金城学院大学論集

通 巻 第 149 号

英米文学編（第34号）

金 城 学 院 大 学

1992

Two Notes on Head-Internal
Relative Clauses

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1. Introduction

One of the most striking differences between Japanese and English is the fact that only the former has the so called "head-internal relative clauses." An example of a head-internal relative clause is shown in (1).

(1) watasi—wa [[ringo—ga   tukue—no   ue—ni oitearu] no]
    I   —TOP apple—NOM desk —GEN on   is—put

    —o   tabeta
    —ACC ate

    (I ate the apple that is put on the desk.)

It has been pointed out that head-internal relative clauses exist, for example, in Navajo (Platero, 1974) and in two Quechua languages, Imbabura and Anchash (Cole, 1988). Cole (1988) discusses head-internal relative clauses from a typological perspective, and explains a typological fact on the basis of two well motivated parameters, the pro-drop parameter and the head parameter. According to Cole (1988), the languages that have head-internal relative clauses are pro-drop and head final. We investigate whether Cole's hypothesis is compatible with one of the pro-drop and head-final

languages, i. e., Japanese.

This paper consists of two notes on the structure of head-internal relative clauses in Japanese. In the following section, we discuss the categorial status of "no" in (1). We argue that it is of a category N, and further, that it is a nominalizer. In the third section, we discuss Cole's (1987) analysis of head-internal relatives. We show that despite the fact that it has many attractive features, it fails to account for those relatives in Japanese.

2. The Categorial Status of the "no" in Head-Internal Relative Clauses

Different hypotheses have been proposed for the categorial status of "no" in head-internal relatives. Kuroda (1992) proposes that it is a complementizer, while Kitagawa and Ross (1982) analyzes it as a genitive Case marker.[1]

As discussed in detail in Murasugi (1991), there are three types of "no" in Japanese: (i) the genitive Case marker, (ii) a complementizer, and (iii) a nominal (pronoun "no" or nominalizer "no"). Further, it is argued there that prenominal sentential modifiers in Japanese are uniformly of the category IP, not CP. If this is correct, then the "no" in head-internal relatives cannot be a complementizer. Given the X'-theory, there cannot be a complementizer without CP. This leaves us with two possibilities: the "no" in quesion must be the genitive Case marker or a nominal.

Here, in Toyama dialect, the genitive Case marker is "no", as in Toyama dialect, but what corresponds to the nominal (and complementizer) "no" in Tokyo dialect is "ga".[2] That is, the nominal "no" is realized as "ga" in this dialect, as illusterated below.

(2) Tokyo dialect
   a. akai no   b. hasitte-iru no
      red one   running-is one

     (the red one)   (the one that is running)

(3) Toyama dialect
   a. akai ga   b. hasitte-iru ga
      red one   running-is one

     (the red one)   (the one that is running)

Since the genitive Case marker and the "nominal "no"" are phonetically distinguished in Toyama dialect, it should provide us with direct evidence on the categorial status of "no" in a head-internal relatives. And as shown below, this "no" is realized as "ga" in Toyama dialect.

(4) Tokyo dialect
   keikan   —wa [[doroboo —ga   detekita] no]—o
   policeman—TOP the robber—NOM came out   —ACC

   tukamaeta
   arrested

   (The policeman arrested the thief who came out of the room.)

(5) Toyama dialect
   keikan   —wa [[doroboo —ga   detekita] ga]—o
   policeman—TOP the robber—NOM came out   —ACC

   tukamaeta
   arrested

   (The policeman arrested the thief who came out of the room.)

If "no" in (4) is the genitive Case marker, it should be realized as "no" also in the Toyama dialect. Hence, the example in (5) clearly

shows that the "no" in question is not the genitive Case marker. We conclude, then, that it is of the category N.

As noted above, there are two kinds of "no" of the category N, the pronoun "no" and the nominalizer "no". They are illustrated below.

(6) pronoun "no"

    John—ga   [akai no] —o   tabeta
       —NOM red   one—ACC ate

    (John ate the red one)

(7) nominalizer "no"

    [tabesugiru   no]—wa   yokunai
    eating too much   —TOP is—not—good

    (It is not good to eat too much.)

Then, a question arises which kind of nominal "no" in head-internal relatives is. The answer to this question is in fact found in Ito (1986).

As Kuroda (1992) points out, the pronoun "no" has a derogatory connotation, and is not compatible with the honorific marking of the main verb.

(8) a. wakai sensei —ga   oozei orareru
      young teachers—NOM many there—are (HON)

      (There are a lot of young teachers.)

    b. #wakai no   —ga   oozei orareru
      young ones   —NOM many there—are (HON)

      (There are a lot of young teachers.)

The pronoun "no" in (8b) has a derogatory connotation, and is not

compatible with the the honorific marking of the matrix verb. On the other hand, the nominalizer "no" does not have any such connotation. Thus, (9b) is a perfectly natural sentence.

(9) a. otosi—no   sensei —ga   otabe—ni—narisugiru   koto
    old —Gen teacher—NOM eating—too—much (HON) the fact

    —wa   yokunai
    —TOP is—not—good

    (It is not good for the old teachers to eat too much.)

   b. otosi—no   sensei —ga   otabe—ni—narisugiru
    old —Gen teacher—NOM eating—too—much (HON)

    —wa   yokunai
    —TOP is—not—good

    (It is not good for the old teachers to eat too much.)

Ito (1986) points out that the "no" in head-internal relatives, like the "no" in (9b), does not have any derogatory connotation. Her example is shown below.

(10) [sensei —ga   kenkyuusitu —kara dete irasshatta no]—ni
     teacher—NOM office   —from out came (HON) —DAT

    guuzen   oaisuru—koto—ga dekita
    accidentally meet (HON)   able (past)

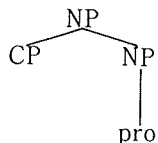   (I happend to be able to meet the teacher who was coming out of his office.)

Hence, we conclude that the "no" in head-internal relatives is the nominalizer "no", and not the pronoun "no".[3]
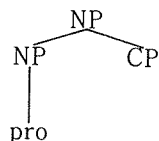
3. On Cole's (1987) "pro" -head Analysis

Cole (1987) discusses head-internal relative clauses from a typological perspective, and proposes an extremely interesting hypothesis. He first notes that those languages that have head-internal relatives allow pro and also are head-final. Given this fact, he first proposes that the head position of a head-internal relative clause is occupied by pro.[4] This explains why only pro-drop languages have such relative clauses. Then, as we will discuss in detail below, he appeals to Condition (C) of the Binding theory to explain why only head-final (relative clause-initial) languages have head-internal relatives.[5]

If the head position is occupied by pro, the structure of head-internal relatives will be as in (11).
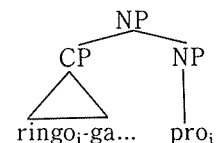
(11) a. head final

$$
\begin{array}{c}
NP \\
\diagup\ \diagdown \\
CP \quad NP \\
| \\
pro
\end{array}
$$

   b. head initial

$$
\begin{array}{c}
NP \\
\diagup\ \diagdown \\
NP \quad CP \\
| \\
pro
\end{array}
$$

Cole proposes that the head pro is coindexed at S-structure with the lexical NP to be interpreted as the head of the relative clause. According to this hypothesis, the structure of (1), for example, will be as in (12).

(12)

$$
\begin{array}{c}
NP \\
\diagup\ \diagdown \\
CP \quad NP \\
\triangle \quad\ | \\
ringo_i\text{-}ga... \quad pro_i
\end{array}
$$

Then, he points out that the structure in (11b), with the proposed coindexation, is ruled out by Condition (C) of Binding theory. This is rather straightforward, since the head pronoun binds the coindexed R-expression in the relative clause. And this explains why head-initial languages do not have head-internal relatives.

However, one last problem remains: It must be explaind why the structure in (11a) is allowed with the proposed coindexation. As Cole notes, this structure is ruled out by Condition (C), if the condition is formulated only in terms of command along the lines of Reinhart (1976). Thus, he proposes that (at least in those languages with the head-internal relatives) Condition (C) is formulated as in (13) in terms of precedence and command.

(13)   An anaphor cannot both precede and command its antecedent.

This condition rules out (11b) with the proposed coindexation, since the pro both precedes and commands the coindexed R-expression in the relative clause. And importantly, it allows (11b) since the pro does not precede the coindexed R-expression.

Cole's hypothesis is clearly very attarctive. He explains a typological fact on the basis of two well motivated parameters, the pro-drop parameter and the head-parameter. But as it is, it is incompatible with the conclusion obtained in the preceding section. We argued that the "no" in Japanese head-internal relatives is of the category N. This implies that the head position of the Japanese head-internal relatives is occupied by "no", and not by pro. And

further, as far as Japanese is concerned, there is rather direct evidence against his hypothesis.

As Cole notes, it has been contraversial whether precedence plays any role in the Binding theory, and in particular, in the formulation of Condition (C). Discussing the problem, Saito (1985: 45) presents the following examples as evidence against "precedence":

(14) a. [[kare$_i$ —no   hahaoya —ga   genkidatta koro]—no   John$_i$
         he   —GEN mother —NOM was—fine   time —GEN

   (*Lit.* John$_i$ of the time when his$_i$ mother was well
   =John$_i$ as he$_i$ was when his$_i$ mother was well)

   b. [[John$_i$ —no   hahaoya —ga   genkidatta koro]—no   kare$_i$
            —GEN mother —NOM was—fine   time —GEN he

   (*Lit.* John$_i$ of the time when his$_i$ mother was well
   =John$_i$ as he$_i$ was when his$_i$ mother was well)

If Condition (C) is formulated as in (13), (14b) is incorrectly allowed since the pronoun "kare" does not precede "John".[6] Independently of the controversy on the role of precedence in the Binding theory, (14b) clearly indicates that a pronoun in the nominal head position cannot be coindexed with an R-expression in a modifying phrase. Thus, Cole's hypothesis, despite its attractive features, cannot be maintained for the analysis of head-internal relatives in Japanese.

4. Conclusion

In this paper, we first argued that the "no" in Japanese head-internal relative clauses is N, and further that it is a nominalizer "no". Then, we presented evidence against Cole's hypothesis that there is pro in the head position coindexed with the R-expression to be interpreted as the head. The latter conclusion suggests that the interpretation of the head of the head-internal relatives takes place solely at LF, not prior to this level. This conclusion is in accord with the LF-Interpretation approach proposed by Larson (1988), Reinhart (1991), and Chomsky (1992), among others.

NOTES

1) See also Ito (1986) and Ishii (1988) for much relevant discussion.
2) See Murasugi (1991) for detailed discussion.
3) We speculate that head-internal relatives in Japanese are possible partly because of the existence of nominalizer "no". Note that there is no obvious counterpart to the lexical nominalizer "no" in English.

   Kuroda (1992) and Ito (1986) point out that the so called ga/no-conversion does not apply in head-internal relative clauses. The following example is from Ito (1986):

   (i) Taroo —wa [[Hanako —ga   /*no   ringo —o   katteoita] no] —o
          —TOP   —NOM/GEN apple —ACC bought   —ACC

      tabetesimatta
      ate up
      (Taro ate up the apples that Hanako had bought.)

   We do not have an account for this fact at the moment, and leave this problem open. Note that this fact is problematic for any analysis which assumes a nominal head ("no" or empty) for the head-internal relatives, and thus, it is not clear at this point that it supports any specific analysis of "no". See the works cited above and also Ishii (1988) for further properties of head-internal relatives in Japanese.

4) "An anaphoric element," in Cole's terms.
5) Cole's discussion is based mainly on data from two Quechua languages, Im-

babura and Ancash. But he is of course making a general proposal.

6) See also Hoji (1990) for relevant discussion.

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