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# Notes on Plural Elements in Japanese: a Labeling Approach\*

Masao Ochi

## 1. Introduction

This paper investigates the syntax of plural markers (PL) (e.g., *-tachi* and *-ra*) in Japanese, which are known to have two distinct readings shown in (1) and (2) (cf. also Park 2002 for recent discussion of Korean plurals).

### (1) Proper name + “plural” (PL) marker

Taro-tachi-ga kita.

Taro-PL-Nom came

- a. ‘Taro and others/his associates came.’ (associative plural)
- b. ‘People with the name/characteristics of Taro came.’ (sum/additive plural)

### (2) Common Noun + PL

nihon-no gakusei-{tachi/-ra}-ga toochaku-shita.

Japan-Gen student-PL-Nom arrive-did

- a. (The) Japanese students arrived. (sum/additive plural)
- b. {a Japanese student/ Japanese students} and others (associative plural)

Due to space limitation, this paper mainly focuses on examples in which the host noun for PL is a common noun. Note that when the host noun for PL is a common noun, the associative plural reading can be made salient with the use of *-ra*, as well as with a slight pause right before *-tachi*.<sup>1</sup> I will often employ *-ra* for facilitating the associative plural reading.

## 2. Two Proposals

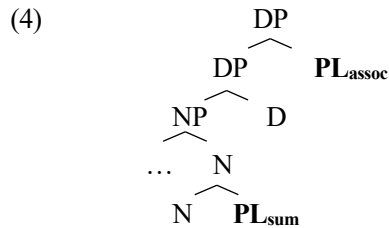
This paper has two main proposals. First, two types of Japanese plural markers (PL) have distinct merging sites as summarized in (3): the associative plural marker PL<sub>assoc</sub> is externally merged at the phrasal level (merged with DP), and the sum/additive plural marker (PL<sub>sum</sub>) is externally merged with the N head.

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<sup>1</sup> Contextual information also plays an important role (Nakanishi and Tomioka 2004).

- (3) Two types of Japanese plural markers PL (-*tachi*/-*ra*)
- a. Associative plural marker (PL<sub>assoc</sub>) → externally merged with DP
  - b. Sum/Additive plural marker (PL<sub>sum</sub>) → externally merged with the N head



This proposal is consistent with the observations made by Ueda and Haraguchi (2008) that two PLs can be stacked if the second PL is PL<sub>assoc</sub>: see (5) and (6).

- (5) [Proper name-PL-PL]

Taro-tachi-ra

Taro-PL-PL<sub>assoc</sub>

- a. ‘Taros and others’ (sum/additive + associative)
- b. ‘Taro and his associates and their associates’ (associative + associative)

- (6) [Common Noun-PL-PL]

gakusei-tachi-ra

student-PL-PL<sub>assoc</sub>

‘students and their associates’ (sum/additive + associative)

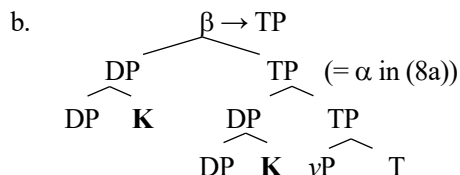
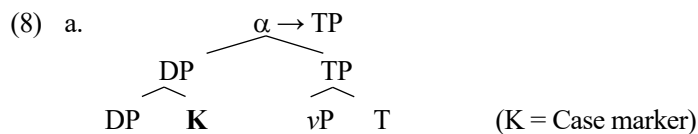
Second, I would like to explore the idea that Japanese PLs are weak heads in the sense of Saito (2018).

- (7) a. Japanese PLs are *weak* heads (i.e., anti-labelers) in the sense of Saito (2018).  
 b. Search  $\{\alpha, \beta\}$  for a label. If  $\alpha$  is a weak head or search into  $\alpha$  yields a weak head, then search on the  $\alpha$  side is suspended and it continues only on the  $\beta$  side

(Saito 2018: 6).

According to Chomsky (2013), phi-agreement in languages like English plays a crucial role in determining the label of an XP-YP configuration. Capitalizing on this point, Saito (2016, 2018) proposes that Case particles play a role in labeling in languages like Japanese that lack phi-agreement. Simply put, a weak head lets its complement phrase to “project.” Furthermore, when that phrase is merged with another phrase, it is the latter that “projects.” Let us illustrate these points below.

(8a) shows a familiar subject-TP configuration in Japanese. When  $\alpha$  is constructed, Minimal Search tries to locate an element that can determine the label of  $\alpha$ . Search on the DP side locates K, a weak head, so the search comes to a halt on the DP side, and the search continues only on the TP side, locating T, a strong head in Japanese. Thus,  $\alpha$  receives the label of T(P). Furthermore, suppose that another DP is merged with  $\alpha$ , as shown in (8b). Multiple nominative constructions (9a) and scrambling (9b), both of which are attested in Japanese, fit this description. In (8b), the label of  $\beta$  is, once again, determined by T(P). Minimal Search on the DP side locates K, a weak head, so the search on this side is suspended.



(9) a. Multiple nominative construction

Bunmeikoku-**ga**      dansei-**ga**      heikin-zyumyoo-**ga**      mizika-i.  
civilized.country-Nom   male-Nom      average-life.span-Nom   short-Pres  
‘It is in civilized countries that male’s average life span is short.’

b. Scrambling

Taro<sub>i</sub>-**o**   Hanako-**ga**   *t<sub>i</sub>* tataita.  
Taro-Acc Hanako-Nom   hit  
‘Hanako hit Taro.’

Similarly, the proposal in (7a) dictates that Japanese PLs do not project upon being merged with a nominal element, which comes close to treating them as “modifying plurals” in the sense of Wiltschko (2008) (see also Kim and Melchin 2018). As summarized in the table in (10), there are some critical differences between modifying plurals and head plurals. Modifying plurals are optional whereas head plurals are obligatory. Also, bare nominals in languages with modifying plurals are interpreted as number-neutral as opposed to being interpreted as singular, which is the case with nominals in languages with head plurals. Importantly, PLs in Japanese are optional, and bare nouns in Japanese are interpreted as number-neutral. For Wiltschko (2008), modifying plurals are adjuncts. But I would like to analyze them as weak heads: like adjuncts, weak heads do not “project.”

(10) Wiltschko (2008) (adopted from Park 2022)

	Modifying plural	Head plural
(i) status	optional	obligatory
(ii) interpretation	number-neutral vs. plural	singular vs. plural
(iii) feature value	[plural]	[+/- plural]

Let us see how labeling works with nominals with PLs (as weak heads).

(11) Gakusei-{tachi/ra}-ga kita.

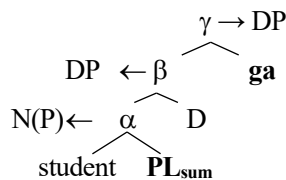
student-PL-Nom came

a. ‘Students came.’ (sum/additive)

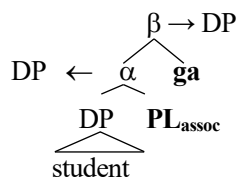
b. ‘Students and others/their associates came.’ (associative)

In (12a), which contains  $PL_{sum}$ ,  $\alpha$  receives the label of N because PL is a weak head. When  $\alpha$  and D are merged, it is the latter that determines the label of  $\beta$  because D is a strong head. When  $\beta$  and K (= *ga*) are merged, the label of  $\gamma$  is determined by the search on the  $\beta$  side because K is a weak head. Let us turn to (12b), which contains  $PL_{assoc}$ . When DP and  $PL_{assoc}$  are merged, the search continues only on the DP side, because the latter is a weak head. When  $\alpha$  and K (= *ga*) are merged, the search continues only on the side of  $\alpha$ . Once again, the label of  $\beta$  is determined by D(P).

(12) a.



b.



This part of the proposal will be particularly important for the discussion in section 4.

In what follows, I will motivate these proposals by bringing into light two contexts in which the associative plural reading is possible whereas the sum/additive plural reading is absent.

### 3. PLs and Nominal Pro-form

The first case is when PL occurs with the nominal pro-form *no* ‘one’ (13): again, using *-ra* facilitates the associative reading.

- (13) Taro-ga    yatotta    hito- $\{tachi/ra\}$     wa    shizuka-datta    ga,    Hanako-ga  
       Taro-Nom   hired    person-PL        Top    quiet-COP.Past    though    Hanako-Nom  
       yatotta    no     $\{tachi/ra\}$ -wa    urusak-atta.  
       hired    one    PL-Top        noisy-Past  
       ‘Although the persons that Taro hired were quiet, ...  
       a. \*the ones that Hanako hired were noisy.’        (\* sum/additive)  
       b. the one(s) that Hanako hired and others were noisy.’    (✓ associative)

Note that the nominal pro-form *to* in Nagasaki Japanese exhibits the same property (Asuka Isono (p.c.)):

- (14) Hanako-ga    yatotta    to     $\{tachi/ra\}$   
       Hanako-Nom   hired    one    PL  
       a. \*the ones that Hanako hired        (\* sum/additive)  
       b. the one(s) that Hanako hired and the associates’    (✓ associative)

Here is an analysis. Let us assume that (i) argument nominals are DPs cross-linguistically, but (ii) languages differ with respect to the presence of #P. I assume, following Li (1999) and Wiltschko (2008) among others, that English plural (PL) -s is realized on the head of #P, which projects between NP and DP: English employs head plurals in the sense of Wiltschko (2008). On the other hand, languages like Japanese, which employ modifying plurals, lack #P.

- (15) a. English nominals: [DP D [<sub>#P</sub> # [NP ... N ...]]]        (head plural)  
       b. Japanese nominals: [DP D [NP ... N ... ] D]        (modifying plural)

As for the pro-form *no*, it is known that *no* demands that (a) at least one syntactic object (argument or modifier) appear in its local domain, and (b) such an element cannot be number-related/quantificational (Kamio 1983, Hiraiwa 2016): see the contrast in (16).

- (16) a. Boku-wa    wakai    no-o    yatotta.  
       I-Top        young    one-Acc    hired  
       ‘I hired a young one/young ones.’

- b. \*Boku-wa yo-nin no-o yatotta.<sup>2</sup>  
 I-Top 4-CL one-Acc hired  
 ‘(lit.) I hired four ones.’

Crucially, when two or more elements are combined with *no*, the first element to merge with *no* must not be number-related/quantificational, as illustrated by the contrast in (17), adopted from Murasugi (1991). (17b) is bad because the first element to merge with *no* is a numeral expression. Importantly, (17a) shows that a numeral expression can co-occur with *no* as long as another element first merges with *no*.

- (17) a. yon-nin-no wakai no  
 four-CL-gen young one  
 ‘four young ones’  
 b. \*wakai yon-nin no  
 young four-CL one  
 ‘(lit.) young four ones (see Murasugi 1991)’

Importantly, PL is number-related, which is why (18) is bad.

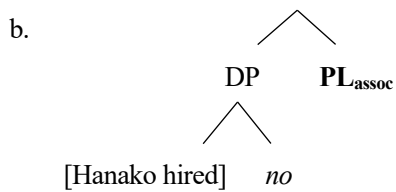
- (18) \*Boku-wa no-tachi-o yatotta.  
 I-Top one-PL-Acc hired  
 \*‘I hired ones.’

Let us now return to (13). The sum/additive plural reading (13a) is unavailable because, given (3b),  $PL_{sum}$  is the first element to merge with *no*: see (19a). By contrast, the associative plural reading (13b) is allowed because the relative clause merges with *no* before  $PL_{assoc}$  is merged with DP (recall (3a)): see (19b).

- (19) a. \*
- 
- ```

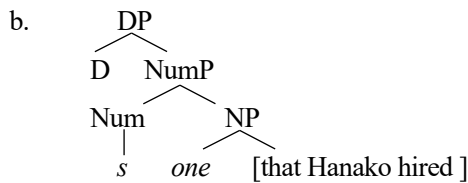
      /\
     /\
    [Hanako hired]  N
                   /\
                  no  PLsum
  
```

<sup>2</sup> This example is fine under the set/group denoting reading (e.g., I hired the group of four people). I set aside this reading (see Hiraiwa 2016 and Ochi 2019 for discussion) and focus on the unavailability of the cardinal reading.



English *one* can yield the sum plural reading in this type of configuration as shown in (20a). This is because English is a head plural language. Thus, *one* first merges with the relative clause at the NP level, before *-s* is introduced at the level of #P (Wiltschko 2008): see (20b).

(20) a. ... the ones that Hanako hired were noisy.



#### 4. PLs in Complex Nominal Phrases

Another context in which only the associative plural reading is available is illustrated in (21), where a nominal argument consists of two DPs: DP<sub>1</sub> = *daigakusei* ‘college student(s)’ and DP<sub>2</sub> = *wakamono* ‘young people.’ Again, using *-ra* as PL will make the associative reading salient.

(21) [ DP<sub>1</sub>-PL + DP<sub>2</sub> ]

|                            |             |              |                     |
|----------------------------|-------------|--------------|---------------------|
| daigakusei- {ra/(??)tachi} | wakamono-ga | kikaku-shita | paatii <sup>3</sup> |
| College student-PL         | youth-Nom   | plan-did     | party-Acc           |

- a. ‘a party that young people including college students and others planned’ (✓ associative)  
 b. \*‘a party that young people consisting of college students planned’ (\*sum/additive)

Some notable features of this construction are as follows. First, PL on the first DP is mandatory.

(22) \*daigakusei      wakamono-ga      kikaku-shita      paatii  
       College student      youth-Nom      plan-did      party

Second, we cannot reverse the order of two DPs without affecting the interpretation.

<sup>3</sup> For speakers (including the author) for whom [Common Noun-*tachi*] typically gives rise to the sum/additive plural reading, the use of *-tachi* in this case sounds degraded initially, which is indicated as (??) *tachi*. But using *-tachi* is fine as long as it is interpreted as associative.

- (23) #wakamono-{tachi/ra} daigakusei-ga kikaku-shita paatii  
 youth-PL college student-Nom plan-did party-Acc  
 a. #‘a party that college students including young people and others planned’ (associative)  
 b. \*‘a party that college students consisting of young people planned’ (\*sum/additive)

Third, DP<sub>1</sub> and DP<sub>2</sub> can each be complex.

- (24) Handai-no gakusei-{ra/(??)tachi} syuukai-no sankasya-ga toochaku-shita.  
 Osaka U-no student-PL meeting-Gen participants-Nom arrived  
 a. \*‘The participants of the meeting consisting of (the) Japanese students arrived.’  
 b. ‘The participants of the meeting consisting of (the) Japanese student(s) and others arrived.’  
 (\* sum/additive, ✓ associative)

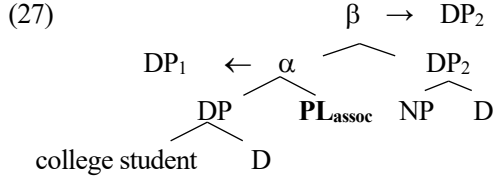
Such observations can be accommodated in the following way. First, (22) is bad because the complex nominal argument (= subject) is without a label: it is an XP-YP configuration consisting of two DPs as shown in (25).

- (25)
- $$\begin{array}{c} \alpha \rightarrow ? \\ \swarrow \quad \searrow \\ DP_1 \quad DP_2 \end{array}$$

Second, adding PL<sub>sum</sub> to DP<sub>1</sub> will not resolve the labeling problem either, since it is attached to the N head (recall (3b)) and hence is “buried” inside DP<sub>1</sub>, as illustrated below.

- (26)
- $$\begin{array}{c} \beta \rightarrow ? \\ \swarrow \quad \searrow \\ DP \quad DP_2 \\ \swarrow \quad \searrow \\ N(P) \leftarrow \alpha \quad D \\ \swarrow \quad \searrow \\ \text{college student} \quad \mathbf{PL}_{\text{sum}} \end{array}$$

By contrast, PL<sub>assoc</sub> will help avoid the labeling problem. When DP<sub>1</sub> and PL<sub>assoc</sub> are merged, DP<sub>1</sub> provides a label because PL<sub>assoc</sub> is a weak head: see (27). When this syntactic object (= α) and DP<sub>2</sub> merge, the latter provides the label of the entire nominal (= β): we have an XP-YP configuration and, given (7b), Minimal Search stops on the side of DP<sub>1</sub> as soon as PL<sub>assoc</sub>, a weak head, is detected, and the search continues only on the DP<sub>2</sub> side.

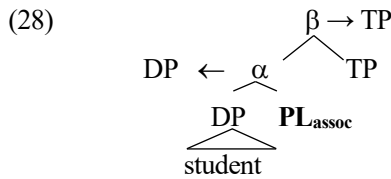


Let us now consider the contrast between (21), which is good on the associative plural reading, and (23), which is grammatical but is felt to be pragmatically odd. Under our analysis, it is  $DP_2$  that “projects” in the configuration of  $DP_1$ -PL  $DP_2$ . (21) is fine because it is natural to talk about a group of young people that includes college students. On the other hand, it is odd to talk about a group of college students that include young people: college students are typically young people but young people are not necessarily college students.

All in all, our analysis successfully brings together two seemingly unrelated cases in which only the associative plural reading is available and provides a comprehensive analysis for them.

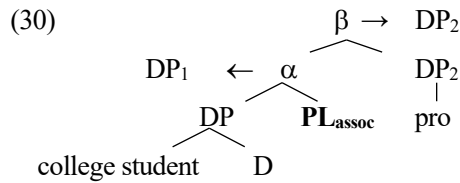
## 5. Conclusion

In this paper, I explored the ideas that (i) the two types of plural markers are merged at distinct locations and (ii) they are weak heads in the sense of Saito (2016, 2018). Many questions arise from the current discussion. Let me just mention one. If the associative plural marker  $PL_{assoc}$  is merged with the entire nominal phrase (DP), and if it is a weak head just like a Case particle, we may expect nominals with  $PL_{assoc}$  to be able to occur without a Case particle. As shown in (28), the presence of  $PL_{assoc}$  should be sufficient to avoid the labeling problem when  $\alpha$  and TP are merged. However, a Case particle is mandatory for a nominal with  $PL_{assoc}$ , as shown in (29). What can we say about such a problem?



- (29) Gakusei-{tachi/ra}\*(-ga) kita.  
 student-PL(-Nom) came  
 ‘Students and others/their associates came.’ (associative)

One possibility is that a nominal with  $PL_{assoc}$  always consists of two DPs, whether  $DP_2$  is phonologically overt (as in (21)) or null (see also Tatsumi 2017 for a proposal along this line, though details are different). The latter possibility is illustrated below.



When the entire nominal expression (=  $\beta$ ) is merged with another phrase such as TP, a Case particle is needed on  $\beta$  to avoid a labeling problem (assuming that *pro* is a strong head).

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