks no different from a cliff that has not been avoided. The participant involved in the BECOME segment is the subject *the hikers*, not the object *the cliff*. (38b) is thus ruled out.

It is unclear how Hayase deals with the contrast between (33) and (34), repeated as (39) and (40), respectively, since she limits her attention to the case where objects are full nouns.

- (39) a. \*music's pursuit  
 b. \*the conviction's expression
- (40) a. Men with the greatest insight into music use one life in *its pursuit* and ....  
 b. This conviction of the superhuman ... found *its visible expression* in offerings, sacrifices to the spirits or deities.

When they are pronominalized, the objects can occupy the pronominal genitive position. Hayase's theory by itself cannot account for the contrasts between (39) and (40).

Taylor accounts for the contrast between (39) and (40) by the first requirement--PossNP should be topical. If an entity is referred to by a pronoun, the referent is assumed to be highly topical, or, at least, in short-term memory (cf. Gundel et al. 1993, Chafe 1976, 1987). Thus pronominalization effectively enhances the topicality of the objects in (39-40).

What has to be noticed is that, as I have already mentioned, contextual manipulation like pronominalization never improves the acceptability of (35), as shown in (36). They are repeated as (41) and (42), respectively:

- (41) a. \*gate nine's arrival (of/by the plane) (Nunes 1993: 411)  
 (cf. the plane's arrival at gate nine)  
 b. \*the room's entry (Hayase 1996: 265)  
 (cf. the burglar's surreptitious entry into the house)
- (42) a. \*its arrival (*its* = "gate nine")  
 b. \*its entry (*its* = "the room")

Given the first requirement proposed by Taylor, we might expect that (40) and (42) would be equally acceptable, because the referents of the pronouns in (42) are thought to be topical.

It is worthwhile to consider the notion of informativity here. Though Taylor's treatment of some data will be criticized, this notion contains his perspective insights into the semantic/pragmatic nature of PossNP. Clarifying it gives us deeper insights into the contrast between (40) and (42).

### 4.2.3 Informativity

Taylor brings up the following issue: Why does the form NP's N give some PossNPs a subject reading and some an object reading? He gains a slightly different perspective on PossNP, and proposes informativity so as to settle this issue. Previous studies consider qualifications for PossNP such as affectedness and topicality, and attempt to distinguish NPs that can be PossNPs from ones which cannot. Informativity can indirectly rule out NPs which cannot occupy the prenominal possessive position. If a PossNP does not receive such-and-such a reading, the entity related to that reading is not informative vis-à-vis the head noun. Taylor suggests that informativity is similar to but distinct from intrinsicness, because it has a different range of application. I however pursue the idea that informativity is derivative from intrinsicness and topicality. I shall endeavor to show that informativity is reducible to topicality and intrinsicness. Before going into our main discussion, let us summarize the notion of informativity.

Informativity is very complicated in its characterization. It does not pertain to the inherent property of participants. Rather, it captures a certain relation of participants to the eventuality described by a derived noun. It is characterized as follows:

- (43) An entity E is informative with respect to a relation R in proportion to the number, and specificity, of inferences that may be drawn with respect to E, given a characterization of R. (Taylor 1996: 247)

An informative entity can be PossNP. This is illustrated in (44):

- (44) a. John's love  
 b. the city's destruction  
 c. \*the cliff's avoidance

In (44) the subject *John* and the object *the city* are regarded as informative; on the other hand, the object *the cliff* is not. Taylor gives a more specific characterization of each case. According to Taylor, if we consider a skeletal sentence *X loves Y*, our inference with respect to *X* is more specific than with respect to *Y*. *X* is prototypically a human being and *X* is in a certain emotional or cognitive state. On the other hand, *Y* may be human or non-human, animate or non-animate, concrete or abstract. *Y* could be a figure of *X*'s imagination. He concludes that *X* is a more informative participant in the relation designated by *love*. Similarly, with *X destroyed Y*, *Y* is more informative than *X*, because we can infer more with respect to the former. *Y* is a thing which underwent a drastic change of state. *X* is just an entity which

exerted a force. But we cannot draw any more specific inference with respect to *X*. *X* may or may not be human. By contrast, in the relation designated by *avoid* the object *Y* is less informative than *X*. *Y* is just an obstacle or something. *X* is a volitional actor who behaved in a certain manner to keep some distance from *Y*.

We are now in a position to say that informativity is reducible to intrinsicness and topicality. Recall that an entity intrinsic to a derived noun can be in the *of*-phrase and that PossNP has to be topical. The PossNPs in (44) can be in the *of*-phrase:

- (45) a. the love of John  
 b. the destruction of the city  
 c. the avoidance of the cliff

As we have already observed, the subject is more inherently and contextually topical than the object. In (45a) since the intrinsic entity is the subject, *John* can be possessive. If we interpret Hayase's affectedness constraint as describing the inherent topicality of participants, we can say that *the city* in (45b) is more inherently topical than *the cliff* in (45c). (45c) is not appropriate because *the cliff* is not so topical in terms of energy transmission though it is intrinsic to *avoidance*. It is concluded from these that an informative entity is both intrinsic and topical vis-à-vis a head noun.

Before leaving this section, I will reconsider in this new light some data which Taylor thinks are pertinent to informativity. First, let us observe nominals derived from the psychological predicate *bore*:

- (46) a. the boredom of the lecture  
 b. the boredom of the students  
 (47) a. \*the lecture's boredom  
 b. the students' boredom

Taylor supposes that the experiencer role and the stimulus role are, to the same degree, intrinsic to the head noun, since both can be in the *of*-phrase. The stimulus role cannot be the reference point for the head noun, but the experiencer role can. He attributes the contrast between (47a) and (47b) to informativity. The experiencer is more informative than the stimulus.

It would be fallacious to say that the experiencer and the stimulus stand in an intrinsic relation, to the same degree. The fact that both the experiencer and the stimulus can be in the *of*-phrase leads Taylor to the conclusion that their intrinsicness makes no difference. It is important to note that, as Taylor observes, (46a) and (46b) correspond to (48a) and (48b),

respectively:

- (48) a. The lecture was boring (for the students).  
 b. The students were bored (with the lecture).

Taylor may suppose that the adjectives *boring* and *bored* share the same conceptual content with the stem verb *bore*, but they impose different construals on the same objective world. From this he may implicitly assume that *boredom* is related to the verb *bore*. As observed in Chomsky (1970), Amritavalli (1980) and Rozwadowska (1988), among others, the noun *boredom* does not receive a causative reading as the base verb does. Rather, its meaning corresponds to the adjective's one. Syntactically, the derived nouns in (46) are related to the corresponding adjectives in (48), not the base verb, as illustrated in (49):

- (49) a. the boredom of the lecture for the students  
 b. the boredom of the students with the lecture (Taylor 1994: 231)  
 c. \*the lecture's boredom of the students

Since the derived nominal *boredom* is semantically related to the adjectives and the relation between the noun *boredom* and the verb *bore* is an indirect, or morphological but not semantic, relation, it is not surprising to suppose that the stimulus is intrinsic to the noun derived from *boring* and the experiencer to that derived from *bored*. We do not have to assume that the two semantic roles are intrinsic, to the same degree, to the verb *bore*. We might say that they have the same intrinsicness, on the surface, to *boredom*, because the two base adjectives are morphologically related to one and the same form.

Let us return to the contrast in (47). If it is indeed the case that informativity is a complex of intrinsicness and topicality, what we have to show is that the experiencer is more topical than the stimulus, since we have already found that both are 'equal' in an intrinsic relation to *boredom*.

It is generally assumed that each entity has its own topicality, by its nature. (See Deane (1987: 67) for the Silverstein Hierarchy, Langacker (1991b: 306-307) for the empathy hierarchy, and also Quirk et al. (1985: 322-323)). Some entities are inherently high in topicality while some are low. Taylor (1996: 219-221) assumes that inherent topicality is determined by "egocentricity, position in a taxonomic hierarchy, and earliness of acquisition". According to Deane (1987) and Taylor (1994, 1996), the more inherently topical an entity is, the more likely it is to function as PossNP. This generalization seems to apply to the nominalizations into which deadjectival nominals enter.

- (50) a. the tallness of the tree  
 b. ??the tree's tallness  
 c. John's tallness

Since human NPs are more inherently topical than inanimate NPs, (50b) is not so natural as (50c).<sup>8</sup> With *boredom* in (47a), which is derived from the adjective *boring*, *the lecture* is inanimate and thus it is unacceptable.

Second, according to Taylor, some subjects which appear to be extrinsic to head nouns can be PossNPs. If so, this would pose a problem for my claim that informativity is a complex of intrinsicness and topicality. Taylor takes this as evidence for informativity, since he supposes that it is distinct from intrinsicness. He assumes that with *invasion*, informativity is evenly distributed between the subject and the object, and we can thus gain both a subject and an object reading of (51a).<sup>9</sup> Compare (51a) with (51b), where the object, not the subject, is informative to the head noun:

- (51) a. Iraq's invasion (Subject =  $\sqrt{\quad}$ ; Object =  $\sqrt{\quad}$ )  
 b. the country's destruction (Subject = \*; Object =  $\sqrt{\quad}$ )

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<sup>8</sup>Facts are not so clear as I observe here. Deane (1987: 69) observes that the abstract noun *loyalty*, derived from *loyal*, allows a wide range of prenominal PossNPs. Here are some of the data he gives:

- (i) a. John's loyalty must not be questioned.  
 b. The city's loyalty to its founder was beyond doubt.  
 c. ??I would often meditate on love's loyalty.

The possessor in (ib) might be metonymically interpreted as human. I found in *TIME ALMANAC Reference Edition (1989-1994 January)* the following data:

- (ii) Academic proponents of cumulative voting swear by such a system's mathematical elegance. (*TIME*, 4/25/1994)

The concept of the PossNP of *such a system's mathematical elegance* seems low in inherent topicality. But the PossNP is topical in this discourse, as the word *such* shows, and thereby its total topicality is enhanced.

<sup>9</sup>In addition to (51a), Taylor gives this example: *John's burglary*. This also has two readings, i.e., a subject reading and an object reading. Though I do not have detailed data for considering *burglary*, I guess that it will show the same behavior as *invasion*.

Langacker (1993: 10) provides the following example: *Booth's assassination*, where John W. Booth is the assassin of President Abraham Lincoln. The base verb *assassinate* does not have intransitive use (e.g., *Booth assassinated \*(Lincoln)*). The example Langacker gives needs explanation. I simply stipulate at present that English speakers could complement the intended *of*-phrase and interpret the example in question. The verb *assassinate* imposes more specific restrictions on its object than, say, *kill*. The direct object of *assassinate* has to be an important or famous person; that of *kill* does not have to be.

Interestingly, the *of*-phrases in (52) are only interpreted as the objects.

- (52) a. the invasion of Iraq  
 b. the destruction of the country

Given the intrinsicness hypothesis and the fact in (52a), *Iraq* in (51a) would require the object NP under the subject reading. Contrary to our expectation, we can get the subject reading of (51a) without an intrinsic NP.

Taylor might implicitly assume that the nominalization with the subject reading and that with the object reading in (51a) are related to the same transitive verb. A careful observation of data reveals that this assumption is invalid. Let us consider the following example:

- (53) a. Concentrations of troops near the border look set to invade within the next few days. (CIDE: 79)  
 b. the invasion of Iraq into Kuwait's business affair

(53a) indicates that the verb *invade* has intransitive use. Though it is hard to gain the subject reading of the example in (52a), as (53b) shows, the addition of the *into*-phrase to (52a) reinforces the subject reading.<sup>10</sup> Assume that (51a) with the subject reading is related to the intransitive verb, and it poses no problem for me. Rather, it is a piece of evidence in favor of my claim.

I have shown that some of the data which seem crucial to informativity can be account for without this notion. This is not the whole story, however. Taylor makes further observations about data which seem difficult to account for only in terms of intrinsicness. A subject reading becomes more likely than an object reading if some derived nominals and representational nouns like *portrait*, *photograph*, and *statue* are modified by some kinds of adjective or pluralized.

- (54) a. the ambassador's dismissals  
 b. John's attempted murder  
 c. the policeman's many arrests (Taylor 1994: 233)

If we cannot account for these facts without informativity, we will admit that informativity is a necessary notion, and we will have to consider the relation of informativity with intrinsicness and topicality. If (54) are proved not to be crucial to informativity, we can say that the notion is

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<sup>10</sup>Similar facts are also observed in Nunes (1993: 404). She argues within the RRG framework that (51a) cannot gain the subject reading because an accomplishment reading, or a transitive reading in our terms, is preferred to an activity reading, or an intransitive reading.

not essential to grammar. This is left to future research.

#### 4.2.4 Summary

Following Langacker (1991b, 1993, 1995), I assume that an entity which functions as PossNP has to have a certain cognitive saliency. I have developed Taylor's (1994, 1995) theory and claimed that the cognitive saliency relevant to PossNPs is a function of topicality and intrinsicness. We have found that an entity the saliency of which is inherently high does not require much discourse topicality to function as PossNP, but an entity with low saliency needs a large amount of discourse topicality for satisfying the qualification for PossNP.

#### 4.3 Cognitive saliency

A question immediately presents itself in regard to my claim that topicality and intrinsicness are involved in the cognitive saliency of PossNPs. Since the object of a transitive verb is in the more intrinsic relation to the process described than the subject, we predict that the former is the more salient in terms of intrinsicness than the latter. At the same time, we predict that the transitive subject is the more salient in terms of inherent topicality than the transitive object, because the subject is the most prominent within a scene, by definition. Which is the more salient in total?

I argue below that the transitive subject is the more salient than the object. Consider the following data given in Fellbaum (1987: 83):

- (55) a. The repair of the hall will bring out the ceiling decoration.  
 b. ??The hall's repair will bring out the ceiling decoration.
- (56) a. The release of the prisoner would be premature.  
 b. ??The prisoner's release would be premature.

Fellbaum gives the examples above to show that passive nominals have an accomplishment interpretation, or a delimited interpretation, in the sense of Tenny (1987, 1994). The low acceptability of the (b) examples in (55-56), according to Fellbaum, is due to the nonaccomplishment reading reinforced by the verb phrases.

Fellbaum's aspectual account of passive nominals is disputed by Taylor (1994, 1996) and Hayase (1995, 1996). Taylor observes that passive nominals receive a nonaccomplishment, or an activity, reading. Hayase points out that some nominals derived from activity verbs can enter into the passive nominal construction.

However, they leave unanswered the question of why (55b) and (56b) are degraded in acceptability. It is important to notice that given an appropriate context, they are improved in

acceptability. Compare (55b) with (57):<sup>11</sup>

- (57) The building has tradition of more than a century. It has been visited by a lot of VIPs from around the world. But it has become too old to use. The costly ceiling decoration has faded. It needs extensive repairs. But I believe that the hall's repair will bring out the ceiling decoration.

The examples in (55) and (57) suggest that even an affected object needs a certain amount of topicality for being PossNP. It is quite certain that the object, even if affected, is not so topical as the subject and thus it is not so easy to be PossNP.

We shall examine further the following examples that illustrate the point we have been considering:

- (58) a. the city's destruction  
 b. \*the cliff's avoidance  
 b'. its avoidance  
 c. \*the room's entry  
 c'. \*its entry

Among objects, some can be full NP possessives, as in (58a); some require pronominalization to function as PossNPs, as in (58b'); some are not allowed to be PossNPs even if well-arranged contexts are given, as in (58c'). In (58) PossNPs are listed in order of inherent saliency. An affected entity such as *the city* in (58a) is more salient or inherently topical than a non-affected one such as *the cliff* in (58b) (cf. Hayase's affectedness constraint); a non-participant like *the room* in (58c) is the least salient in intrinsicness and inherent topicality, since it is not marked by *of* or *by* and it is not involved in the BECOME-STATE segment of a causal chain.

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<sup>11</sup>One might feel that (57) still has some unnaturalness. This is probably because it is difficult to give a context in which the intended referent is uniquely identifiable but not activated nor in focus. It is not clear what Fellbaum means by the nonaccomplishment reading reinforced by a context, but if it means that an event does not take place in uttering the sentence expressing it, I can give as a counterexample to her the following excerpt from *TIME* (8/14/1989):

But a poll conducted last Thursday for *TIME/CNN* by Yankelovich Clancy Shulman indicates substantial public recognition that a big stick may not be the answer to an explosive and delicate situation. Among those questioned, 45% said the U.S. should retaliate in this instance with military action and 39% said it should not. But when presented with an array of options, 58% of the respondents said the U.S. should negotiate with terrorist groups for *the hostages' release*, and between 45% and two-thirds rejected various specified U.S. military options. (Italics are mine.)

We can safely state that the participant/non-participant distinction is more crucial than the ERG/ABS distinction. Both ERG and ABS are involved in an energetic interaction and related only to participants in an event. We cannot conceive of a process without participants. By contrast, non-participants are not essential to a process. We can assume that there is little, if any, difference in intrinsicness between a subject and an object, while the difference between participants and non-participants is very large. Given this assumption, we can say that the inherent saliency of non-participants is so low that no contextual manipulation can increase their saliency to a certain level. This is my answer to the fourth question raised in section 4.1--why are some objects never PossNPs?

To sum up, we can rank subjects, affected objects, non-affected objects, non-participants according to intrinsicness, inherent topicality, and the total saliency measured by the first two notions, as given in (59):

- (59) a. Intrinsicness:  
        $ABS \geq ERG \gg$  non-participants
- b. Inherent topicality (in terms of energy flow):  
        $Subj > Affected\ Obj > Non-affected\ Obj \gg$  non-participants
- c. Total cognitive saliency ( $=(a)+(b)$ )  
        $Subj > Affected\ Obj > Non-affected\ Obj \gg$  non-participants

The higher ranked an entity is, the less amount of discourse topicality it needs to serve as PossNP; the lower ranked, the more amount of topicality an entity needs. Since they are relatively high in saliency, affected objects do not undergo pronominalization to be PossNPs; if they are pronominalized, non-affected ones are given enough amounts of saliency. Non-participants are too low in saliency to be PossNPs, even if they are pronominalized.

## 5. Concluding Remarks

We have considered the syntax of English nominalizations from a CG viewpoint. CG assumes that syntax is symbolic, and thus syntactic phenomena can be account for in semantic terms. We have developed Taylor's theory and showed that the participant/non-participant distinction is crucial for the nominalization syntax. By explicating the relation of this distinction with ERG/ABS assignment, we can give a natural account of the "argument linking" phenomena, as seen in section 3. Entities regarded as participants are subject to *by/of* assignment. An entity is marked by *of*, when it stands in an intrinsic relation to a head noun; if

construed as energy source, it is marked by *by*. Where an intrinsic entity is referred to as energy source, both prepositions can be assigned to the entity. On the other hand, since they are outside of the focus of predication, non-participants are not marked by *by/of*.

In section 4 we have revealed that the participant/non-participant distinction is also crucial to distinguishing entities that can be PossNPs from ones that cannot. PossNPs are assumed to have a certain cognitive salience. The cognitive saliency relevant to PossNP is determined by discourse-based and inherent topicality and participanthood (or intrinsicness). An entity is required to have a certain cognitive salience, by its very nature, to serve as PossNP. Entities which meet this requirement are classified as participants. Non-participants are too low in inherent saliency to be PossNPs, even if appropriate contexts are given to them.

We have also considered the nature of informativity in that section. We have pursued the idea that informativity is reducible to intrinsicness and topicality. Some of the data which appear crucial to informativity are proved to be accounted for by intrinsicness and topicality. Some cases are however left open. It is worthwhile to reconsider what informativity is.

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