

Cognate Objects and NP-Movement*

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1. Introduction

It has been observed in the literature that cognate objects cannot undergo NP-movement, as the following examples show:^{1, 2}

(1) a. *An unpleasant laugh was laughed by Mary.

(cf. Mary laughed an unpleasant laugh.)

b.?*A blood-curdling scream was screamed by one of the campers.

(cf. One of the campers screamed a blood-curdling scream.)

c. *{A/Her} silly smile was smiled by Shirley.

(cf. Shirley smiled {a/her} silly smile.)

The purpose of this paper is to consider the impossibility of NP-movement of cognate objects and provide a plausible explanation for it within the principles-and-parameters framework of generative grammar. This paper is organized as follows. In section 2, we review Jones' (1988) analysis and point out some problems with his analysis. In section 3, we argue firstly that cognate objects are arguments ($[+\theta]$) in the sense of Hale and Keyser (1993), and thus should not be regarded as pure adjuncts (section 3.1). We then propose a syntactic operation for the interpretation of a cognate object (specifically, the interpretation of the modifier in a cognate object (section 3.2)). The syntactic operation provides an account of the impossibility of the NP-movement. At the end of the section, we consider some consequences of the syntactic operation proposed in section 3.2. In section 4, we will see that our analysis also accounts for the behavior of cognate objects with regard to *wh*-movement. Section 5 makes concluding remarks.

2. Jones' (1988) Analysis

2.1. Case-Theoretic Approach

Jones proposes a Case-theoretic analysis to explain the impossible NP-movement of cognate objects. Starting with a question about Larson's (1985) analysis of bare NP adverbs, Jones (1988) proposes Revised Case Filter (RCF), which relates the requirement of *structural* assignment of Case (CASE in Jones' terms) with the requirement of θ -role assignment. (The RCF can be seen as another version of the Visibility Condition, as we will see below.) Jones' RCF is given below (α denoting either '+' or '-')

(2) Revised Case Filter:

*NP [$\alpha \theta$, - α CASE]

The RCF requires that both θ -marking and CASE-marking on an NP (or DP) should coincide. For example, adverbs as in the following sentences are assigned no θ -role nor CASE by the verbs:

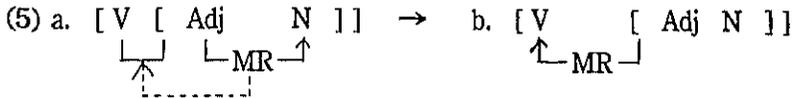
- (3) a. John died *gruesomely*.
 b. Harry lived *uneventfully*.
 c. Bill sighed *wearily*.

Bare NP adverbs are adjuncts as well in that they are assigned no θ -role by the verbs, and hence should have no structural Case. In effect, the adjunct status of adverbs and bare NP adverbs explains the impossibility of NP-movement (passivization). The movement results in a CASE-conflict: a constituent which should be, CASE-less is assigned a CASE in the subject position.

- (4) a. *This morning was arrived by John.
 b. *The wrong way was gone by George.
 c. *This way is danced by Mary.
 d. *Several hours were stayed on the beach by Jill.

Pointing out the fact that cognate objects have an adverbial interpretation, Jones argues that they are also assigned no θ -role by the verbs, and hence must have an adjunct (non-argument) status. In this sense, they are similar to adverbs or bare NP adverbs. Being adjuncts ($[-\theta]$), cognate objects must not be assigned a structural Case ($[-\text{CASE}]$) due to the RCF in (2). As a result, passivization of cognate objects ($[-\theta, -\text{CASE}]$) would result in a CASE-conflict and hence impossible: a cognate object ($[-\text{CASE}]$) cannot move into the subject position, where a nominative Case (CASE) is assigned.

At the same time, since cognate objects are NPs, they must be Case-assigned somehow. Jones assumes that the Case of a cognate object is a default (accusative) Case, which is assigned at PF. Moreover, it is widely known that cognate objects have an adverbial interpretation (having an "adjunct-predicate" status in Jones' terms). In order to resolve the gap of a cognate object between this adjunct-predicate status and the categorial status as NP, Jones proposes an interpretation mechanism. That is, (LF-) "transfer" to the VP of the modificational relation between the modifier and the head (N-head) within a cognate object: the constituents within the VP (i.e., the cognate verb and its cognate object) come to establish a modificational relation. This mechanism can be schematized as in (5):



The adjective (Adj) and the N-head is in a modificational relation (MR): the adjective modifies the N, represented with a solid arrow in (5a). Through the interpreting process (LF-transfer), the 'modificational' relation is transferred to the relation between the NP complement and the verb, represented with a dotted arrow. As a result, a cognate object acquires an adverbial status and modifies the cognate verb, as in (5b).

2.2. Problems with Jones' Analysis

In this subsection, we will point out three problems with Jones' (1988) analysis. The first problem is concerned with Jones' analysis of cognate objects as NP adjuncts. The fact that cognate objects are able to be paraphrased into adverbials does not necessarily lead us to conclude that the relation between a cognate object and the cognate verb is an (adverbial) modificational relation. Rather, there are some facts which suggest that that relation is an argument (complement)-predicate relation, and that the cognate object should be marked as [+ θ]. In other words, there are some facts in which cognate objects do not behave like other adverbials. We will review some of the observation in Massam (1990) below, in view of which she also argues for the claim that a cognate object is a "true object" (i.e., a complement) of a verb and is assigned a θ - role.

Consider the following examples:

- (6) a. *Mordred killed the knight a gruesome kill.
 b. *Ethel moved her lips a slight move(ment).
 c. Mordred killed the knight gruesomely.
 d. Ethel moved her lips slowly.
 e. Alice will read the book tomorrow.

(Massam (1990))

While the occurrence of pure adverbials is rather free (as in (6c-e)), it is obvious from the examples in (6a,b) that not all verbs can take an 'extra' cognate object. If cognate objects were pure adverbials, they could occur freely and the examples in (6a,b) should be acceptable, since the 'cognate' NP in each sentence (*a gruesome kill* in (6a) and *a slight move(ment)* in (6b)) is semantically compatible with the rest of the sentence. Thus, even if they were, nothing seems to rule out (6a,b). Then, it is plausible to consider that those NPs are complements to the verbs. The fact in (6) shows the restricted behavior of a cognate object, and, as Massam claims, argues that a cognate

object is not an adverbial to a verb, but a true object.

Moreover, it is a well-known fact that, as shown in (7), an NP complement in English is subject cannot be separated, by an adverbial, from the verb assigning a Case to it: this structural requirement is known as the adjacency condition (cf. Stowell (1981)).

- (7) a. *John kisses often Mary.
 b. John often kisses Mary.

Now, the examples in (8a,b) show that cognate objects (unlike adverbials) are also subject to the adjacency condition: an adverb cannot intervene between a cognate verb and its cognate object.

- (8) a. Let Ben run (*quickly) a little run.
 b. Ben sneezed (*that way) a glorious sneeze.

(Massam (1990))

This shows that cognate objects, in parallel to 'pure' complements, are assigned an accusative Case by the verbs, again implying the argumenthood of a cognate object. If a cognate object is identified as a true object of a cognate verb, i.e., an argument ($[+ \theta]$), then, following the Visibility Condition, they should be identified as $[+Case]$ as well. Given that, the explanation in terms of Case-conflict cannot be maintained as an account for the unacceptability of passive sentences with a cognate subject. It is true that the adjacency condition does not apply to all complements: PP- and CP-complements are not subject to it, and can be separated from the verbs. However, cognate objects are NPs and, if they are true arguments, they should be adjacent to the verbs. The examples in (8a,b) show that they *are* arguments, and contrast with the following example:

- (8) c. Ben always runs (quickly) that way.

An adverbial NP, as the bare NP adverb *that way* in (8c), is not a complement to the verb, and hence is not assigned a Case by the verb. Thus, the acceptability of (8c) indicates that the adjacency condition does not apply to adverbial NPs.

Another problem with Jones' (1988) analysis is concerned with the RCF. In generative grammar, the relation between Case-requirement of an NP and θ -role assignment is defined as the Visibility Condition (cf. Chomsky (1981)): ³

- (9) Visibility Condition:

A chain is visible for θ -marking if it contains a Case position.

(Chomsky and Lasnik (1991))

The Visibility Condition requires that an NP should be Case-marked when it receives a

θ -role; a Caseless NP cannot be assigned a θ -role. Thus, the Visibility Condition in (9) is a (Case-)requirement for θ -marking on an NP.

On the other hand, Jones' (1988) RCF is intended to define a (θ -role) requirement for Case (CASE)-marking, a reversed version of the Visibility Condition. Jones claims as follows:

- (10) A maximal lexical projection is Case-identified if and only if it is
 θ -identified. (Jones (1988))

Replacing the Visibility Condition with the RCF, however, makes the Case system more complicated. That is, so-called inherent Cases are partly exempted from the Case filter: they are not subject to the Case filter. It has long been assumed that inherent-Case assignment crucially depends on θ -role assignment, which is formalized as in (11):

- (11) If α is an inherent Case-marker, then α Case-marks NP if and only if
 θ -marks the chain headed by NP. (Chomsky (1986a: 194))

With the RCF, he needs to divide the inherent Case into two groups: one is structurally assigned to an NP ([+CASE]) by a governing verb, and the other is not ([−CASE]), despite the fact that in either case, Case-marking depends on θ -marking (i.e., [+ (inherent) Case]).

Let us take some examples. The NP which is assigned a dative Case in German is licensed by the assignment of a θ -role, and the Case in question has been considered, by definition, to be an instance of the inherent Case. This θ -role assignment is carried out by the verb governing the NP and hence, in Jones' (1988) analysis, this inherent Case is analyzed to be structurally assigned ([+CASE]):

- (12) Dative Case in German: [+CASE] (inherent Case)

Das Mädchen dankte dem Mann.

The girl [NOM] thanked the man [DAT]

(Jones (1988))

Let us now consider another example. Ablative Case in Latin is licensed by the instrument θ -role, and thus can be regarded, again, as an instance of the inherent Case. Jones claims, however, that the NP which is assigned this (ablative) Case is not assigned a θ -role by the verb. Thus, this inherent Case, in Jones' analysis, is considered not to be a structurally-assigned Case ([−CASE]):

(13) Ablative (Instrument) Case in Latin: [– CASE] (inherent Case)

Marcus januam clave aperit.
 Marcus [NOM] door [ACC] key [ABL] opens
 ‘Marcus opens the door with the key.’

(Jones (1988))

Although both dative Case in German and ablative Case in Latin are instances of inherent Case, which is licensed by a θ -role, the former is analyzed as [+ CASE], parallel to what has been called ‘structural Case’, and the latter as [– CASE].

As is the case in English, cognate objects in languages with overt Case-marking are often realized with an accusative Case, which is less marked than a dative or an ablative Case:

(14) Cognate Objects in Arabic, German, Latin: [– CASE]

- a. Yajatahidu zijtihaada zaltamittina
 he-studies studying [ACC] the ambitious [GEN]
 ‘He studies in an ambitious way.’
- b. Johann starb einen milden Tod.
 Johann died a peaceful death [ACC]
- c. Faciam ut mei memineris dum vitam vivas
 I-will-make that me you-remember as long as life [ACC] you-live
 ‘I will make you remember me as long as you live your life.’

(Jones (1988))

The accusative Case of a cognate object is also analyzed as [– CASE] because, in Jones’ analysis, the cognate object is not at all assigned a θ -role, and thus the Case cannot be structurally assigned and hence [– CASE].

Though marked as [– CASE], Jones claims, the accusative Case of a cognate object is still different from the ablative Case in Latin with respect to θ -marking. In order to distinguish the [– CASE] of the ablative Case and that of the accusative Case of a cognate object, he claims that the latter is a ‘PF Case’ assigned at PF component. In sum, what has been called inherent Case is divided into two ([+ / – CASE]), and those Cases which are marked as [– CASE] are also divided into two (inherent Cases as in Latin and the PF Case of a cognate object).

Let us move to the third problem with Jones (1988) analysis. It is concerned with his interpretation mechanism for cognate objects, namely ‘transfer’ in (5). Although (6a,b) and (8b,c) are unacceptable, which implies that cognate objects have an argument-like status, cognate objects do have an adverbial interpretation. Whatever

analysis may be given to the impossibility of the passivization of cognate objects, some kind of mechanism is needed for providing proper interpretations (adverbial status) for cognate objects, and the mechanism in (5) is proposed, by Jones, for this purpose. However, the 'transfer' mechanism in (5) is not sufficient. This is firstly because, as Jones himself implies, the relation between the modifier and the N-head within a cognate object is different from the argument-predicate relation held between a cognate object and a cognate verb: the members involved in these relations are categorially and configurationally different from each other. Moreover, there are some cases where cognate objects are not allowed to have an adverbial interpretation. Consider the following example:

- (15) a. Mary sang a beautiful song.
 b. Mary sang beautifully.

Jones (1988: 93) claims that "the head noun acts as a surrogate for the verb, with the result that the modification relation assigned to the NP by the adjective or other modifier . . . is transferred to the VP at the level of LF (or Semantic Representation)".⁴ If the application of the 'transfer' in (5) were conditioned on the 'surrogation', which can be paraphrased into morphological and semantic similarities between the verb and the head noun, the interpretation process should also apply to the cognate object in (15a), because the head noun *song* is enough to be qualified as a surrogate for the verb *sing*. Then, the modificational relation in the cognate object should be transferred to the relation between the verb *sang* and the complement *a beautiful song*, and the cognate object could also be interpreted as an adverbial (as in (15b)). Since this is not the case, we need to refine the interpreting mechanism in (5). (In 3.4.1, we will return to such examples as in (15a).)

3. An Alternative Analysis

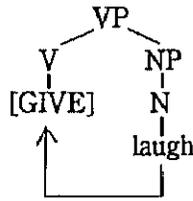
3.1. Cognate Objects as Arguments ($[+ \theta]$)

In this subsection, we will argue that cognate objects are assigned a θ -role by the verb. By way of explaining the strong island effects of a certain type of cognate object, I have extended elsewhere (Nogawa (1995)) the analysis of the lexical relational structure (LRS) of an unergative verb in Hale and Keyser (1993), and proposed an analysis of the derivation of a cognate verb. I have argued there that a certain type of cognate verb has the LRS which is identical with that of an unergative verb, and that it is derived by N-copying operation. For example, the sentence with the cognate verb *laugh* in (16a) is analyzed as a result of the derivation in (16b,c), where the N-head in

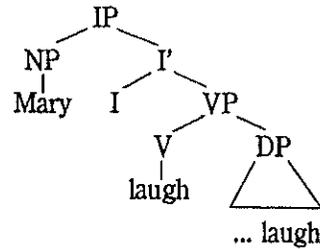
the cognate object *laugh* is a copy of the moved N-head (N-copy):⁵

(16) a. Mary laughed a hearty laugh.

b. LRS:



c. S-str.:



Our assumption that the LRS of an unergative verb and that of a cognate verb are identical plays an important role in accounting for the strong island effects which a certain type of cognate object shows. Moreover, it also gives a simple explanation for the fact that both unergative and cognate verbs cannot accompany an extra 'causee' NP, exemplified by the following (see also Nogawa (1995) for detailed discussion):

(17) Unergative Verbs:

a. *The clown laughed the child. (i.e., got the child to laugh)

b. *The alfalfa sneezed the colt. (i.e., made the colt sneeze)

(Hale and Keyser (1993))

(18) Cognate Verbs:

a. *John smiled Mary a bright smile. (i.e., got Mary to smile a bright smile)

b. *John coughed Mary a big cough. (i.e., made Mary cough a big cough)

In Hale and Keyser's analysis, LRS itself represents a semantic relationship between predicates and arguments. Hale and Keyser argue that the LRS of an unergative verb represents a situation in which "an action or dynamic event 'implicates' an entity . . . the implicating event is completed, or perfected, by virtue of the 'creation,' 'production,' or 'realization' of the relevant entity" (p. 74). In other words, the complement position of the abstract V in the LRS, when occupied by an NP, is regarded as a θ -position, carrying a θ -role, say 'an entity to be created, produced, or realized'. Now, their argument also applies to the case with cognate verbs, since the LRS of a cognate verb (the one in (16b)) is analyzed as identical with that of an unergative verb. Thus, in the LRS of a cognate verb above as well, the NP complement, which is a sister to the light (abstract) verb V [GIVE], is in a θ -position, carrying, here again, the θ -role 'an entity to be created, produced, or realized'.⁶ The LRS of a cognate verb (and of an unergative verb) below represents the semantic relation:

(19) LRS:

A tree diagram for the LRS of a cognate verb. The root is VP, which branches into V and NP. V is labeled with a plus sign. NP is labeled [+ θ].

It is natural to consider that a cognate object at the surface still keeps the θ -role and hence [+ θ], since, as mentioned above, a cognate verb is analyzed as derived by N-copying operation in Nogawa (1995), basically preserving the LRS in (19). Therefore, we conclude that cognate objects have a θ -role and marked as [+ θ]. In sum, we have seen in this subsection, along the lines of Hale and Keyser (1993), that cognate objects are true objects: they are assigned a θ -role (in the LRS) and hence [+ θ].

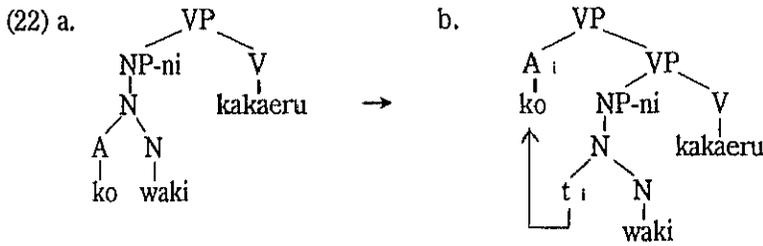
3.2. Cognate Object with Adverbial Status

In this subsection, we propose a syntactic device which derives the adverbial interpretation of a cognate object. Specifically, we refine the transfer mechanism in (5). The adverbial interpretation of a cognate object can be regarded as an instance of the transferred epithet: an adjective modifying a nominal element at the surface is interpreted as functioning as an adverb, modifying the event involved.

A similar kind of transferred epithet is discussed in Kitagawa (1986). Kitagawa analyzes adverbial interpretation of adjectival morphemes in Japanese, including *ko* 'little' and *usu* 'thin' in (20), each of which has an adverbial interpretation parallel to the adverb in the corresponding sentence in (21). He considers that the semantic representations of the sentences in (20) should be something like (21):

- (20) a. [VP [NP [N [A ko] [N waki]]]]-ni [v kakaeru]
 little armpit loc hold
 'lightly hold something under one's armpit'
 b. [VP [NP [N [A usu] [N me]]]]-o [v akeru]
 thin eye acc open
 'open one's eyes slightly'
- (21) a. [VP [Adv karuku] [v' waki-ni kakaeru]]
 'lightly hold something under one's armpit'
 b. [VP [Adv usuku] [v' me-o akeru]]
 'open one's eyes slightly'

In order to resolve the discrepancy between the surface structures in (20) and their corresponding semantic representations in (21), Kitagawa (1986: 182f.) proposes covert (LF) movement of non-adverbial morphemes. This mechanism is instantiated below:



(Kitagawa (1986: 182))

The adjectival morpheme *ko* 'little' in (22a), modifying the N-head *waki* 'armpit', is moved into a VP-adjoined position at LF ((22b)), where it is licensed as an adverbial and is interpreted as *karuku* 'lightly'.

Let us now turn to the cognate object. We should recall here that in a cognate object construction, the N-head in the cognate object and the verb are morphologically and semantically related to each other. Because of this, the modifier in the cognate object, which we will hereafter refer to as AP (adjectival phrase), is somehow interpreted as dependent on the cognate verb. We regard this semantic dependency of the AP on the cognate verb as a factor yielding the adverbial interpretation of the AP. In other words, in this construction the AP functions as an adverbial, modifying the event described by the verb. This means, we consider, that the AP occupies a certain position at the level for interpretation, i.e., at LF, where it can function as an adverbial.

Although the syntactic positions for adverbials are still at issue in the literature, we assume with Rizzi (1990) that manner adverbs occupy a VP-adjoined position, where the adverbial interpretation is properly licensed. Now as the following examples show, a cognate object (specifically, the AP within it) can be paraphrased into a manner adverb:

- (23) a. He slept a sound sleep. = He slept soundly.
 b. He lived a happy life. = He lived happily.
 c. She smiled a bright smile. = She smiled brightly.
 d. She laughed a hearty laugh. = She laughed heartily.

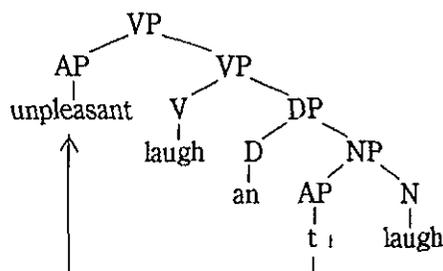
Considering this fact, we suppose that the AP in a cognate object, which has an adverbial interpretation, occupies the VP-adjoined position at the level of interpretation (i.e., at LF).

Now, as Kitagawa did to derive the adverbial interpretation of an adjectival morphology in Japanese, we assume here that the AP in a cognate object is to be adjoined to VP at LF (for the reason to be discussed below).⁷ Specifically, we assume, in this study, the following syntactic mechanism:⁸

- (24) Covert (LF) movement to a VP-adjoined position of the adjectival modifier in a cognate object

Given this assumption, we can derive the adverbial interpretation of the AP in a cognate object: the syntactic merging operation (adjunction) sets the relevant AP in the VP-adjoined position, the position for manner adverbials, allowing it to have a (manner-) adverbial interpretation. For example, the merging operation in (24) derives the LF representation in (25b) from the VP in (25a). The modifier (AP) *unpleasant* originally within the cognate object is adjoined to the VP. Through this operation, we can obtain the syntactic representation which guarantees the interpretation of a cognate object as Jones (1988) intended.

- (25) a. laugh an unpleasant laugh (S-structure)
 b. [_{VP} unpleasant_i [_{VP} laugh [_{an} t_i laugh]] (LF)
 c.



In (25c), the AP occupies the structural position for manner adverbs and directly modifies the event described by the VP. In effect, the modification by the adjective *unpleasant* within the cognate object is "transferred" to the cognate verb.

Now, let us consider what triggers the VP-adjunction of the AP in a cognate object: Why does the AP undergo LF-raising? Kitagawa (1986) simply assumes that the A-adjunction in (22b) is motivated by the principle of Full Interpretation (cf. Chomsky (1986a)): the adjectival morpheme raises to the VP-adjoined position in order to receive (or to be licensed to have) an adverbial interpretation. We assume in this study that the factor relevant to the AP-movement is the derivation of a cognate verb in the I-syntax.

Recall that the cognate verb is derived through an N-copying operation in the I-syntax (as in (16b)). This N-copying operation is essentially the same, in nature, as the noun-incorporation which is discussed in Baker (1988). In relation to the noun-incorporation, Williams (1994: 219) makes an interesting and important statement: specifically, he states that "[I]ncorporated' nouns do not 'satisfy' the theta role that they qualify" and that "[T]he argument is 'qualified' by the incorporated noun, and then it is 'satisfied' by

the direct object NP".⁹ We assume, following Williams, that the moved N (i.e., the head-N), which is merged with the V-head, qualifies (or classifies) the θ -role to be assigned to the external NP (i.e., the object NP involving the copy-N). In other words, the head-N, not the copy-N, carries the relevant semantic features, so that it can qualify the θ -role. The copy-N, on the other hand, is an N in name only: it does not have any semantic features but only phonological ones.¹⁰

If we consider that the modification relation between a nominal head and an AP is established by satisfying, not merely certain categorial and configurational conditions, but also semantic ones (whatever formalization may be given to it), it is obvious that the AP cannot establish a proper modificational relation with the copy-N, so far as it stays in its surface position (cf. Higginbotham (1985)). This is because the copy-N in a cognate object is not qualified as a modifyee: it has no semantic features to be modified. Then, the AP needs to be raised, at LF, to the position from which it can properly modify the relevant semantic features of the N. Since the N-head with the semantic features is now merged into the verb, the AP must move into the VP-adjoined position. As a result, as we have discussed above, this VP-adjunction operation derives the adverbial interpretation of the AP in a cognate object.¹¹

In sum, we proposed in this subsection that the adverbial status of (the AP in) a cognate object is derived by the adjunction of the AP in a cognate object. We will discuss this LF operation further in section 3.4.

3.3. NP-Movement of Cognate Objects

Since we have seen that a cognate object is [+ θ] and there are only two possibilities as to Case (CASE)-marking ([+/- CASE]), cognate objects must be marked as either (a) [+ θ , +CASE] or (b) [+ θ , -CASE]. In this subsection, we will examine each of the possibilities and seek plausible explanations for the impossible NP-movement of a cognate object.

Let us start with case (a). If we stand for option (a) and consider cognate objects as [+CASE], contrary to Jones (1988), we can preserve the Visibility Condition in (9). As having seen in 2.2, however, we have to abandon a Case (CASE)-theoretic explanation for the impossibility of NP-movement of cognate objects; it cannot be reduced to CASE-conflict. We instead need to seek some other (non-Case-theoretic) explanations for it.

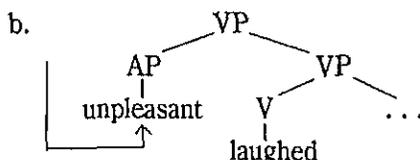
Now, let us take up the following example:

- (26) a. Mary laughed₁ an unpleasant laugh₁ .
 b. *An unpleasant laugh₁ was laughed₁ by Mary.
 c. [_{IP} [an unpleasant laugh₁]₂ was [_{VP} laughed₁ t₂ by Mary]]

Taking into consideration the derivation of a cognate verb in (16), the N-head of the cognate object *laugh*₁ in (26a) is an N-copy. By moving the cognate object into the subject position, we obtain the passive counterpart in (26b), which is unacceptable. If a cognate object is marked as [+CASE], the impossibility of this NP-movement can not be predicted. This is because the cognate object NP (which is to be assigned a CASE) moves into a position where a (nominative) CASE is assigned and thus causes no Case-conflict.

Recall, however, that at LF the AP in the cognate object adjoins to the VP for the proper interpretation of a cognate object (see section 3.2). The resulting structure is in (27a):

- (27) a. [_{IP} [an t₂ laugh]₁ was [_{VP} unpleasant₂ [_{VP} laughed t₁ by Mary]]



This AP-adjunction is a lowering operation and we can see that the trace left by this movement operation (t₂) violates Proper Binding Condition (PBC), given in (28):¹²

- (28) Proper Binding Condition:

Traces must be bound.

(Saito (1989); cf. Fiengo (1974, 1977))

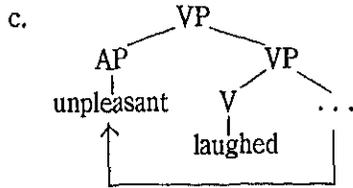
Now, the NP-movement in (26b) causes a violation of the PBC, and hence (26b) is unacceptable. Therefore the impossibility of passivization of a cognate object is accounted for by the PBC.¹³

We have seen so far that even without Case (CASE)-theoretic explanation, the impossible NP-movement of cognate objects can be accounted for by the PBC. Moreover, this line of analysis can properly guarantee the co-occurrence requirement of θ -marking and Case (CASE)-marking on an NP (which may be formalized as the Visibility Condition, Jones' RCF, or whatever).

Note here that our analysis above is also compatible with the fact that the active sentence with a cognate object is acceptable as in (26a), repeated in (29a). After the AP-adjunction at LF, we get the representation in (29b):

(29) a. Mary laughed an unpleasant laugh.

b. [_{IP} Mary [_{VP} unpleasant [_{VP} laughed [an t_i laugh]]]



This movement is a raising operation, and the trace t_i is properly bound. As a result, (29b) does not violate the PBC in (28), hence the active sentence is acceptable.

Now let us examine case (b), where a cognate object is marked as [+ θ , -Case (CASE)]. Remember that Jones (1988) analyzes cognate objects as [-CASE]. He argues that they are not assigned an inherent Case either (cf. ablative Case in Latin) and stipulates that the (morphologically unmarked) accusative Case of a cognate object is assigned at PF.

In this case, a Case-theoretic explanation, as in Jones (1988), can be provided. The impossible NP-movement can be accounted for in terms of Case (CASE)-conflict. That is, a cognate object [-CASE] cannot be moved into the subject position, where nominative CASE (structural Case) is to be assigned. If the NP-movement takes place, it will cause a violation of CASE-matching. Thus NP-movement is disallowed for cognate objects.¹⁴

True that this explains the impossibility of NP-movement, but there arises a serious problem. The status [+ θ , -CASE] of a cognate object would violate the Visibility Condition in (9), repeated below:

(9) Visibility Condition:

A chain is visible for θ -marking if it contains a Case position.

What is crucial to this line of analysis is the fact that the active sentence with a cognate object *is* acceptable. If cognate objects were [+ θ , -CASE], active sentences with a cognate object should also be unacceptable because of the violation of the Visibility Condition, contrary to the fact. Thus, we cannot adopt the identification in (b) ([+ θ , -CASE]) for cognate objects. Before concluding this subsection, let us examine whether or not it is possible to evade the violation of the Visibility Condition somehow, though it will soon be clear that the answer is negative.

One conceivable way to avoid the Visibility Condition violation can be found in Baker (1988; 1992). Beside the option of Case-assignment to an NP, Baker argues for another option to satisfy the Visibility Condition: to fuse an argument with its verb

(through an operation like adjunction). His proposal is based on the fact that the benefactive argument in Sesotho must be incorporated into the V-head, as in (30); and the fact that it is impossible to derive passive or unaccusative sentences with a theme subject from double object constructions in English, as in (31):

(30) Sesotho:

- a. *Letebele leo le-hol-el-e rona.
 Letebele that agr-grow-appl us
 'May that Letebele (clan name) grow up for us!'
- b. Letebele leo le-re-hol-el-e.
 Letebele that agr-us-grow-appl
 'May that letebele (clan name) grow up for us!'

(Baker (1992))

(31) Theme Subject from the Double Object Construction:

- a.?*The ring was passed Mary t.
 b. *The ring passed Mary t.
 c. *The beer opened Max t.

(Baker (1992))

The goal NP *rona* 'us' in (30a), which receiving no Case, violates the Visibility Condition. If it is cliticized onto the verb as in (30b), however, the sentence becomes acceptable. The sentences in (31) are ruled out because the goal phrases (*Mary* and *Max*) have no Case and commit a Visibility Condition violation. Based on these facts, Baker (1992: (21); 1988) proposes that an (argument) NP which cannot be Case-assigned should adjoin the θ -role assigner V. By doing so, the NP is exempted from Case requirement, and hence the Visibility Condition will be satisfied (cf. Everett (1987)). In Sesotho, pronominal cliticization is available, and hence the goal phrases become visible, due to cliticization. Since English does not have pronominal cliticization as a syntactic device, the goal phrases stay *in situ* and invisible, violating the Visibility Condition. (See Baker (1992) for detailed discussion.)

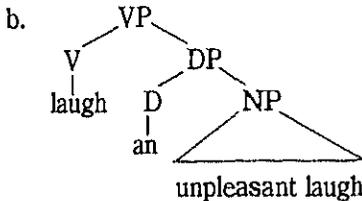
If Baker's analysis is correct, we have two options for satisfying the Visibility Condition: one is for an NP to be Case (CASE)-assigned ((32i)) and the other is for the head of an NP (or DP) to be fused with the θ -role assigning head ((32ii)):

- (32) For an argument to be visible for θ -role assignment at LF, it must either
- (i) be assigned Case, or
 - (ii) have its head morphologically united with an X^0 .

(Baker 1992: 39)

Now, if the option in (32ii) were allowed for cognate objects, the Visibility Condition could be satisfied by fusing the head of a cognate object with the verb governing it. We assume here that the VP in (33a) has the surface structure in (33b), with the article in the cognate object occupying the (D-)head position:

(33) a. laugh an unpleasant laugh



Given the second clause in (32), we expect that the article *an*, the head of the constituent which is θ -assigned, should move into the cognate verb. As the following examples show, however, this expectation fails, indicating that the option in (32ii) is not allowed in English:

(34) a. *Mary an-laughed unpleasant laugh.

b. *Mary laughed-an unpleasant laugh.

This shows that the option in (32ii) is not allowed in English. Then, we cannot avoid the Visibility Condition violation, and therefore we cannot adopt case (b) for cognate objects: cognate object cannot be identified as [+ θ , -CASE].¹⁵ This also means that we do not need to postulate PF Cases as Jones does in his analysis.

We have seen, in this subsection, that cognate objects are identified as [+ θ , +CASE], and that the impossible NP-movement of it can be explained with the PBC. Besides, our explanation can guarantee the Visibility Condition as it is, without any stipulation like PF Cases.¹⁶ Before concluding this subsection, it should be noted that this analysis, together with the Visibility Condition, also provides a straightforward explanation for the facts observed in (6) and (8), repeated below:

(6) a. *Mordred killed the knight a gruesome kill.

b. *Ethel moved her lips a slight move(ment).

c. Mordred killed the knight gruesomely.

d. Ethel moved her lips slowly.

e. Alice will read the book tomorrow.

(8) a. Ben always runs (quickly) that way.

b. Let Ben run (*quickly) a little run.

c. Ben sneezed (*that way) a glorious sneeze.

While a cognate object is a true object and hence must be assigned an (accusative) Case

by the verb governing it, the verbs in (6a,b) are, arguably, able to assign only one Case. As a result, the cognate objects are left Caseless and the unacceptability derives (cf. Nogawa (1995)). On the other hand, since the adverbials in (6c-e) are not complements to the verbs, they do not need to be assigned a Case, and thus they can occur rather freely. The same explanation applies to the contrast in (8), and, if the adverbials intervene, the sentences in (7b,c) can be ruled out with the adjacency condition in English. (See also Massam (1990).)

3.4. *More on the AP-Movement at LF*

We have argued in this paper that the impossibility of NP-movement of cognate objects can be accounted for by the Proper Binding Condition. Our analysis of the impossible NP-movement of cognate objects crucially depends on two assumptions: (1) VP-adjoined elements have a manner adverbial interpretation; (2) the AP in a cognate object adjoins to the VP at LF, i.e., the assumption in (24), repeated below:

- (24) Covert (LF) movement to a VP-adjoined position of the adjectival modifier in a cognate object

The AP-movement properly derives the adverbial interpretation of the AP modifier in a cognate object. In passive constructions, this movement creates an illegitimate trace in the subject position at LF, which violates the PBC. In short, the impossibility of NP-movement is due to the existence of an adverbial AP in a cognate object.

In this section, we provide two arguments for the necessity of the AP-movement at LF. We will firstly focus on the transitivity object construction, and then the resultant object construction.

3.4.1. *Transitivity Object Constructions*

Massam (1990) divides cognate objects into two subclasses: ‘true cognate objects’ (COs), which we have discussed so far, and ‘transitivity objects’ (TOs) (e.g., *sing a song*, *dance a dance*, *dream a dream*) (see note 1). It is well known and bears an interesting implication for our analysis that TOs, contrary to COs, can undergo NP-movement as follows:

- (35) a. A merry dance was danced by Sam. (cf. Sam danced a merry dance.)
 b. A beautiful song was sung by Mary. (cf. Mary sang a beautiful song.)

This appears to be strange, because the sentences above should also be ruled out as sentences with a CO subject if the AP in the cognate objects (TOs) could undergo AP-movement at LF. Then, the acceptable passive sentences in (35) imply that the AP-movement operation in (24) does not apply to all ‘cognate objects’ (COs and TOs): the operation, for some reason, does not apply to TOs.

Recall our proposal for the adverbial interpretation of the AP in a cognate object. The AP-movement takes place at LF in order to establish a proper modificational relation with the semantic features of the moved N. In other words, the application of the AP-adjunction operation depends on the semantic emptiness of the N-head in a cognate object. Since the N-head in a CO is a remnant of the N-copying operation (cf. (16b)), it is regarded as having no semantic features. Thus, the N-head in a CO, as being defective, triggers the VP-adjunction of the AP, deriving the adverbial interpretation. This is shown by the fact that CO-constructions can be paraphrased into ‘an (intransitive) verb + an adverb’ sentences (as in (36)):

(36) (= (23)) COs:

- a. He slept a sound sleep. = He slept soundly.
- b. He lived a happy life. = He lived happily.
- c. She smiled a bright smile. = She smiled brightly.
- d. She laughed a hearty laugh. = She laughed heartily.

Now, the AP in a TO does not and must not raise to VP. Considering the fact that TOs, in contrast to COs, do show parallel syntactic behaviors to pure complements of transitive verbs, I have argued in Nogawa (1995) that TOs are genuine complements of transitive verbs, and is assigned a θ -role by the (TO-taking) verb at s-syntax (see Nogawa (1995) for detailed discussion; cf. Massam (1990)). That is to say, the N-head in a TO is not considered to be an N-copy, even if it has morphologically the same form as the verb. Since the N-head in a TO is not a remnant of the N-copying operation, the AP in a TO, if present, has a proper modificational relation with the N-head in its surface position. Thus, the VP-adjunction operation in (24) is not well motivated in the case of TOs, and the TO-modifier stays *in situ*. This is confirmed by the fact that TO-constructions, unlike CO-constructions, cannot be paraphrased into ‘an (intransitive) verb + an adverb’ sentences (as shown in (37)): the AP in a TO cannot have an adverbial interpretation.

(37) TOs:

- a. He sang a beautiful song. \neq He sang beautifully.
- b. He dreamed a strange dream. \neq He dreamed strangely.

In short, the AP-adjunction operation in (24) is triggered in CO-constructions, but not in TO-constructions.

Now, our analysis can correctly predict the acceptability of NP-movement of COs and TOs. In contrast to COs, TOs in the subject position, when passivized, do not involve any unbound trace at LF, without yielding a PBC violation, and hence NP-move-

ment of TOs are possible as in (35). In sum, the acceptability of NP-movement of these two classes of cognate object depends on whether or not the AP-movement takes place at LF: the LF AP-movement takes place in the CO-construction, but not in the TO-construction. The discussion of NP-movement of TOs in this subsection provides an argument for the movement of the modifier in a CO for licensing its adverbial interpretation.

3.4.2. Resultant Object Constructions

We will show in this subsection that the resultant object construction also provides another argument for the AP-movement at LF for the interpretation of adverbial APs.

We have discussed, in Nogawa (1995), the contrast between the two types of cognate object, namely COs and TOs. They show different behaviors with respect to island constraints, as the following examples show:

(38) *Wh*-island:

- a. *What sort of smile_i do you wonder [whether [Hitler smiled t_i in front of Chamberlain]]? [CO]
- b.??What sort of song_i do you wonder [whether [John sang t_i at the party]]? [TO]

(39) Inner island:

- a. *What sort of smile_i didn't Hitler smile t_i in front of Chamberlain? [CO]
- b. ?What (sort of song)_i didn't John sing t_i at the party? [TO]

We proposed that the strong island effects of COs can be captured under Rizzi's (1990) analysis (though a slight modification needed). We proposed there that constituents which have non-pre-existent property cannot be extracted out of an island (see the discussion in Nogawa (1995); cf. Rizzi (1990)). Thus, the strong island effects of COs in the examples above are due to the non-pre-existence of their referents.¹⁷ (Recall the discussion about the LRS of a CO-taking verb.)

Verbs such as *paint* and *dig* can take either a patient object (PO) or a resultant object (RO). We will refer to sentences with a PO as PO-constructions and those with a RO as RO-constructions and to the verb involved in each construction as V_P and V_R , respectively:

- (40) a. Mary painted_P the wall. [PO]
- b. Mary painted_R the flowers on the ceiling. [RO]

- (41) a. Mary dug_P the ground. [PO]
 b. Mary dug_R the small holes. [RO]

Now consider the following examples. The contrasts found in (44) and (45) show that ROs (but not POs) show strong *wh*-island effects. The contrasts in (46) and (47) shows that ROs also show inner island effects:¹⁸

- (42) a. What_I do you think that Mary painted_P *t*_I? [PO]
 b. What_I do you think that Mary painted_R *t*_I on the ceiling? [RO]
- (43) a. What_I do you think that John dug_P *t*_I? [PO]
 b. What_I do you think that John dug_R *t*_I on the ground? [RO]
- (44) a.??What_I do you wonder whether Mary painted_P *t*_I? [PO]
 (cf. What_I did Mary paint_P?)
 b. *What_I do you wonder whether Mary painted_R *t*_I on the ceiling? [RO]
 (cf. What_I did Mary paint_R *t*_I on the ceiling?)
- (45) a.??What_I do you wonder whether John dug_P *t*_I? [PO]
 (cf. What_I did John dig_P *t*_I?)
 b. *What_I do you wonder whether John dug_R *t*_I on the ground? [RO]
 (cf. What_I did John dig_R *t*_I on the ground?)
- (46) a. What_I didn't Mary paint_P *t*_I? [PO]
 b.?*What_I didn't Mary paint_R *t*_I on the ceiling? [RO]
- (47) a. What_I didn't John dig_P *t*_I? [PO]
 b.?*What_I didn't John dig_R *t*_I on the ground? [RO]

Given the analysis in Nogawa (1995), the contrasts between POs and ROs, observed in (44-47), can also be straightforwardly explained. The referent of a RO, by definition, does not pre-exist before the event described by the verb is completed. It comes to exist as a result of the (creative) activity described there. This is not the case with POs. POs do pre-exist before the relevant events. In short, the V_P is specified for pre-existent objects and the V_R for non-pre-existent one.¹⁹ Then, both the strong island effect of ROs and that of COs can be reduced to the property which is common to COs and ROs: non-pre-existence of their referents.

Although COs and ROs share the same property, non-pre-existence, and show the same behavior to the island constraints, they show different acceptability in NP-movement. As the following examples show, ROs can undergo NP-movement, contrary to COs:

- (48) a. The flowers were painted_R by Mary.
 b. The small holes were dug_R by Mary.

This indicates that the property of non-pre-existence is not relevant to the (un)acceptability of NP-movement; it does not say anything about the contrastive behavior between COs and ROs with regard to NP-movement. Then, it seems difficult, if not impossible, to account for this contrast, unless we do not take into consideration the implication of the adverbial AP in a CO, and if we do not postulate the AP-movement at LF.

Note that RO-constructions do not involve such 'adverbial' adjectives as are found in CO-constructions. Within our analysis, then, the AP (if present) in a RO in the subject position need not, and hence must not, merge with the VP at LF for entering into a proper modificational relation. Then ROs, when passivized, do not involve any unbound trace, observing the PBC. Hence we can correctly account for the acceptability of passive sentences with a 'RO subject'. If we seek for other possible analyses and consider, for example, that the lack of the property of pre-existence is responsible for the impossible NP-movement of COs, the NP-movement of ROs would remain unexplained. In sum, the contrastive behaviors between COs and ROs with regard to NP-movement are also reduced, in our analysis, to the presence or absence of the adverbial modifier in a verbal complement.

4. *Wh*-Movement of Cognate Objects

In this section, we will see that our analysis can account for *wh*-movement of cognate objects (of the CO-type). We will examine two types of *wh*-movement of a cognate object: 'what sort of X' movement and 'what' movement. Sentences derived by each type of *wh*-movement show a clear difference in acceptability.

As the following examples show, cognate objects can undergo *wh*-movement in the form of 'what sort of X':

- (49) a. What sort of death did John die?
 b. What a (gruesome) death John died!
- (50) Was für einen Tod starb Johann?
 what sort-of-a death [ACC] died Johann
 'What sort of a death did Johann die?'

Contrary to the NP-movement of a cognate object, *wh*-movement of this type is possible. This fact can be explained within our analysis proposed above, with the analysis of the copy theory of movement and the operator-variable formation proposed in Chomsky (1993).

Chomsky (1993: 53ff.) proposes 'operator-variable formation' at LF, which is

motivated by the principle of Full Interpretation (cf. Chomsky (1986a)). Chomsky's proposal gives an explanation for the ambiguity of the sentence in (51a), where the reflexive anaphor within the *wh*-phrase can be interpreted as referring to the entity represented by the matrix subject *John* or the one by the embedded subject *Bill*. Assuming the copy theory of movement, which leaves a copy of the moved constituent instead of its trace, the representation of the sentence in (51a) is as in (51b) at the point of Spell-Out:

- (51) a. John_i wondered [which picture of himself_{i/j}] [Bill_j saw t]
 b. John wondered [_{wh}- which picture of himself] [Bill saw
 [_{wh}- which picture of himself]]

After Spell-Out, 'operator-variable formation' applies, and in this case, we have two options. One is to select the whole *wh*-phrase as an operator and, as a first step of operator-variable formation, the operators-to-be adjoins to the *wh*-phrases ((52ai)). The other is to select only the *wh*-word *which* as an operator and, as a first step, undergo the same adjunction operation ((52aii)). The second step of each option is to undergo complementary deletion of an operator and a variable. The resulting representations in (52b) provide the two interpretations of the reflexive anaphor:

- (52) a. (i) John wondered [[which picture of himself]_{wh}- t] [Bill saw
 [[which picture of himself]_{wh}- t]]]
 (ii) John wondered [which [_{wh}- t picture of himself]] [Bill saw
 [which [_{wh}- t picture of himself]]]
 b. (i) John_i wondered [which x, x a picture of himself_i] [Bill saw x]
 (ii) John wondered [which x] [Bill_j saw [x picture of himself_j]]

Now, let us consider the 'what sort of X' movement of a cognate object.

Assuming the copy theory of movement, the representation of (49a) is, at Spell-Out, as in (53a):

- (53) a. [_{CP} [what sort of death]_i did [_{IP} John die [what sort of death]_i]]

Now, if we select the whole *wh*-phrase as an operator-to-be, we get the representation in (53c) after the two-step operation of operator-variable formation:

- (53) b. [_{CP} [what sort of death₂ [<sub>t₂]_i] did [_{IP} John die
 [what sort of death₂ [<sub>t₂]_i]]]
 c. [_{CP} [what sort of death₂] did [_{IP} John die [_{t₂]]]}</sub></sub>

After this, the AP-adjunction in (24) applies, and the resulting LF representation in (53d) is excluded because the trace left by the last adjunction (*t₃*) violates the PBC: ²⁰

- (53) d. [_{CP} [what **t₃* death]₂ did [_{IP} John [_{VP} [sort of]₃ [_{VP} die [_{t₂]]]]]}

Then, we predict that the 'what sort/kind of X' movement of a cognate object should be ruled out, contrary to the fact.

In applying the operator-variable formation, however, we have another option. We can select only the *wh*-word *what* as an operator. After the operator adjunction and the complementary deletion, we reach the stage in (54b). Now, the nonoperator portion of the cognate object, especially the AP within it, is in its original position, down below the cognate verb. Thus, the AP-adjunction by (24) is a raising operation, not a lowering as is the case of NP-movement of a cognate object. The representation we get here is legitimate as in (54c), observing the PBC in (28):

(53) a. [_{CP} [what sort of death]₁ did [_{IP} John die [what sort of death]₁]]

(54) a. [_{CP} [what₂ [_{t₂} sort of death]₁]] did [_{IP} John die [what₂
[_{t₂} sort of death]₁]]]

b. [_{CP} [what₂ did [_{IP} John die [_{t₂} sort of death]]]]

c. [_{CP} [what₂ did [_{IP} John [_{VP} [sort of]₃ [_{VP} die [_{t₂} _{t₃} death]]]]]]

Notice that 'what' movement is impossible with cognate objects (cf. Massam (1990)): ²¹

(55) a. *What did he die?

b. What sort of death did John die?

c. ?What did she laugh?

d. What kind of laugh did she laugh?

(a,c,d: Massam (1990); b: Jones (1988))

Our analysis here can also provide an account for the unacceptability. The difference between cognate objects in the form of 'what sort of X' and 'what' is that the former type of cognate object is a result of I-syntactic operations, which can be observed overtly, whereas the latter is not. This seems to be an appropriate assumption, because *what* has no morphological or semantic indicator as a cognate object. If we are forced to suggest that *what* is a cognate object, we have to stipulate some queer syntactic operation, say '*what*-substitution for *what sort/kind of X*'. Then, we are led to conclude that the VP in a *what*-interrogative consists of a (pure) unergative verb and a DP complement *what*. Since unergative verbs cannot take a complement (at the surface), the resulting sentence violates the selectional restriction. Thus, '*what*-movement' of a cognate object is correctly excluded. ²² We have seen, in this section, that our analysis can provide an account for the fact that cognate objects can undergo 'what sort of X' movement, but not 'what' movement.

5. Conclusion

We have seen, in this study, that cognate objects (COs) should be identified as [+ θ , +CASE]. The impossible NP-movement of a CO can be accounted for by the Proper Binding Condition. We have also argued that the AP in a CO adjoins to the VP headed by the CO-taking verb at LF in order to establish a proper modificational relation. We have also seen that our analysis further give an account of *wh*-movement of COs.

Notes

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¹ Massam (1990) divides cognate objects into two groups: true cognate objects (COs) and transitivizing objects (TOs). What we refer to as 'cognate objects' in this paper are Massam's COs. We will discuss NP-movement of TO-type cognate objects in section 3.4.1.

² Actually, there are some cases where NP-movement is allowed for cognate objects (COs):

- (i) a. His whole life seemed to be lived in the past.
 - b. Such awful thoughts can only be thought by a sick mind.
 - c. One of the silliest smiles I've ever seen was smiled by Mary.
- (cf. *A silly smile was smiled by Mary.)

(a,b: Dixon (1991))

In this paper, however, we regard those cases as exceptional, leaving those cases for future research.

³ Specifically, as the Visibility Condition in (9) states, both θ -role assignment and Case-assignment are carried out to a 'chain'. However, in the text we will use the term 'NP' to refer to a chain, for convenience' sake.

⁴ It is true that Jones (1988) does not deal with what Massam (1990) calls TOs, and that the interpretation mechanism in (5) is proposed to explain the adverbial interpretation of a CO. It should be noticed, however, that if we take literally the condition for the application of (5), namely the 'surrogation', the interpretation process should apply not only to COs but also to TOs.

⁵ In this paper, we will make use of the label NP for the nominal category in the complement position of the abstract V in the LRS. We do not intend to discuss the question of whether the complement is NP or DP. I have analyzed, in Nogawa (1995), that it is DP rather than NP. This is because in deriving a cognate verb, the D-position must somehow be reserved for the article to be introduced in the s-syntax. (Note that this problem does not arise so far as we deal only with unergative verbs, but not with cognate verbs.) In this study, however, we leave the issue of the D-position in the LRS, and represent the nominal complement simply as NP, following Hale and Keyser (1993). Notice that, whether NP or DP, the nominal complement (and the cognate object at the surface) remains nonreferential, since the D-head in a DP has been analyzed to be defective (see Nogawa (1995) for detailed discussion). Therefore whether NP or DP makes no difference to the discussion in the text.

⁶ Massam, who also argues that true cognate objects (both COs and TOs) are arguments, considers that they are assigned a patient θ -role. Concerning cognate objects of the CO type, she claims as follows:

- (i) COs are patients of CAUSE/EXIST BY MEANS OF verbs. This means that they are licensed by theta theory and are generated by projection as direct objects. (Massam (1990: 179))

See Massam (1990) for detailed discussion.

⁷ In an earlier version of this paper, I proposed, instead, that the N-head of a cognate object adjoin to the verb at LF (cf. note 16). I thank Katsuo Ichinohe and Joe Morita (personal communication) for bringing out the idea of AP-movement, which has come to be formalized as in (24).

⁸ One might wonder if it is possible for an adjectival modifier to occupy the position for an adverb, i.e., a VP-adjoined position, and to function as an adverbial modifier. We assume, with Kitagawa (1986), that the categorial distinction between adjectival and adverbial modifiers is "somehow suppressed at LF". In this connection, it should be noticed that the application of the operation in (24) is not restricted to adjectives which have a corresponding adverb with the adverbial *-ly* suffix; thus, it can also deal with sentences like *Mary lived a hard life*.

⁹ See also Baker (1988) for a slightly different view.

¹⁰ The following examples (Mohawk noun-incorporation in (i) and Hungarian pseudo-object in (ii)) are consistent with this idea. In each of these examples, the N-head in the external (object) NP has little (or no) explicit semantic features.

- (i) kanekwarunyu wa'-k-akyatawi'tsher-u:ni
 it.dotted.DIST PAST-I-dress-make
 'I dress-made a polka-dotted one.'
 (cited from Williams (1994: 219))

- (ii) a. *Sétáltunk egyet.*
 walk-PAST-1PL one-ACC
 'We took a walk.'
 b. *Jót/nagyot sétáltunk.*
 good-ACC/big-ACC walk-PAST-1PL
 'We took a walk.'
 (cited from Kiefer (1994: 451))

¹¹ One might wonder why overt AP-adjunction is not allowed, not only in English but also in languages which allow noun-incorporation. If overt AP-adjunction were allowed, the external NP (object NP) could be semantically less specific than the meaning of the verb, as in (i):

- (i) *Mary big-laughed a laugh.

Williams (1994: 219) claims that he has seen, in languages which allow noun-incorporation, no examples which would be translated as (ii):

- (ii) *He fish bullhead-caught.

Baker (1988: 145) also observes that "the incorporated noun and the head of the external phrase [object NP] doubling it are not the same lexical item; instead the latter is more specific than the former". This fact, Williams argues, can be explained with Wasow's (1972) Novelty Condition. Considering the parallelism between cognate object constructions and noun-incorporated sentences, we assume that the Novelty Condition prevents overt application of the AP-adjunction operation. The Novelty Condition requires that an anaphorically dependent element should not have more determinate reference than its antecedent. In the sentence in (i) the Novelty Condition requires that the external NP be semantically more determinate than the incorporated N (merged with the V in the I-syntax), but this is not the case; hence the sentence is ruled out. See Williams (1994) for detailed discussion of the Novelty Condition and its application to noun-incorporation.

¹² We assume Saito's (1989) definitions of 'bind', and 'c-command', given below:

- (i) X BINDS Y = αr (a) X and Y are coindexed, and (b) X c-commands Y.
 (ii) X C-COMMANDS Y = αr the branching node most immediately dominating X also dominates Y.

¹³ Since the trace left by a moved AP is expected to be subject to the Empty Category Principle (ECP), passive sentences with a 'cognate' subject may be ruled out by the ECP. We assume Rizzi's (1990) conjunctive version of the ECP. According to him, a non-pronominal empty category must be properly head-governed. In addition to this formal licensing requirement, traces must be properly identified. Taking into consideration the referentiality of a moved element, Rizzi appeals to binding and antecedent-government chain, in order to explain the island-extractability of the element with a referential θ -role and the unextractability of the other elements, respectively (see Rizzi (1990: 3.5, 3.6) for detailed discussion). Given these, sentence (26b) is correctly ruled out, because the trace (t_2) in (27a), left by the AP-adjunction, violates the ECP. We assume here that the trace is properly head-governed, probably by the N-head, fulfilling the formal licensing requirement. However, the trace fails to satisfy the identification requirement. APs are, arguably, not assigned a referential θ -role, and thus should be identified through the (chain of) antecedent-government, which is defined below:

- (i) X antecedent-governs Y iff
 - (a) X and Y are nondistinct
 - (b) X c-commands Y
 - (c) no barrier intervenes
 - (d) Relativized Minimality is respected.

(Rizzi (1990))

Now, the AP-movement in (27) is a lowering operation, and thus the c-command requirement ((ib)) for the antecedent-government is not fulfilled. As a result, the passive sentence with a cognate subject may also be ruled out by the ECP.

Although one might consider it odd to explain one linguistic phenomenon with the PBC and the ECP, we do not compare these two explanations in this paper. We should notice, however, that the crucial point in each explanation is the violation of c-command requirement.

¹⁴ We have also suggested in Nogawa (1995) that this line of analysis might be at hand. We will abandon that possibility for the reasons discussed below in the text.

¹⁵ We assume here the Stray Affix Filter of Baker (1988), given below:

- (i) Stray Affix Filter:
 - *X if X is a lexical item whose morphological subcategorization frame is not satisfied at S-structure.

Given that, the morphological unification, motivated by (32ii), must not be carried out at

LF to satisfy the Visibility Condition. Thus the structures in (34) are not allowed even at LF.

¹⁶ There is another logical possibility for relating the modifier in a cognate object and the cognate verb: LF adjunction of the N-head in a cognate object into the V-head (cognate verb). This N-head adjunction would derive the LF representation in (ib) from the VP in (25a):

(i) laugh_i -laugh [an unpleasant t_i] (LF)

In (ib), the V- and the N-heads are structurally merged, and the modification of the adjective *unpleasant* within the cognate object is, in effect, indirectly "transferred" to the cognate verb.

Empirically, this line of analysis could also explain the impossible NP-movement of a cognate object. Since the N-head movement in passive sentences is a lowering operation, it would create an illegitimate trace in the subject position. (This head-movement analysis could also explain the facts concerning the *wh*-movement of a cognate object, which are to be discussed in section 4.)

There are, however, some conceptual problems with this mechanism. Firstly, we have to clarify what triggers the movement of the N-head, instead of the AP. Secondly, since the adverbial interpretation of the AP is achieved 'indirectly', via N-chain, we need to postulate an LF interpreting mechanism, as in (ii):

(ii) The modification relation between the N-head and its modifier in a cognate object is preserved even after the N-head is moved.

¹⁷ To put it precisely, extending the derivative analysis of argument structures, proposed in Hale and Keyser (1993), we have argued there that strong island effects are due to the empty D-position at the point of θ -role assignment. Non-pre-existence of the referent of a cognate object is analyzed to be due to this vacancy of the D-position. In the case of the derivation of a cognate verb (shown in (16)), when the CO(-to-be) is assigned a θ -role in the LRS, the D-position is considered to be empty (cf. Hale and Keyser (1993)). Because of this empty D-position in the LRS, COs show extreme deviation when extracted out of an island, yielding a violation of the antecedent-government chain requirement. See the discussion in Nogawa (1995).

¹⁸ Although the contrasts in judgement differ among speakers with regard to the *wh*-island constraint ((44) and (45)), this is not the case with the inner island constraint ((46) and (47)).

¹⁹ Hale and Keyser (1993) do not consider the LRS of V_Rs, and we do not intend to provide, in this paper, a detailed discussion about it. However, we can say, at

least, that the V_R shares, as a part of its LRS, the same structure as in the LRS of a CO-taking verb: the structure which represents the event of 'creation', 'production', or 'realization' (see Hale and Keyser (1993)).

Moreover, we tentatively consider that the LRS of V_R is built through some kind of lexical process such as 'lexical subordination' in Levin and Rapoport (1988). Lexical subordination embeds (subordinates) the original meaning under a new lexical predicate. Levin and Rapoport provides a diagnostic for verbs with a derived (complex) sense, that is, *re*-prefixation. They make the generalization that *re*-prefix can be added to verbs with their basic sense, but not to those with their complex one derived by the lexical subordination. This generalization also covers the V_P - V_R pair as the following examples indicate:

- (i) a. Mary re-painted_P the wall. [PO]
- b. *Mary re-painted_R the flowers. [RO]
- (ii) a. Mary re-dug_P the muddy ground. [PO]
- b. *Mary re-dug_R a small hole. [RO]

We thus consider that V_R is derived from the corresponding V_P . See also Massam (1990), Levin and Rapoport (1988), and references cited there.

²⁰ We cannot provide a detailed discussion of the internal structure of 'what sort/kind of X'. We simply assume that '(what) sort/kind of' and the 'X' correspond to the AP and the N-head in a cognate object, though the '(what) sort/kind of' part does not form a constituent.

²¹ The judgements of (55a,c) are due to Massam (1990). We have no clear explanation for the contrast in acceptability between (55a) and (55c).

²² We should notice here that *how*-interrogatives are possible with cognate objects (COs). *How* is not a complement, but an adverb.

- (i) a. How did he die?
- b. How did she laugh?

It should also be noticed that we are dealing only with COs in Massam (1990). As the following examples show, TOs, unlike COs, can undergo *what*-movement:

- (ii) a. What did Mary dance?
- b. What did John sing?

We have analyzed, in Nogawa (1995), TO as a complement of a genuine transitive verb, and is assigned a θ -role by the (TO-taking) verb at s-syntax. Then, '*what*' movement is naturally expected to be possible for TOs.

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