PLURALITY IN JAPANESE AND CHINESE

Yasuki Ueda\textsuperscript{a} and Tomoko Haraguchi\textsuperscript{b}
Nanzan University\textsuperscript{a} and Nagoya Gakuin University\textsuperscript{b}

1. Introduction

This paper presents a comparative analysis of plural markers and nominal constructions in Japanese and Chinese. Japanese has some morphemes that represent plurality. The suffix \textit{-tati} is one of them. Chinese also has a similar suffix, \textit{-men}. They are akin to each other in many ways. For example, they are attached to common nouns, proper nouns, and pronouns, as exemplified in (1).

\begin{enumerate}
\item[(1)]
\begin{enumerate}
\item (Japanese)
\begin{tabular}{lll}
gakusei-tati, & Taroo-tati, & watasi-tati \\
student-TATI & Taroo-TATI & I-TATI
\end{tabular}
\item (Chinese)
\begin{tabular}{lll}
xuesheng-men, & XiaoQiang-men, & wo-men \\
student-MEN & XiaoQiang-MEN & I-MEN
\end{tabular}
\end{enumerate}
\end{enumerate}

Many researchers have cast doubt on the analysis of \textit{-tati} and \textit{-men} as ‘true’ plural markers like \textit{-s} in English (Chao 1968, Iljic 1998, and Martin 1988 among many others). This is because the plural markers in Japanese and Chinese have some unique properties that are not observed with \textit{-s} in English. For example, they yield a special plural interpretation when they are attached to proper nouns. However, Li (1999) convincingly argues that \textit{-men} is a ‘true’ plural marker and that its unique interpretive properties are attributed to the Chinese nominal structure and the morphological properties of the suffix.

In this paper, we build on Li’s analysis and investigate the syntax of \textit{-tati} in comparison with \textit{-men}. We examine how syntactically similar or different \textit{-tati} and \textit{-men} are and whether \textit{-tati} is a ‘true’ plural marker or not. We argue that \textit{-tati} and \textit{-men} differ in the positions where

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they are generated and in the way they are attached to their hosts. Further, we argue that there are two distinct -tatis and that one of them is a ‘true’ plural marker. Along with the plural markers, we also discuss nominal structures in Japanese and Chinese. We show that one of the differences between -tati and -men can be well accounted for if we assume that Chinese and Japanese differ in the positions of a classifier projection (henceforce CLP).

This paper is organized as follows. Section 2 reviews Li’s (1999) analysis of -men and Chinese nominal constructions. Then, we discuss the syntax of -tati in Section 3. This section consists of two parts. In the first subsection, we extend Li’s analysis of Chinese nominal construction to Japanese noun phrases. Then, we introduce Saito, Lin, and Murasugi’s (2006) analysis of prenominal CLP in Japanese as an NP adjunct. This hypothesis enables us to account for the compatibility of CLP and -tati in Japanese. The second subsection discusses the syntax of -tati. We first provide some data related to the recursion of -tati to argue that there are two -tatis. One is generated as the head of NumP, and the other is generated as the head of DP. Finally, we present more data to show that -tati and -men differ in the way they are suffixed to words. Section 4 contains concluding remarks.

2. Chinese Nominal Construction and -MEN

This section reviews Li’s (1999) argument that -men can be analyzed as a ‘true’ plural marker like -s in English. Many researchers have cast doubt on the analysis of -men as a ‘true’ plural marker because of its properties that are not observed with plural markers like -s (Chao 1968, and Iljic 1998 among many others). For instance, -men yields a special plural interpretation when they are attached to proper nouns. Consider the examples in (2).

(2) a. xuesheng-men student-MEN
   ‘the students’

   b. XiaoQiang-men
      XiaoQiang-MEN
   ‘XiaoQiang and his associates’

In (2a), xuesheng-men denotes a homogenous set of students just like the pluralized common noun students does. In (2b), the proper noun with -men, XiaoQiang-men denotes a heterogeneous set of people including XiaoQiang. Following Mizuguchi (2004), we call this interpretation the associative interpretation.\(^1\) Another unique property of -men is that it cannot occur with a quantity expression when it is attached to a common noun, as in (3).

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\(^1\) Li calls the special plural interpretation the collective interpretation.
Thus, there are some considerations that argue against analyzing -men as a straightforward plural marker. Nevertheless, Li argues that -men is a ‘true’ plural marker. She proposes that the patterns that -men exhibits, in contrast with -s, can be attributed to the Chinese nominal structure and the morphological properties of -men. In her analysis, English and Chinese have essentially the same nominal structure except for the presence of CLP in the latter. DP, NumP, and NP are projected in both languages. In Chinese, however, CLP is projected between NumP and NP when a classifier appears in a noun phrase. Compare the two nominal structures in (4).

(4) a. English
   
   \[
   \begin{array}{c}
   \text{DP} \\
   \text{D} \quad \text{NumP} \\
   \quad \text{Num'} \\
   \quad \text{Num} \quad \text{NP} \\
   \quad \quad \text{-s} \quad \text{N}
   \end{array}
   \]
   
   Plurality is specified in Num in both English and Chinese. Where the two languages differ is the category on which plurality is realized on the surface. In English, plurality surfaces as -s on N. In Chinese, plurality is realized as -men on N or D. That is, -men can be attached to D as well as to N. This accounts for the existence of the associative interpretation in Chinese.

Let us consider Li’s analysis in more detail to see how the plural markers are suffixed to their hosts to yield the plural and/or associative interpretations. In English, common nouns are suffixed with -s through N-to-Num movement. Common nouns obligatorily move from N to Num when Num contains -s, or the plural feature. The derivation of students is illustrated in (5).

(5) 
   
   \[
   \begin{array}{c}
   \text{DP} \\
   \text{D} \quad \text{NumP} \\
   \quad \text{Num'} \\
   \quad \text{Num} \quad \text{NP} \\
   \quad \quad \text{-s} \quad \text{N} \\
   \quad \quad \text{student}
   \end{array}
   \]
Li proposes that in Chinese, common nouns are suffixed with the plural marker through N-to-D movement.\(^2\) The derivation of *xuesheng-men* ‘student-men’ is shown in (6).

(6)

![Diagram of N-to-D movement and plural feature attachment.]

In contrast, proper nouns are suffixed to *-men* through Num-to-D movement of *-men*, or the plural feature. More specifically, proper nouns like *XiaoQiang* are assumed to be base-generated in D, and *-men* moves from Num to D to be suffixed to proper nouns.

Li’s analysis of Chinese noun phrases and *-men* accounts for why a common noun with *-men* cannot be preceded by a quantity expression, yielding the equivalent of ‘three students’ in English. The relevant example in (3) is repeated in (7).

(7) *san-ge* xuesheng-men
   three-CL student-MEN
   ‘three students’

Expressions like (7) are out because the affixation of *-men* to a common noun is possible only when N moves up to D through Num. If N moves up to D, then it should precede the numeral because the numeral is generated in the spec of NumP by assumption. The word order in (7) is possible only when N stays in situ, as in (8).

(8)

![Diagram of N-stay-in-situ scenario.]

\(^2\) The movement to D here is motivated by the fact that a common noun with *-men* always receives definite interpretation, another characteristic of *-men* not observed with *-s* in English. See Li (1999) for details.
In English, on the other hand, quantity expressions can precede plural-marked nouns because N does not have to move further up to D. The word order as in *three students* is obtained when N raises to Num.

Li’s analysis of the Chinese nominal constructions with CLP and -men accounts for another puzzling fact. In Chinese, quantity expressions can occur after proper nouns with -men, as shown in (9a), but cannot follow common nouns with -men, in (9b).

(9) a. XiaoQiang-men san-ge (ren)
    XiaoQiang-MEN three-CL person
    ‘XiaoQiang (them) three’

b. *xuesheng-men san-ge (ren)
   student-MEN three-CL person
   ‘three students’

Recall that N raises to D through Num when a common noun is suffixed with -men, and that Num moves to D when -men is suffixed to a proper noun. Then, in (9b), *xuesheng ‘student’ must move up from N to D through Num crossing the classifier ge. This movement violates the Head Movement Constraint in the sense of Travis (1984) and Chomsky (1986), as shown in (10).

(10)

In contrast, there is no illicit movement in the derivation of expressions like (9a). Num moves up to D without crossing any intervening head when proper nouns are suffixed with -men. Li’s analysis of the Chinese noun phrases and -men thus captures the contrast in (9).
3. Japanese Nominal Construction and -TATI

3.1 Japanese Nominal Construction

In Section 2, we have reviewed Li’s (1999) analysis of nominal construction and the plural marker in Chinese. In this subsection, we discuss the Japanese nominal construction. One important difference between -men and -tati is that the Japanese counterpart of (7) is grammatical, as shown in (11).

\[(11) \quad \text{san-nin-no gakusei-tati} \]
\[\text{three-CL-NO student-TATI} \]
\[\text{‘three students’}\]

That is, a quantity expression may precede a common noun with -tati. We show that this difference follows from the hypothesis proposed in Saito, Lin, and Murasugi (2006) that CLP in Japanese, in distinction with Chinese, is an NP adjunct.\(^3\)

It has been argued in the literature that Japanese and Chinese noun phrases are quite similar in structure (Kitagawa and Ross (1982) and many others). For example, they use classifiers for quantity expressions. However, if Japanese and Chinese noun phrases have essentially the same structures except for the Head Parameter, the contrast between (7) and (11) cannot be accounted for. Suppose that (11) has the structure in (12), which parallels (8), the structure Li (1999) assigns to (7).

\[(12) \quad \text{DP} \]
\[\text{NumP} \quad \text{D} \]
\[\text{three} \quad \text{Num’} \]
\[\text{CLP} \quad \text{Num} \]
\[\text{NP} \quad \text{CL} \quad \text{-tati} \]
\[\text{N} \quad \text{nin} \]
\[\text{student} \]

In (12), N must move up to Num to obtain the correct word order. This movement, however, violates the Head Movement Constraint just as in the case of (9b). If N stays in situ, gakusei ‘student’ precedes the classifier nin and follows the numeral. Then, we can never obtain the correct word order. Thus, (11) must have a structure distinct from (7). In particular, the

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\(^3\) This was initially pointed out by I-Ta Chris Hsieh in his comments to Saito, Lin, and Murasugi (2006). It was this suggestion that inspired us to work on the comparison of -men and -tati.
grammaticality of (11) suggests that the classifier head should not intervene between N and Num.

The desired structure for (11) is in fact proposed by Saito, Lin, and Murasugi (2006). They propose that in Japanese a numeral and a classifier form a constituent and that it is an NP adjunct. According to their proposal, (11) has the structure shown in (13).

(13)

\[
\text{DP} \quad \text{NumP} \quad \text{D}
\]

\[
\text{Num'} \quad \text{Num} \quad \text{NP} \quad \text{Num}
\]

\[
\text{CLP} \quad \text{NP} \quad \text{tati} \quad \text{N} \quad \text{student}
\]

One piece of evidence for this structure has to do with the possible positions of quantity expression.\(^4\) Consider the sentences in (14).

(14) a. Taroo-wa san-satu-no hon-o katta
Taroo-TOP three-CL-NO book-ACC bought

‘Taroo bought three books.’

b. San-satu, Taroo-wa hon-o katta
three-CL Taroo-TOP book-ACC bought

As shown in (14b), a quantity expression can appear independently in a position not adjacent to the associate noun. In Chinese, however, there is no parallel phenomenon, as indicated in (15).

(15) a. Zhangsan mai-le san-ben shu
Zhangsan buy-PERF three-CL book

‘Zhangsan bought three books.’

b. * San-ben, Zhangsan mai-le shu
three-CL Zhangsan buy-PERF book

Since the numeral and the classifier do not form a constituent in Chinese, a quantity

\(^4\)A more decisive argument is based on the different patterns Japanese and Chinese show with N’-ellipsis. See Saito, Lin, and Murasugi (2006) for the details.
expression cannot appear separated from the associate noun. The contrast between (14) and (15) suggests that Japanese and Chinese differ in the structure of quantity expressions.

In (13), the nominal structure based on Saito, Lin, and Murasugi’s (2006) proposal, we have the correct word order. There is no intervening head between N and Num. Hence, nothing blocks the suffixation of -tati to the noun whether N is raised to Num or -tati hops onto the noun. The grammaticality of (11), thus, follows from the analysis of Japanese quantity expressions as NP adjuncts, and provides supporting evidence for Saito, Lin, and Murasugi’s (2006) proposal.

3.2 -TATI

As discussed at the outset of this paper, -tati and -men have many overlapping properties (see Ishii (2000) and Kurafuji (2004) for relevant discussions). For example, both can be suffixed to common nouns, proper nouns, and pronouns. The relevant examples shown in (1) are repeated in (16).

(16) a. (Japanese)
   gakusei-tati, Taroo-tati, watasi-tati
   student-TATI Taroo-TATI I-TATI

   b. (Chinese)
   xuesheng-men, XiaoQiang-men, wo-men
   student-MEN XiaoQiang-MEN I-MEN

Another similarity is the range of interpretations the plural markers yield. Just like -men, -tati yields the plural interpretation when attached to common nouns, and it yields the associative interpretation when attached to proper nouns, as exemplified in (17).

(17) a. gakusei-tati
    students-TATI
    ‘the students’

    b. Taroo-tati
    Taroo-TATI
    ‘Taroo and his associates’

The two suffixes, however, are different in some respects. A prominent difference concerns the multiple occurrence of -tati. In Japanese, common nouns and proper nouns can take more than one plural marker, as exemplified in (18).

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5 Both also select animate nouns. See Kurafuji (2004) on this point.
In contrast, no parallel phenomenon is observed in Chinese, as indicated in (19).

(19) a. *xuesheng-men-men
    student-MEN-MEN

b. *XiaoQiang-men-men
    XiaoQiang-MEN-MEN

The contrast shown in (18) and (19) suggests that -tati and -men are syntactically different. In this subsection, we discuss the syntax of -tati in comparison with -men.

Let us first take a closer look at the multiple occurrence of -tati to examine its possible syntactic position. In both of the examples in (18), the additional markers yield the associative interpretation. That is, recursion is allowed only when the second occurrence of -tati has the associative interpretation. It is impossible to have two occurrences of -tati with plural interpretation as shown in (20).

(20) *gakusei-tati-tati
    student-TATI(PL)-TATI(PL)

‘The students’

The impossibility of multiple marking for the plural interpretation in (20) can be accounted for if we assume that multiple occurrence of NumP in a noun phrase is not allowed. This comes into play in Chinese, too. Since -men is the head of NumP, the multiple occurrence of -men is not allowed.

But there remains a fact to account for. A noun phrase can have more than one plural marker for the associative interpretation in Japanese. If the analysis of plural -tati as Num is on the right track, then we cannot identify the additional associative -tati as the head of NumP. We propose then that the associative -tati is a D on the assumption that the recursion of DP is possible. This is consistent with the fact that the associative -tati always occurs on the right edge of a noun phrase, as the ungrammaticality of (21) shows.

(21) *gakusei-tati-tati
    student-TATI(ASS)-TATI(PL)

Given that Japanese is head-final, (21) suggests that the associative -tati is in a position higher
than Num. If the plural -tati is a Num, and the associative -tati is a D, the former must be within the complement of the latter, and hence, must precede it. Thus, the ungrammaticality of (21) is predicted.

We provide two pieces of supporting evidence for the analysis of -tati as two distinct morphemes, one being a Num and the other a D. The first evidence is the existence of a plural suffix that yields only the plural interpretation in Japanese. Consider the examples in (22).

(22)  
a. sensei-gata  
teacher-GATA  
‘the teachers’

b. * Smith-kyoozyu-gata  
Smith-Professor-GATA  
‘Professor Smith and his associates’

As in (22), the plural marker -gata can be attached only to common nouns to yield the plural interpretation. The multiple occurrence of -gata is impossible, as expected.

(23)  
* sensei-gata-gata  
teacher-GATA-GATA

Given our proposal, we can analyze -gata straightforwardly as a variant of the plural -tati, that is, as a Num. On the other hand, if there is only one -tati, a more complicated account would be required to explain the difference between -gata and -tati.

The second supportive evidence concerns the associative interpretation obtained in plural-marked common nouns in Japanese. Nakanishi and Tomioka (2004) and Mizushima (2007) observe that common nouns with -tati can have the associative interpretation in addition to the plural interpretation. This is shown in (24).

(24)  
gakusei-tati-ga   koogisita  
student-TATI-NOM   protested  
‘The students (and their associates) protested.’

Note first that a common noun in Japanese can have plural interpretation by itself. Thus, (25) is ambiguous as indicated.

(25)  
gakusei-ga   koogisita  
student-Nom   protested  
‘The student(s) protested.’

This indicates that a plural Num can be null or be analyzed as -tati. If gakusei can be a DP with a null plural Num (meaning ‘the students’) and the associative -tati is a D that takes a DP

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complement, the associative interpretation of (24) is in fact predicted. The precise structure for gakusei-tati in (24) will be as in (26).

(26)
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DP
  | NumP  D   -tati (ASS)
  | NP    Num  [+DEF]
  | N     PL
```

Thus, the analysis of the associative -tati as a D renders it possible to capture the associative interpretation of common nouns with -tati.

In contrast with Japanese, the associative interpretation is not observed with common nouns followed by -men, as shown in (27).

(27) haizi-men zhengzai zai-gongyuan wan
   child-MEN PRES.PROG in-park play
   ‘The children are playing in the park.’

This is also predicted by our analysis. In Chinese also, a common noun can have plural interpretation by itself. Thus, a plural Num head can be null or be analyzed as -men. However, if haizi is a DP with a null plural Num, then the Num position is filled and consequently, further suffixation of -men should be impossible. This is so because -men, unlike -tati, is always a Num head and never takes a DP complement. Thus, the absence of the associative interpretation in plural common nouns with -men provide further support for Li’s (1999) analysis of -men as a Num head.

Now we focus on the relationship between the plural markers and their hosts, particularly on the attachment of the plural markers to their hosts. Recall that the suffixation of -men to its host requires the head movement of N to Num or of Num to D in Li’s analysis. N raises to Num when common nouns are suffixed with -men, and Num moves up to D when proper nouns are suffixed with -men. However, there is evidence that no head movement is required for the suffixation of -tati, and that -tati is combined with its host by affix hopping or phonological merger.  

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6 Then, an intervening head between -tati and its host does not induce a violation of the Head Movement Constraint, but breaks the adjacency between the two elements, which is required for affix hopping.

7 The data come from Martin (1988) and Ishii (2000). They argue that -tati is a phrasal suffix.
Let us first consider the following example, where -tati serves as a plural marker for conjoined common nouns:

\[(28)\] zyuuroku-nin-no sakka, hyooronka, sisooka, kagakusha-tati
sixteen-CL-NO writer critic thinker scientist-TATI

‘sixteen writers, critics, thinkers, and scientists’

In (28), the quantity expression quantifies a sequence of conjoined nouns, and -tati marks the whole expression as plural. Then, the plural -tati in Num may take the conjoined NPs and a quantity expression as its complement, as in (29).

\[(29)\]

\[
\text{Num'} \quad \text{Num} \quad \text{CLP} \quad \text{NP} \quad \text{NP, NP, NP, NP, N, N, N, N}
\]

If the rightmost N raises to Num, the movement should violate the coordinate structure constraint and (28) is incorrectly predicated to be ungrammatical. On the other hand, there is no problem with affix hopping if it only requires adjacency. Note that the English counterpart of (28) is totally ungrammatical, as shown in (30).

\[(30)\] * sixteen writer, critic, thinker, scientists

‘targeted meaning: sixteen writers, critics, thinkers and scientists’

This is consistent with the analysis that a common noun and -s is combined through head movement (Delfitto and Schroten (1991) and Li (1999)).

A similar fact obtains with the associative -tati. (31) shows that it can take conjoined proper nouns as its complement.

\[(31)\] Taroo to Hanako-tati
Taroo and Hanako-TATI

‘Taroo and Hanako, and their associates’

Again, if Taroo and Hanako are Ds, the latter should not be able to move to -tati out of the coordinate structure. Thus, the associative -tati also seems to hop onto the adjacent D. As expected, the Chinese counterpart of (31) is ungrammatical. This is shown in (32).
(32)  *A-Q he XiaoQiang-men
       A-Q and XiaoQiang-MEN

       ‘A-Q and XiaoQiang and their associates’

The example can only mean ‘A-Q, XiaQiang, and XiaoQiang’s associates’. This follows from Li’s (1999) analysis. If -men is the Num in a DP headed by XiaoQiang, then it should be able to move to D. But there is no way for it to raise to a conjunction of DPs. Given that -men is always a Num head and never takes a DP complement, it is in fact hard to imagine what structure (32) may have.

4. Concluding Remarks

This paper has pursued the comparative syntax of the plural markers and noun phrases in Japanese and Chinese. We have argued that Japanese and Chinese nominal constructions are essentially the same except for the structure and the position of quantity expressions. In Japanese, quantity expressions are best analyzed as NP adjuncts, as proposed in Saito, Lin, and Murasugi (2006). In Chinese, quantity expressions do not form a constituent, and a classifier heads its own projection in the nominal structure. We have also argued that -tati and -men are structurally different despite their superficial similarities. In Japanese, the plural marker that yields the plural interpretation is generated in Num, and the plural marker that yields the associative interpretation is generated in D. In Chinese, the plural marker is always generated in Num. Further, -tati and -men are different in the way they are attached to their hosts. In Japanese, no head movement is required when -tati is suffixed to common nouns or proper nouns: it simply hops onto the adjacent noun. In Chinese, the head movement of Num or N is required for the suffixation of -men.

Finally, we would like to make a small remark on the categorical status of the associative -tati. In Li’s analysis, -men is a ‘true’ plural marker like -s in English in the sense that it is a plural feature in Num. We argue that -tati, on the other hand, can be generated in Num and D. What we have shown is that the associative -tati occurs in a head position higher than Num, and further that it can appear recursively. For this reason, we proposed that it is a D that takes a DP complement, but whether it is really a D or some other category remains to be seen. We must leave a more precise characterization of the categorical status of the associative -tati for future research.

References


