A semantic constraint on the interpretation of pronominal elements

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1 Introduction

- Two strategies of nominal ellipsis have been proposed in the literature: delation and pronominalization (Corver and Koppen (2011) and references therein).

(1)   Two strategies of nominal ellipsis

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

   b.   [Mod [N_pro]]   [Pronominalization]

- Hiraiwa (2016) argues that Japanese uses the pronominalization strategy.

- Based on Hiraiwa (2016), this study investigates what kind of modifiers can combine with the pronominal item.
- Specifically, I argues that the condition in (2) holds for at least two types of pre-nominal modifiers in Japanese; numeral classifiers and temporal adjectives.

> (2)   The pronominalization strategy is allowed when a pronominal item combines with a local modifier of type $\langle e,t \rangle$.

2 Pre-nominal numeral classifier phrases
2.1 Unavailability of the quantificational reading

- The first example of the condition in (2) comes from interpretations of pre-nominal numeral classifiers in Japanese.

- Japanese pre-nominal numeral classifier phrases can yield two interpretations ((3)).

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

The abbreviations are as follows: ACC = accusative; CLS = classifier; COP = copular; GEN = genitive linker; NOM = nominative; TOP = topic marker.

- Kamio (1983) observes that the quantificational reading is unavailable in the nominal ellipsis construction, as in (4b).
- Japanese numeral classifier phrases have another type of anaphoric use as in (4c). When (4c) is uttered after (4a), only the quantificational reading is available.

(4)   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 (5b), *subete* 'all' cannot be followed by the pronominal *no*.

(5)   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
           '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. (5b) is unacceptable because the pronominal *no* is incompatible with a modifier which has a quantificational meaning.
- As shown in (5c), 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 (3) and (4) have one of the structures represented in (6).

(6) Analysis

    a.   [$_{QP}$ [$_{ClsP}$ three-CLS] [$_{Q'}$ [$_N$ {book | *no}] Q]]   (Quantificational)

    b.   [$_{NP}$ [$_{ClsP}$ three-CLS] [$_N$ {book | no}]]   (Property)

- I assume that the classifier phrase in (6a) is of type $\langle\langle e,t\rangle,\langle\langle e,t\rangle,t\rangle\rangle$, like other quantifiers such as *subete* 'all'.
- In (6a), the condition in (2) is not satisfied, and the pronominal *no* is not licensed.
- When the classifier phrase functions as an attributive modifier of type $\langle e,t\rangle$ (i.e. λx[five-volume$'$(x)]), it directly modifies the noun via Predicate Modification (Heim and Kratzer (1998)), as in (6b).
- The ClsP in (6b) licenses the pronominal *no*, respecting the condition in (2).

- The condition in (2) includes a locality constraint which requires a licensing modifier to be local to a pronominal item.
- This requirement is confirmed by the example in (7).

(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* [*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 (7b) behaves like the one in (4b) regarding its interpretation.
- In this case, the pre-nominal numeral classifier phrase, which is a property-denoting modifier of type $\langle e,t\rangle$, licenses the pronominal *no*.

- The adjective *takai* 'expensive' intervenes between the pre-nominal numeral classifier phrase and the pronominal *no* in (7c).
- Crucially, (7c) exhibits the ambiguity of the interpretation of the pre-nominal numeral classifier.
- The current analysis can capture the ambiguity of (7c).

- The pre-nominal numeral classifier in (7c) is not local to *no* and hence is not subject to the condition in (2). It can yield the two interpretations.

- The absence of the quantificational reading in the nominal ellipsis construction can be explained by the condition in (2).
- When a pre-nominal numeral classifier phrase is a licensing modifier of the pronominal item, it must be of type $\langle e,t\rangle$ due to the condition in (2).

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3 Temporal adjectives
3.1 The ambiguity of Japanese temporal adjectives

- The second example which exhibits the effect of the condition in (2) comes from (im)possible interpretations of temporal adjectives.
- As shown in (8), the temporal adjective *old* in English exhibits an ambiguity.

(8) a.   *This is **John's old car**.*   (Larson and 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.]

- A similar ambiguity is observed in Japanese, as shown in (9).

(9)   *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 Taro formerly owned.'   [POSS-mod.]

- I propose that Japanese temporal adjectives have one of the structures represented in (10).

(10) a.   [$_{NP}$ [$_{RC}$ pro$_1$ OLD] [$_{NP}$ N$_1$]]   [Indirect modification] / [N-mod.]

    b.   [$_{NP}$ [$_{AP}$ OLD] [$_{NP}$ N]]   [Direct modification] / [POSS-mod.]

- I refer to (10a) as the indirect modification structure, and (10b) as the direct modification structure (Cinque (2010)).
- When the temporal adjective occurs in the indirect structure as in (10a), the resulting phrase receives the N-modifying reading.
- When the temporal adjective occurs in the direct modification structure as in (10b), the resulting phrase receives the POSS-modifying reading.

- There is evidence that the ambiguity of (9) arises from the structural ambiguity represented in (10).

- Firstly, when *hurui* 'old' is used as a predicate, only the N-modifying reading is available as in (11).

(11) [*Taro-no   kuruma*]-*ga hurui.*
      Taro-GEN car-NOM   old

      'The car owned by Taro is old.'   [N-mod.]

- The temporal adjective in (10a) is used as a predicate of the relative clause. Therefore, the temporal adjective in (10a) is expected to yield the N-modifying reading, like the one in (11).

- Another piece of supporting evidence for the structures in (10) 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 (12) shows that *tokubetsu* must be followed by the suffix *-na*, in order to function as an adjectival expression modifying a noun.
- The suffix *-ni* must be used for the adverbial use of *tokubetsu*, as shown in (13).

(12) 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.

(13) 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 (14a), while *tokubetsu-na* allows both the N-modifying reading and the POSS-modifying reading as in (14b).

(14) 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 (14).
- The two structures in (15) are available for (14b).

(15) a. [NP *tokubetsu-**na*** [NP [RC pro₁ OLD] NP₁]]   [N-mod.]

      b. [NP *tokubetsu-**na*** [NP [AP OLD] NP]]   [POSS-mod.]

- (14a) should have the structure in (16a), but not the one in (16b), because of the presence of *tokubetsu-ni*.

(16) a. [NP [RC pro₁ [*tokubetsu-**ni*** OLD]] NP₁]   [N-mod.]

      b. *[NP *tokubetsu-**ni*** [NP [AP OLD] NP]]   [POSS-mod.]

- Since *tokubetsu-ni* is an adverbial expression modifying a predicate, it cannot occur inside the extended nominal projection containing *kuruma* 'car', as in (16b).
- In (16a), which yields the N-modifying reading, the temporal adjective is used as a predicate in the relative clause, and *tokubetsu-ni* modifies the predicate.

- Under the current analysis, the POSS-modifying reading is unavailable in (14a) because (16b) is impossible.

3.2   Temporal adjectives and pronominalization

- Crucially, the ambiguity of temporal adjectives disappears when the temporal adjective occurs with the pronominal *no*.
- When (17c) is uttered after (17a), only the N-modifying reading is available.

(17) 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.]

- The noun phrase in (17c) should have the indirect modification structure given in (18a), due to the condition on the pronominalization strategy in (2).

(18) a. [NP *Taro-no* [NP [RC pro$_1$ OLD] *no$_1$*]]

  b. *[NP *Taro-no* [NP [AP OLD] *no*]]

- Following Larson (1998), I assume that the temporal adjective in the direct modification structure ((10b) and (18b)) is not of type $\langle e,t \rangle$.

- Larson (1998) proposes that *old* in English is a doublet, as in (19).

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

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

- As shown in (19a), *old$_1$* is analyzed as a modifier of type $\langle e,t \rangle$, yielding the N-modifying interpretation.

- On the other hand, *old$_2$* combines with ^friend$'$, and hence is not of type $\langle e,t \rangle$.

- I implement Larson's analysis syntactically.

- *Old$_1$* occurs in the indirect modification structure ((10a) and (18a)), whereas *old$_2$* occurs in the direct modification structure ((10b) and (18b)).

- When *old$_1$* is used as a predicate in a relative clause, the relative clause functions as a modifier of type $\langle e,t \rangle$ and licenses the pronominal *no*, as in (18a).

- *Old$_2$* in (18b) is not of type $\langle e,t \rangle$, and the pronominal strategy is unavailable due to the condition in (2).

- The unambiguity of (17c) can thus be explained by the condition in (2).

4   Summary & implication

- This paper argued that the condition in (2), repeated here as (20), holds for two types of pre-nominal modifiers in Japanese; numeral classifiers and temporal adjectives.

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

- 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.

(21)   Only elements of type $\langle e,t \rangle$ can be copied in LF.

- It is not unreasonable to pursue a unified analysis in which (20) is reduced to a more general semantic condition like (21). I leave this for future research.

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