Functional categories: classifiers and case markers in Japanese

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Many East Asian languages including Japanese and Korean have classifiers and case markers, which may constitute the only functional elements in these languages (Keil & Yamamoto, 2000). In this paper, I consider Fukui's (1995) Functional Parameterization Hypothesis, which insists that functional categories are subject to parametric variations unlike the lexical categories that have θ-roles. Fukui argues that Japanese could lack some of, or possibly all of, the functional categories. After reviewing Fukui's Principles-and-Parameters Approach, I suggest that Japanese uses classifiers and case markers as functional categories. I consider several pieces of evidence which argue for the claim that Japanese does contain functional categories, contrary to Fukui (1995), by looking carefully at the behavior of classifiers and case markers. I assume that these functional categories are heads of phrases (written as ClassP and CaseP), operate similar to D in languages like English, and take head-final positions like other heads in Japanese.

1   Introduction

In the field of Generative Grammar, it seems that English has been the primary language studied for many years; therefore, some languages that were structured differently from English needed some explanation of their language structures. Principles-and-Parameters theory claims that "the biologically determined mental organ UG is conceived of as the set of principles each of which is associated with an open parameter whose value is to be set by experience" (Chomsky, 1981 cited in Fukui, 1995). Principles-and-Parameters theory enables linguists to compare languages by looking at each parametric difference. One parametric view is Fukui's (1995) Functional Parameterization Hypothesis, which states that functional categories are subject to parametric variations unlike the lexical categories that have θ-roles. Fukui also argues that Japanese could possibly lack all functional categories. In this paper, however, I will suggest that classifiers and case markers could be functional categories in Japanese, contrary to Fukui's claim. Classifiers and case markers may not be categorized with DP, IP, CP, or AgrP, so they may be considered as new functional categories for languages that have classifiers and case markers like Japanese.

2   Review of Fukui's Functional Parameterization Hypothesis

Fukui (1995) proposes the Functional Parameterization Hypothesis, according to which only functional categories ([+F]) are subject to parametric variation. Lexical categories would not be subject to parametric variation because they have their own meanings (i.e., bear θ-roles) and are necessary tools for communication in any human language; however, functional categories do not take θ-roles or have any "meaning" in the conventional sense. Fukui (1986) states that the basic role of functional categories is to connect syntactic constituents through some purely syntactic relationship like 'agreement'. He also mentions that it could be possible to function as a language without any functional category since only the functional elements are subject to parametric variation. He presents Japanese as an example of a language that lacks some or all of the functional categories, yet he points out that Japanese is still a tool for speakers to communicate thoughts.

Fukui (1990) also suggests a useful way to study functional categories in relation to lexical categories, by way of feature specifications. He specifies the major lexical and functional categories in human languages with three basic features ($\pm$F, $\pm$N, $\pm$V), which are incorporated from Chomsky's (1970) earlier study. +F means that the element can work as a functional category. +N means that the element is nominal in nature, and +V means that the element functions as a predicate. There are four major lexical categories (N, V, A, and P) corresponding to the four major functional categories (AGR, T, D, and C). He categorizes the major functional categories in the following way in relation to the lexical categories.

(1)   Feature specifications of the major functional categories (Fukui 1990, 1995)

$$AGR = [+F, +N, +V]$$
$$T = [+F, -N, +V]$$
$$D = [+F, +N, -V]$$
$$C = [+F, -N, -V]$$

With these feature specifications, it is clear to see which functional category has a relation to which lexical category. For example, AGR has a relation to both N and V, and D has a relation to N but not to V.

Considering this, I will now discuss the nature of classifiers and case markers in Japanese. Also, I will provide the feature specifications for both classifiers and case markers to show their relations to the major lexical categories in the discussion section.

3   Classifiers and case markers

In Japanese, like other East Asian languages, classifiers are attached to numbers describing how many or how much the objects are. In Japanese, classifiers are divided into two categories, animate and inanimate (Keil &

Yamamoto, 2000). Classifiers differ depending on which objects they are associated with. For example, animate classifiers like -hiki counts tailed animals, and inanimate classifiers like -hon counts thin and long objects etc. Inoue (1993) mentions that it is difficult to say how many classifiers there are in Japanese in total. However, Downing (1986) claims that 154 Japanese numeral classifiers fit her criteria, and 36 classifiers account for 80% of the usage found in modern Japanese communication. A classifier is attached to the number, and a number cannot occur without a classifier. A classifier and its complement (number) can also appear in a place both before and after the object with which it is associated. The examples below (2)-(5) examine the nature of classifiers.

(2)   ni -hiki -no   saru   -o   mi-ta
         two -cl   -Gen   monkey –Acc see-past
         "I saw two monkeys"

(3)   saru   -o   ni -hiki   mi -ta
         monkey –Acc   two -cl   see -past
         "I saw two monkeys"

(4)   * ni   -no   saru   -o   mi-ta
           two -Gen   monkey –Acc   see-past
         "I saw two monkeys"

(5)   * saru   -o   ni   mi -ta
           monkey –Acc   two   see -past
         "I saw two monkeys"

        Both (4) and (5) are ungrammatical since the classifiers fail to attach with numbers. (2) & (3) represent a difference in focus depending on which element is adjacent to the verb. In (2), the speaker emphasizes primarily on the monkeys that he or she saw ("I saw two monkeys but not two skunks"). In (3), the number of monkeys the speaker saw is emphasized. It is, therefore, important to distinguish the positional differences of a classifier and its complement.
        Japanese also uses distinct case markers. Some general case markers include -ga (nominative), -o (accusative), and -no (genitive). In (6.a & b.), the general usage of case markers is demonstrated. Case markers follow the NP, and it is generally ungrammatical to have an NP without a case marker. However, Lee (2002) points out that some nominative case markers can be deleted in conversational Japanese as shown in (7).

(6)   a.   akachan –ga   omocha -o   mot -te   -imasu.
                 baby   -Nom   toy   -Acc   hold -present -progressive.
                 "A baby is holding a toy"

b. omocha-o   akachan -ga   mot -te   -imasu.
    toy -Acc   baby -Nom   hold -present -progressive.
    "A baby is holding a toy"

In conversational Japanese,

(7) akachan omocha -o   mot -te   -imasu   -yo
     baby   toy -ACC   hold -present -progressive -final particle
     "A baby is holding a toy"

(8) * omocha -o   akachan mot -te   -imasu   -yo
       toy -ACC   baby   hold -present -progressive -final particle
     "A baby is holding a toy"

The data above show that case makers and their complements can be scrambled in a sentence. In conversation, it is considered grammatical to sometimes drop the nominative case marker as Lee (2002) suggests. However, it is possible that in (7) 'akachan'(baby) is a topic and not a nominative NP. Therefore, it is ungrammatical when the case marked phrases get scrambled, as in (8), where 'akachan' without a case marker is ungrammatical.

The discussion of classifiers and case markers confirms their obligatory nature in relation to their complement. In this way, they behave like functional categories in other languages.

4 Properties of functional categories

Abney (1987:64-5) claims that there are five criteria that an element must satisfy to be considered a functional category, and he proposes the particular five criteria to be met if the item is to be a functional category. I will examine these five criteria with Japanese classifiers and case markers.

Each criterion has a heading from 4.1-4.5. For each criterion, I will discuss classifiers and case markers together.

4.1 Functional elements constitute closed lexical classes

This means that one cannot create a new functional category in a particular language. Classifiers and case markers are in fact closed classes; they cannot be newly created. Therefore, I consider classifiers and case markers to pass this criterion.

4.2 Functional elements are generally phonologically and morphologically dependent

Classifiers and case markers are phonologically and morphologically dependent on the nouns (or numbers) that precede. In other words, they cannot

appear by themselves, and they are influenced by their complements morphologically and phonologically.

From (9.a) and (9.b) below, it is clear that a classifier is morphologically dependent on its complement. Without the complement, it is ungrammatical.

(9)   a.   inu -ga   sam   -biki   i -masu
                dog –Nom three   -cl   be-present
                "There are three dogs"

        b.   *inu -ga   -biki   i -masu
                dog –Nom   -cl   be-present
                "There are ? many dogs"

The data in (10.a & b) show the phonological dependency that a classifier has on its complement. The classifier in (10.a) is [biki] while the other classifier in (10.b) is [çiki]. A preceding labial nasal changes the initial consonant of the classifier to a voiced bilabial stop.

(10)   a.   inu -ga   sam   -<u>b</u>iki   i -masu
                dog –Nom three   -cl   be-present
                "There are three dogs"

        b.   inu -ga   ni   -<u>ç</u>iki   i -masu
                dog –Nom two   -cl   be-present
                "There are two dogs"

The data in (11) show the same morphological dependence with case markers. (11.c) is ungrammatical because the noun (imo) and the case marker are separated. From this, it is confirmed that a case marker depends morphologically on its complement.

(11)   a.   Michael -ga   imo   -o   tabe   -ru
                Michael -Nom potato -Acc eat   -present
                "Michael eats potatoes"

        b.   imo   -o   Michael -ga   tabe -ru
                potato -Acc   Michael -Nom eat   -present
                "Michael eats potatoes"

        c.   * imo $_i$ Michael -ga   t $_i$-o   tabe   -ru
                  potato $_i$ Michael -Nom   t $_i$-Acc   eat   -present
                "Michael eats potatoes"

Case markers are also dependent phonologically on their complements. Case markers do not have their own pitch, so they need to be assigned pitch

from their complements (Shibatani, 1990). Using what Shibatani (1990) provided, I will explore this with my Osaka dialect of Japanese.

(12) a.   hana (HL)
              "flower"

      b.   hana –ga (HLL)
              "flower-Nom"

(13) a.   hana (LH)
              "nose"

      b.   hana -ga (LHH)
              "nose –Nom"

In (12. b), the case marker –ga is assigned L pitch, whereas in (13.b) it is assigned H pitch. Classifiers and case markers are in fact phonologically and morphologically dependent on their complements.

4.3   Functional elements permit only one complement

We first look at classifiers:

(14) a.   Michael -ga   ringo $_i$ -o   ni $_i$ -ko   kat -ta.
              Michael –Nom apple $_i$ –Acc two $_i$ –cl   buy -past
              "Michael bought two apples"

      b.   * Michael -ga   ringo $_i$ to mikan $_{ii}$ -o   ni $_i$ to san $_{ii}$ -ko kat -ta.
              Michael –Nom apple $_i$ & orange $_{ii}$–Acc two $_i$ & three $_{ii}$ –cl buy-past
              "Michael bought two apples and three oranges."

Based on (14.b), I suggest that classifiers do not take more than one complement. Note that –ko is associated with two numbers, which is ungrammatical.

We next turn to case markers. To show the evidence that a case marker permits only one complement, I provide the trees (15.a & b.) where a classifier and a case maker are treated as functional categories assuming (from the previous discussion) that a classifier and a case marker head their own phrases. From now on, I will describe both phrases as ClassP (Classifier Phrase) and CaseP (Case marker Phrase).

(15)

```
      a.      CaseP                    b.     * CaseP
                |                                  |
              CaseP'                             CaseP'
              /      \                          / |      \
            NP      case marker             NP  NP     case marker
            /\           |                  /\  /\          |
       imo to ningin    -o              imo ningin         -o
      potato & carrot  -Acc            potato carrot      -Acc
```

From the trees above, it is clear that, like other heads, a case marker permits only one complement. Therefore, both classifiers and case markers meet this criterion since they permit only one complement.

4.4 Functional elements are usually inseparable from their complement

As discussed in 4.2, classifiers and case markers cannot be separated from nouns or numbers, which are their complements.

4.5 Functional elements lack what Abney calls "descriptive content"

Abney (1987:64-5) states that a functional category contributes to the interpretation of its complement, and it marks grammatical or relational features. Case markers meet this criterion because they serve to mark grammatical and relational features in the sentence (nominative, genitive, accusative, etc), but they do not have any conventional 'meanings'.

Classifiers may or may not meet this criterion. For instance, it is optional to have a ClassP in a sentence as shown in (16).

(16)   asoko -ni,   inu -ga   i -ta
         there -place particle   dog -Nom   be –past
         "There was a dog over there" or "There were dogs over there"

However, both classifiers and case markers seem to lack descriptive content in that they do not have independent "meanings".

5 Discussion

As discussed above, both classifiers and case markers seem to be functional categories. Their feature specifications below show that they have a strong relation to N, but not to V. Thus, they have similarity with D in languages like English.

(17) Feature specification of classifier, case marker, and D.

<div align="center">
Classifier = [+F, +N, -V]
Case marker = [+F, +N, -V]
D = [+F, +N, -V]
</div>

Another finding on classifiers and case markers is that they are functional heads and take head-final positions like other heads in Japanese. For example, in Japanese, a verb follows its complement [VP [Complement] [V]], as do classifiers and case markers; [ClassP [Num] [Cl]] and [CaseP [NP] [Case]].

In this section, I will look at the relationship between classifiers and case markers closely. Considering the two examples discussed earlier (2) & (3), I suggest that ClassP is an adjunct of CaseP.

(2)   ni -hiki   -no   saru   -o   mi -ta
        two -cl   -Gen   monkey –Acc   see -past
        "I saw two monkeys"

(3)   saru   -o   ni   -hiki   mi -ta
        monkey –Acc   two   -cl   see -past
        "I saw two monkeys"

One might conclude that in (2), the case marker (-no) is attached to the classifier when CaseP (saru -o) follows the ClassP (ni -hiki). I assume that the case marker –no is inserted post syntactically in the environment {N, Class}_N (Harada, 2002). However, in (3), the case marker (-no) on the ClassP goes away when ClassP follows the CaseP. I suggest that ClassP may originally be an adjunct of CaseP, follows the CaseP, and gets focus in a position adjacent to the verb. Another evidence that supports ClassP to be an adjunct of CaseP is quantifier float as shown in (18).
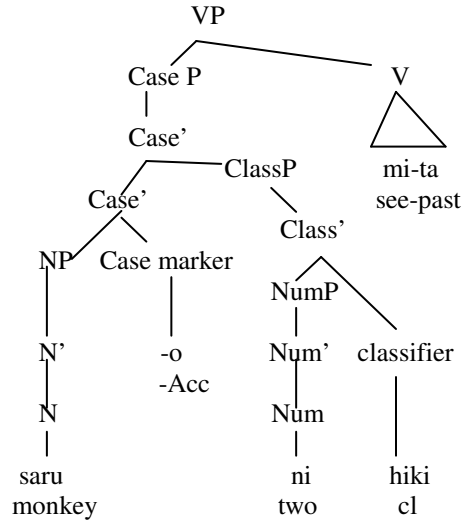
(18)   san -ko Michael -ga   imo   -o   tabe -ta
        three -cl   Michael –Nom   potato-Acc   eat -past
        "Michael ate three potatoes"

Since ClassP is an adjunct, it can be extracted and scrambled separately from the NP and CaseP. With this interpretation, it is natural for the ClassP to be optional as discussed in (16). However, in order to emphasize the object in CaseP, ClassP may be positioned before CaseP so that it can modify the CaseP (note that the genitive case marker must be added).
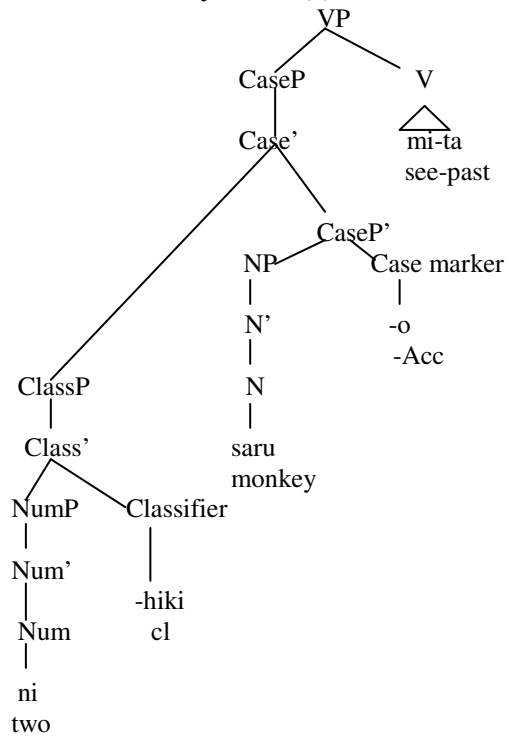I provide trees below to show the relationship between ClassP and CaseP in each sentence visually.

(19) "I saw **two** monkeys" from (3)

```
                          VP
                  ┌────────┴────────┐
               Case P               V
                 │                 △
               Case'            mi-ta
            ┌────┴────ClassP    see-past
          Case'          │
        ┌───┴───┐      Class'
       NP   Case marker  ┌──┴──┐
        │       │      NumP  classifier
       N'      -o       │        │
        │     -Acc     Num'   classifier
        N              │
        │             Num
      saru             │
     monkey           ni     hiki
                      two     cl
```

(20) "I saw two **monkeys**" from (2)

```
                          VP
                   ┌───────┴───────┐
                CaseP              V
                  │               △
                Case'          mi-ta
          ┌───────┴───────┐    see-past
          │            CaseP'
          │          ┌────┴────┐
          │         NP    Case marker
          │          │         │
          │         N'        -o
          │          │        -Acc
        ClassP       N
          │          │
        Class'      saru
      ┌───┴───┐    monkey
    NumP  Classifier
      │        │
    Num'     -hiki
      │        cl
    Num
      │
     ni
     two
```

6   Conclusion

By examining Abney's five criteria (1987), I suggest that classifiers and case markers can be considered as functional categories in Japanese, contrary to Fukui's (1995) claim. The evidence shows that both classifiers and case markers have similarity to D in languages like English when their feature specifications were examined. They are also assumed to be heads of phrases and take the head-final position like other heads in Japanese such as VP ([VP [Complement] [V]]).

The relationship between classifiers and case markers was discussed. The evidence suggests that ClassP may be an adjunct of the CaseP considering the fact that it is optional to have ClassP in a sentence. When ClassP appears in a sentence, it originally follows CaseP and allows its complement to be focused as shown in (18). However, ClassP precedes CaseP when a complement of CaseP is focused as shown in (19).

This squib examined Japanese classifiers and case markers from various aspects using Abney's five criteria, and it also investigated the relationship between classifiers and case markers. I conclude that classifiers and case markers in Japanese are functional categories, and that they serve a role to connect syntactic constituents like other functional categories do in other languages.

7   Acknowledgement

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