A Semantic Condition on Pronominalization in Japanese*

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1 Introduction

Two strategies of nominal ellipsis have been proposed in the literature: delation and pronominalization (see Corver & van Koppen (2011) and references therein). Under the deletion analysis, a nominal constituent undergoes a deletion as in (1a). Under the pronominalization analysis, a noun is replaced by a pro-form without deletion, as in (1b).

(1) Two strategies of nominal ellipsis

a. [Mod ~~[N]~~] [Deletion]

b. [Mod [N_{pro}]] [Pronominalization]

With regard to nominal ellipsis in Japanese, Saito & Murasugi (1990) argue that elliptical noun phrase in (2) is derived by deletion of a noun phrase.

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(2) [*gakubusee-no* *sensee-e-no* *izon*]-*wa* *yuruseru*
undergraduate-GEN professor-on-GEN reliance-TOP can.tolerate
ga, [***insee*** ***no***]-*wa* *yurusenai.*
but graduate NO-TOP cannot.tolerate
'I can tolerate the undergraduate's reliance on the professor, but not the graduate student's.'

According their analysis, the elliptical noun in (2) has the structure in (3).

(3) NP-deletion
[$_{XP}$ graduate-GEN [$_{X'}$ X ~~[$_{NP}$ professor-on-GEN [$_{NP}$ reliance]]~~]]

Saito & Murasugi's (1990) deletion analysis relies on Kamio' (1983) observation that the pronominal *no* in Japanese does not refer to an abstract concept. However, as pointed out by Kinsui (1995), the pronominal *no* can refer to an abstract concept in some contexts. Based on Kinsui's observation, Hiraiwa (2016) argues more recently that the alleged examples of NP-deletion should be analyzed as an instance of pronominalization involving haplology. His analysis is illustrated in (4).

(4) a. [graduate-no_{gen} [~~$no_{\overline{pro}}$~~]] b. [graduate-~~$no_{\overline{gen}}$~~ [no_{pro}]]

In (4), the pronominal *no* combines with the pre-nominal modifier. Since the pronominal *no* and the genitive linker *no* are homophonous, one of them is deleted due to haplology.

Following Hiraiwa's (2016) pronominalization analysis, this study investigates what kind of modifiers can license the pronominal item. Specifically, I argues that the condition in (5) holds for at least two types of pre-nominal modifiers in Japanese; numeral classifiers and temporal adjectives.

(5) The pronominalization strategy is allowed when a pronominal item combines with a local modifier of type ⟨e,t⟩.

This paper is organized as follows. Section 2 provides data about Japanese pre-nominal numeral classifiers and then argues that (im)possible interpretations of Japanese pre-nominal numeral classifiers can be predicted by the condition in (5). Section 3 shows a similar pattern is observed in the ambiguity of Japanese temporal adjectives. Section 4 summarizes the paper.

2 Pre-nominal numeral classifier phrases

2.1 Unavailability of the quantificational reading

The first example of the condition in (5) comes from Japanese pre-nominal numeral classifiers. In Japanese, pre-nominal numeral classifier phrases can yield two interpretations, as shown in (6). Under the quantificational reading, the pre-nominal numeral classifier phrase functions as a quantifier. The pre-nominal numeral classifier phrase can also be interpreted as a property-denoting modifier. Under the property reading, the common noun can be singular or plural because Japanese common nouns are number neutral.

(6) *Hanako-wa* [***go-satsu no hon***]*-o katta.*
Hanako-TOP five-CLS NO book-ACC bought
'Hanako bought five books.' [Quantificational]
'Hanako bought {a book | books} composed of five volumes.' [Property]

Kamio (1983) observes that the quantificational reading is unavailable in the nominal ellipsis construction. (7a) is a preceding sentence. When (7b) is uttered after (7a), the numeral classifier phrase is interpreted as a property-denoting modifier, but not as a quantifier. Japanese numeral classifier phrases have another type of anaphoric use in which both an overt noun and *no* are absent, as in (7c). In contrast to (7b), when (7c) is uttered after (7a), only the quantificational reading is available.

(7) a. *Taro-wa* [*san-satsu-no hon*]*-o katta kedo ...*
Taro-TOP three-CLS-GEN book-ACC bought but
'Taro bought three books, but ...'

b. *Hanako-wa* [***go-satsu no***]*-o katta.*
Hanako-TOP five-CLS NO-ACC bought
*'Hanako bought five books.' [Quantificational]
'Hanako bought {a book | books} composed of five volumes.' [Property]

c. *Hanako-wa* [***go-satsu***]*-o katta.*
Hanako-TOP five-CLS-ACC bought
'Hanako bought five books.' [Quantificational]
*'Hanako bought {a book | books} composed of five volumes.' [Property]

The fact that the pronominal *no* is incompatible with the quantificational interpretation is also confirmed by the quantifier *subete* 'all'. As shown in (8b), *subete* 'all' cannot be followed by the pronominal *no*.

(8) a. *Taro-wa* [*san-satsu-no hon*]-*o katta kedo* ...
Taro-TOP three-CLS-GEN book-ACC bought but
'Taro bought three books, but ...'

b. **Hanako-wa* [***subete no***]-*o katta.*
Hanako-TOP all NO-ACC bought
Int. 'Hanako bought all books.'

c. *Hanako-wa* [***subete***]-*o katta.*
Hanako-TOP all-ACC bought
'Hanako bought all books.'

The quantifier *subete* 'all' has only the quantificational meaning, unlike pre-nominal numeral classifier phrases. (8b) is unacceptable because the pronominal *no* is incompatible with a modifier which has a quantificational meaning. As shown in (8c), the ellipsis construction, which lacks both an overt noun and *no*, is acceptable under the quantificational reading.

2.2 Analysis

Following Kamio (1983) and Hiraiwa (2016), I assume that there are two positions for Japanese pre-nominal numeral classifiers. The object noun phrases in (6) and (7) have one of the structures represented in (9).

(9) a. $[_{QP}\ [_{ClsP}$ five-CLS] $[_{Q'}\ [_{N}$ {book | **no*}] Q]] (Quantificational)

b. $[_{NP}\ [_{ClsP}$ five-CLS] $[_{N}$ {book | *no*}]] (Property)

In (9a), the classifier phrase (ClsP) functioning as a quantifier occurs in Spec,XP. I assume that the classifier phrase in (9a) is of type $\langle\langle e,t\rangle,\langle\langle e,t\rangle,t\rangle\rangle$, like other quantifiers such as *subete* 'all'. In (9a), the condition in (5) is not satisfied, and the pronominal *no* is not licensed. On the other hand, when the classifier phrase functions as a property-denoting modifier of type $\langle e,t\rangle$ (e.g. λx[five-volume$'$(x)]), it directly modifies the noun via Predicate Modification (Heim & Kratzer 1998), as shown in (9b). The ClsP in (9b) licenses the pronominal *no*, respecting the condition in (5), repeated here as (10).

(10) The pronominalization strategy is allowed when a pronominal item combines with a local modifier of type $\langle e,t\rangle$.

It should be noted that the condition in (10) includes a locality constraint which requires a licensing modifier to be local to a pronominal item. This requirement is confirmed by the example in (11).

(11) a. *Taro-wa* [*san-satsu-no hon*]-*o katta kedo* ...
Taro-TOP three-CLS-GEN book-ACC bought but
'Taro bought three books, but ...'

b. *Hanako-wa* [*takai* ***go-satsu no***]-*o katta.*
Hanako-TOP expensive five-CLS NO-ACC bought
*'Hanako bought five expensive books.' [Quantificational]
'Hanako bought {an expensive book | expensive books} composed of five volumes.' [Property]

c. *Hanako-wa* [***go-satsu****-no takai* ***no***]-*o katta.*
Hanako-TOP five-CLS-GEN expensive NO-ACC bought
'Hanako bought five expensive books.' [Quantificational]
'Hanako bought {an expensive book | expensive books} composed of five volumes.' [Property]

The elliptical noun phrase in (11b) behaves like the one in (7b) regarding its interpretation. In this case, the pre-nominal numeral classifier phrase, which is a property-denoting modifier of type ⟨e,t⟩, licenses the pronominal *no*. On the other hand, the adjective *takai* 'expensive' intervenes between the pre-nominal numeral classifier phrase and the pronominal *no* in (11c). Crucially, (11c) exhibits the ambiguity of the interpretation of the pre-nominal numeral classifier. The current analysis can capture the ambiguity of (11c). The pre-nominal numeral classifier in (11c) is not local to *no* and hence is not subject to the condition in (10). Therefore, it can yield the quantificational reading and the property reading. (Note also that the adjective *takai* 'expensive' is of type ⟨e,t⟩ and licenses *no* in (11c).)

In this section, I argued that the absence of the quantificational reading in the nominal ellipsis construction can be explained by the condition in (10). When a pre-nominal numeral classifier phrase is a licensing modifier of the pronominal item, it must be of type ⟨e,t⟩ due to the condition in (10). In the next section, I will also provide data which support the condition in (10).

3 Temporal adjectives

3.1 The ambiguity of Japanese temporal adjectives

The second example which exhibits the effect of the condition in (5) comes from (im)possible interpretations of temporal adjectives. As shown in (12), the temporal adjective *old* in English exhibits an ambiguity.

(12) a. *This is* ***John's old car****.* (Lasron&Cho 2003)
b. 'This is a car that John possesses and that is old.' [N-mod.]
c. 'This is a car that John formerly owned.' [POSS-mod.]

Under the N-modifying reading, (12a) entails that the car that John owns is old. Under the POSS-modifying reading, the noun phrase in (12a) refers to a car which John used to own, but the car is not necessarily old. A similar ambiguity is observed in Japanese, as shown in (13).

(13) *kore-wa* [***Taro-no*** ***hurui*** ***kuruma***] *desu.*
this-TOP Taro-GEN old car COP
'This is a car that Taro possesses and that is old' [N-mod.]
'This is a car that John formerly owned.' [POSS-mod.]

In this paper, I assume that the ambiguity of (13) can be analyzed as a structural ambiguity. Specifically, I propose that Japanese temporal adjectives have one of the structures represented in (14).[1]

(14) a. $[_{NP}\ [_{RC}\ pro_1\ \text{OLD}\ ]\ [_{NP}\ N_1\ ]\ ]$ [N-mod.]
b. $[_{NP}\ [_{AP}\ \text{OLD}\ ]\ [_{NP}\ N\ ]\ ]$ [POSS-mod.]

In (14a), the temporal adjective *hurui* 'old' is used as a predicate of the relative clause. On the other hand, the temporal adjective combines directly with

[1] With regard to the structure of English possessive construction, Larson and Cho (2003) propose the structure given in (i). The P head undergoes head movement to D, and the complex head [D-P] is realized as the Saxon genitive *'s*. The possessor phrase also moves to Spec,DP.

(i) $[_{DP}\ John_1\ [_{D'}\ [_{D}\ \text{D-P}\ ]\ [_{PP}\ [_{NP}\ car\ ]\ [_{P'}\ \text{P}\ \sout{John_T}\ ]\ ]\ ]\ ]$

I do not pursue their analysis in this paper because Japanese possessives behave differently from English ones in several respects. As shown in (iia), Japanese possessor phrases can co-occur with demonstratives, in contrast to English possessor phrases containing the Saxon genitive.

(ii) a. ***Taro-no*** *kono* *kuruma*
Taro-GEN this.GEN car
Lit. 'Taro's this car'
b. **Taro's this car*

In this respect, Japanese behaves like Serbo-Croatian, in which possessor phrases behave like adjectives (Bošković 2005). Moreover, an attributive adjective can be followed by a possessor phrase in Japanese, but not in English, as shown in (iii).

(iii) a. *akai* ***Taro-no*** *kuruma*
red Taro-GEN car
Lit. 'Red Taro's car'
b. **red Taro's car*

These examples indicate that there is little evidence that Japanese possessives are associated with D of the English type. Rather, Japanese possessor phrases behave more like adjectives. Since Larson & Cho's (2003) analysis of English possessives relies crucially on the presence of DP, it is difficult to extend their analysis to Japanese possessives.

the noun phrase in (14b). In this paper, I refer to (14a) as the indirect modification structure, and (14b) as the direct modification structure (Cinque 2010). I propose that when the temporal adjective occurs in the indirect structure as in (14a), the resulting phrase receives the N-modifying reading. When the temporal adjective occurs in the direct modification structure as in (14b), the resulting phrase receives the POSS-modifying reading.

There is evidence that the ambiguity of (13) arises from the structural ambiguity represented in (14). Firstly, when *hurui* 'old' is used as a predicate, only the N-modifying reading is available as in (15).

(15) [*Taro-no kuruma*]-*ga hurui.*
Taro-GEN car-NOM old
'The car owned by Taro is old.' [N-mod.]

The temporal adjective in (14a) is used as a predicate of the relative clause. Therefore, the temporal adjective in (14a) is expected to yield the N-modifying reading, like the one in (15).

Notice also that when a pre-nominal temporal adjective appears with the past tense suffix *-ta*, the resulting sentence receives only the N-modifying reading, as shown in (16a). The unambiguity of (16a) is also expected under the current analysis. I assume that the past tense suffix appears only when a predicative adjective is c-commanded by $T_{[PAST]}$. This means that the temporal adjective in (16a) is a predicate c-commanded by $T_{[PAST]}$ and behaves like the predicative adjective in (16b) regarding its interpretation. The proposed analysis correctly predicts the N-modifying reading in (16a,b).

(16) a. *Taro-no* [*hurukat-**ta***] *kuruma*
Taro-GEN old-PAST car
'a car that Taro possesses and that was old' [N-mod.]
*'a car that John formerly owned' [POSS-mod.]

b. [*Taro-no kuruma*]-*ga hurukat-**ta***.
Taro-GEN car-NOM old-PAST
'The car owned by Taro was old.' [N-mod.]

Another piece of supporting evidence for the structures in (14) comes from adverbial expressions in Japanese. In Japanese, *tokubetsu* 'special' can be used as an adjectival expression or an adverbial expression, depending on the suffix follows it. The contrast in (17) shows that *tokubetsu* must be followed by the suffix *-na*, in order to function as an adjectival expression modifying a noun. On the other hand, the suffix *-ni* must be used for the adverbial use of *tokubetsu*, as shown in (18).

(17) a. *Yuta-wa* [*Hiro-no tokubetsu-**na** uta*]-*o kiita.*
Yuta-TOP Hiro-GEN special-NA song-ACC listened
'Yuta listened Hiro's special song.

b. **Yuta-wa* [*Hiro-no tokubetsu-**ni** uta*]-*o kiita.*
Yuta-TOP Hiro-GEN special-NI song-ACC listened
'Yuta listened Hiro's special song.

(18) a. **Hiro-ga* [*tokubetsu-**na** utatta*].
Hiro-NOM special-NA sang
'Hiro specially sang.

b. *Hiro-ga* [*tokubetsu-**ni** utatta*].
Hiro-NOM special-NI sang
'Hiro specially sang.

Crucially, *tokubetsu-ni* blocks the POSS-modifying reading of the temporal adjective, as shown in (19a), while *tokubetsu-na* allows both the N-modifying reading and the POSS-modifying reading as in (19b).

(19) a. *Taro-no tokubetsu-**ni** hurui kuruma*
Taro-GEN special-NI old car
'a speciallly old car that Taro possesses' [N-mod.]
*'a car that John owned a long time ago' [POSS-mod.]

b. *Taro-no tokubetsu-**na** hurui kuruma*
Taro-GEN special-NA old car
'a special old car that Taro possesses' [N-mod.]
'a special car that John formerly owned' [POSS-mod.]

The current analysis can capture the contrast in (19). The two structures in (20) are available for (19b). When *-na* is suffixed to *tokubetsu*, it functions as an adjectival expression modifying a noun phrase. In this case, *tokubetsu-na* does not affect the structure of the temporal adjective. *Hurui* can occur in the indirect modification structure as in (20a) or in the direct modification structure as in (20).

(20) a. $[_{NP}$ *tokubetsu-**na*** $[_{NP}\ [_{RC}\ pro_1$ OLD $]\ NP_1\ ]\ ]$

b. $[_{NP}$ *tokubetsu-**na*** $[_{NP}\ [_{AP}$ OLD $]$ NP $]\ ]$

On the other hand, (19a) should have the structure in (21a), but not the one in (21b), because of the presence of *tokubetsu-ni*. Since *tokubetsu-ni* is an adverbial expression modifying a predicate, it cannot occur inside the extended nominal projection containing the noun phrase *kuruma* 'car', as in (21b). In

(21a), which yields the N-modifying reading, the temporal adjective is used as a predicate in the relative clause, and *tokubetsu-ni* modifies the predicate.

(21) a. $[_{NP}\ [_{RC}\ pro_1\ [\ \textit{tokubetsu-}\textbf{\textit{ni}}\ \text{OLD}\ ]\ ]\ NP_1\ ]$

b. *$[_{NP}\ \textit{tokubetsu-}\textbf{\textit{ni}}\ [_{NP}\ [_{AP}\ \text{OLD}\ ]\ NP\ ]\ ]$

Under the current analysis of Japanese temporal adjectives, the POSS-modifying reading is unavailable in (19a) because (21b) is impossible. Given these considerations, I conclude that the ambiguity of Japanese temporal adjectives arises from the structural ambiguity illustrated in (14).

3.2 Temporal adjectives and pronominalization

Let us now consider cases where the temporal adjective modifies the pronominal *no*. Crucially, the ambiguity of temporal adjectives disappears when the temporal adjective occurs with the pronominal *no*. When (22c) is uttered after (22a), only the N-modifying reading is available. It should be noted that when the pre-nominal modifier *hurui* modifies a noun phrase, it never appears with the genitive linker *no*, as in (22b). *No* in (22c) should thus be a pronominal item, but not a genitive linker.

(22) a. *are-wa* [*Hanako-no* *kuruma*] *desu.*
that-TOP Hanako-GEN car COP
'That is Hanako's car.'

b. *kore-wa* [*Taro-no* *hurui* *kuruma*] *desu.*
this-TOP Taro-GEN old car COP
'This is a car that Taro possesses and that is old.' [N-mod.]
'This is a car that John formerly owned' [POSS-mod.]

c. *kore-wa* [*Taro-no* *hurui* ***no***] *desu.*
this-TOP Taro-GEN old NO COP
'This is a car that Taro possesses and that is old.' [N-mod.]
*'This is a car that John formerly owned' [POSS-mod.]

Recall that I proposed that Japanese temporal adjectives can occur in the two types of structures; the direct modification structure and the indirect modification structure. The noun phrase in (22c) should have the indirect modification structure given in (23a), due to the condition on the pronominalization strategy in (5), repeated here as (24).

(23) a. $[_{NP}\ \textit{Taro-no}\ [_{NP}\ [_{RC}\ pro_1\ \text{OLD}\ ]\ \textit{no}_1\ ]\ ]$

b. *$[_{NP}\ \textit{Taro-no}\ [_{NP}\ [_{AP}\ \text{OLD}\ ]\ \textit{no}\ ]\ ]$

(24) The pronominalization strategy is allowed when a pronominal item combines with a local modifier of type ⟨e,t⟩.

Following Larson (1998), I assume that the temporal adjective in the direct modification structure ((14b) and (23b)), which yields the POSS-modifying reading, is not of type ⟨e,t⟩. Larson (1998) proposes that *old* in English is a doublet *old*, as represented in (25).

(25) a. $[\![\textit{old}_1 \textit{ friend}]\!] = \lambda x[\text{old}_1'(x) \,\&\, \text{friend}'(x)]$

b. $[\![\textit{old}_2 \textit{ friend}]\!] = \text{old}_2'(\hat{}\text{friend}')$

As shown in (25a), $\textit{old}_1$ is analyzed as a modifier of type ⟨e,t⟩, yielding the N-modifying interpretation. On the other hand, $\textit{old}_2$ combines with ˆfriend′, and hence is not of type ⟨e,t⟩.

In this paper, I implement Larson's analysis syntactically; $\textit{old}_1$ occurs in the indirect modification structure ((14a) and (23a)), whereas $\textit{old}_2$ occurs in the direct modification structure ((14b) and (23b)). When $\textit{old}_1$ is used as a predicate in a relative clause, the relative clause functions as a modifier of type ⟨e,t⟩ and licenses the pronominal *no*, as in (23a). $\textit{Old}_2$ in (23b) is not of type ⟨e,t⟩, and the pronominal strategy is unavailable in this case. The unambiguity of (22c) can thus be explained by the condition in (24).

4 Summary and Implication

This paper argued that the condition in (26) holds for two types of prenominal modifiers in Japanese; numeral classifiers and temporal adjectives.

(26) The pronominalization strategy is allowed when a pronominal item combines with a local modifier of type ⟨e,t⟩.

It is worth noting that the current analysis can be associated with the gist of Tomioka's (2003) analysis of null pronouns. Bošković (2017) also offers the following semantic condition on argument ellipsis based on Tomioka's insights.

(27) Only elements of type ⟨e,t⟩ can be copied in LF.

Although (26) is a condition on the pronominal strategy, it is not unreasonable to pursue a unified analysis in which (26) is reduced to a more general semantic condition like (27). I leave this for future research.

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