This paper proposes a unified analysis of the cognate object construction and the intransitive unergative sentence. Based on the assumption that the cognate object construction is an alternation of the unergative construction, the lexical and syntactic structures of the two constructions are presented. It is argued that the three readings of the cognate object construction correspond to the three-way distinction between DP and NP proposed in Borer (1994). This correspondence enables us to explore not only the cognate object construction but also the cognate object itself, focusing on referentiality and event structure.*

1. Introduction

The aim of this paper is to provide a unified treatment of the cognate object construction and the unergative intransitive construction, as illustrated by (1) and (2) respectively:¹

(1) Mary smiled a beautiful smile.
(2) Mary smiled beautifully.

The basic assumption here is that (1) is an alternation of (2) and thus verbs in (1) and (2) have a common lexical structure.

To begin with, let us clarify the scope of the cognate object (hereafter, CO) construction to be dealt with in this paper. Generally

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¹ Keyser and Roeper (1984: 404), Levin and Rappaport Hovav (1995: 40), and Oomuro (1991: 72) have pointed out that unergative verbs, but not unaccusative verbs, can take a cognate object.
speaking, the following classes of verbs may appear in a CO construction:

(3) a. waltz verbs (dance, waltz, etc.)  
   (Levin (1993))
   
b. verbs of non-verbal expression (smile, laugh, etc.) (ibid.)
   
c. verbs of secretion (bleed, sweat, etc.)  
   (Rice (1988))
   
d. others (die, sleep, etc.)

Verbs which belong to (3a) and (3d) do not show the characteristics of verbs that appear in the typical CO construction. Firstly, waltz verbs in (3a) allow COs to occur without its adjectival modification as in (4a), while it is obligatory in other classes of verbs. Furthermore, waltz verbs can take an object other than a CO as in (4b). Thus they behave like genuine transitives.

(4) a. Mary danced a dance.  
   (Jones (1988: 89))
   
b. Mary danced a jig.

Secondly, as noted by Jones (1989: 90), die in (3d) may be taken as an ergative verb rather than an unergative verb. Apparently, verbs of (3a) and (3d) are not consistent with our basic assumption that the CO verb and the unergative verb have a common lexical structure. However, our goal is to account for the CO construction of (3a-d) under a unified analysis. It will be shown that, in spite of the characteristics of the verbs of (3a) and (3d), our argument, which is based on the alternation with unergatives, can be maintained.

This paper is organized as follows: In section 2, it will be shown that the cognate object is an argument rather than an adjunct. In section 3, it will be argued that some “unusual properties” discussed in Massam (1990) among others are accounted for by the notion of referentiality, which is incorporated into syntax by Borer (1994). In section 4, a unified analysis of unergatives and the cognate object construction will be proposed, based on their event structures and referentiality. In section 5, the relation of referentiality and the event structure of the CO will be further explored.

2. Argument Analysis

Due to the peculiar properties of the CO, there has been a long-

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2 Other classes of verbs also take a CO. According to Levin (1993), verbs of manner of speaking like grunt, scream, form the construction, but most of them are marginal. See Rice (1988) for “atypical” cases.
standing debate on its status: whether the CO is an argument or an adjunct. The adjunct analysis of the CO is favored by Jones (1988) and Moltmann (1990). On the other hand, Massam (1990) and Macfarland (1994) favor the argument analysis. The present paper favors the argument analysis and I will defend this latter position in the rest of this section.

Let us begin by reviewing Massam (1990) and Macfarland's (1994) refutation of the adjunct analysis. Firstly, the adjunct analysis claims that the impossibility of passivization presented as in (5) is attributable to the adjunct status of the CO:

(5) a. *A happy death was died by the old man.  
   (Iwakura (1976: 61))
   
   b. *A weary sigh was sighed by Bill.  
   (Jones (1988: 91))
   
   c. *A terrifying scream was screamed by John.  
   (Moltmann (1990: 301))

In this respect, Massam (1990: 180) points out that direct objects other than the CO also disallow passivization. According to Massam, direct objects which contain a necessarily bound element cannot undergo passivization:

(6) a. *His way was moaned out the door by Alfred.
   
   b. *Grateful thanks were smiled by Rilla.
   
   c. *His neck was craned by Ted.  
   (Massam (1990: 180))

Furthermore, Macfarland (1994: 2) shows some instances of passivization:

(7) a. ... he that obeys the law merely through fear of being punished is not good, because, “although a good DEED may be DONE through servile fear, i.e., fear of punishment, it is not done well,” as Augustine says. 
   
   (Macfarland (1994: 2))
   
   b. Life here had been LIVED on a scale and in a style she knew nothing about. 
   (ibid.)

The second argument put forward in favor of the adjunct analysis is that the indefiniteness effect in (8) and the impossibility of topicalization in (9) are ascribed to the predicative status, namely the adjunct status of the CO. Compare (9) with the impossibility of topicalization of the adverb in (10):

(8) a. *A death occurred today in this clinic. It was John who died that death.
   
   b. *John screamed this scream/every scream we heard
today. (Moltmann (1990: 301))

(9) a. *A painful death, John died t.
   b. *A shrill scream, John screamed t. (ibid.)

(10) a. *Slowly, John ate the cake.
    b. *Beautifully, Mary sang the song. (ibid.)

As a refutation, Massam (1990: 169) and Macfarland (1994: 4) show that not all the COs are indefinite:

(11) a. Tom sneezed every sneeze that we heard that day.
    (Massam (1990: 169))
    
    b. And you know, what I'll always remember is that with all the noise, the gun firin', the bullets whistlin', the boys screamin' as they got hit, over all the noise I could hear him LAUGHIN' that crazy LAUGH.
    (Macfarland (1994: 4))

Besides, as Massam (1990: 181) points out, topicalization of a CO is possible if the CO contains new information:

(12) a. The big cheery smile, Fran smiled: it was Elsie who smiled the insipid smirky smile.
    b. Such a crazy whooping laugh, Norma would never laugh; so there must have been someone else in the room. (Massam (1990: 181))

From the discussion above, it follows that the arguments for the adjunct analysis are no longer tenable. In the rest of this section, I will discuss further arguments in favor of the argument analysis.

The adjunct analysis stems from the intuitive idea that the CO behaves like an adverb, modifying the activity or process denoted by the verb. For instance, according to Jones (1988: 93), the difference between (13a) and (13b) is "more a matter of style than meaning."

(13) a. Bill sighed wearily. (Jones (1988: 89))
    b. Bill sighed a weary sigh. (Jones (1988: 93))

Indeed, the CO a weary sigh in (13b) may denote the way that Bill sighed just as the adverb wearily in (13a) does. However, as Tenny (1994: 39) observes, (13b) is aspectually different from (13a). According to Tenny, a delimited reading is possible only in (13b).³ If Tenny is correct, then the difference between (13a) and (13b) is more than a

³ The term "delimitedness" is defined by Tenny (1994: 4) as follows:
   (i) Delimitedness refers to the property of an event's having a distinct, definite, and inherent endpoint in time.
Furthermore, as Iwakura (1976: 61) shows, it is not always the case that CO constructions have a corresponding intransitive sentence:

(14) a. Mary dreamed a strange dream.

This argument is confirmed by the comparison of (15a) and (15b):

(15) a. Mary smiled a beautiful smile.
    b. Mary smiled beautifully.

(15a) is ambiguous in the way (15b) is not. One of the readings of (15a) is that the facial expression of a smile was itself beautiful. The other reading is that the way Mary smiled was beautiful. The former reading is not available in (15b). To summarize, the modifying property of the CO does not directly lead to the rejection of the argument analysis.

Now I will explain the syntactic properties of the CO construction which may support the argument analysis. Firstly, the fact that the CO cannot occur with other objects suggests that the CO is a direct object:

(16) a. Mary danced a waltz a little.
    b. *Mary danced a waltz a little dance.

A little dance can not occur after the direct object a waltz in (16b), whereas a little can in (16a).

Secondly, the adjacency requirement between the CO and the verb also suggests the status of the CO as a direct object:

(17) a. Sam died a painful death slowly.
    b. Sam slowly died a painful death.
    c. *Sam died slowly a painful death.

Thirdly, the possibility of the extraction from the wh-island shows that the CO is an argument rather than an adjunct:

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4 Levin and Rappaport (1995: 22) also demonstrate that the CO construction is not just a paraphrase of an intransitive sentence by using locative inversion.

5 Massam (1990: 166) also presents examples where the CO cannot co-occur with the direct object. However, she only discusses the pure transitive verb as in (i) and (ii):

(i) *Mordred killed the knight a gruesome kill.
(ii) *Ethel moved her lips a slight move(ment). (Massam (1990: 166))

(i) and (ii) are not relevant examples because transitive verbs in (i) and (ii) do not allow cognate objects:

(iii) *Mordred killed a gruesome kill.
(iv) *Ethel moved a slight move(ment).
(18) a. What sort of smile do you wonder whether John smiled?
b. What color blood do you wonder whether Mr. Spock bled?

It seems reasonable to conclude that the CO is an argument rather than an adjunct. However, the discussion in this section ignores one problem. We have observed a variation in acceptability with regard to passivization, indefiniteness effects, and topicalization.

In the next section I will show that this variation may be explained by the notion of referentiality.

3. The Structure of the Cognate Objects
3.1. Referentiality

In the previous section, we demonstrated that many CO constructions disallow passivization. In this section, we will show that this phenomenon is due to the lack of referentiality and that there are two types of CO: referential CO and non-referential CO.

Firstly, let us consider Massam's (1990) account of passivization. Massam (1990: 180) argues that the CO does not undergo passivization because it is a necessarily bound element created by a lexical subordination. Massam's claim is based on her proposal of the lexical subordination process which creates the LCS (=Lexical Conceptual Structure) of the CO construction in (19b) from that of the unergative verb in (19a):

(19) a. [x verb]
     (=John laughed)
b. [x CAUSE [yi BECOME EXIST]] BY [x verb],
     (=John caused the event [John laugh] to exist by means of [John laugh]) (Massam (1990: 173))

There are two problems in Massam's proposal. First, yi in (19b) is considered by Massam (1990: 172) to be "the event itself which is created by the action." However, not all the COs denote events. For instance, the CO of verbs of secretion like green blood in (20) is not an event but the object created by the physiological process:

(20) Mr. Spock bleeds green blood. (Rice (1988: 208))

Therefore, yi cannot be directly connected with [x verb], by coindexation.

Secondly, the question posed at the end of the last section, i.e. the
variation in the acceptability of the passive, in the definiteness effect, and in the topicalization, is not captured by (19b). According to Massam, the coindexation of yi and \([x \text{ verb}]\) leads to the impossibility of passivization of the CO. However, the same mechanism cannot account for the fact that passivization is sometimes possible as shown in (7).

Thus (19) does not give a satisfactory account of the CO construction. It does not cover the four classes of verbs presented in (3) or explain the variation in acceptability of the CO construction.

In order to solve this problem, let us consider the referentiality of the CO. Note that even among the CO constructions of the same verb, there is a variation in acceptability. Compare (21c) and (21d):

(21) a. Mary smiled a beautiful/mysterious smile.
    b. Mary smiled a never-ending/sudden smile.
    c. ?A beautiful/mysterious smile was smiled.
    d. *A never-ending/sudden smile was smiled.
This suggests that it may be the CO itself that determines the acceptability of the passive. Actually, the readings of smile in (21c) and (21d) are different. Let us recall the ambiguity of the CO construction which we observed in (15a). We can induce each reading by choosing an adjective which modifies the CO. Adjectives used in (21a) and (21c) contribute to the result reading, i.e. a smile as a result of the action of smiling. On the other hand, adjectives in (21b) and (21d) tend to induce the action reading. Furthermore, I will claim that there is another difference between the COs in (21c) and (21d), that is, a difference in referentiality. A beautiful/mysterious smile in (21a) and (21c) is referential, while a never-ending/sudden smile in (21b) and (21d) is non-referential. In discussing referentiality, we will use the notion of referentiality proposed by Borer (1994).

Borer (1994: 39), characterizing the NP inside and outside the nuclear scope, proposes the following three-way distinction:

(22) a. Specifics, definites, and quantifiers which move out of the nuclear scope.
    b. (Referential) non-specifics which are subject to existential closure.
    c. (Non-referential) non-specifics which incorporate.

We will discuss the relationship between the action/result reading and referentiality in 5.1.
(23) a. Anna collected the sand.
   b. Anna collected some sand.
   c. Anna collected sand.  (Borer (1994: 41))

The sand in (23a), some sand in (23b), and sand in (23c) correspond to (22a), (22b), and (22c) respectively. According to Borer (1994: 41), the ungrammaticality of (24c) in the passive would follow from the assumption that non-referential non-specifics incorporate.

(24) a. The sand was collected (by Anna).
   b. Some sand was collected (by Anna).
   c. *Sand was collected (by Anna).  (Borer (1994: 41))

If we apply this analysis to the CO construction, the ungrammaticality of the passivization of the CO in (21d) lies in the non-referentiality of the CO. The non-referentiality of the CO in the action reading may be supported by other tests. Firstly, Borer (1994: 41) notes that non-referential non-specifics do not serve as antecedents for pronouns:

(25) a. Kim collected some of the sand, and it was very clean.
   b. Kim collected some sand, and it was very clean.
   c. *Kim collected sand, and it was very clean.  (Borer (1994: 41))

There is a contrast between two kinds of COs with respect to this property:

(26) a. Mary smiled a mysterious smile and it was attractive.
   b. Mary smiled a sudden smile and it was attractive.

It in (26b) can refer to the whole sentence, Mary smiled a sudden smile, but not a sudden smile with an action reading, while it in (26a) can refer to Mary smiled a mysterious smile as well as a mysterious smile.

Secondly, Mohanan (1995: 89) points out that gapping is disallowed in the case of the non-referential nominal in Hindi. Non-referential reading, i.e. the reading B is not available in (27):

(27) Anil  ghođe __i  aur  raam  haatʰiːi
    Anil-Nom horses-Nom and Ram-Nom elephants-Nom
    bectaaɨ  hai.
    sell-Hab be-Pres

   A. Anil buys horses and Ram elephants.
   B. *Anil does horse- __ and Ram elephant-selling.  (Mohanan (1995: 89))

The gapping of the CO with the result reading but, not the CO with the activity reading, is allowed:
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(28)  a. Mary smiled a mysterious smile and Jane a beautiful smile.

b. ??Mary smiled a never-ending smile and Jane a sudden smile.

The contrast between the referential CO and the non-referential CO in passive, pronominalization, and gapping suggests that the notion of referentiality has a syntactic effect in the CO construction.

In passing, there is a type of CO which fully allows passivization:

(29)  A merry dance was danced by Sam.  (Jones (1988: 91))

Note that a merry dance in (29) must denote a type of dance as pointed out by Jones (1988: 91). This CO may be classified as an instance of (22a). We will return to this type of CO in section 5.

We have shown that a variation in the acceptability of the passive in (21c), (21d), and (29) may be attributed to the three-way distinction proposed by Borer (1994). Borer's proposal will be extended to cover the unergative construction and the CO constructions in 3.2.

3.2. Syntactic Structure of the CO

Here, an analysis of two types of CO will be proposed based on their referential properties.

Firstly, let us consider the structures of the referential CO and the non-referential CO. Our analysis of the syntactic structure of the CO is based on the following claim by Borer (1994: 39-40) and Stowell (1989: 235-236):

(30) Referential nominals are DP, while non-referential nominals are NP.7

The structures of DPs proposed by Borer (1994) are shown in (31):

(31)  a. DP
     D
     a, three
     NP
     some, many

     b. DP
     D
     [e]
     NUM
     three, a
     NUMP
     NP

     c. DP
     D
     [e]
     NUM
     three, a
     N'  

(Borer (1994: 39))  (Borer (1994: 40))

---

7 As admitted by Stowell (1989: 257), DPs do not always function referentially.
According to Borer (1994), (22a) has the structure (31a). (22b) has either (31b) or (31c).

The referential CO may be considered to be non-specific because it behaves like the direct object of the creation verb which is taken to be non-specific. Let us consider the object pronominalization. Neither the referential CO nor the non-referential CO serves as an antecedent of the object pronoun:

(32) a. *?Mary smiled a beautiful smile and Jane smiled it, too.
    b. *Mary smiled a sudden smile and Jane smiled it, too.

(33) a. *Mr. Spock bled green blood and his father bled it, too.
    b. *Mr. Spock bled gruesome blood and his father bled it, too.

Above all, the fact that the referential COs in (32a) and (33a) cannot become the antecedent of the object pronoun means that they behave like direct objects of creation verbs:

(34) a. *John built a house in Boston and Sam built it in Philadelphia.
    b. *Mary wrote a book for her pleasure and Jane wrote it for money.

The existence of the direct object of a creation verb is not presupposed. Kratzer (1994: 35) writes:

(35) The predicate 'build the porch' characterizes an event that is a building activity, and whose target state consists in the existence of the porch. (Kratzer (1994: 35))

In this sense, the referential COs in (32a) and (33a) are referential non-specifics, for they do not presuppose the existence of the object denoted by the CO.

Turning to the structure of the non-referential CO, it may be (36):

(36) 
```
(36) NP
    /\     
   /    
  NP NUM N' 
     \   
      a sudden smile
```

If we choose the DP structure of the referential non-specific CO which is compatible with the NP structure in (36), then it might be (31c) rather than (31b).
4. Unergatives and the CO Construction

4.1. N-trace in LRS

Let us now consider the derivation of the CO constructions as well as the unergative intransitive construction. Our basic assumption is that verbs of the CO construction and unergative verbs share the common lexical relational structure (=LRS) which is presented in (37). We will follow the claim by Hale and Keyser (hereafter, H&K) (1991) that the derivation of an unergative verb in the lexicon is an instance of a conflation process:

(37) a. VP
    V  NP
     N

    laugh

b. VP
    V  NP
     N

    N  t

    laugh

(h & k (1991: 56))

As shown in (37), N is incorporated to V by means of head-movement and leaves its trace. According to H&K (1991: 57), t, the trace of N in (37b), is not visible in syntax, but it is not completely unavailable in syntax, because lexical knowledge is fully present in the grammar.8

If the trace of N is available in syntax, it may be claimed that the trace enables the unergative verb to form the cognate object construction. In the intransitive construction (38), the trace of N is not visible. In other words, the trace in (37b) is not realized syntactically in the intransitive sentence. On the other hand, in the CO constructions (39a) and (39b), the trace of N is syntactically realized as a CO.9 When it is realized as DP, the CO is referential as

8 One piece of evidence to support this idea is given by Higginbotham (1989):
   (i) John did that.
   (Higginbotham (1989))
   That in (i) is a realization of the N-trace in our analysis. In this sense, the N-trace may correspond to E(vent)-position in Higginbotham's theory.

9 Khalaily (1994: 101-102) independently proposes the copying analysis of the CO in Hebrew. Khalaily's analysis differs from mine in that the trace realized as a CO is left through the syntactic movement of the eventive N:
   (i) Darab-a Zayd-un l-Himmar-a *(Darb-an) quawiyy-an
       hit-Pst-3MS Zayd-Nom the-donkey-Acc Hit-Acc Strong-Acc
       'Zayd gave the donkey a strong hit/ hit the donkey strongly.'
   (Khalaily (1991: 101))

Khalaily argues that Darb-an is a copy of Darab-a which is left in the base position of Darab-a. According to Khalaily, the copying is "a last resort to get to a well-
in (39a). When it is realized as NP, the CO is non-referential as in (39b):

(38) Mary smiled beautifully.
(39) a. Mary smiled a beautiful smile. (referential)
    b. Mary smiled a sudden smile. (non-referential)

Let us now consider the structure of (38), (39a), and (39b). The structure of an unergative intransitive sentence (38) before movement in syntax may be the following:

(40) Intransitives (= (38))

```
        VP
       /   \
  Spec -- V
       \
     Mary smiled
```

The structure of the referential CO construction (39a) before movement is shown in (41):

(41) Referential CO (= (39a))

```
        FP
       /   \
  Spec -- F'
   /     \     \
 F       VP
       /   \
[ + Acc] -- V
       \
   smiled
       \   \     \
 a beautiful smile
[ + Acc]
```

FP is the functional projection which reflects the delimitedness of the event. The reader may recall that the unergative intransitive sentence and the CO construction differ in delimitedness. Only the latter can denote the delimited event. Furthermore, I will assume that the accusative Case feature [+Acc] of DP is checked at the specifier of

formed structure for adjectival modification.” I agree on Khalailiy's claim that the account of the Hebrew CO in terms of modification may apply to the English CO, but the syntactic adequacy of the “last resort” account awaits further research.

10 (40) is the structure of unaccusatives rather than unergatives in Chomsky (1995: 352). Chomsky claims that unergatives are “concealed accusatives,” and thus that they form the light verb construction. We will return to this issue in 4.2.

11 This phrase may roughly correspond to ASPP by Borer (1994) and Tenny (1987).
The non-referential CO construction (39b) has the following structure:

(42) Non-referential CO (= (39b))

\[
\begin{array}{c}
\text{FP} \\
\text{F} \\
\text{VP} \\
\text{V} \\
\text{smiled} \\
\text{NP} \\
\text{a sudden smile}
\end{array}
\]

Unlike in the referential CO construction, the specifier of FP is not projected in (42). A sudden smile in (42) is NP and thus requires no Case.\(^{13}\)

As shown above, the aspectual difference between the unergative intransitive and the CO construction may be captured by means of the functional projection FP. Thus we can maintain our basic assumption that the intransitives and the CO construction have a common lexical structure. At the same time (40) and (42) show that even the non-referential CO construction is not just a paraphrase of the unergative intransitive sentence.

4.2. Defending FP

Here I will argue that the functional projection FP in the CO construction participates in the accusative Case feature checking. Firstly, the correlation between the accusative Case and referentiality is found in some languages other than English. Let us compare a Hindi sentence (43) containing an accusative object with (44) containing a nominative object:

(43) ilaa baccō-ko kʰojtii rahtii hai.
   Ila-Nom children-Acc search-Hab Prog be-Pres
   ‘Ila keeps searching for the/some children.’

(44) ilaa bacce kʰojtii rahtii hai.
   Ila-Nom children-Nom search-Hab Prog be-Pres

\(^{12}\) The issue of accusative Case will be discussed in 4.2.

\(^{13}\) The behavior of the non-referential CO construction which we saw in 3.1 suggests the possibility of incorporation of the CO into V. The question of whether the process really happens or not is beyond the scope of this paper.
'Ila keeps children-searching (i.e. performing the act of searching for children).'

(Mohanan (1995: 77-78))

The referential object baccò-ko in (43) is accusative, while the corresponding non-referential object bacce in (44) is nominative.

Another case in point is the Japanese CO construction and its related construction. Odoru (=to dance) is one of the rare verbs that can take a CO in Japanese:

(45) Taro-ga henna odori-o odotta.
Taro-Nom strange dance-Acc danced
'Taro danced a strange dance.'

The fact that the CO construction with an adjective like totsuzenno (=sudden) is unacceptable as in (46) shows that the Japanese CO is always referential:14

(46) *Taro-ga totsuzenno odori-o odotta.
Taro-Nom sudden dance-Acc danced

Japanese has another type of CO, to be dubbed hito-CO here, which is always non-referential:15

(47) a. Taro-ga hito-odori odotta.
Taro-Nom one-dance danced
'Taro danced a little dance.'

Taro-Nom one-dance-Acc danced

(47a) and (47b) show that, being non-referential, hito-odori (=a little dance) cannot be accusative. The contrast between the Japanese CO

---

14 Totsuzenno odori may be used in other constructions:

(i) Hanako-ga Taro-no enkaideno totsuzenno odori-ni
Hanako-Nom Taro-Gen at the banquet sudden dance-Dat
odoroita.
surprised.
'Hanako was surprised at Taro's sudden dance at the banquet.'

Note that totsuzenno, like sudden, induces the action reading in (i).

15 One of the reviewers, who allows the light verb construction in (i), does not agree with our judgement with regard to (47a):

(i) Taro-ga hito-odori shita.
Taro-Nom one-dance did
'Taro danced a little dance.'

Indeed, some speakers do not allow (47a), but the difference in acceptability between (47a) and (47b) is clear. Furthermore, compare (47a) with its unaccusative counterpart in (ii), which is clearly out:

(ii) *Taro-ga hito-ochi/hito-otoshi ochita.
Taro-Nom one-fall fell.
and _hito_-CO suggests that referentiality is related to accusative Case in Japanese, too. The correlation between referentiality and accusative Case may lead one to argue that the referential CO in English needs a mechanism for checking the required accusative Case. FP is the projection which serves the purpose.

Another argument comes from the observation that FP plays the role of the light verb phrase \( \nu P \) proposed for the transitive verb construction in Chomsky (1995):

\[
\text{(48) } \quad \begin{array}{c}
\text{Subj} \\
\nu
\end{array} \quad \begin{array}{c}
\nu' \\
\text{VP}
\end{array} \\
\text{Obj}
\]

(Chomsky (1995: 352))

Both being functional projections (see Chomsky (1995: 368) for the nonsubstantial categorial status of \( \nu \)), FP and \( \nu P \) equally create a shell-type structure for VP. This, in tandem with the claim that FP projects in the CO construction but not in the intransitive sentence, may support the view that FP captures the intermediate nature of the CO construction between transitives and intransitives.

On the other hand, FP and \( \nu P \) do not share exactly the same properties. FP is assumed primarily for capturing the aspectual property of delimitedness, while \( \nu P \) is a reflex of transitivity. Thus, while unergatives are also associated with the \( \nu P \) structure in Chomsky's framework, they do not require FP in others.\(^{16}\)

Given the restricted nature of FP just seen, one may take it as a variant of \( \nu P \): \( \nu P \) contributes to the accusative Case feature checking in overt object shift languages. If \( \nu P \) is associated with the Case feature checking, so may be FP in the CO construction. Indeed, the shell-type structure of VP created by FP and \( \nu P \) may be regarded as a common basis for the accusative Case feature checking.

At the same time, since FP is mainly concerned with delimitedness, a notion pertaining to event structure rather than to syntax, it may be conjectured that the accusative Case is weaker when checked via F

\(^{16}\) Considering the syntactic and aspectual gap between intransitive unergatives and transitives, I am rather reluctant to accept Chomsky's view that \( \nu P \) projects for intransitives, too. As for unaccusatives, I agree with Chomsky that unaccusatives do not require any shell-type structure.
than via $v$. This will explain why the acceptability of passivization of the CO is low even if the CO is referential.

The two arguments presented above may not be direct arguments for the association of FP and accusative Case feature checking, but we can explain the facts discussed in this subsection in an elegant manner if we assume that FP is related to accusative Case.

5. Event Structure and Referentiality

In section 3 and section 4, we have proposed a unified analysis of unergatives and the referential/non-referential CO construction. In this section, we will discuss the relation of the event structure of the verb which can take a CO and the syntactic status of the CO.

5.1. Activity and Result

The sentence (49) has three possible readings:

(49) Mary danced a beautiful dance.

(50) Reading A: the activity of dancing is beautiful.
    Reading B: the result of the activity of dancing is beautiful.
    Reading C: a certain type of dance, e.g. a tango, is famous for its beauty.\(^\text{17}\)

It has been shown above that the CO of Reading B tends to be referential, while the CO of Reading A tends to be non-referential.\(^\text{18}\) This three-way reading in (50) corresponds to the three-way distinction between DP and NP of Borer (1994) in (22). However, we have not explained why a correlation exists between activity/result readings and referentiality.

The relation between referentiality and event structure is already suggested by Rizzi (1991), who employs the notion of referentiality for the argument/adjunct distinction. Rizzi (1991: 287) states that some elements selected by the verb “refer to participants in the event described by the verb (John, apples, books, etc.),” while other selected elements “do not refer to participants: they rather qualify the event, compositionally (measure, manner, etc.) or idiosyntactically (idiom

\(^{17}\) The CO of Reading C allows the passivization as we observed in (29).

\(^{18}\) All the three readings entail the delimited event. Note that delimitedness does not necessarily imply result, thus Reading A is consistent with the delimited nature of the event.
chunks).” In short, Rizzi’s basic idea is that participants of the event can be referential. However, he does not explain the correlation.

To find a solution to this problem, let us begin by considering the way that modification of the CO works. Intuitively, in Reading A, the adjective modifies the activity in the event, while in Reading B, it modifies the result of the activity.

To be precise, we may extend Larson and Segal’s (hereafter, L&S) (1995: 498) analysis. In explaining the sentence (51), they suppose that “dancer is relational, taking an individual-event pair \(<x, e>\) as its semantic value; the latter is the event of dancing, the former is the individual who dances (p. 498).”

(51) Olga is a beautiful dancer. (L&S (1995: 498))

By introducing the modification structure of (51) presented in (52), they explain the ambiguity in (51) as in (53):

(52) \[
(N' \rightarrow \langle x, e \rangle \rightarrow N' \rightarrow AP \rightarrow \text{beautiful})
\]

(53) When beautiful applies to \(x\), (52) will entail that the dancer is beautiful; when beautiful applies to \(e\), (52) will entail that the dancing is beautiful. (ibid.)

If we apply the explanation in (52) and (53) to the account of the modification in the CO, we may obtain the following modification structure:

(54) a. \[
(N' \rightarrow \langle x, e \rangle \rightarrow N' \rightarrow AP \rightarrow \text{beautiful})
\]

b. \[
(N' \rightarrow \langle x, e \rangle \rightarrow N' \rightarrow AP \rightarrow \text{dance})
\]

19 I thank an anonymous reviewer and Richard Larson for suggesting that the external argument, i.e. the person who dances, is not included as a value in (54). Thus, (49) cannot have the reading “a dance by a beautiful dancer,” as suggested by the reviewer. Larson (personal communication) analyzes this fact as a matter of the scope of the relevant arguments and event quantifiers. The verb dance takes only two values in (55), too. The constraint concerning scope may be syntactic rather than lexical. For the surface subject is not predicated of by an adverb either in the unergative or the unaccusative sentences, as in (i) and (ii) respectively:
In (54), *dance* may also take two values, an individual and an event. If *beautiful* applies to *x* as in (54a), (49) will entail that the result of dancing is beautiful, and we will get Reading B. If *beautiful* applies to *e* as in (54b), (49) will entail that the dancing is beautiful, and we will get Reading A. In other words, when the adjective applies to the individual, the CO is referential, that is, D projects.

Concerning Reading A, the above account may not be sufficient. We also have to consider the VP structure. For in the CO construction, the meaning of activity is entailed not only by N, but also by V. To solve this problem, let us suppose the following modification structure for the non-referential reading:

In (55), the modification relation of NP (i.e. *beautiful* applies to *e*) is inherited by V through the coindexation of the value *e* of N and *e* of V. Suppose further that the presence of DP prevents this coindexation syntactically. Therefore, in order to have Reading A, DP cannot project. Since the referential property lies in D (e.g. +/−R feature as suggested by Longobardi (1994)), Reading A does not permit the projection of DP.

5.2. Verb Classes

Here we will consider the remaining problem: the verb classes and their event structure with respect to the CO construction. Let us consider again the classes of verbs that can take a CO:

(i) Mary danced elegantly.
(ii) Mary arrived elegantly.

20 This line of argument may be also possible for the light verb construction.
(56) (= (3))
   a. waltz verbs (dance, waltz, etc.) (Levin (1993))
   b. verbs of non-verbal expression (smile, laugh, etc.) (ibid.)
   c. verbs of secretion (bleed, sweat, etc.) (Rice (1990))
   d. others (die, sleep, etc.)

Much of our discussion has dealt with the ambiguity in the CO, which is summarized in (50). However, not all the verbs can form the ambiguous CO construction. Verbs of secretion can have only Reading B, a result reading:

(57) a. Mr. Spock bleeds green blood.
    b. *Mr. Spock bled sudden blood.

In terms of event structure, the impossibility of (57b) is due to the nature of the CO blood, which does not take an event as a semantic value.21

Let us now consider waltz verbs. These waltz verbs can take direct objects other than the CO. However, their direct objects are very limited. For instance, the verb dance can take direct objects such as jig, waltz, tango, etc., all of which denote kinds of dance. Recall Reading C in (50). Reading C is a kind reading and thus the direct objects are still in a sense a CO of Reading C. This may be another argument for the unified analysis of unergative verbs and the CO.

Lastly, let us consider verbs like die, which are considered to be ergative (or unaccusative). The CO of die may be a true adjunct in the sense that it has only Reading A. The case of verbs like die should be treated as an instance of unaccusative mismatches. In fact, the Dutch language allows the CO of laugh, sneeze, bleed, dance, but not die, sleep. Die and sleep do not permit impersonal passive, either, which suggests that the requirement of agency is stronger for the CO construction in Dutch than in English.22

6. Conclusion

In this paper, we have proposed a unified analysis of the cognate

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21 As pointed out by a reviewer, sudden blood itself is not permitted. The fact that the adjective sudden can modify smile and dance as we saw in (21) but not blood also suggests that blood does not take an event as a semantic value. For the adjective sudden forces the activity reading.

22 See Zaenen (1993) for the relation between impersonal passive and controllability, which is ascribed to agency.
object construction and the unergative intransitive sentence.

The approach taken in this paper differs from previous studies of the CO construction in three respects. Firstly, we did not devote much time to the argument/adjunct distinction. Rather, we have availed ourselves of the notion of referentiality.

Secondly, we have explored not only the CO construction but also the CO itself. It is the notion of referentiality that enables an accurate analysis of the syntax and semantics of the CO itself. Borer's three-way distinction between DP and NP corresponds to the three readings of the CO in (50). The analysis by means of event structure rests on this correspondence. The properties of D, however, await further research.

Lastly, but most importantly, we have kept the assumption that the CO construction and the unergative intransitive sentence have a common lexical relational structure. How the N-trace is projected in syntax determines whether the LRS is mapped in syntax as a referential CO construction, a non-referential CO construction, or an unergative intransitive sentence. This assumption has led us to explore the CO construction from a broad point of view as an alternation of an unergative verb, which forms part of a large inventory including unergative verbs and their related constructions. In this sense, the present study may validate an approach which attempts to solve the question of unaccusative mismatches from the standpoint of unergativity.

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