

## The physical attribute construction in Japanese and the cognate object construction in English\*

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This paper deals with the physical attribute construction (PAC) in Japanese such as *Cameron Diaz-wa kireina me-o siteiru* 'Cameron Diaz has beautiful eyes'. This paper points out that the PAC shares some properties with the cognate object construction (COC) in English such as *The tree grew a century's growth within only ten years*. The properties include: (i) the obligatory presence of the modifier, (ii) the semantic focus on the modifier, (iii) the inability to be passivized and (iv) the inability to be operator-moved. Based upon these properties, this paper reaches the conclusion that the English COC involving unaccusative verbs is the counterpart of the Japanese PAC. Furthermore some principled accounts are given to those properties.

Areas of interest: physical attribute construction, subject-predicate relation

### 1. Introduction

Japanese has the physical attribute construction (henceforth PAC), as shown in (1):<sup>1</sup>

- (1)a. Cameron Diaz-wa kireina me-o siteiru.  
Cameron Diaz-Top beautiful eyes-Acc BE  
'Cameron Diaz has beautiful eyes.'
- b. Nadia Comaneci-wa yawarakai karada-o siteiru.  
Nadia Comaneci-Top flexible body-Acc BE  
'Nadia Comaneci has a flexible body.'

The above construction consists of the verbal expression *siteiru* 'BE' and an object-like NP which expresses a body part.<sup>2</sup> The construction has been studied so far in terms of possession (cf. Tsunoda 1991,

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<sup>1</sup> The following abbreviations are used in this paper: Top(ic), Acc(usative), Nom(inative), Dat(ive), Pass(ive), Comp(lementizer), Cop(ula).

<sup>2</sup> The verb form is a characteristic of the PAC: the PAC exclusively involves the *siteiru* form (*do*-ing form) indicating stativity. It allows neither the present form (*suru* 'do-present') nor the past form (*sita* 'do-past'). Note here that the *sita* form is available only in the prenominal position as shown in (i):

(i) aoi me-o sita onnanoko-ni atta.  
blue eyes-Acc BE girl-Dat met  
'I met a blue-eyed girl.'

It is important, however, to note that *sita* in (i) is not the past form but the participle one, since it does not show any past event or situation. Thus, even though *sita* but not *siteiru* appears in the prenominal position, it cannot be used as the past form. It is supported by the fact that (i) can be paraphrased by using *siteiru* instead of *sita*: that is, we can also say "*aoi me-o siteiru onnanoko-ni atta*".

As for the object-like NP of the PAC, some non-body part NPs can also occur, as follows:

Sato 2003, Kageyama 2004 *inter alia.*). This paper points out that the PAC in Japanese shares some properties (such as obligatory modification, semantic focus on the modifier) with the cognate object construction (henceforth COC) in English.<sup>3</sup>

The organization of this paper is as follows: section 2 shows that the PAC and the COC share some semantic and syntactic properties, pointing out further that there are two types of the English COC. Section 3 attempts to explain their similarities shown in the previous section. Section 4 summarizes this paper.

## 2. Similarities between the PAC in Japanese and the COC in English

### 2.1. Similarities

First, let us compare the typical examples of the PAC in (1) repeated below with the examples in (2), where the objects appear without an adjectival modifier.

- (1)a. Cameron Diaz-wa kireina me-o siteiru.  
Cameron Diaz-Top beautiful eyes-Acc BE  
'Cameron Diaz has beautiful eyes.'
- b. Nadia Comaneci-wa yawarakai karada-o siteiru.  
Nadia Comaneci-Top flexible body-Acc BE  
'Nadia Comaneci has a flexible body.'
- (2)a. \*Cameron Diaz-wa me-o siteiru.  
Cameron Diaz-Top eyes-Acc BE  
'\*Cameron Diaz has eyes.'
- b. \*Nadia Comaneci-wa karada-o siteiru.  
Nadia Comaneci-Top body-Acc BE  
'\*Nadia Comaneci has a body.'

The ungrammaticality of (2) shows that the lack of an adjectival modifier (*kireina* 'beautiful' or *yawarakai* 'flexible') makes the PAC ungrammatical. This observation is summarized as the following property of the PAC:

**PAC's Property [1] - Obligatory modification:** The object NP of the PAC needs an adjectival modifier.

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- (ii) yasasii kokorone-o siteiru  
sweet nature-Acc BE  
'has sweet nature'
- (iii) otonasii seikaku-o siteiru  
weak personality-Acc BE  
'has weak personality'

Neither *kokorone* 'nature' nor *seikaku* 'personality' is a body part NP, but can appear in the PAC. Inalienable possessed NPs like them often appear in the construction in question. Nonetheless we will use the term 'the physical attribute construction,' as in the literature, since the typical examples of the PAC involve body part NPs.

<sup>3</sup> As far as we know, few researchers have so far studied whether or not the physical attribute construction has its counterpart in other languages (but see Tsujioka 2001).

Next consider the following example:

- (3) kyooen-siteiru zyoyuu-wa kireina me-o sitei-nai.  
costarring actress-Top beautiful eyes-Acc BE-not  
'The costarring actress does not have beautiful eyes.'

In the above sentence, what the negative element *nai* 'not' negates is not the noun *me* 'eyes' but its modifier *kireina* 'beautiful'. Accordingly, what (3) means is not that the costarring actress does not have eyes, but that the costarring actress's eyes are not beautiful. Thus, the semantic focus in the PAC is not on the noun object itself but on its modifier.<sup>4</sup> This observation is depicted as the following property of the PAC:

**PAC's Property [2] - Semantic focus on the modifier:** It is not the body-part object but its modifier that is given semantic focus in the PAC.

Interestingly enough, these two properties of the PAC in Japanese are involved in the COC in English exemplified in (4):

- (4)a. She smiled a charming smile.  
b. Your father died a natural death.

In (4), both the verb *smile* and the verb *die* are followed by the object that is a morphological cognate of them (i.e. *smile* and *death*, respectively). Let us compare (4) with (5) below:

- (5)a. \*She smiled a smile.  
b. \*Your father died a death.

The ungrammaticality of (5) shows that the lack of an adjectival modifier (*charming* or *natural*) makes the COC ungrammatical. This is summarized as the following property of the COC (see also Huddleston 1984 and Levin 1993):

**COC's Property [1] - Obligatory modification:** The object NP of the COC needs an adjectival modifier.

Next consider the following examples:

- (6)a. She did not smile a charming smile.  
b. Your father did not die a natural death.

In (6a), what is negated by *not* is not the noun *smile* but its modifier *charming*. That is, what (6a) intends to mean is not 'she did not smile' but 'the way she smiled was not charming'. Likewise, what is negated by *not* in (6b) is not the noun *death* but its modifier *natural*. That is, what (6b) intends to mean is not 'your father did not die' but 'the way your father died was not natural'. Thus, the semantic focus in the COC is not on the noun object itself but on its modifier. This is summarized as the following property of the COC (see also Omuro 1990 and Levin 1993):

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<sup>4</sup> Note that the term "(semantic) focus" in the text does not mean the one in the topic-focus distinction (i.e. new/old information). It may be paraphrased as "prominence."

**COC's Property [2] - Semantic focus on the modifier:** It is not the cognate object but its modifier that is given semantic focus in the COC.

It must be noted here that the property [2] of both the COC and the PAC does not hold true of any other negative sentences with modifiers, or more accurately Physical Attribute modifiers (henceforth, PA modifiers). Observe the following:

- (7)a. John doesn't have a big car.
- b. John has no car.
- c. John doesn't have a big one.

It is true that an example such as (7a) entails (7c). It is, however, noted that (7a) can also imply (7b) under such a circumstance as in (8):

- (8) John doesn't have a big car, but instead he has a big motorcycle: Harley-Davidson.

In (8), what is negated in the former sentence is *a car* but not *big*. This implicature in (8) comes from the whole sentence (or context). However, this kind of implicature cannot be obtained in the case of both the COC and the PAC: the objects of both constructions cannot be the target of negation at any context. For example, let us compare the following example (9) to (3) with some modification:

- (9) John-wa ookina kuruma-o mottei-nai ga, sono kawari (kare-wa) ookina baiku-o motteiru.  
John-Top big car-Acc have-not but instead he-Top big motorcycle-Acc have  
'John doesn't have a big car, but instead he has a big motorcycle.'
- (3) kyooen-siteiru zyoyuu-wa kireina me-o sitei-nai (*ga kanozyo-wa kireina hana-o siteiru*).  
costarring actress-Top beautiful eyes-Acc BE-not (but she-Top beautiful nose-Acc BE)  
'The costarring actress does not have beautiful eyes, (but she has a beautiful nose).'

The first sentence in (9), which is underlined, is a Japanese negative sentence with PA modifiers, where the head noun of the object *kuruma* 'a car' is negated. As stated above, however, what the negative element *nai* 'not' in (3) negates is not the noun *me* 'eyes' but only its modifier *kireina* 'beautiful'. Note here that the noun *me* 'eyes' cannot be the target of negation in (3), even if the sentence (3) is followed by the parenthesized sentence given above. Thus the fact that negation cannot affect the head noun of the object can be regarded as the outstanding character of the COC and the PAC (i.e. the property [2]), which is distinct from other negative sentences with PA modifiers.<sup>5</sup>

To sum up, we conclude that the properties in [1] and [2] of the English COC correspond to those in [1] and [2] of the Japanese PAC, respectively: obligatory modification and semantic focus on the modifier. This suggests that the PAC and the COC are related to each other.

## 2.2. More on similarities

In this section, we will point out that the English COC can be divided into two types in terms of the verb type: the unergative COC and the unaccusative COC. We will then show that the Japanese PAC shares some properties with the English COC involving unaccusative verbs.

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<sup>5</sup> We thank *JLL* anonymous reviewers for calling our attention to this matter.

### 2.2.1. Two kinds of the cognate object construction

It has been pointed out in the literature that unaccusative verbs cannot appear in the COC (see Keyser and Roeper 1984, Massam 1990, Macfarland 1995 *inter alia.*); however, some unaccusative verbs can occur with a cognate object, as exemplified in (10):

- (10)a. The tree grew a century's growth within only ten years.  
b. The stock market dropped its largest drop in three years today.  
c. The apple fell just a short fall to the lower deck, and so were not too badly bruised.  
(Kuno and Takami 2004: 116)

There are good reasons to differentiate the COC involving unaccusative verbs in English (henceforth unaccusative COC) in (10) from the (typical) COC involving unergative verbs in English (henceforth unergative COC). The unaccusative COC is different from the unergative COC in the following two respects: one is passivization and the other is *wh*-movement of the cognate object.

First let us examine the ability of passivization of the cognate object. Observe the following:

- (11)a. A sound sleep was slept by the baby.  
b. The same dream was repeatedly dreamed by Mary. (Nakajima 2006: 677)

As shown in (11), the unergative COC allows the cognate object to be passivized (see also Massam 1990, Macfarland 1995). On the other hand, the cognate object of the unaccusative COC cannot be passivized, as shown below:

- (12)a. \*A century's growth was grown within only ten years by the tree trunk.  
b. \*The largest drop in three years was dropped by the stock market today.  
c. \*Just a short fall was fallen to the lower deck by the apples. (Nakajima 2006: 667)

The above contrasts can be summarized as the following property of the COC:

**COC's Property [3] - The (in)ability to be passivized:** The unergative COC allows the cognate object to be passivized, whereas the unaccusative COC does not.

Second, let us examine the ability of *wh*-movement of the cognate object. Observe the following examples:

- (13)a. What kind of sleep did the baby sleep?  
b. What kind of dream did the boy dream? (Nakajima 2006: 677)

As shown in (13), the unergative COC allows the cognate object to be *wh*-moved (see also Macfarland 1995). On the other hand, the cognate object of the unaccusative COC cannot be *wh*-moved, as shown below:

- (14)a. \*What kind of growth did the tree grow in ten years?  
b. \*What kind of drop did the stock market drop today?  
c. \*What kind of fall did the apples fall to the lower deck? (Nakajima 2006: 667)

The above contrasts can be summarized as the following property of the COC: <sup>6</sup>

**COC's Property [4] - The (in)ability to be *wh*-moved:** The unergative COC allows the cognate object to be *wh*-moved, whereas the unaccusative COC does not.

To sum up, the COC's properties [3] and [4] enable us to conclude that there are two kinds of the English COC: one is the unergative COC involving unergative verbs and the other is the unaccusative COC involving unaccusative verbs.

### 2.2.2. Similarities between the PAC and the unaccusative COC

In this section, we will show that the Japanese PAC shares some properties with the English COC involving unaccusative verbs (i.e. the unaccusative COC).

Let us first examine the type of verbs involved in the PAC. As shown in (1), the verb in the PAC is exclusively *siteiru* 'BE'. *Suru* (the bare form of *siteiru* in (1)) represents stativity and can be classified as the unaccusative verb since stativity is assumed to be one of the typical characteristics of unaccusativity (cf. Van Valin 1990 *inter alia.*). Thus we can see that the verb type of the PAC as in (1) and that of the unaccusative COC as in (10) are the same: unaccusative verbs. Interestingly enough, the PAC and the unaccusative COC behave similarly with regard to passivization and *wh*-question, more generally, operator movement.

Recall that the cognate object of the unaccusative COC cannot be passivized, as in (12) repeated below:

- (12)a. \*A century's growth was grown within only ten years by the tree trunk.  
 b. \*The largest drop in three years was dropped by the stock market today.  
 c. \*Just a short fall was fallen to the lower deck by the apples.

It is true of the PAC: its body-part object cannot be passivized, as in (15):

- (15)a. \*kireina me-ga (Cameron Diaz-ni(-yotte)) sareteiru.<sup>7</sup>  
 beautiful eyes-Nom (Cameron Diaz-by) BE-Pass  
 '\*Beautiful eyes are had (by Cameron Diaz).'
- b. \*yawarakai karada-ga (Nadia Comaneci-ni(-yotte)) sareteiru  
 flexible body-Nom (Nadia Comaneci-by) BE-Pass  
 '\*Flexible body is had (by Nadia Comaneci).'

Now we can obtain the following property of the PAC:

**PAC's Property [3] - The inability to be passivized:** The PAC does not allow the body-part object to be passivized.

<sup>6</sup> It is noted that the *how*-type question is allowed in the COC. Observe the following examples, where cognate objects in the unaccusative COC are *wh*-questioned:

- (i)a. How much/How far did the tree grow in ten years?  
 b. How much/How far did the stock market drop today?  
 c. How much/How far did the apples fall to the lower deck? (Nakajima 2006: 667)


<sup>7</sup> *Sareteiru* is the passive form of *siteiru*.

We can, therefore, see that both the PAC and the unaccusative COC cannot undergo passivization.<sup>8</sup>

Recall further that the cognate object of the unaccusative COC cannot be *wh*-moved, as in (14) repeated below:


- (14)a. \*What kind of growth did the tree grow in ten years?  
 b. \*What kind of drop did the stock market drop today?  
 c. \*What kind of fall did the apples fall to the lower deck?

As is well known, Japanese has no overt *wh*-movement (cf. Hoji 1985, Saito 1985 *inter alia*.) Accordingly, the direct comparison of Japanese *wh*-question with English *wh*-question is difficult. Japanese, however, has overt movement of null operator (henceforth *Op*-movement) in the cleft construction (cf. Matsuda 1997, Kizu 2005 *inter alia*.).

- (16)a. Cameron Diaz-wa tennis-o siteiru.<sup>9</sup>  
 Cameron Diaz-Top tennis-Acc doing  
 ‘Cameron Diaz is playing tennis.’  
 b. Cameron Diaz-ga siteiru no-wa tennis-(o) da.  
 Cameron Diaz-Nom doing Comp-Top tennis-Acc Cop  
 ‘It is tennis that Cameron Diaz is playing.’  
 (17) [<sub>CP</sub> *Op*<sub>i</sub> [<sub>IP</sub> Cameron Diaz-ga *t*<sub>i</sub> siteiru ] no]-wa tennis-o<sub>i</sub> da.  


(16) is an example of the sentence with a transitive verb *siteiru* ‘playing’. In (16b), the object *tenisu-o* ‘tennis-Acc’ can be focused in the cleft sentence, where overt operator movement like English *wh*-movement occurs: a null operator *Op* moved overtly to the Spec, CP in the embedded sentence, as schematically represented in (17).

Interestingly enough, the object NP of the PAC cannot be focused in the cleft sentence. Observe the following:

- (18)a. Cameron Diaz-wa kireina me-o siteiru. (=1a))  
 Cameron Diaz-Top beautiful eyes-Acc BE  
 ‘Cameron Diaz has beautiful eyes.’  
 b. \*Cameron Diaz-ga siteiru no-wa kireina me-(o) da.  
 Cameron Diaz-Nom BE Comp-Top beautiful eyes-Acc Cop  
 ‘It is beautiful eyes that Cameron Diaz has.’  
 (19) [<sub>CP</sub> *Op*<sub>i</sub> [<sub>IP</sub> Cameron Diaz-ga *t*<sub>i</sub> siteiru ] no]-wa kireina me-o<sub>i</sub> da.  


<sup>8</sup> An anonymous reviewer points out that ‘affectedness’ might be closely related with the (un)grammaticality of passivization of the PAC and the COC. Though this possibility is worth pursuing, we leave this matter to future study.

<sup>9</sup> In (16), *siteiru* in *tenisu-o siteiru* ‘playing tennis’ means *playing*, which is an active transitive verb. Note that the Japanese verb *suru* has two types: one is intransitive with a stative interpretation and the other is transitive with a non-stative interpretation. To avoid unnecessary confusion, we provide the former *siteiru* with *BE* and the latter with *doing* as glosses. See section 3.2 for details.

As in (18b), the object *kireina me-o* ‘beautiful eyes-Acc’ cannot appear in the focus position of the cleft sentence. It means that movement of the null operator relevant to the object of the PAC is impossible, as shown in (19). Thus we can obtain the following property of the PAC:

**PAC’s Property [4] - The inability to be *Op*-moved:** The PAC does not allow the body-part object to be *Op*-moved.

In short, we can conclude that the PAC and the unaccusative COC behave similarly with regard to passivization and *Op*-movement (including both *wh*- and null operator overt movement): both constructions undergo neither passivization nor *Op*-movement (see the COC’s properties [3] and [4] in the previous section and the PAC’s properties [3] and [4] in this section).

Now we are ready to summarize this section. We have so far compared the Japanese PAC with the English COC in terms of the following four properties: Obligatory modification (Property [1]), Semantic focus on the modifier (Property [2]), Passivization (Property [3]) and *Op*-movement (Property [4]). Since the English COC is divided into the two types (i.e. the unergative COC and the unaccusative COC), we can summarize this section in the following table (○ means ‘have’ or ‘possible’; × means ‘not have’ or ‘impossible’):

(20)

	PAC	Unaccusative COC	Unergative COC
Property [1] (modification)	○ (see (2))	○ (see (5b))	○ (see (5a))
Property [2] (semantic focus)	○ (see (3))	○ (see (6b))	○ (see (6a))
Property [3] (passivization)	× (see (15))	× (see (12))	○ (see (11))
Property [4] ( <i>Op</i> -movement)	× (see (18b))	× (see (14))	○ (see (13))

As shown in the above table, the Japanese PAC and the English COC (i.e. both the unergative COC and the unaccusative COC) share the following properties: (i) the obligatory presence of a modifier (Property [1]), and (ii) the semantic focus on the modifier (Property [2]).<sup>10</sup> As for passivization (Property [3]) and *Op*-movement (Property [4]), the PAC and the unaccusative COC share the same properties: both

<sup>10</sup> There is more evidence that the unaccusative COC shows the properties [1] and [2]. First, the sentences in (10) become ungrammatical without modifiers, as shown below (see section 2.2.1):

- (i)a. \*The tree grew a growth within only ten years.
- b. \*The stock market dropped a drop in three years today.
- c. \*The apple fell just a fall to the lower deck, and so were not too badly bruised.

As shown in (i), the modifier is obligatory in the unaccusative COC (Property [1]). Second, let us observe the following sentence.

- (ii) The tree did not grow a century’s growth within only ten years. (cf. (10a))

In the above sentence, what is negated by *not* is not the noun *growth* but its modifier *century*’s. That is, what (ii) intends to mean is not ‘the tree did not grow’ but ‘the degree of the tree’s growth was not like a century’s expansion’. Therefore, it is not a cognate object but its modifier that makes a large contribution to the meaning of the unaccusative COC (Property [2]).



constructions undergo neither passivization nor *Op*-movement (including both *wh*- and null operator overt movement). The above table (20) thus leads us to the following conclusion:

- (21) The unaccusative COC is the counterpart of the Japanese PAC.

Next section considers where the similarities between the unaccusative COC and the Japanese PAC come from.

### 3. Toward explaining similarities

The previous section has pointed out that the Japanese PAC and the unaccusative COC share some properties. This section considers where those similarities come from. The similarities between both constructions can be divided into two types: one is concerning modification (Property [1] and [2]), and the other is concerning syntactic operation such as passivization and *Op*-movement (Property [3] and [4]). As we will show below, the former can be explained in terms of the subject-predicate relation and the latter in terms of the verb type.

#### 3.1. Obligatory modification and its semantic focus

As stated in the previous section, the Japanese PAC and the English COC including both the unergative COC and the unaccusative COC share the following properties:

- (22)a. the obligatory presence of a modifier (Property [1])  
 b. the semantic focus on the modifier (Property [2])

Typical examples of both constructions are repeated below (see section 2.1):

- (23) Obligatory modification (Property [1]):

- a. Cameron Diaz-wa \*(kireina) me-o siteiru. [PAC]  
 Cameron Diaz-Top beautiful eyes-Acc BE  
 ‘Cameron Diaz has beautiful eyes.’  
 b. Your father died a \*(natural) death. [unaccusative COC]  
 c. She smiled a \*(charming) smile. [unergative COC]

- (24) Semantic focus on the modifier (Property [2]):

- a. kyooen-siteiru zyoyuu-wa kireina me-o sitei-nai. [PAC]  
 costarring actress-Top beautiful eyes-Acc BE-not  
 ‘The costarring actress does not have beautiful eyes.’  
 b. Your father did not die a natural death. [unaccusative COC]  
 c. She did not smile a charming smile. [unergative COC]

First, let us consider the property [1] (i.e. obligatory modification) of the PAC, as shown in (23a). It is important to note that (25a) (=1)) is semantically equivalent to (25b).

- (25)a. Cameron Diaz-wa kireina me-o siteiru.  
 Cameron Diaz-Top beautiful eyes-Acc BE  
 b. Cameron Diaz-wa me-ga kireida.  
 Cameron Diaz-Top eyes-Nom beautiful  
 ‘Cameron Diaz has beautiful eyes.’

The paraphrasability shown in (25) means that the subject-predicate relation should be established between the PA modifier and its head noun in the PAC. In other words, without a modifier, the subject-predicate relation cannot be established in the first place, which makes the PAC unacceptable (see (23a)). What is more important is that the subject-predicate relation here means the *direct* attribute relation between a (PA) modifier and its noun: the modifier *kireina* ‘beautiful’ refers directly to the noun *me* ‘eyes’ itself in (25a).

Our analysis here can be supported by the following examples:<sup>11</sup>

- (26)a. #Ano seijika-wa hiroi-kao-o siteiru.  
           that politician-Top big face-Acc BE  
       b. Ano seijika-wa kao-ga hiroi.  
           that politician-Top face-Nom big  
           ‘That politician knows a lot of people.’

In (26), the idiom *kao-ga hiroi* ‘well-known’ is used: that is, the adjective *hiro* ‘big’ in (26b) does not refer directly to the subject *kao* ‘face’ itself. In this case (i.e. idiom interpretation), we can predict that the PAC is not allowed, as in (26a), where the direct subject-predicate relation is not established between the PA modifier *hiro* and its head noun *kao*. Interestingly, under the literal meaning of (26b), where the sentence means ‘that politician has a big face’, the PAC in (26a) is acceptable. Therefore, we can safely conclude that the property [1] of the PAC, the obligatory presence of a modifier, comes from the requirement that the subject-predicate relation be established between the PA modifier and its head noun.<sup>12</sup>

Next, we consider the property [2] (i.e. semantic focus on the modifier) of the PAC in (24a). Given that (25a) is semantically equivalent to (25b), (27a) (=3) or (24a)) is semantically equivalent to (27b).

- (27)a. kyooen-siteiru zyoyuu-wa kireina me-o sitei-**nai**.  
           costarring actress-Top beautiful eyes-Acc BE-not  
       b. kyooen-siteiru zyoyuu-wa me-ga kireide-**nai**.  
           costarring actress-Top eyes-Nom beautiful-not  
           ‘The costarring actress does not have beautiful eyes.’

In (27b), what the negative element *nai* ‘not’ negates is not the noun *me* ‘eyes’ but its predicate *kireina* ‘beautiful’, as indicated by the underscore. In other words, *nai* negates the predicate *kireina* under the subject-predicate relation. As just stated above, the same subject-predicate relation holds in a nominal expression of the PAC such as *kireina me* ‘beautiful eyes’. Thus it is obvious that *nai* ‘not’ in (27a) also negates the “predicate” *kireina* ‘beautiful’ not the “subject” *me* ‘eyes’.

The same explanation can be applied to the COC. Let us first deal with the property [1] (i.e. obligatory modification) of the COC, as shown in (23b-c). Like the PAC in (25), (28a) (=4b)) is semantically equivalent to (28b).

- (28)a. Your father died a natural death.  
       b. Your father's death is natural.

<sup>11</sup> We thank a *JJL* anonymous reviewer for providing us the interesting examples in (26).

<sup>12</sup> It has been also pointed out in the literature that modifiers are predicate-like (cf. Williams 1980, Higginbotham 1987 *inter alia*). There is thus a form of licensing by predication which includes relations such as adjective to noun or adverb to verb.

The paraphrasability shown in (28) means that the subject-predicate relation should be established between the cognate object and its modifier in the COC. In other words, without a modifier, the subject-predicate relation cannot be established in the first place, which makes the COC unacceptable (see (23b-c)). This is supported by the following contrast:

- (29)a. He died an awful death.  
 b. \*He died awfully.

The point here is that (29a) is not semantically equivalent to (29b). What (29a) really means is that his death was awful. In other words, the modifier *awful* in (29a) refers directly to the cognate object *death*. The non-paraphrasability shown in (29) and the interpretation of (29a) thus suggest that the subject-predicate relation is established between the cognate object and its modifier in the COC (cf. Iwakura 1976, Konishi 1981 *inter alia.*)<sup>13</sup>

Let us now consider the property [2] (i.e. semantic focus on the modifier) of the COC in (24b-c). Likewise, (30a) (= (6b) or (24b)) is semantically equivalent to (30b).

- (30)a. Your father did **not** die a natural death.  
 b. Your father's death is **not** natural.

In (30b), what is negated by *not* is not the subject *your father's death* but its predicate *natural*, as indicated by the underscore. In other words, *not* negates the predicate *natural* under the subject-predicate relation. As stated above, the same subject-predicate relation holds in a nominal expression of the COC such as *a natural death*. Thus it is obvious that *not* in (30a) also negates the “predicate” *natural*, but not the “subject” *death*.<sup>14</sup>

In this section, we have claimed that adjectival modifiers in both the PAC and the COC are regarded as predicates which are obligatory in the subject-predicate relation. We have further suggested that the properties of (22) can be reduced to the subject-predicate relation.

### 3.2. The inability to be passivized and *Op*-moved

As shown in the table (20), the (im)possibility of passivization and *Op*-movement in the PAC and the COC can be summarized as follows:

- (31)a. The PAC and the unaccusative COC can be neither passivized nor *Op*-moved.  
 b. The unergative COC can be both passivized and *Op*-moved.

Typical examples are repeated below (see section 2.2):

- (32) Passivization:  
 a. \*kireina me-ga (Cameron Diaz-ni(-yotte)) sarete-iru. [PAC]  
     beautiful eyes-Nom (Cameron Diaz-by) done-be  
     ‘\*Beautiful eyes are had (by Cameron Diaz).’

<sup>13</sup> As pointed out in Matsumoto (1992: 52), the modification is done not only by adjectives before nouns but also by relative clauses. Observe the following sentence:

(i) He died a death which was unimaginable.

It is clear from (i) that the subject-predicate relation holds in a nominal expression of the COC.

<sup>14</sup> Note that the same explanation can be applied to (24c) (= the unergative COC).

- b. \*A century's growth was grown within only ten years by the tree trunk. [unaccusative COC]  
 c. A sound sleep was slept by the baby. [unergative COC]
- (33) *Op*-movement:  
 a. \*Cameron Diaz-ga siteiru no-wa kireina me-(o) da. [PAC]  
     Cameron Diaz-Nom BE Comp-Top beautiful eyes-Acc Cop  
     'It is beautiful eyes that Cameron Diaz has.'  
 b. \*What kind of growth did the tree grow in ten years? [unaccusative COC]  
 c. What kind of sleep did the baby sleep? [unergative COC]

As shown in (32) and (33), the PAC and the unaccusative COC can be neither passivized nor *Op*-moved whereas the unergative COC can be both passivized and *Op*-moved. Note here that the verb in the PAC is exclusively the stative verb *siteiru* 'BE', which is generally classified as the unaccusative verb (see section 2.2.2); as their names indicate, the unaccusative COC includes only unaccusative verbs whereas the unergative COC includes only unergative verbs. Given the fact that the PAC and the unaccusative COC behave similarly with regard to passivization and *Op*-movement, it is clear that the verb type (i.e. the unaccusative/unergative distinction) is closely related with the possibility of passivization and *Op*-movement. Below we will show that it is the case, using examples of the PAC.

Let us observe the following data:

- (34)a. Cameron Diaz-wa kireina me-o siteiru. [PAC]  
     Cameron Diaz-Top beautiful eyes-Acc BE  
     'Cameron Diaz has beautiful eyes.'  
 b. Cameron Diaz-wa boyfriend-ni kisu-o siteiru.  
     Cameron Diaz-Top boyfriend-Dat kiss-Acc doing  
     'Cameron Diaz is kissing her boyfriend.'

Although both (34a) and (34b) involve the verb *siteiru*, they are different from each other: while *siteiru* in (34a) is an unaccusative verb, it is a transitive verb in (34b). This observation is supported by one of the most reliable tests for unaccusativity - the co-occurrence with a volitional adverb such as *wazato* 'intentionally'. Let us observe the following contrast:

- (35)a. \*Cameron Diaz-wa (minna-no mae de) wazato kireina me-o siteiru.  
     Cameron Diaz-Top everyone-Gen front in intentionally beautiful eyes-Acc BE  
     '\*Cameron Diaz intentionally has beautiful eyes (in the presence of others).'  
 b. Cameron Diaz-wa (minna-no mae de) wazato boyfriend-ni kisu-o siteiru.  
     Cameron Diaz-Top everyone-Gen front in intentionally boyfriend-Dat kiss-Acc doing  
     'Cameron Diaz is intentionally kissing her boyfriend (in the presence of others).'

According to the test, unaccusative verbs disallow the addition of volitional adverbs. As shown in (35a), *wazato* 'intentionally' cannot co-occur with *siteiru*. This suggests that *siteiru* in (34a) or the PAC is an unaccusative verb (i.e. 'BE'). *Siteiru* in (34b), on the other hand, is a transitive verb since *wazato* can co-occur with it, as shown in (35b).

As just stated above, the verb type is closely related with the possibility of passivization and *Op*-movement; more precisely, the occurrence of unaccusative verbs results in the inability to be passivized and *Op*-moved. Thus, it is predicted that only (34b) can be passivized or *Op*-moved since the

verb *siteiru* in (34b) is not an unaccusative verb but a transitive verb (see the contrast in (35)). This is really the case. Observe the following contrasts:

- (36) Passivization:
- a. \*kireina me-ga (Cameron Diaz-ni(-yotte)) sareteiru. [PAC]  
 beautiful eyes-Nom (Cameron Diaz-by) being done  
 ‘\*Beautiful eyes are had (by Cameron Diaz).’
- b. kisu-ga (Cameron Diaz-ni(-yotte)) boyfriend-ni sareteiru.  
 kiss-Nom (Cameron Diaz-by) boyfriend-Dat being done  
 Lit. ‘Kiss is being done with her boyfriend by Cameron Diaz.’
- (37) *Op*-movement:
- a. \*Cameron Diaz-ga siteiru no-wa kireina me-(o) da. [PAC]  
 Cameron Diaz-Nom BE Comp-Top beautiful eyes-Acc Cop  
 ‘It is beautiful eyes that Cameron Diaz has.’
- b. Cameron Diaz-ga boyfriend-ni siteiru no-wa kisu-(o) da.  
 Cameron Diaz-Nom boyfriend-Dat doing Comp-Top kiss-Acc Cop  
 ‘It is a kiss that Cameron Diaz is giving to her boyfriend.’

Our analysis here is further supported by the following example, which has two meanings:<sup>15</sup>

- (38) Cameron Diaz-wa henna kao-o siteiru.  
 Cameron Diaz-Top strange face-Acc BE/doing

The ambiguity of (38) is due to the two distinct *siteiru*: stative (BE) or non-stative (doing) (see (34)). The *wazato* ‘intentionally’ test seen in (35) works clearly here, as well: unaccusative verbs disallow the addition of volitional adverbs such as *wazato*. We can preferentially interpret (38) as the stative interpretation ‘Cameron Diaz has a strange face’. On the other hand, when *wazato* is inserted in (38), we can get only the non-stative interpretation ‘Cameron Diaz intentionally makes a strange face’. In other words, the former reading is the unaccusative (stative) interpretation of *siteiru* and the latter reading is the transitive (non-stative) interpretation of the verb. Interestingly enough, when (38) is changed into the passive construction as in (39a) and the cleft construction as in (39b), the interpretations of the verb *siteiru* are exclusively the transitive (non-stative) one.

- (39)a. Henna kao-ga Cameron Diaz-ni(yotte) sareteiru  
 strange face-Nom Cameron Diaz-by being done  
 ‘A strange face is being made by Cameron Diaz.’ (unergative meaning)  
 ‘\*A strange face is had by Cameron Diaz.’ (unaccusative meaning)
- b. Cameron Diaz-ga siteiru no-wa henna kao-(o) da.  
 Cameron Diaz-Nom doing Comp-Top strange face-Acc Cop  
 ‘It is a strange face that Cameron Diaz is making.’ (unergative meaning)  
 ‘\*It is a strange face that Cameron Diaz has.’ (unaccusative meaning)

These facts strongly show that the verb *siteiru* not as an unaccusative verb but as a transitive verb allows its object NP to be both passivized and *Op*-moved.

<sup>15</sup> We thank an anonymous reviewer for providing us with the interesting example (38).

In sum, we have shown that the verb type is closely related with the (in)ability to be passivized and *Op*-moved. Therefore, we can safely conclude that the properties in (31) can be captured in terms of the verb type.

#### 4. Concluding remarks

This paper has pointed out that there are some properties shared by the physical attribute construction (PAC) in Japanese, such as *Cameron Diaz-wa kireina me-o siteiru* ‘Cameron Diaz has beautiful eyes’ and the cognate object construction (COC) in English such as *The tree grew a century's growth within only ten years*. The properties include: (i) the obligatory presence of a modifier, (ii) the semantic focus on the modifier, (iii) the (in)ability to be passivized and (iv) the (in)ability to be *Op*-moved. Based upon these properties and the fact that there are two kinds of the COC, this paper has reached the conclusion that the English COC involving unaccusative verbs (i.e. the unaccusative COC) is the counterpart of the Japanese PAC. It is also pointed out that the similarities between the PAC and the unaccusative COC can be reduced to more general factors: the properties (i) and (ii) are captured by the predication and the properties (iii) and (iv) by the verb type.

Before concluding the paper, we will make some remarks on the predication and the verb type. First, as stated in section 3.1, adjectival modifiers in the PAC and the COC show predicate-like behavior. In other words, they can be considered to be modifiers in syntax but predicates in semantics. This “dual nature” of adjectives in both constructions has an interesting implication on the theory of syntax-semantic interface: it is in accordance with Culicover and Jackendoff’s (1997) Mismatching Hypothesis, which shows that there exist mismatches between syntactic structure and the level of conceptual (or semantic) structure. Considering that focus and negative interpretations are most relevant to semantic component rather than syntactic one, our predication analysis concerning properties (i) and (ii) can be a case for the Mismatching Hypothesis.

Second, as shown in 3.2, the unergative/unaccusative distinction is closely related with the (in)ability to be passivized and *Op*-moved in both constructions. It might be possible that the grammaticality difference of passivization and *Op*-movement can be reduced to the structural difference between the unergative verb and the unaccusative one. For example, the anti-passivizability issue of the PAC and the COC could be reduced to a sub-case of Burzio’s (1986) Generalization to the effect that all and only the verbs that can assign  $\theta$ -roles to the subject can assign accusative Case to an object. According to Burzio’s Generalization, unergative verbs assign  $\theta$ -roles to their subjects and thus have the ability to assign accusative Case; on the other hand, unaccusative verbs cannot assign  $\theta$ -roles to their subjects and thus do not have the ability to assign accusative Case. Given that passivization is only applied to objects with Case, we can easily account for the inability to be passivized in both the PAC and the unaccusative COC: since they exclusively include unaccusative verbs, their objects do not have accusative Case. However, there are problems in this kind of analysis: it is not clear how the inability to be *Op*-moved could be reduced to a sub-case of Burzio’s Generalization or the structural difference between the unergative verb and the unaccusative one; more seriously, we have to answer the question as to why for the first place unaccusative verbs can take an object in both the PAC and the unaccusative COC if they do not have the ability to assign accusative Case to their objects. Truly, there is a possibility that the grammaticality difference of passivization and *Op*-movement can be reduced to the structural difference between the unergative verb and the unaccusative one (cf. Nakajima 2006). We must not, however, hasten to conclude since it is important to consider the balance of the tension between description and explanation. It is our hope that the observations and speculations offered in this paper will help make a step toward a truly valid and unified analysis of the Japanese PAC and the English COC. We leave it to further study.

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