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Parametrization of the External D-System in Relativization*

Koji Hoshi

Abstract

Hoshi (2004a,b) observes an apparently puzzling hybrid nature of N-final relativization in Japanese, viz., simultaneous movement and non-movemnet properties: presence of CNPC effects, presence of connectivity/reconstruction effects, lack of idiom chunk interpretations, lack of scope reconstruction effects and lack of relative Q-scope shift. In an attempt at solving this aporia, I will propose to parametrize the external D system of Kayne's (1994) D-CP structure with respect to the property [±operator]. It will be demonstrated that this parameter plays a pivotal role in accounting for the observed peculiar hybrid phenomena at hand, while the resulting derivations of the relatives in Japanese being thoroughly examined. On top of that, some typological implications of the hypothsis in question for the head-internal relatives will be briefly considered in a cross-linguistic setting.

1. Introduction

With respect to the N-final relatives in Japanese, Hoshi (2004a,b) points out a puzzling hybrid nature having to do with movement and non-movement properties, as summarized in (1) below:

(1)   Movement properties:
    a. presence of Complex NP Constraint (CNPC) effects
      (head-external and head-internal relatives)
    b. presence of connectivity/reconstruction effects
      (head-external and head-internal relatives)
   Non-movement properties:
    a. lack of idiom chunk interpretations
      (head-external relatives)

b. lack of scope reconstruction effects
   (head-external relatives)

c. lack of relative Q-scope shift
   (head-internal relatives)

This observation is not consonant with the standard assumption that Japanese relativization is not subject to movement, which has been prevalent in the literature since Kuno (1973). The question that immediately comes to my mind is how come N-final relativization in Japanese displays both movement and non-movement properties at the same time. The main purpose of this paper is to provide a principled solution to this puzzle by proposing a hypothesis concerning parametrization of the external D system of the Kaynean D-CP structure (cf. Bianchi 1999, 2000a,b and Kayne 1994).[1]

The present paper is organized as follows. In Section 2, I will review relevant data discussed in Hoshi (2004a,b) as the empirical background. In Section 3, I will put forth a new proposal concerning parametrization of the external D-system in the D-CP structure which underlies N-final relativization in Japanese. In Section 4, I will look at the resulting derivations of both head-external and head-internal relatives in Japanese based on the hypothesis in Section 3, showing how the apparently non-movement properties of N-final relativization can be accounted for under my system. Section 5 touches on the issues of typology of the head-internal relatives in connection with the hypothesis in question. Section 6 briefly addresses some remaining issues concerning four phenomena: Case-marking, multiple headed relatives, split pivot phenomena, and extraction out of PPs. Although full understanding of the relevant issues awaits more investigation in future, I provide tentative explanations of those phenomena, which are consonant with my analysis of N-final relativization in Japanese. Section 7 concludes this paper.

2. The Puzzle: Apparently Hybrid Nature of N-Final Relativization in Japanese

2.1. Movement Properties
2.1.1. Complex NP Constraint Effects in Head-External Relatives

Since Kuno's (1973) well-known observation, it has been standardly assumed in the literature that Japanese relativization does not involve movement due to its apparent lack of island effects, as illustrated in (2) below:

(2) $[_{DP}$ $[[_{DP}$ $[e_i$ e_j kiteiru] [yoohuku$_j$]] -ga yogoreteiru] [sinsi$_i$]]
            wearing-is suit-Nom   dirty-is   gentleman
    'the gentleman who [the suit that he is wearing] is dirty'

In (2), relativization out of a relative clause has occurred in violation of the Complex NP Constraint (CNPC). Acceptability in (2) has been taken to indicate that Japanese relatives need not be derived by movement of the relative head (cf. also Perlmutter 1972). Murasugi (2000a,b) regards this fact as a clear piece of evidence against Kayne's (1994) relative head-raising analysis for N-final relatives in Japanese.

However, there is another possible derivation in which the relative head can be taken to have been moved without inducing violation of the CNPC. Kuroda (1986a,b;1992) explores a possibility of movement analysis of topicalizaiton in Japanese, incorporating the notion of the so-called "major subject" in Japanese. Sakai (1994) applies Kuroda's major subject analysis to the empirical domain of relativization in Japanese, arguing that relativizaton in Japanese can involve movement of a null operator (Op) from the major subject position into [Spec, CP].[2] Consider (3) and (4) below:

(3) [**(sono) sinsi$_i$-ga** [[pro$_i$ e$_j$ kiteiru] [yoohuku$_j$]]-ga yogoreteiru]
      that gentleman-Nom   wearing-is suit-Nom   dirty-is
    '(that) gentleman is such that the suit that he is wearing is dirty'

(4) [Op$_i$ [t$_i$ [[pro$_i$ e$_j$ kiteiru] [yoohuku$_j$]]-ga yogoreteiru] [sinsi$_i$]]
            wearing-is suit-Nom   dirty-is   gentleman
    'the gentleman who [the suit that he is wearing] is dirty'

Note that (4) involves movement of a null operator (Op) from the major subject position corresponding to the position of the bold-faced *(sono) sinsi* '(that) gentleman' in (3), crossing no complex NP (cf. Sakai 1994 and Hoshi 1995 for some discussion of relativization from the major subject position).[3, 4] By the same token, it is equally plausible to assume a derivation in which the relative head [*sinsi*] 'gentleman' rather than a null operator (Op) has been directly moved from the major subject position to [Spec, CP] under the Kaynean D-CP complementation structure, as illustrated in (5) below:

(5) $[_{DP}$ $[_{IP}$ t$_i$ kiteiru yoohuku-ga yogoreteiru]$_j$ $[_{DP}$ D $[_{CP}$ sinsi$_i$ $[_{CP}$ C t$_j$]]]]]
            wearing-is suit-Nom dirty-is   gentleman
    'the gentleman that the suit that he is wearing is dirty'

Thus, apparent lack of island effects does not necessarily indicate lack of movement in Japanese relativization. In Section 2.1.2, it will be demonstrated that the head-raising operation should be favored over the null operator movement in light of the presence of connectivity/reconstruction effects in Japanese relativization. In fact, if Aoun and Li (2003) are on the right track in claiming that null operator movement does not exhibit connectivity/reconstruction effects in general, this conclusion will be forced.

If the major subject analysis of the relative head movement is correct, it makes a specific prediction that island effects should emerge where the relative head movement from the major subject position is somehow not available. Indeed, this prediction seems to be borne out, as illustrated in (6) below:

(6) a. sono sinsi$_i$-ga   kinoo [[pro$_i$ itinen-mae-ni t$_j$ okusan-ni okutta] yubiwa$_j$]-ga
         that gentleman-Nom yesterday a year ago   wife-Dat gave   ring-Nom
         nusumareta.
         was-stolen
         'That gentleman is such that yesterday the ring which he gave his wife a year ago was stolen.'
     b. *[[sono sinsi$_i$-ga   kinoo [[pro$_i$ itinen-mae-ni t$_j$ t$_k$ okutta] yubiwa$_j$]-ga
         that gentleman-Nom yesterday a year ago   gave   ring-Nom
         nusumareta] okusan$_k$]
         was-stolen wife
         'The wife that that gentleman is such that yesterday the ring which he gave her a year ago was stolen'

(6b) has been derived from (6a) by relativizing the dative Case-marked nominal *okusan* 'wife' out of the relative clause (= a complex NP), resulting in unacceptability. Note that, as the following paradigm in (7) shows, in a simplex sentence involving no complex NP, a dative Case-marked nominal can be relativized:

(7) a. sono sinsi-ga   okusan-ni yubiwa-o okutta.
          that gentleman-Nom wife-Dat ring-Acc gave
          'That gentleman gave a ring to his wife.'
     b. [sono sinsi-ga   t$_i$ yubiwa-o okutta] okusan$_i$]
          that gentleman-Nom   ring-Acc gave   wife
          'the wife to whom that gentleman gave a ring'
Thus, the status of the dative Case-marked nominal *per se* does not block its relativization.

One might suspect that (6b) has been derived from the following sentence in (8):

(8) sono sinsi$_i$-ga okusan$_k$-ga kinoo [[pro$_i$ itinen-mae-ni t$_j$ pro$_k$ okutta] yubiwa$_j$]-ga
     that gentleman-Nom wife-Nom yesterday   a year ago   gave   ring-Nom
     nusumareta.
     was-stolen
     'That gentleman is such that yesterday his wife had the ring which he gave her a
     year ago stolen.'

In fact, for some unknown reason, the inner nominative subject cannot be relativized
in the following multiple nominative construction in (9):

(9) a. sono sinsi-ga   okusan-ga yubiwa-ga nusumareta.
        that gentleman-Nom   wife-Nom ring-Nom   was-stolen
        'That gentleman is such that his wife had a ring stolen.'
     b. *[[sono sinsi-ga t$_i$ yubiwa-ga nusumareta] okusan$_i$]
        that gentleman-Nom   ring-Mom   was-stolen   wife
        'Lit. the wife who that gentleman is such that she had a ring stolen'

First of all, whatever the exact reason may be, relativization of the inner nominative
Case-marked nominal is disallowed in (9). Given this, the unacceptability of (6b) might
be expected on a par with (9). But, notice that the relevant intended interpretation in
(6a) is different from the one in (8). Therefore, it is impossible to account for the unac-
ceptability of (6b) by appealing to the same reason as in (9b). Based on these consid-
erations, it seems to be legitimate to conclude that in (6b) the relativized head *okusan*
'wife' has been moved out of the complex NP, running afoul of the CNPC.

2.1.2. Connectivity/Reconstruction Effects in Head-External Relatives

It is well-known that the connectivity/reconstruction effects can emerge with
A-bar movement, but it is not the case with a base-generated DP-pronoun relation, as
illustrated in (10)-(11) (see Jackendoff 1972, Barss 1986 *inter alia* for discussion on
the connectivity/reconstruction effects in English):

(10) [That picture of himself$_i$]$_j$, John$_i$ liked t$_j$. (= topicalization)
(11) *[That picture of himself$_i$]$_j$, John$_i$ liked it$_j$. (= left dislocation)

As the following example in (12) shows, the restrictive relative in English patterns

with (10):

(12)   [[the picture of himself$_i$]$_j$ [that John$_i$ likes t$_j$ best]] (= restrictive relative)

Murasugi (2000a,b) appeals to Hoji's (1985) strong claim for lack of movement in Japanese relativization, which is based on the putative apparent absence of the connectivity/reconstruction effects regarding anaphor binding. Hoji (1985) reports that the Japanese analogue with an anaphoric expression *zibun* 'self' is unacceptable, as displayed in (13):

(13)   *[[John$_i$-ga e$_j$ taipusita] [zibun$_i$-no ronbun]$_j$]
         John-Nom   typed   self-Gen paper
         'Lit. self's paper that John typed'

First of all, pace Hoji (ibid.), I judge (13) to be quite acceptable, and for that matter, even if the non-local subject oriented-anaphor *zibun* is replaced with the local subject-oriented anaphor *zibun-zisin*, the expression is still fully acceptable, as illustrated below:[5)]

(14)   [[John$_i$-ga e$_j$ taipusita] [zibun-zisin$_i$-no ronbun]$_j$]
         John-Nom   typed   self-Gen   paper
         'Lit. self's paper that John typed'

Hoji (2003: 440), however, claims that *zibun* 'self' and *zibun-zisin* 'self' are not anaphors in Japanese. Thus, it may well be fair to use different items other than the two expressions at hand to check reconstruction effects in relativization.

    Ishii (1991: 29) demonstrates that Japanese relatives show connectivity/reconstruction effects with reflexive anaphors such as *kare-zisin* 'himself' and *kanozyo-zisin* 'herself', as illustrated below:

(15)   [[John$_i$-ga e$_j$ taipusita] [kare-zisin$_i$-no ronbun]$_j$]
          John-Nom   typed   himself-Gen paper
          'the paper of himself that John typed'

In this vein, observe the following example:

(16)   Mary-wa [[John$_i$-ga e$_j$ taipusita] [kare-zisin$_i$-no ronbun]$_j$]-o mottekita.
       Mary-Top John-Nom   typed   himself-Gen paper-Acc   brought
       'Mary brought the paper of himself that John typed.'

Note that although in (16) the relative clause is embedded within a matrix sentence, it is still possible to interpret the relative subject *John* as coreferential with *kare-zisin* 'himself'. This clearly shows a reconstruction effect with respect to anaphor binding in Japanese.

   Ishii (1991: 30) further observes that what he calls long-distance relativization is unacceptable regarding reconstruction effects on anaphor binding, as illustrated below (?* is his judgment):

(17)   ?*[[Mary-ga [[[John$_i$-ga e$_k$ e$_j$ miseta] koto-ga aru] hito$_k$]-o sitteiru]
       Mary-Nom John-Nom   showed fact-Nom exist person-Acc know
       [kare-zisin$_i$-no syasin]$_j$]
       himself-Gen picture
       'Lit. the picture of himself which Mary knows the person to whom John has once showed.'

In (17), the external head *[kare-zisin-no syasin]* 'picture of himself' is related to a position inside a complex NP. Recall from section 2.1.1 that I claimed that this kind of relativization in Japanese could involve the major subject construction underlyingly. As expected, the correspndong major subject construction is also unacceptable, as illustrated in (18) below:

(18)   *[kare-zisin$_i$-no sysin]$_j$-ga   [Mary-ga [[[John$_i$-ga e$_k$ e$_j$ miseta]
       himself-Gen picture-Nom   Mary-Nom John-Nom   showed
       koto-ga aru] hito$_k$]-o sitteiru]
       fact-Nom exist person-Acc know
       'Lit. the picture of himself is such that Mary knows the person to which John showed it.'

In (18), the anaphor *kare-zisin* 'himself' is contained in the major subject position and thus is not c-commanded by its antecedent *John* at the subject position in the most deeply embedded clause in violation of Condition A of the Binding Theory under reconstruction. Thus, under the major subject analysis, the unacceptability of (17) can be accounted for as a result of connectivity/reconstruction to the underlying structure

in (18).[6), 7]

Furthermore, Aoun and Li (2003: 197) touch on connectivity/reconstruction effects of Japanese relatives with respect to bound pronouns, comparing the cases of scrambling and clefting, as illustrated in (19)-(21) below:

(19) Relativization:

[[Toyota-sae]-ga$_i$ e$_j$ uttaeta] [so-ko-o$_i$ uragitta kaisya]$_j$-ga tubureta

Toyota-even-Nom   sued   that-place-Acc betrayed company-Nom bankrupt

'[(The company/ies that had betrayed it$_i$ that [even Toyota]$_i$ sued] went bank-
 rupt.'

(20) Scrambling:

[so-ko-o$_i$ uragitta kaisya-o]$_j$ Toyota-sae-ga$_i$ e$_j$ uttaeta (koto)

that-place-Acc betrayed company-Acc Toyota-even-Nom sued (fact)

'(the) company/nies that had betrayed it$_i$, [even Toyota]$_i$ sued.'

(21) Clefting:

[Toyota-sae-ga$_i$ uttaeta] no-wa [so-ko-o$_i$ uragitta kaisya-o] da

Toyota-even-Nom sued -Top   that-place-Acc betrayed company-Acc be

'It is [(the) company/nies that had betrayed it$_i$] that [even Toyota]$_i$ sued.'

Aoun and Li (2003: 197) claim, citing Hajime Hoji's (p.c.) judgments, that (19) does not allow the reconstructed bound pronoun interpretation in contradistinction to its scrambling and clefting counterparts in (20) and (21), respectively. But, I disagree with his acceptability judgments. To the extent that (20) and (21) permit the reconstructed bound pronoun interpretation, it seems that (19) can equally allow for such an interpretation as well.

Finally, Bianchi (1999: 111) shows that the non-restrictive relatives do not exhibit connectivity/reconstruction effects of the relative head with respect to Condition C as follows (I will use Condition C effects, since Condition A effects are more complicated to obtain in a clear manner (cf. Bianchi 1999: 115–122 on this issue):[8]

(22) Gianni$_i$'s book, which he$_i$ surely dedicated to his children, is about children
     psychology.

Interestingly, however, the non-restrictive relatives in Japanese exhibit connectivity/reconstruction effects regarding Condition C, as illustrated below:

(23) a. *[[kare$_i$-ga tasikani t$_j$ zibun-no kodomo-ni   sasageta] Gianni$_i$-no hon]$_j$-wa
        he-Nom surely   self-Gen children-Dat dedicated Giaani-Gen book-Top
        zidoo sinrigaku-ni kansuru mono da.
        children psychology about thing is
        'Gianni$_i$'s book, which he$_i$ surely dedicated to his children, is about children
        psychology.'
     b. *[[pro$_i$ tasikani   t$_j$ zibun-no kodomo-ni sasageta] Gianni$_i$-no hon]$_j$-wa
        he-Nom surely   self-Gen children-Dat dedicated Giaani-Gen book-Top
        zidoo sinrigaku-ni kansuru mono da.
        children psychology about thing is
        'Gianni$_i$'s book, which he$_i$ surely dedicated to his children, is about children
        psychology.'

This seems to indicate that even the relative head in the non-restrictive relative will be reconstructed to its original position within the embedded clause, unlike the case in English. This clearly shows that the non-restrictive relative in Japanese is derived via the relative head-raising on a par with its restrictive counterpart.[9]

2.1.3. Complex NP Constraint Effects in Head-Internal Relatives

The assumption that there is an overt relative head movement to [Spec, CP] involved in the derivation of the head-internal relative in Japanese is empirically supported by the fact that the construction at hand exhibits the Complex NP Constraint (CNPC) effects as in (24) below, as originally observed by Watanabe (1992a,b) (cf. also Hoshi 1995 and Kuroda 1998, 1999a,b among others for further discussion on such an A-over-A effect):

(24) a. ?*[[John-ga   [[Mary-ga   **subarasii ronbun-o**   kaita toyuu]
        John-Nom   Mary-Nom excellent paper-Acc wrote Comp
        uwasa]-o   kiita] no]-ga   syuppansareta.
        rumor-Acc heard -Nom   was-publish
        (Intended)'An excellent paper which John heard a rumor that Mary had
        written was published.'

b. *[[John-ga [[**subarasii ronbun-o** kaita] hito]-o
   John-Nom excellent paper-Acc   wrote person-Acc
   hometeita] no]-ga   syuppansareta.
   praised had -Nom   was-published
   (Intended)'An excellent paper which John had praised the person who
   wrote (it) was published.'

The readings forced in (24a) and (24b) are the ones in which the complex NPs *[[Mary-ga subarasii ronbun-o kaita toyuu] uwasa]* 'a rumor that Mary had written an excellent paper' and *[[subarasii ronbun-o kaita] hito]* 'the person who wrote an excellent paper' are construed as the internal semantic heads of the head-internal relatives instead of the bold-faced nominals, respectively, which results in semantic anomaly.

By the same token, as Watanabe (2002, 2003a) observes, in the Japanese-type head-internal relative, stacking of head-internal relatives is prohibited, as illustrated in (25) below:

(25)   *[John-ga [MIT-no gakusei-ga subarasii ronbun-o kaita no]-o
        John-Nom MIT-Gen student-Nom excellent paper-Acc wrote -Acc
        posuto-doku-tosite saiyousite-ita no]-no syuppan-ga okureta.
        Post-doc-as   adopted-had   -Gen publication-Nom was-delayed
        'Publication of an excellent paper which John had hired as a post-doc an MIT
        student who wrote (it) was delayed.'

This follows as a result of violation of the CNPC under the assumption that movement of the internal relative head to [Spec,CP] is involved in the derivation.

2.2. Non-movement Properties

In this section, I will be concerned with a couple of phenomena which display apparent non-movement properties of N-final relatives in Japanese.

2.2.1. Lack of Idiom Chunk Interpretations in Head-External Relatives

One of the motivations for the head raising analysis stems from the fact that an idiom chunk can occur as the head of a relative clause, as illustrated by English examples in (26) (cf. Brame 1968 and Schachter 1973 *inter alia* for idiom chunk arguments in favor of the relative head raising analysis):

(26) The headway that we made on that problem (cf. make headway = progress)

In contrast, apparently, the head-external relative in Japanese does not allow for an idiom chunk to appear as its relative head, as illustrated in (27) below:

(27) *[[kare-ga hutatabi onazi ayamati-o sumai-to katameteita] hozo]
        he-Nom again   the same mistake-Acc never-make-to strengthen navel
        'Lit. the navel that he has strengthened never to make the same mistake'
        (cf. hozo-o katameru = make up one's mind)

(27) has only a non-idiomatic literal interpretation. One might take this fact to conclude that Japanese relativization does not involve movement of the relative head to [Spec,CP].[10]

2.2.2. Lack of Scope Reconstruction Effects in Head-External Relatives

Based on Bianchi's (1999: 45-46, 122-123) Italian examples, Aoun and Li (2003: 98, 102-103) discuss the following paradigm in (28), which illustrates an effect of the relative head-raising in English *that*-relatives:

(28) a. Every doctor will examine two patients.
       b. Every doctor will examine the two patients.
       c. I phoned the two patients$_i$ [that every doctor will examine t$_i$ tomorrow]

In (28a), the object QP *two patients* allows for a narrow scope interpretation, whereas the one in (28b) containing a definite determiner has only a wide scope interpretation. Interestingly, in (28c), the relativized QP *two patients* preceded by a definite determiner allows for a narrow scope interpretation on a par with (28a), showing scope reconstruction effects due to the relative head-raising to [Spec, CP].

In contrast, the following paradigm in Japanese corresponding to (28) indicates that there is no such scope reconstruction effects in Japanese relatives:

(29) a. Dono isya-mo   hutari-no kanzya-o   sindansuru koto-ni natteiru.
          every doctor-also two-Gen patient-Acc examine   will
          'Every doctor will examine two patients.'
       b. Dono isya-mo   sono hutari-no kanzya-o sindansuru koto-ni natteiru.
          every doctor-also those two-Gen patient-Acc examine   will
          'Every doctor will examine those two patients.'

c. Watasi-wa [[dono isya-mo   asita t_i sindansuru koto-ni natteiru]

I-Top   every doctor-also   tomorrow   examine will

hutari-no kanzya$_i$]-ni   denwa-o kaketa.

two-Gen patient-Dat phone (call)-Acc make

'I phoned the two patients that every doctor will examine tomorrow.'

Unlike (28c), the relativized QP *hutari-no kanzya* 'two patients' in (29c) has only a wide scope reading, displaying no scope reconstruction effects. This apparently points to lack of the relative head-raising to [Spec, CP] in Japanese relatives.[11]

2.2.3. Lack of Relative Q-Scope Shift in Head-Internal Relatives

Next, let us turn to Q-scope facts with respect to head-internal relatives in Japanese discussed by Shimoyama (1999) (cf. also Hoshi 1995), which apparently suggest lack of the relative head movement to [Spec, CP] in the relevant construction at hand. First, consider the following paradigm:

(30)　a. Hotondo-no gakuei-ga   [[Taro-ga e sikenmae-ni

most-Gen   student-Nom Taro-Nom   before exam-at

dasita]   dono syukudai-mo] teisyutusita.

assigned every homework   turned in

'Most students turned in every homework that Taro assigned before the exam.'

(i) Most > $\forall$ (ii) * $\forall$ > Most

b. [[Taro-ga e sikenmae-ni dasita]   dono syukudai-mo]$_i$

Taro-Nom   before exam-at assigned every homework

hotondo-no gakusei-ga t_i teisyutusita.

Most-Gen   student-Nom   turned in

'Lit. Every homework that Taro assigned before the exam, most students turned in.'

(i) *Most > $\forall$ (ii) $\forall$ > Most

(30a) involves two quantified nominal expressions *hotondo-no gakusei* 'most students' and *dono syukudai-mo* 'every homework' as the matrix subject and the external relative head at the matrix object position, respectively. As far as the relative scope of the two nominal expressions is concerned, only Most > $\forall$ relation obtains. Interestingly, if the surface order of the two quantified nominal expressions is reversed by scrambling, the relative scope relation is also reversed, as indicated in (30b).

With this fact in mind, observe the following paradigm with regard to head-internal relatives in Japanese:

(31)   a. Hotondo-no gakusei-ga   [[Taro-ga   dono syukudai-mo
          most-Gen student-Nom Taro-Nom every homework
          sikenmae-ni dasita] no]-o   teisyutusita.
          before exam-at assigned NM-Acc turned in
           'Taro assigned every homework before the exam and most students turned them in.'
          (i) Most > ∀ (ii) * ∀ > Most
       b. [[Taro-ga   dono syukudai-mo sikenmae-ni
          Taro-Nom   every homework   before exam-at
          dasita] no]ᵢ-o   hotondo-no gakusei-ga tᵢ   teisyutusita.
          assigned NM-Acc most-Gen student-Nom   turned in
          'Taro assigned every homework before the exam and most students
          turned them in.'
          (i) Most > ∀ (ii) * ∀ > Most

As illustrated in (31a,b), regardless of the surface order between the matrix subject and the matrix object involving a head-internal relative, the relevant relative scope relation remains the same, viz., Most > ∀.

If the internal relative head also raises to [Spec, CP] out of the embedded IP on a par with its head-external relative counterpart, then it would be expected that scrambling should change the relative scope relation just as in (30) above. Therefore, the lack of relative Q-scope shift in (31) apparerntly point to the absence of the relative head-raising to [Spec, CP] in the head-internal relative in Japanese.

3. New Proposal

In this section, I will propose to parametrize the external D-system in the Kaynean D-CP structure and provide some empirical motivations for my hypothesis in question.

3.1. Parametrization of the External D-System in the D-CP Structure

As far as surface word order within the D-CP structure is concernced, I will assume that the parameter [± EPP] in D and C is responsible for determining whether to trigger overt movement of IP and DP to [Spec, DP] and [Spec, CP], respectively (cf.

Kayne 1994). The relevant parameters are summarized in (32) below:

(32)   D: [±EPP]
     C: [±EPP]

If Kayne's analysis is on the right track, English takes the values [-EPP] and [+EPP] for D and C, respectively and Japanese has the value [+EPP] for both D and C. In addition to the regular EPP-related parameters in D and C concerning word order in (32), I will propose the following parameter on the external D-system:

(33)   *Parametrization of the External D-System in the D-CP Structure:*
     The external D can take either the [+operator] value or the [-operator] value, depending on whether the categorial status of the relativized nominal head at [Spec,CP] is NP or DP.

If a language adopts the [+operator] value for D, it means that the relevant D can function as a determiner operator in the sense of Reinhart (1987). On the other hand, if it opts for the [-operator] value for D, it means that the D in question is a kind of semantically null "expletive" element. This is schematically represented in (34) below:[12]

(34)   a. English-type language: $[_{DP}$ [**D (= operator)** $[_{CP}$ **NP$_i$** C $[_{IP}$ . . . **NP$_i$** . . .]]]]
     b. Japanese-type language: $[_{DP}$ [**D (= non-operator)** $[_{CP}$ **DP$_i$** C $[_{IP}$ . . . **DP$_i$** . . .]]]]

In Section 5, I will explore some implications of the interactions of the parameter in (33) and the regular EPP-related parameters in D and C for typology of head-internal relatives in natural languages.

     Notice that there is a clear correlation between the nature of the external D and the categorial status of the raised relative head at [Spec, CP]: If the external D is an operator, the raised relative head at [Spec,CP] must be an NP. On the other hand, if it is a non-operator, then the relative head to be promoted to [Spec,CP] must be a DP. Theoretically speaking, this seems to follow from the ban on vacuous quantification in UG (cf. Chomsky 1982). Suppose that in (34a) the raised relative head were a DP. Then, the operator in the external D would end up not being able to bind any predicate in violation of the ban on vacuous quantification. Similarly, suppose that the promoted relative head in (34b) were an NP. Then, it would result in not being bound by any operator due to the non-operator nature of the external D in (34b), running afoul of the ban on vacuous quantification as well.[13), 14]

With repect to DPs in Japanese, I will assume that both an indefinite DP and a definite DP have a kind of operator (cf. Saito and Murasugi 1990a,b; 1999 for the DP analysis of Japanese noun phrases and Watanabe 2003 for the necessity of DP projections above NP projections in Japanese).

First of all, in the case of an indefinite null operator in Japanese, following Szabolcsi (1981, 1983, 1992, 1994), Kayne (1993), and Watanabe (1992a,b), I just assume that it is located at [Spec,DP], which is a default locus for a quantificational operator. On the other hand, as for a demonstrative definite operator in Japanese, I take a position that it is located at the D head. Since the overt prenominal demonstrative element in Japanese is morphologically made up of a prefix *ko/a/so-*'this/that/that' and the particle *-no*, it seems to be reasonable to generate it at the head D as follows:

(35) $[_{DP}$ D(= ko/a/so-no) $[_{NP}$ hon]]
              this/that/that book
        'this/that/that book'

Given the above consideration, I will postulate the following relative head DP-internal structure in Japanese:[15]

(36) <u>The Relative Head DP-Internal Structure in Japanese:</u>
        a. Indefinite DP: $[_{DP} Op_{indef.} [D [_{NP/DP} \ldots]]]$
        b. Definite DP: $[_{DP} Op_{def.} (= D) [_{NP/DP} \ldots]]$
                        (DP-recursion allowed in Japanese)

In (36), the indefinite operator and the definite operator can be considered to correspond to an existential operator and an overt/covert demonstrative element, respectively.[16], [17]

3.2. Motivations

In this subsection, I will provide some empirical motivations for the DP status of the relative head to be raised to [Spec,CP] in relatives in Japanese.

3.2.1. Lack of Definiteness Restriction on the Internal Head in Head-Internal Relatives

Recall that I proposed that the Japanese-type language opts for a non-operator D and a full DP rather than an NP as the relative head to be moved to [Spec, CP] in accordace with the hypothesis in (33). Thus, the combination of the non-operator D and the full-fledged DP status of the "raised" relative head leads to a prediction that there

is no (in)definiteness restriction on the internal head of the head-internal relatives in Japanese. That is, since the external D of the D-CP structure in Japanese does not function as a semantically active determiner operator to bind into the raised relative head, the internal head can be either a indefinite or a definite (referential) DP. This seems to be borne out. Hoshi (1995) points out that the head-internal relative clause in Japanese is not subject to the so-called (in)definiteness restriction on the internal head reported for several languages that possess the head-internal relative construction, e.g., Lakhota (cf. Williamson 1987) and Mooré (cf. Tellier 1989) (cf. also Kuroda 1999b: 91, n.3 for the same point.). Observe the following example in (37), in which the deictic use of the pronoun *sono* 'that' is involved:

(37)   zituwa , watasi-ga [John-ga   sono naihu-de ninzin-o
        actually I-Nom   John-Nom that knife-with carrot-Acc
        kitteiru no]-o   toriageta n desu yo.
        cutting-is -Acc took away it-is-that
        'Actually, it is that I took away that knife with which John was cutting the carrot.'

Suppose that the speaker is explaining to the hearer what has happened during the latter's absence and that in that situation a knife is located at some place near the hearer. Given this kind of situation, the speaker can utter (37) to the hearer while pointing at the knife near the latter. In addition, the anaphoric use of the pronoun *sono* 'that' can also occur in the internal head, as illustrated in (38) below:

(38)   boku-ga [John-ga sono naihu-de asondeita no]-o
        I-Nom   John-Nom that knife-with playing-is -Acc
        sakki   toriageta   tokoro na n da yo.
        just now took away moment it-is-that
        'It is that I just now took away that knife with which John was playing.'

Suppose that you noticed that John was upset and so you asked Bill, who is John's brother, what had happended to John. Then, Bill started explaining to you by saying, "Well, John has taken out my favorite knife from my desk drawer during my absence." Given this kind of context, Bill could utter (38) as a portion of his account for the situation.

    Thus, as (37) and (38) show, since the external D of the D-CP structure in Japanese does not function as a semantically active determiner operator to bind into the

raised relative head, the internal head can be either an indefinite or a definite (referential) DP, as predicted.[18]

3.2.2. Lack of Coordinaton of Pure NPs

Another argument for the full DP status of the relative head to be moved to [Spec,CP] in Japanese can be given on the basis of a certain fact concerning nominal coordination in Japanese. Recall that in the case of the English-type language an NP rather than a DP is the target for the movement operation to [Spec,CP]. This seems to be related to the fact that in such a language NPs can be a target for the syntactic operation of Merge independently of DPs. In this connection, consider the following paradigm in English:

(39)   a. I want to find [[$_{DP}$ a secretary] and [$_{DP}$ a typist]]
        b. I want to find [a [$_{NP}$ secretary] and [$_{NP}$ typist]]

                                  (adapted from Aoun and Li 2003: 141)

Aoun and Li (2003: 141–146) observe that English allows for not only DP coordination like (39a) but also NP coordination as in (39b). While the nominal coordination in (39a) represents two possibly different individuals, the one in (39b) illustrates the dual roles of one individual. Interestingly, Japanese does not have a syntactic analogue to (39b), as shown in (40)–(41) below:

(40)   watasi-wa [hishyo to taipisuto]-o sagasitai.
        I-Nom   secretary and typist-Acc want-to-find
        'I want to find a secretary and a typist.'
(41)   watasi-wa hitori-no [hisyo to taipisuto]-o sagasitai.
        I-Nom   one-CL secretary and typist-Acc want-to-find
        'I want to find one secretary and one typist.'

(40) and (41) involve the nominal connective particle *to* 'and'. As indicated in the translations, the bracketed portions in (40) and (41) cannot express the dual roles of one individual and must represent two possibly different individuals on a par with (39a). In order to make an analogue to (39b) in Japanese, it is necessary to conjoin two Ns with the morpheme *-ken* 'and' via "morphological compounding" rather than a syntactic conjunction, as illustrated in (42) below:

(42) watasi-wa (hitori-no) hisyo-ken-taipisuto-o sagasitai.
       I-Top (one-CL) secretary and typist-Acc want-to-find
      'I want to find a secretary and typist.'
       (cf. *watasi-wa hitori-no hisyo-ken-hitori-no taipisuto-o sagasitai.)

The above fact seems to suggest that syntactically Japanese always projects larger nominal structures than NPs, presumably DPs unlike English, although D may be phonologically null.[19]

4. The Resulting Derivations for N-final Japanese Relatives and Accounts for the Apparently Non-movement Properties

In this section, I will consider the resulting derivations for each of the N-final relatives in Japanese as in (43)–(45) below, while providing possible accounts for the apparently non-movement properties in keeping with the position that Japanese "genuine" relatives uniformly involve a movement operation to [Spec,CP] in the Kaynean D-CP structure.[20]

<Restrictive Relatives>
(43) John-wa [[Mary-ga t_i yaitekureta] [pan]$_i$]-o tabeta.
      John-Top Mary-Nom baked   bread ate
      'John ate the bread that Mary baked.'
<Non-Restrictive Relatives>
(44) John-wa [[Mary-ga t_i yaitekureta] [sono pan]$_i$]-o tabeta.
      John-Top Mary-Nom baked   that bread   ate
      'John ate that bread, which Mary baked.'
<Head-Internal Relatives>
(45) John-wa [[Mary-ga   pan-o   yaitekureta] no]-o   tabeta.
      John-Top Mary-Nom bread-Acc baked   D-Acc ate
      'Mary baked a loaf of bread and John ate it'

First of all, the derivations for (43)–(45) up to Spell-Out are the same and run as follows:

・Pre-Spell-Out Derivation (all the relatives):

(46)

a. [$_{DP}$ D [$_{CP}$ C [$_{IP}$ . . . DP . . .]]]

   ←relative DP movement to [Spec, CP], leaving behind its copy

b. [$_{DP}$ D [$_{CP}$ DP$_i$ [$_{CP}$ C [$_{IP}$ . . . DP$_i$ . . .]]]]

   ←IP movement to [Spec, DP], leaving behind its copy

c. [$_{DP}$ [$_{IP}$ . . . DP$_i$ . . .]$_j$ [$_{DP}$ D [$_{CP}$ DP$_i$ [$_{CP}$ C [$_{IP}$ . . . DP$_i$ . . .]$_j$]]]]

   ←Spell-Out (the derivation will branch off into the one toward PF and
              the one toward LF as follows)

And, then, the post-Spell-Out derivation for PF proceeds as follows as far as head-external relatives (both restrictive and non-restrictive relatives) are concerned:

・Post-Spell-Out Derivation for PF (both restrictive and non-restrictive relatives):

(47)

c. [$_{DP}$ [$_{IP}$ . . . DP$_i$ . . .]$_j$ [$_{DP}$ D [$_{CP}$ DP$_i$ [$_{CP}$ C [$_{IP}$ . . . DP$_i$ . . .]$_j$]]]]

   ←deletion of tails of chains in accordance with the PF condition in (51) below

d. [$_{DP}$ [$_{IP}$ . . . ~~DP$_i$~~ . . .]$_j$ [$_{DP}$ D [$_{CP}$ DP$_i$ [$_{CP}$ C [$_{IP}$ ~~. . . DP$_i$ . . .~~]$_j$]]]] (= PF)

   →underlying form for the PF output

In contrast, head-internal relatives have the following post-Spell-Out derivation for PF:

・Post-Spell-Out Derivation for PF (head-internal relatives):

(48)

c. [$_{DP}$ [$_{IP}$ . . . DP$_i$ . . .]$_j$ [$_{DP}$ D [$_{CP}$ DP$_i$ [$_{CP}$ C [$_{IP}$ . . . DP$_i$ . . .]$_j$]]]]

   ←deletion of tail of IP movement chain and deletion of head of DP movement
     chain in accordance with the PF condition in (51) below

d. [$_{DP}$ [$_{IP}$ . . . DP$_i$ . . .]$_j$ [$_{DP}$ D [$_{CP}$ ~~DP$_i$~~ [$_{CP}$ C [$_{IP}$ ~~. . . DP$_i$ . . .~~]$_j$]]]] (= PF)

   →underlying form for the PF output

     Up to this point, the derivations are all pretty much straightforward, but the post-Spell-Out derivations for LF are rather complicated, to which I will turn next.

     First, let us take stock of the post-Spell-Out LF derivation of the restrictive head-external relatives in Japanese.

     With respect to the interpretatin for the restrictive relative in N-initial languages such as English, Bianchi (1999: 81) suggests that at LF the raised relative head is re-

constructed to the trace position, applying Chomsky's (1993) idea for the LF mechanism on reconstruction effects, as illustrated below:

(49) a. $[_{DP}$ the $[_{CP}$ boy$_i$ $[_{DP}$ who $[boy]_i]_j]$ $[_{IP}$ I met $[who boy]_j]]]$
      b. $[_{DP}$ the $[_{CP}$ $[_{IP}$ I met $[_{DP}$ who boy]]]]$
      c. the x such that (x is a boy) & (I met x)

As represented in (49b), at LF, the whole CP/IP structure, which corresponds to the relevant restrictive clause/term, is c-commanded by the external D and thus the "predicative" relative head is licensed by the determiner-operator binding in the sense of Reinhart (1987).

Then, how should the derivation of the N-final restrictive relative in Japanese be carried out under the assumtion that the external D of the D-CP in the N-final relative in the language does not serve as a determiner-operator in the sense of Reinhart (1987)? If nothing happens, the Full Interpretation Principle seems to be violated, leading the derivation to crash at LF.

Recall from Section 3 that I proposed the following DP-internal strucutre for the relative head DP in Japanese, repeated as (50):

(50) The Relative Head DP-internal Structure in Japanese:
      a. Indefinite DP: $[_{DP}$ $Op_{indef.}$ $[D$ $[_{NP/DP}$ . . .]]]
      b. Definite DP: $[_{DP}$ $Op_{def.}(= D)$ $[_{NP/DP}$ . . .]]]

In addition to the assumption in (50), I will assume Kayne's (1994) condition on PF deletion and his definition of c-command as in (51) and (52) below:

(51) Condition on PF Deletion:
      A given chain link c_k can license PF deletion of another link c_l of
      the same chain only if c_l does not c-command c_k.
                              (cf. Kayne 1994: 96)
(52) X c-commands Y iff X and Y are categories and X excludes Y and
      every category that dominates X dominates Y.
                              (cf. Kayne 1994: 16)

Given these assumptions, the relevant derivation should look something like the following:

· Post-Spell-Out Derivation for LF (restrictive relatives):

(53)

c. $[_{DP} [_{IP} \ldots DP_i \ldots]_j [_{DP} D [_{CP} DP_i [_{CP} C [_{IP} \ldots DP_i \ldots]_j]]]]$

   ← "deletion" of the raised IP

This "LF deletion" of the upper IP is based on the intuition that universally the restrictive relative clause IP must be in the scope of the operator related to the relativized head, which seems to be a reasonable assumption.

d. $[_{DP} [_{IP} \overline{\ldots DP_i \ldots}]_j [_{DP} D [_{CP} \mathbf{DP}_i [_{CP} C [_{IP} \ldots \mathbf{DP}_i \ldots]_j]]]]$

At this stage, the bold-faced DPs have the internal structures schematically represented as follows:

(54) $[_{DP} Op_{indef.} [_{DP} D [_{NP} \ldots]]]_i \ldots [_{DP} Op_{indef.} [_{DP} D [_{NP} \ldots]]]_i$

Notice that in (54) the indefinite operator at [Spec, DP] c-commands both of the restrictive terms, viz., its complement NP and the IP. Then, the LF "deletion" applies to (54) on a par with (49b): deletion of the NP at the upper DP and deletion of $Op_{indef.}$ at the lower DP, which results in an appropriate determiner-operator variable construction, as represented below:

(55) $[_{DP} Op_{indef.} [_{DP} D [_{NP} \overline{\ldots}]]]_i \ldots [_{DP} \overline{Op_{indef.}} [_{DP} D [_{NP} \ldots]]]_i$

After this LF operation, both the NP and the IP are c-commanded by the indefinite null operator $Op_{indef.}$ at the specifier of the upper DP, given the definition of c-command by Kayne (1994) in (52), yielding an appropriate interpretation for the N-final restrictive relative in Japanese in (56) on a par with (49c):

(56) $\exists$x such that (x is bread) & (Mary baked x)

It is assumed here that the null indefinite operator at [Spec, DP] will be interpreted as an existential operator by default. Note in passing that since the whole NP has been "reconstructed" to its original position, the reconstruction effects regarding anaphors and bound pronominals can be accounted for.

     Notice that unlike English, which moves an NP (= predicative, nonreferential, nonspecific) to [Spec,CP], Japanese moves a full DP to [Spec, CP]. Via this move-

ment to [Spec,CP], the full DP can be taken to obtain a specific reading on a par with topicalization/focalization, which results in incompatibility with idiom chunk interpretaions and "narrow scope" readings of numeral quantifiers with respect to universal quantifiers.

Next, let us consider the post-Spell-Out LF derivation of the non-restrictive head-external relative in Japanese.

·Post-Spell-Out Derivation for LF (non-restrictive relatives):
(57)
c. $[_{DP} [_{IP} \ldots DP_i \ldots]_j [_{DP} D [_{CP} DP_i [_{CP} C [_{IP} \ldots DP_i \ldots]_j]]]]$
    ←deletion of the lower IP
d. $[_{DP} [_{IP} \ldots DP_i \ldots]_j [_{DP} D [_{CP} DP_i [_{CP} C [_{IP} \overline{\ldots DP_i \ldots}]_j]]]]$
    ←the DP within the upper IP is interpreted as a referential/E-type pronoun which is associated with the antecedent relative head DP in [Spec, CP]

Demirdache (1991) and Hoshi (1995) *inter alia*. argue that the gap in the non-restrictive relative clause is to be interpreted as a referential/E-type pronoun in the sense of Evans (1980) (cf. also Sells 1986). If the relevant structural condition for E-type anaphora is that the E-type pronoun be not c-commanded by its quantified expression antecedent (at LF), it is expected that the non-restrictive relative should employ the upper copy of IP rather than the lower one.

At the stage (57d), the bold-faced DPs have the following structure:

(58) $[_{DP}[D(= Op_{def.}) [_{NP/DP} \ldots]]] \ldots [_{DP}[D(= Op_{def.}) [_{NP/DP} \ldots]]]$

Note that since the definite operator occupies the head D position, it can only c-command its complement NP/DP and does not c-command anything out of the containing DP unlike the indefinite null operator at [Spec,DP] according to the definition of c-command in (52). If the demonstrative element such as *so/a/ko-no* 'that/that/this' or their covert counterparts were located at [Spec, DP], by definition, it would c-command the the lower IP as well as the NP, and the lack of restrictive relative interpretation in (44) could not be accounted for without any stipulations. On the other hand, if it is assumed to be located at the head D of the moved relative head DP, the lack of restrictive interpretation would automatically follow.

Is there any theoretical or empirical evidence to determine whether the upper IP or the lower IP is to be deleted at LF for interpretation? Although it is rather difficult to find empirical evidence in support of the LF deletion of the lower IP in (57d), there

is a fact which is indicative of the validness of such an analysis.

Ishii (1991: 50) claims that in Japanese only the restrictive relative allows a non-existential quantificational DP as its head on a par with English based on an example like (59) below:

(59)   John-wa [e kono tosyokan-ni aru] [dono Chomsky-no hon]-mo yonda
           -Top   this library in   exist   every Chomsky-Gen book   read
       'John read every book by Chomsky that can be found in this library.'
       '*John read every book by Chomsky, which can be found in this library.'

I do not concur with his judgment. Unlike English, Japanese seems to permit both the restrictive relative and the non-restrictive relative to have a non-existential quantificational DP as its head. Consider the contrast in (60) below:

(60)   a. John$_j$-wa [t kono tosyokan-ni aru] [dono Chomsky-no hon]-mo yonda ga,
             -Top   this library in   exist every Chomsky-Gen book   read   but
         pro$_j$ LSLT-wa   yondeinai.
                 -Top has not read
       'John read every book by Chomsky that can be found in this library, but
       he has not read LSLT.'
       b. #John$_j$-wa [t kono tosyokan-ni aru] [dono Chomsky-no hon]-mo yonda ga,
             -Top   this library in   exist   every Chomsky-Gen book   read   but
          pro$_j$ LSLT-wa   yondeinai.
                 -Top has not read
       '*John read every book by Chomsky, which can be found in this library, but
       he has not read LSLT.'

If the library in question happens to possess all the books by Chomsky, it is not possible to discern the restrictive and non-restrictive readings of (59). But, suppose that the library at hand possesses all the books by Chomsky except for *LSLT*, then the difference between the two interpretations will clearly emerge. The restrictive interpretation is fine in the context, as shown in (60a). On the other hand, the non-restrictive interpretation is pragmatically odd, as shown in (60b), although it is grammatically well-formed.

With respect to the position of the universal determiner *mo* in Japanese, I will partially follow Kayne's (1994: 143, n.3) suggestion and assume that the universal determiner *mo* takes a NP/DP as its complement and attracts it to its specifier, as il-

lustrated below (cf. Takahashi 2002 for a recent treatment of such a focus particle in Japanese):

(61) $[_{DP} [_{NP/DP} . . .]_i [_{DP} [mo (= D) t_i]]]$

Let us further assume that there is a null operator *Op* at [Spec,DP], whose universal quantificational force is determined by the associated universal determiner *mo* a la Watanabe (1992a,b). Given these assumptions, the structure of the raised relative head DP in (59) looks like the following:

(62) $[_{DP} [_{DP} \boldsymbol{Op}_\forall [_{DP} \text{dono} (= D) [_{DP} \text{Chomsky-no} [_{DP} D [_{NP} \text{hon}]]]]]_i [_{DP} [\mathbf{mo} (= D) t_i]]]$

Crucially, if the whole phrase in (62) is put at [Spec,CP], the null operator with a universal quantificational force at [Spec,DP] could c-command the lower IP in (57c). Thus, in order to guarantee the appropriate non-restrictive relative interpretation, the upper IP must be employed rather than the lower one.

Furthermore, I will propose that with respect to DP movement to [Spec,CP] "copies" of movement must be interpreted as either of the following two possibilities, as prescribed in (63):

(63)   <u>Functional Determination of Null DP A-bar Chain Links:</u>
       a. bound variable (operator-bound)
       b. anaphoric "referential" pronoun (not operator-bound)

In the case of restrictive relatives, the tail of the relevant DP movement chain is interpreted as a bound variable c-commanded by an operator at D or [Spec, DP]. On the other hand, in the case of non-restrictive relatives, the tail of the relevant DP movement chain is interpreted as an anaphoric "referential" pronoun. As Juan Uriagereka (p.c.) points out, this kind of functional determination of the status of a particular occurrence of a chain link is reminiscent of the functional determination of empty categories in Chomsky (1982).

Given the condition in (63), the upper copy of the raised DP in the non-restrictive relative in Japanese must be interpreted as follows:

(64) $[_{\mathbf{DP}}[\mathbf{D}(= \boldsymbol{Op_{def.}}) [_{\mathbf{NP}} . . .]]]_i . . . [_{DP}[D(= Op_{def.}) [_{NP} . . .]]]_i$
                      ⇩
       anaphoric "referential" pronoun

Note that since non-restrictive relatives involve movement to [Spec, CP] of a full DP with a definite, specific, referential force from the start, they are not congruent with idiom chunk interpretations or "narrow scope" readings of numeral quantifiers with respect to universal quantifers. With respect to the reconstruction effects on Condition C, I have to speculate that after the Binding Condition C has been checked, the interpretive condition in (63) will be applied.

Finally, let us look at the post-Spell-Out LF derivation of the head-internal relative in Japanese.

・Post-Spell-Out Derivation for LF(head-internal relatives):

(65)

c. $[_{DP} [_{IP} \ldots DP_i \ldots]_j [_{DP} D [_{CP} DP_i [_{CP} C [_{IP} \ldots DP_i \ldots]_j]]]$

←deletion of the lower IP

d. $[_{DP} [_{IP} \ldots \mathbf{DP}_i \ldots]_j [_{DP} D [_{CP} \mathbf{DP}_i [_{CP} C [_{IP} \ldots DP_i \ldots]_j]]]$

←the DP within the upper IP is interpreted as the antecedent for the DP in [Spec,CP], which is treated as a referential/E-type pronoun.[21]

Since in the case of the head-internal relative just like in the case of the non-restrictive head-external relative, the raised relative DP is a full referential DP in itself, logically, either the upper IP or the lower IP appears to fare well for interpretation. Note that Condition C of the Binding Theory in the susual sense does not seem to apply here since the c-commanding DP at [Spec,CP] is in an A-bar position.

However, there is a piece of empirical evidence which suggests that a "referential" anaphoric pronoun in an A-bar position cannot c-command its antecedent referential DP in general. Consider the following paradigms from Reinhart (1983: 83, 85) (the paradigm in (66) was originally noted by Postal 1971: 197):

(66)   a. John$_i$ keeps a snake near him$_i$.

b. *Him$_i$, John$_i$ keeps a snake near.

c. Near him$_i$, John$_i$ keeps a snake.

(67)   a. Sonya$_i$'s husband would give his life for her$_i$.

b. *Her$_i$, Sonya$_i$'s husband would give his life for.

c. For her$_i$, Sonya$_i$'s husband would give his life.

(68)   *(As for) her$_i$, Sonya$_i$ denies that Hirschel admires her$_i$.

(66b, c) and (67b, c) involve topicalization, while (68) left-dislocation. If the topicalized and left-dislocated elements occupy some A-bar position, as standardly assumed, the

above paradigms show that a "referential" pronoun in an A-bar position cannot c-command its referential antecedent DP, whatever the ultimate principle to account for this restriction may be. Although this might be a phenomenon partly related to discourse, as Howard Lasnik (p.c.) points out, if this holds in general and the structural notion of c-command is also at work, it seems to provide a piece of evidence in favor of LF deletion of the lower copy of IP in the case of the head-internal relative in Japanese.

This being the case, the lower copy of the raised relative head DP at [Spec,CP] will be interpreted as an anaphoric "referential" pronoun in accordance with the condition in (63), as illustrated below:

(69) $[_{DP}[D(= Op_{def.}) [_{NP} \ldots]]]_i \ldots [_{DP}[\mathbf{D(= Op_{def.}}) [_{NP} \ldots]]]_i$
$$\Downarrow$$
anaphoric "referential" pronoun

Note that although a full DP moves to [Spec, CP] in head-internal relatives in Japanese as well, it must be obligatorily interpreted as a referential/E-type anaphoric pronoun, which renders the relevant DP as non-quantificational even if it is originally a quantificational DP within the IP at [Spec, DP]. This can account for the lack of relative Q-scope shift concerning head-internal relatives in Japanese.

Recall that the non-restrictive head-external relative exhibits reconstruction effects with respect to Condition C. Does the head-internal relative also display the same effects? As the following example shows, it seems to be the case as well:

(70) *Mary-wa [[kare$_i$-ga **John$_i$-no hon**-o mottekita] no]-o karita.
      Mary-Top he-Nom John-Gen book-Acc brought D-Acc borrowed
      'He brought John's book and Mary borrowed it.'

The ungrammaticality in (70) indicates that the embedded subject must c-command the bold-faced internal head DP at LF. Given this fact, again, I have to speculate that the interpretive condition in (63) will apply after the Binding Condition C has been checked on a par with the case of the non-restrictive head-external relative in Japanese.

Incidentally, both the non-restrictive head-external relative and the head-internal relative in Japanese share the property of the relative head DP (external and internal, respectively)'s not c-commanding its associated "pronominal element". I believe that this similarity will capture Kuroda's (1992: 174, fn.24) original intuition to the effect that the head-internal relative in Japanese is "non-restrictive" in a certain se-

mantic sense.

5. Some Implications for Typology of Head-Internal Relatives

Recall from Section 3 that I discussed the following parameters concerning the Kaynean D-CP structure, which are reproduced as (71) and (72):

(71)   D: [±EPP]
       C: [±EPP]

(72)   *Parametrization of the External D-System in the D-CP Structure:*
       The external D can take either the [+operator] value or the [-operator] value, depending on whether the categorial status of the relativized nominal head at [Spec,CP] is NP or DP.

First, notice that (72) will lead to a prediction that if the relative head can remain in-situ and does not have to move to [Spec,CP], its categorial status will not be constrained as in (72). Given the above parameters, logically speaking, it could produce the following typologically different sixteen patterns of the head-internal relatives in natural languages:[22]

(73)   a. *[$_{DP}$ [$_{IP}$ ... NP$_i$ ...] [$_{DP}$ **D[+op]** [$_{CP}$ ~~NP$_i$~~ [$_{CP}$ C [$_{IP}$ ~~... NP$_i$ ...~~]]]]]
       b. [$_{DP}$ [$_{IP}$ ... DP$_i$ ...] [$_{DP}$ **D[+op]** [$_{CP}$ ~~DP$_i$~~ [$_{CP}$ C [$_{IP}$ ~~... DP$_i$ ...~~]]]]]
       c. *[$_{DP}$ [$_{IP}$ ... NP$_i$ ...] [$_{DP}$ **D[-op]** [$_{CP}$ ~~NP$_i$~~ [$_{CP}$ C [$_{IP}$ ~~... NP$_i$ ...~~]]]]]
       d. [$_{DP}$ [$_{IP}$ ... DP$_i$ ...] [$_{DP}$ **D[-op]** [$_{CP}$ ~~DP$_i$~~ [$_{CP}$ C [$_{IP}$ ~~... DP$_i$ ...~~]]]]]
       e. *[$_{DP}$ [$_{IP}$ ... NP ...] [$_{DP}$ **D[+op]** [$_{CP}$ C [$_{IP}$ ~~... NP ...~~]]]]]
       f. [$_{DP}$ [$_{IP}$ ... DP ...] [$_{DP}$ **D[+op]** [$_{CP}$ C [$_{IP}$ ~~... DP ...~~]]]]]
       g. *[$_{DP}$ [$_{IP}$ ... NP ...] [$_{DP}$ **D[-op]** [$_{CP}$ C [$_{IP}$ ~~... NP ...~~]]]]]
       h. [$_{DP}$ [$_{IP}$ ... DP ...] [$_{DP}$ **D[-op]** [$_{CP}$ C [$_{IP}$ ~~... DP ...~~]]]]]
       i. *[$_{DP}$ **D[+op]** [$_{CP}$ ~~NP$_i$~~ [$_{CP}$ C [$_{IP}$ ... NP$_i$ ...]]]]]
       j. *[$_{DP}$ **D[+op]** [$_{CP}$ ~~DP$_i$~~ [$_{CP}$ C [$_{IP}$ ... DP$_i$ ...]]]]]
       k. *[$_{DP}$ **D[-op]** [$_{CP}$ ~~NP$_i$~~ [$_{CP}$ C [$_{IP}$ ... NP$_i$ ...]]]]]
       l. *[$_{DP}$ **D[-op]** [$_{CP}$ ~~DP$_i$~~ [$_{CP}$ C [$_{IP}$ ... DP$_i$ ...]]]]]
       m. *[$_{DP}$ **D[+op]** [$_{CP}$ C [$_{IP}$ ... NP ...]]]
       n. [$_{DP}$ **D[+op]** [$_{CP}$ C [$_{IP}$ ... DP ...]]]
       o. *[$_{DP}$ **D[-op]** [$_{CP}$ C [$_{IP}$ ... NP ...]]]
       p. [$_{DP}$ **D[-op]** [$_{CP}$ C [$_{IP}$ ... DP ...]]]

First of all, (73i–1) will be immediately ruled out due to the PF deletion condition in (51). In principle, it is impossible for the upper c-commanding link of a chain to be deleted by the PF deletion condition at hand. Second, (73a, c, e, g, i, k, m, o) are excluded simply because the predicative NP cannot remain at its original argument position for a DP (or a CaseP) by nature. As a result, there remain the following six patterns as proper structures of the head-internal relatives in natural languages:[23)]

(73)' b. [$_{DP}$ [$_{IP}$ ... DP$_i$ ...] [$_{DP}$ **D[+op]** [$_{CP}$ ~~DP$_i$~~ [$_{CP}$ C [$_{IP}$ ~~... DP$_i$ ...~~]]]]]
           (= Quechua-type)

  d. [$_{DP}$ [$_{IP}$ ... DP$_i$ ...] [$_{DP}$ **D[-op]** [$_{CP}$ ~~DP$_i$~~ [$_{CP}$ C [$_{IP}$ ~~... DP$_i$ ...~~]]]]]
           (= Japanese-Navajo-type)

  f. [$_{DP}$ [$_{IP}$ ... DP ...] [$_{DP}$ **D[+op]** [$_{CP}$ C [$_{IP}$ ~~... DP ...~~]]]]
           (= Lakhota-type)

  h. [$_{DP}$ [$_{IP}$ ... DP ...] [$_{DP}$ **D[-op]** [$_{CP}$ C [$_{IP}$ ~~... DP ...~~]]]]
           (= ??)

  n. [$_{DP}$ **D[+op]** [$_{CP}$ C [$_{IP}$ ... DP ...]]]
           (= ??)

  p. [$_{DP}$ **D[-op]** [$_{CP}$ C [$_{IP}$ ... DP ...]]]
           (=??)

(73'b) is the case where the CNPC effects are observed and the (in)definiteness restriction is imposed on the internal head DP. (73'd) is the case in which the CNPC effects are exhibited and there is no (in)definiteness restriction imposed on the internal head DP. (73'f) represents the case where no CNPC effects are observed but (in)definiteness restriction is imposed on the internal head DP. As what follows shows, (73'b), (73'd), and (73'f) seem to be attested by Quechua, Japanese/Navajo, and Lakhota, respectively. It remains to be seen whether (73'h), (73'n), and (73'p) are actually instantiated in natural languages or not, which I must leave to future research, though.[24)]

  First, although the relevant data is not fully available to me at this point, as far as I judge from the examples in Cole (1987) and Cole and Hermon (1994), the internal relative head seems to be restricted to weak/indefinite DPs in Quechua, presumably due to the presence of a null operator at the external D. In addition, the head-internal relative in Quechua displays the CNPC effects, as observed by Cole (1987: 297):

(74) *[[Juan [[warmi t$_i$ japi-shka]   sisa-kuna$_i$]
         Juan   woman pick-NOMINAL flower-PL
      gushta-j]]   juyaylla-mari
      like-NOMINAL   beautiful-VAL
      'The woman who Juan likes the flowers that picked is beautiful.'

In (74), head-internal relativization takes place out of a head-external relative, running afoul of the CNPC.

Second, I claimed in Section 4 that the Japanese head-internal relative involves a non-operator D and movement of a full-fledged DP from within the IP to [Spec,CP] under the Kaynean D-CP structure. This nicely captured the lack of (in)definiteness restriction on the internal relative head DP and the sensitivity to the CNPC, as observed in Sections 2 and 3. In this connection, Navajo seems to pattern with Japanese in terms of the lack of (in)definiteness restriction on the internal relative head and the sensitivity to the CNPC, as illustrated in (75) from Faltz (1995: 305) and (76) from Platero (1974: 220), respectively:

(75) John Bill **t'áá ałtso chidí** yaa nayiisnii' ęę   t'éiyá nizhónígo
      John Bill 3 all   car 3 from 3.3 buy P.REL only   well
      nidaajeeh
      Da.3.run.I
      'All the cars that John bought from Bill (and only those) run well.'

(76) *[[Hastiin ééchaa'í bishxash-éé] be'eldooh néifiitá -(n)ée] naha 'in.
          man   dog   3.perf.3.bite   gun   3.perf.3.pick.up imp.3.bark
      'The dog that the man who was bitten by (it) picked up the gun is barking.'

Note that in (75) the internal relative head *chidí* 'car' is associated with a universal quantifier *t'áá ałtso* 'all', making up a strong DP and that in (76) embedding a head-internal relative under another head-internal relative is prohibited. Thus, if Navajo allows for strong DPs in general, the analysis I proposed for the head-internal relative for Japanese can be extended to Navajo as well. But, more detailed examination is definitely called for on this matter.

Finally, Williamson (1984) observes that, in Lakhota, the head-internal relative is subject to the indefiniteness restriction on the internal relative head and displays no CNPC effect, as illustrated in (77) and (78), respectively:

(77)   a. [[Mary [owiza wa] kage] ki] he ophewathu.
           Mary   quilt   a   make the Dem I-buy
         'I bought the quilt that Mary made.'
       b.* [[Mary [owiza ki] kage] ki] he ophewathu.
           Mary   quilt the make the Dem I-buy
         'I bought the quilt that Mary made.'

(78)   [[Wichota   wowapi wa yawa pi cha] ob wo uglaka pi ki] he
       many-people   paper   a   read pl ind with we-speak pl the that
       L.A. Times e.
       L.A. Times be
       'The newspaper that we talk to many people who read (it) is the L.A. Times.'

In (78), the internal head of the higher head-internal relative is embedded under another head-internal relative, and the result is well-formed.

   Before closing this section, let me make a brief remark on the unavailability of head-internal relativization in Chinese, another N-final language, from the perspective of my analysis. If Aoun and Li (2003) is correct in that Chinese does not project DP structures in general, the lack of D-CP structure and head-internal relatives might follow. Since Chinese lacks an overt determiner-operator system within the DP, unlike Lakhota, it cannot make use of unselective binding within a D-CP structure. Furthermore, if Chinese is different from Japanese in that the former does not project DP structures in general unlike the latter, the option of DP-head raising is not available, either. This is merely a speculation at this moment, so a comprehensive more in-depth investigation on this matter is definitely required.

   Finally, let me mention a difference between me and Bonneau (1992) and Grosu and Landman (1998), who point to the presence vs. absence of the overt determiner system as the key factor in distinguishing between Lakhota/Mojave and Japanese/Navajo/Quechua, respectively. My analysis of the head-internal relative in Japanese in this paper suggests that although Japanese has an external D in the D-CP structure, it is semantically inactive in the sense that it does not serve as a determiner operator. Thus, whether the language can have an operaor D (= semantically active D) or a non-operator (= semantically inactive D) as the external D in the D-CP structrure holds the key in classifying languages with respect to the types of head-internal relatives and availability of the construction in question.

6. Remaining Issues

6.1. Case-marking

With respect to the internal structure of the Kaynean D-CP structure, there remains an issue related to "Case-marking." First, consider (79)–(82):

<*That*-Restrictive Relatives>
(79) John ate [the [bread]$_i$ that Mary baked t$_i$]
<Restrictive Relatives>
(80) John-wa [[Mary-ga t$_i$ yaitekureta] [pan]$_i$]-o tabeta.
       John-Top Mary-Nom   baked   bread ate
       'John ate the bread that Mary baked.'
<Non-Restrictive Relatives>
(81) John-wa [[Mary-ga t$_i$ yaitekureta] [sono pan]$_i$]-o tabeta.
       John-Top Mary-Nom   baked   that bread   ate
       'John ate that bread, which Mary baked.'
<Head-Internal Relatives>
(82) John-wa [[Mary-ga pan-o   yaitekureta] no]-o tabeta.
       John-Top Mary-Nom bread-Acc baked   D-Acc ate
       'Mary baked a loaf of bread and John ate it'

Note that in the case of *that*-restrictive relative in English such as (79) what has been raised to [Spec,CP] from within the embedded IP is an NP rather than a DP, whereas it is a full DP in the case of all the three relatives in Japanese like (80)–(82). What is common between the two languages is that what is to be raised to [Spec,CP] must be a non-argumental or predicative element regardless of the categorial difference. In English, the DP is argumental and the NP is predicative. But, in Japanese, in order for a nominal element to be function as an argument, it must be morphologically case-marked and the DP status *per se* is not enough for its purpose. How can this situation be placed within the theory of Case/case in syntax?

Under the assumption on Case in the Minimalist Program (cf. Chomsky 2000, 2001), *v* and T *per se* do not have any uninterpretable Case-feature, but rather Case is taken to be a reflection of ϕ-feature checking holding between the v or T and the argument DP. Unlike Chomsky (2000, 2001), suppose that the relevant checking/Agree relation does not require both the checker and the checkee to have an uninterpretable feature, then as far as ϕ-feature checking is concerned, it will be carried out suc-

cessfully without any reflection of Case on the predicative NP in English under the assumption that the relevant unvalued Case feature is located at D. How about Japanese, then? If Japanese requires a projection larger than a DP for the argumenthood of a nominal element, that larger nominal projection must be a Case-related element. I will assume that the relevant projection is a CaseP/KP containing a DP inside. Under this assumption, the CaseP/KP is the Japanese analogue to the DP in English as far as Case-checking is concerned. If Neeleman and Weerman (2001) is on the right track, every language has the structure [$_{CaseP}$ [Case [$_{DP}$ . . .]] for the argumental nominal element. If a language carries overt morphological case, it will be realized at the Case head position; if it does not carry any morphological case, the Case head position is null. Alternatively, it has been claimed in the literature that the morphological case-marking in Japanese takes place in PF or the phonological component (cf. Kuroda 1978, Takano 1996, Fukui and Takano 1998, Fukui and Sakai 2003 *inter alia*.). Although a more detailed discussion is called for in this realm, I will leave this matter to future research.

6.2. Multiple Headed Relatives

Takeda (1999: chap.4) points out that Japanese has what she calls "multiple headed relatives", as illustrated below:

(83) [[Mary-ga kono nikagetu-de   sibusibu e$_i$ e$_j$ okutta]
      Mary-Nom these two months reluctantly   sent
      [ronbun$_j$-to syuppansya$_i$]]-o   osiete kudasai.
      article and publisher-Acc   tell please
      'Lit. Please tell me about the articles and the publishers such that Mary
      reluctantly sent them to those places for these two months.'

In (83), the two DPs in the relativized head with a coordinated structure *[ronbun-to syuppansya]* 'article and publisher' correspond to two gaps in the embedded position. This poses a serious problem to my analysis of overt DP movement of relativization in Japanese, since it is impossible to move two DPs from the gapped positions to [Spec,CP] while creating a conjunction structure by transformation. As Takeda (1999) claims, this may indicate that Japanese relativization needs the option of a base-generation strategy available. In fact, as Kayne (1994: 165) remarks, his theory of antisymmetry of syntax itself does not force [Spec,CP] being filled by movement, so it could be filled by base-generation under the D-CP structure.

One possibility is to assume an undelying structure of the following sort, sug-

gested to me by Masaya Yoshida (p.c., 2002):

(84)   [[Mary-ga kono nikagetu-de sibusibu e_i e_j okutta] [ronbun$_j$]]-to
       Mary-Nom these two months reluctantly   sent   article and
       [[~~Mary-ga kono nikagetu-de sibusibu e_i e_j okutta~~] [syuppansya$_i$]]-o
                                                                        publisher-Acc

       osiete kudasai.
       please tell
       'Lit. Please tell me about the articles and the publishers such that Mary
       reluctantly sent them to those places for these two months.'

In (84), the second conjunct involves the relative clause identical with the one in the first conjunct and is deleted at PF, giving rise to the surface form in (83). The e_i in the first relative clause and the e_j in the second relative clause are instances of zero pronouns coreferential with *syuppansya* 'publisher' and *ronbun* 'paper' in the relative heads, respectively. If (84) corresponds to the relevant LF representation, the correct interpretation for (83) seems to obtain.

In fact, Takeda (1999: 134ff.) entertains the possibilities of the "Relative Clause Ellipsis" analysis and the "Left Node Raising" analysis, as illustrated in (85) and (86), respectively, below:

(85)   [[Mary-ga   kono nikagetu-de sibusibu   pro e_j okutta] [ronbun$_j$]]-to
       Mary-Nom these two months reluctantly   sent   article and
       [[~~Mary-ga   kono nikagetu-de   sibusibu e_i pro okutta~~] [syuppansya$_i$]]-o
                                                                        publisher-Acc

       osiete kudasai.
       please tell
       'Lit. Please tell me about the articles that Mary reluctantly sent to some place
        and the publishers that Mary reluctantly sent something to for these two
        months.'

(86) [[Mary-ga kono nikagetu-de   sibusibu   pro pro okutta] [∅[ronbun_j]]-to
      Mary-Nom these two months reluctantly   sent   article and
      [∅[syuppansya_i]]-o osiete kudasai.
          publisher-Acc   tell please
      'Lit. Please tell me about the articles that Mary reluctantly sent to some place
      and the publishers that Mary reluctantly sent something to for these two
      months.'

First of all, the "Left Node Raising" analysis in (86) seems to be dubious, given the
fact that in general the relative clause in Japanese cannot be moved out of the nominal
projection containing it, as shown below:

(87) *[Mary-ga kono nikagetu-de sono syuppansya-ni e_i okutta]_j John-wa
      Mary-Nom these two months that publisher-Dat   sent   John-Top
      [e_j [ronbun]]-o yomitagatteiru.
          article-Acc want-to-read
      'John wants to read the paper that Mary sent to that publisher for these two
      months.'

In (87), the relative clause has been extracted out of the nominal projection of its
modified head, resulting in ungrammaticality.

    Second, the representation in (85) does not faithfully reflects the intended inter-
pretation of the multiple headed relative in (83), due to the presence of the two free-
standing zero pronouns, the referents of which are to be fixed by the relevant context,
as the translation suggests. Once the representation in (84) in the text is adopted,
however, the intended interpretation can be expressed properly.

    A detailed re-examination of this phenomenon is beyond the scope of this paper,
so I have to leave it to future research, including the possibility of the major subject
analysis suggested for the regular single headed relative in the text.

6.3. Split Pivot Phenomena

    Kuroda (1975–76) originally observed the so-called "split pivot phenomenon" of
the head-internal relative in Japanese, as illustrated below:

(88) [[zyunsa-ga   doroboo-o kawa-no hoo-e oitumete itta] no]-ga
        policeman-Nom thief-Acc river-Gen toward track-down went -Nom
        ikioi amatte   hutaritomo kawa-no nake-e tobikonda.
        power exceed both-two river-Gen in jumped
        'A policeman was tracking down a thief toward the river, who both,
        losing control, jumped into the river.' (= his (32)) (The brackets by K.H.)

Kuroda observed that (88) can be (but not necessarily) interpreted in such a way that the subject *zyunsa* 'policeman' and the object *doroboo* 'thief' together make up the split pivot (= split internal head) of the head-internal relative.

   If my analysis of overt movement of internal head DP is correct, (88) should involve overt movement of both *zyunsa* 'policeman' and *doroboo* 'thief' to [Spec, CP]. However, the head-external counterpart of (88) is not acceptable, as illustrated below:

(89) *[[e_i e_j kawa-no hoo-e oitumete itta] zyunsa$_i$, doroboo$_j$]-ga
                 river-Gen toward track-down went policeman thief-Nom
        ikioi amatte   hutaritomo kawa-no nake-e tobikonda.
        power exceed both-two river-Gen in jumped
        'Lit. The policeman, the thief such that he was tracking down him toward the
        river, losing control, both jumped into the river.'

   The multiple headed relativization version of (89) is not acceptable under the intended interpretation, either, as shown below:

(90) *[[e_i e_j kawa-no hoo-e oitumete itta] zyunsa$_i$ to doroboo$_j$]-ga
                 river-Gen toward track-down went policeman and thief-Nom
        ikioi amatte   hutaritomo kawa-no nake-e tobikonda.
        power exceed both-two river-Gen in   jumped
        'Lit. The policeman and the thief such that he was tracking down him toward
        the river, losing control, both jumped into the river.'

Thus, overt movement of such split antecedents seems to be impossible in general. In this connection, it is instructive to note the following example from Hoshi (1995: 90), which is attributed to Yoshihisa Kitagawa (p.c.):

(91) [[zyunsa-ga   doroboo-o kawa-no hoo-e oitumete itta] no]-ga
      policeman-Nom thief-Acc river-Gen toward track-down went -Nom
      ikioi amatte   kawa-no nake-e tobikonda.
      power exceed river-Gen in   jumped
      'A policeman was tracking down a thief toward the river, who,
      losing control, jumped into the river.'

Once a "quantificational expression" *hutaritomo* 'both two' is removed from (88) as in (91), the possibility of split pivot seems to disappear. Either *zyunsa* 'policeman' or *doroboo* 'thief' should be the semantic internal head, not simultaneously, in (91). Thus, the "quantificational expression" *hutaritomo* 'both two' seems to play a key role in the split pivot phenomenon in the head-internal relative. One possibility is to regard the *ga*-marked bracketed portion in (88) as belonging to the adverbial clause homophonous to the head-internal relative, as demonstrated by Kuroda (1998, 1999a, b). Presumably, the presence of the "quantificational expression" *hutaritomo* 'both two' may well force this option. Since, in the case of an adverbial clause, there exists a zero pronominal element in the matrix clause, this should serve the purpose of taking the two DPs in the adverbial clause as its split antecedent. I will relegate full scrutiny of this phenomenon to future research, though.

6.4. Extraction out of PPs

In the foregoing discussion, I only looked at the cases in which the semantic internal head of the head-internal relative is an argument DP within the embedded clause. However, it is possible to relativize a DP out of a PP, as the following example shows:

(92) watasi-ga [[John-ga **naihu**-de ninzin-o   kitteiru] no]-o
      I-Nom   John-Nom knife-with carrot-Acc cutting-is -Acc
      toriageta.
      took away
      'I took away the knife with which John was cutting the carrot'
                              (= Watanabe 1992a, (152))

If my DP movement analysis of the head-internal relative in Japanese is on the right track, the DP *naihu* 'a knife' has been overtly extracted out of the PP *naihu-de* 'with a knife' to move into [Spec,CP]. Is this kind of overt extraction justified? The head-external counterpart is impossible with the postpostion *-de* 'with' being stranded, as

illustrated below:

(93) watasi-ga [[John-ga [e](*-de) ninzin-o   kitteiru] naihu]-o
     I-Nom   John-Nom -with carrot-Acc cutting-is knife-Acc
     toriageta.
     took away
     'I took away the knife John was cutting the carrot with.'

In (92), the copy at [Spec,CP] of the DP movement has been deleted while the copy at the original position has remained intact. On the other hand, in (93), just the opposite pattern of PF deletion has taken place, deleting the DP at the original site has been deleted, stranding its postposition. Since postpositions in Japanese cannot stand on their own, the structure turns out to be ill-formed. Although both cases involve overt DP extraction out of a PP, thanks to the copy theory of movement (Chomsky 1993), only the latter case violates the prohibition against the "surface P-stranding" in Japanese. Note also that the deletability of a P in the head-external relative in Japanese has something to do with the recoverability condition on deletion. It seems that as long as the P can be "recovered" somehow, say, based on the information related to the predicate's argument structure, it can be omitted for relativization. If it can be dropped in this fashion, the head-external relativization out of a PP is to be carried out without any problem (cf. Kuno 1970, 1973; Teramura 1971; Muraki 1970; McCawley 1976 *inter alia* for some discussion on this issue).

Another possible line of analysis for "PP-relativization" in Japanese without directly invoking the deletion operation is to assume that phonologically null postpositions are available in Japanese, as illustrated below:

(94) watasi-ga [[John-ga   [e]-$\varnothing_{de}$ ninzin-o   kitteiru] naihu]-o
     I-Nom   John-Nom -with   carrot-Acc cutting-is knife-Acc
     toriageta.
     took away
     'I took away the knife John was cutting the carrot with.'

Under the copy theory of movement, [e] is the copy [$_{DP}$ *naihu*] before its PF deletion. Thus, it is reasonable to assume that the null P in (94) has been licensed by its being attached/affixed to the N head of the copy DP prior to the PF deletion of the affixed copy DP, extending the idea of Bošković and Lasnik (2003) and Pesetsky (1995). I would like to leave the investigation into this issue to another occasion.

7. Conclusion

In this paper, in an attempt to solve the puzzle concerning an apparernt hybrid nature of the N-final Japanese relatives, I proposed a hypothesis of parametrization of the external D-system in the D-CP structure in the context of UG. While considering the resulting derivations of the relevant relatives in Japanese, it has been demonstrated that the relevant parameter, i.e., [±operator], is responsible for accounting for the puzzling apparent hybrid phenomemon with respect to Japanese relatives. Further, I have also discussed some implications of my hypothesis as it relates to the typology of the head-internal relatives in natural languages. Although there remain numerous problems to be addressed, it is hoped that the present paper will serve as a guideline for future research in this empirical domain.

Notes

1) Although I will not discuss N-initial relativization in English in this paper, I will follow Carlson (1977), Aoun and Li (2003), and Sauerland (2003) in assuming that relativizatin in English requires both raising and matching analyses (under the Kaynean D-CP structure), contra Kayne (1994) and Bianchi (1999, 2000a, b) (cf. also Heim 1987 and Grosu and Landman 1998 *inter alia* for a similar idea). With respect to the reason for the need for the matching analysis, I speculate, modifying Aoun and Li's (2003) idea, that the type II determiners(or weak determiners) in the sense of Carlson (1977) are the conflation of D and Num(ber) and that the Num(ber) has to select an NP rather than a CP as its complement, excluding the D-CP structure for the relative head-raising, as illustrated below:

(i) $[_{DP} D [_{Num} Num [_{NP} N [_{CP} . . .]]]]$

Furthermore, I will follow Kayne (1994) rather than Bianchi (1999, 2000a,b) in assuming that what is raised to [Spec,CP] in *that*-relatives in English is uniformly an "NP" but not a DP headed by a phonologically null D(see Borsley 1997 for criticisms of the head-raising analysis of relative clauses by Kayne 1994 and Bianchi 2000a for her reply to Borsley ibid.). As Borsley (1997) correctly points out, one of the potential problems to this line of analysis is an apparent difficulty in dealing with stacked *that*-relatives such as (i):

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(i)   the book that John wrote that Bill burnt

He assumes the following structure as a problematic one for (i):

(ii)   [$_{DP}$ D [$_{CP}$ [$_{CP}$ NP$_i$ [$_{CP}$ C [$_{IP}$ . . . t$_i$ . . .]]]]$_j$ [$_{CP}$ C [$_{IP}$ . . . t$_j$ . . .]]]]

Note that in (ii) what has been moved to the upper [Spec,CP] is a CP rather than an NP, which is the point attacked by Borsley. But, the "labels" like NP and DP are just mnemonics, and what is essential is the feature compositions of the relevant elements. Suppose that the "CP" at the upper [Spec, CP] is virtually functioning as a predicative nominal, or an "NP" due to the process of an NP being attracted to the Spec of its head C, a kind of "nominalization", following the idea in Hoshi (2001) and Kayne (2003). If this assumption is on the right track, the stacked *that*-relatives do not pose any problem to Kayne's (1994) original analysis.
2) See Kuno (1973) *inter alia* for discussion on the correlation between the availability of topicalization and that of relativization in Japanese.
3) In this paper, I will abstract away from the possibility of the process of subjectivization in Japanese, which has been claimed to be responsible for generating a subset of multiple nominative constructions in Japanese.
4) In Japanese, the head-internal relativization from the major subject position is possible, as illustrated below:

(i)   John-wa [[**sinsi**$_i$-ga [[pro$_i$ kiteiru] huku]-ga yogoreteiru] no]-o kabatteageta.
      John-Top gentleman-Nom wearing-is suit-Nom dirty-is -Acc stood up for
      'Lit. John stood up for the gentleman who the suit that he was wearing was dirty.'

Thus, if the same overt relative head DP movement to [Spec,CP] is involved in both head-external relativization and head-internal relativization, (i) will support the idea of the major subject analysis of relative head movement in the text. I will deal with the head-internal relative in Japanese in Sections 4 and 5.
5) Gunji (2002: 212-217) also judges that relativization in Japanese exhibits reconstruction effects with respect to the "anaphor" *zibun*, as illustrated in (i):

(i)   [Ken$_i$-ga e$_j$ kaita] zibun$_i$-no denki$_j$]-ga besutoseraa-ni natta.
      Ken-Nom wrote self-Gen biography-Nom bestseller-Dat became
      'The biography of himself that Ken wrote became a bestseller.'
6) Note in passing that topicalizaiton counterpart, which is considered to be derived from the major subject construction (Kuroda 1986a,b;1992), is unacceptable either, as shown in (i):

(i)   *[kare-zisin$_i$-no syasin]$_j$-wa t$_j$ [Mary-ga [[[John$_i$-ga   e   e miseta]
      himself-Gen picture-Top   Mary-Nom John-Nom   showed
      koto-ga aru] hito]-o sitteiru
      fact-Nom exist person-Acc know
      'Lit. the picture of himself, Mary knows the person to which John showed (it).'
7) Takeda (1999: 112) points out the following example to illustrate that *kare-zisin* 'himself' can apparently take the subject of the highest clause in the relative as its antecedent:

(i) [John$_k$-ga [[Mary-ga e$_i$ e$_j$ miseta] hito$_i$]-o sitteiru] [kare-zisin$_k$-no syasin]$_j$

    John-Nom Mary-Nom   showed person-Acc know himself-Gen picture

    'The picture of himself that John knows the person who Mary showed it to.'

Although I have no definite explanation of why (i) is acceptable under the interpretation with *John* as the antecedent of *kare-zisin* 'himself', whatever makes its interpretation possible should account for the acceptability in (i) under connectivity/reconstruction process. One possibility is to assume that (i) is derived from the underlying structure in (ii):

(ii) John$_k$-ga [kare-zisin$_k$-no syasin]$_j$-wa [Mary-ga e$_i$ e$_j$ miseta]

    John-Nom himself-Gen picture-Top Mary-Nom   showed

    hito$_i$-o sitteiru.

    Person-Acc know

    'John, as for the picture of himself, knows the person who Mary showed it to.'

In (ii), *[karezisin-no syasin]-wa* is located IP-internally, functioning as a contrastive focus phrase. Thus, it is plausible for the relative head *[karezisin-no syasin]* in (i) has been moved from such a contrastive focus position in a sentence. Note that in (ii) *John* c-commnads *karezisin* in the contrastive focus phrase.

8) Here, I will assume that non-restrictive relatives in English and Italian are derived without directly raising the relative head from within the IP in the Kaynean D-CP structure.

9) Note, however, that Ishii (1991: 49) observes that the non-restrictive relatives in Japanese do not show connectivity/reconstruction effects with respect to Condition A, as illustrated below:

(i) ?*Mary-wa [[John$_i$-ga taipusita] [ano kare-zisin$_i$-no ronbun]]-o

        -Top   -Nom typed   that himself-Gen paper -Acc

    sutete-simattta

    threw away

    'Mary threw away that paper of himself, which John typed.'

Although I admit that the matrix subject *Mary* tends to blur connectivity/reconstruction effects, I find (i) quite acceptable under the relevant interpretation if the intonation is properly controlled. I have no idea as to where this difference of judgment comes from at this moment.

10) Note that non-restrictive relativization in English does not permit an idiom chunk being the external head, either, as illustrated in (i):

(i)   ***the headway**, which we made on that problem

This is due to the referentiality of the bold-faced external relative head of the non-restrictive relative in English. I will claim in section 4 that lack of idiom chunk interpretations in Japanese relatives in (27) can be also attributed to the referentiality of the relative head moved to [Spec,CP].

    Bernstein (2001: 561, n.16) alludes to Mark Baltin's (p.c.) example like (i) (due to McCawley 1981) and his remark that it would compromise Kayne's (1994) promotion approach to idiom chunks:

(ii) John made the headway that got us out of here.

This is so, because *headway* would have to be raised from within the relative clause. However, under the

framework of the Minimalist Program (Chomsky 1995), idiom chunks are not necessarily subjet to the restriction that they must constitute a unit at D-structure due to lack of such a level of representation. Thus, it could be reasonable to assume that in the course of the core computation by Merge they must form a relevant unit to be idiomatically interpreted. The information that a such-and-such expression is an idiom may well be stored in the long-term memory related to the lexicon and checked against it when interpreted at LF/semantic component (cf. Jackendoff 1997, 2002 for a different view in the "post-Minimalist" framework). In (ii), after raising of the NP *headway* to [Spec, CP] of the D-CP structure, the verbal part *make* of the idiom will be merged to it to make up a relativized idiom *make the headway that got us out of here*. Note that even if *make the headway that got us out of here* is derived by the matching analysis, i.e., moving a null operator to [Spec,CP], it remains to be explained why the definite determiner *the* can appear here, but not in **make the headway*, under the assumption that idioms are stored in the lexicon and are directly introduced as such from the lexicon into the core syntactic computation. My line of analysis holds the view that idioms are also built out of smaller parts via Merge rather than being inserted as a "frozen" lexical unit. If this is on the right track, it seems to be the case that the external D *the* in (ii) is invisible, or can be ignored for the purpose of idiom chunk interpretation (cf. Nunberg et al. 1994 for a detailed examination of idioms).

Ruichi Washio (p.c.) points out that the following examples of idiom chunks in Japanese relatives seem to sound OK:

(iii)   a. Kare-ga tuini dasita   sippo-wa tukamiyasukatta.
            He-Nom at last showed tail-Top   was-easy-to-grab
            'Lit. the tail that he showed at last was easy to grab'
        b. Kare-ga tuini dasita   sippo-wa timeiteki data.
            He-Nom at last showed   tail-Top fatal   was
            'Lit. the tail that he showed at last was fatal'

I am not sure about the status of (iiib), though. It sounds rather non-idiomatic to me at least. As far as (iiia) is concerned, note that it involves two idioms *sippo-o dasu* 'show one's true self/true colors' and *sippo-o tukamu* 'have something on someone' On a par with (ii) in English, it seems that for the purpose of idiom chunk interpretation, the raised relative head at [Spec, CP] in Japanese relatives might be somehow rendered non-specific/non-referential as well. I will leave a full investigation on this matter to future research.

11) Note that the non-restrictive relative counterpart in (i) below does not show any scope reconstruction effects, either:

(i)   Watasi-wa [[dono isya-mo   asita t_i sindansuru koto-ni natteiru]
        I-Top   every doctor-also tomorrow   examine will
        sono hutari-no kanzya$_i$]-ni   denwa-o kaketa.
        those two-Gen patient-Dat phone (call)-Acc make
        'I phoned those two patients that every doctor will examine tomorrow.'

12) I am assuming that the parameter in (33) is a kind of macroparameters in UG. Masaharu Shimada (p.c.) points out that if the distinction between strong determiners and weak determiners is responsible for the difference of raising vs. non-raising/matching within a single language such as English, the parameter in (33) cannot be an instance of macroparameters in UG (cf. Baker 2001). However, if a weak determiner can be analyzed as an amalgam of D and Q/Num rather than a pure D, as suggested in Aoun and Li (2003), then the parameter in (33) can be assumed to hold only with respect to a pure D. Given this assumption, there is no problem in taking the parameter in (33) as an instance of macroparameters in UG.

13) Toshiaki Oya (p.c.) poses a question as to the status of the parameter in (33): why is the notion of operator vs. non-operator relevant in the first place? The parameter in (33) might be ultimately derived from a

more general "semantic" parameter like [± sematically active] (cf. Chierchia 1998 for the notion of semantic parameters). I will leave a more in-depth research on this parameter to another occasion.

14) Ruichi Washio (p.c.) asks me if a similar parameter could be found in the clausal domain on a par with the nominal domain. Although this is an extremely important question for my line of research, I have to leave the investigation to future research.

15) The present proposal has to face a various issues related to the so-called null pronominal in Japanese, which has been analyzed as corresponding to a null NP rather than a null DP in the literature (cf. Hoji 1998, Tomioka 2003, Zushi 2003 among others). A full-fledged investigation of this matter has to be relegated to future research at this moment.

16) There are pieces of empirical evidence which suggest that the relevant demonstrative definite operator is located at the D head. Consider the following paradigms in (i)-(ii):

(i)   a. [John-no hon]-ga omosiroi.
          John-Gen book-Nom interesting-is
          'John's book is interesting.'
       b. *[John-no no]-ga omosiroi.
          John-Gen D-Nom interesting-is
          'The one of John's is interesting.'
       c. [John-no]-ga omosiroi.
          John-D-Nom interesting-is
          'The one of John's is interesting.'

(ii)   a. [ko/a/so-no hon]-ga omosiroi.
          this/that/that-Gen book-Nom interesting-is
          'This/that/that book is interesting.'
       b. *[ko/a/so-no-no]-ga omosiroi.
          this/that/that-Gen-D-Nom interesting-is
          'This/that/that one is interesting.'
       c. *[ko/a/so-no]-ga omosiroi.
          'This/that/that one is interesting.'

It is well-known in the literature that the reason why standard/Tokyo dialect does not allow the double-occurrence of the particle *no* is related to the deletion/coalescence rule in (iii) (cf. Okutsu 1974, Poser 1984 *inter alia*):

(iii)   *no-no haplology
         no→Ø:__no
             (adapted from Takeda 1999: 42)

In (iii), the first instance of the particle *no* is deleted. Given this analysis, (ic) is to be derived due to the no-no haplology applying to (ib), which in turn is derived by moving the genitive phrase *John-no* 'John's' to [Spec,DP]. Suppose the demonstrtive phrase *ko-no* 'this', *a-no* 'that' and *so-no* 'that' were on a par with the genitive phrase like *John-no* 'John's'. Then, (iic) should be predicted to be fine just like (ic), contrary to fact. On the other hand, if the demonstrative element in Japanese, which is morphologically made up of a prefix *ko/a/so-* 'this/that/that' and the particle *no*, is generated at the head D, the ungrammaticality in (iic) might be attributed to the D head status of the demonstrative element in Japanese. Namely, since the demonstrative element *ko-no/a-no/so-no* is a minimal syntactic unit as a whole, deleting only its subpart *-no*

while leaving behind just the prefix *ko-/a-/so-* dangled does not seem to be possible as a legitimate deletion operation in the phonological component.

However, Sachiko Aoshima (p.c.) points out that Yaizu-Fujieda dialect in Shizuoka displays a pattern different from the one in standard/Tokyo dialect, as illustrated in (iv) below:

(iv)　a. John-no no 'John's one'
　　　　　　　-Gen D
　　　b. ko/a/so-no no 'this/that one'
　　　　　this/that-Gen D

She reports that along with the sequence in (iva), the one in (ivb) is also possible in the dialect in Shizuoka. At first blush, the pattern in (iv) appears to indicate that in this dialect *ko/a/so-no* 'this/that-Gen' should be analyzed as an element occupying [Spec,DP] on a par with *John-no* 'John-Gen' unlike in the case of standard/Tokyo dialect. This problem could be avoided given the following structure in conformity to the assumption in (36) in the text:

(v)　$[_{DP}$ kono/ano/sono(= D) $[_{DP}$ $Op_{indef.}$ [no(= D) $[_{NP}$ Ø](= pro)]]]

(v) involves a DP-recursion. The indefinite operator at the lower Spec of DP is to be interpreted as an unspecified cardinality predicate here. Note in passing that DP-recursion is needed to account for such definite DPs in Japanese as follows as well:

(vi)　a.　$[_{DP}$ John-no$_i$ D $[_{DP}$ D ko/a/so-no $[_{NP}$ t$_i$ hon]]]
　　　　　　John's　　　　this/that/that/　book
　　　　'Lit. John's this/that/that book'
　　　b.　$[_{DP}$ D ko/a/so-no $[_{DP}$ John-no$_i$ D $[_{NP}$ t$_i$ hon]]]
　　　　　　this/that/that John's　　　　book
　　　　'Lit. this/that/that John's book'

Given these assumptions, it might be possible to prescribe that the rule in (iii) be applied if and only if the first *no* is an element contained at [Spec,DP]. Furthermore, the reason why the surface form in (v) is not observed in standard/Tokyo dialect might be attributable to obligatory application of a spell-out rule in this dialect like the following:

(vii)　$[_{DP}$ kono/ano/sono(= D) $[_{DP}$ $Op_{indef.}$ [no(= D) $[_{NP}$ Ø](= pro)]]]→$[_{DP}$ kore/are/sore]

17) Note that the reason why no definite operator can possibly occupy [Spec,DP] is due to the presence of the demonstrative operator at D. Placing a definite operator at [Spec, DP] would lead to vacuous quantification, which is generally prohibited in natural languages (cf. Chomsky 1982). I will also assume that proper nouns such as *Taroo* 'Taro' makes up a DP by itself without any definite operator (possibly due to the N-to-D raising in the sense of Longobardi 1994).

18) Shimoyama (1999: 170-171) claims that there is a(n) (in)definiteness restriction on the internal head of the head-internal relative in Japanese on the basis of the following apparent contrasts in (ia,b) and (iia,b):

(i) a. [[daidokoro-no mado-kara   siroi neko-ga
         kitchen-Gen window-from   white cat-Nom
         haitte kita] no]-ga   sakana-o totte nigeta.
         came-in NM-Nom fish-Acc steal-ran-away
         'A white cat came in from the kitchen window and it stole a
         fish and ran away.'
     b.?* [[daidokoro-no mado-kara   Lucky-ga
            kitchen-Gen window-from   Lucky-Nom
            haitte kita] no]-ga   sakana-o totte nigeta.
            came-in NM-Nom fish-Acc steal-ran-away
            'Lucky came in from the kitchen window and it stole a
            fish and ran away.'
(ii) a. John-wa [[[Kathy-ga   ofisu-ni yagi-o   2-too
         John-Top Kathy-Nom   office-to goat-Acc 2-CL
         turete kita] no]-no   ke]-o   katta.
         brought   NM-Gen hair-Acc cut
         'Kathy brought two goats to the office and John cut their hair
         (sheared them).'
      b.?* John-wa [[[Kathy-ga   ofisu-ni Sebastian-o
           John-Top Kathy-Nom office-to Sebastian-Acc
           turete kita] no]-no   ke]-o   katta.
           brought   NM-Gen   hair-Acc cut
           'Kathy brought Sebastian to the office and John cut his hair
           (sheared them).'

Although I agree with her in that (b) is a bit degraded in acceptability relative to (a) in (i) and (ii), I am not sure whether it is really due to a(n) (in)definiteness restriction on the internal head of the head-internal relative in Japanese. Observe the following paradigm:

(iii) a. [[daidokoro-no mado-kara   neko-no Lucky-ga
           kitchen-Gen window-from   cat-Cop Lucky-Nom
           haitte kita] no]-ga   sakana-o totte nigeta.
           came-in NM-Nom fish-Acc steal-ran-away
           'Lucky, which is a cat, came in from the kitchen window and it stole a
           fish and ran away.'
       b. John-wa [[[Kathy-ga   ofisu-ni yagi-no Sebastian-o
          John-Top Kathy-Nom office-to   goat-Cop Sebastian-Acc
          turete kita] no]-no   ke]-o   katta.
          brought   NM-Gen hair-Acc cut
          'Kathy brought Sebastian, which is a goat, to the office and John cut his hair
          (sheared them).'

I find (a) and (b) quite acceptable under the intended interpretations. The difference between (ib) and (iib) on one hand and (iiia,b) on the other is that in the latter the internal head contains an expression with the appositive attributive copula *-no*, which explains what the name *Lucky* or *Sebastian* refers to. Although at this moment I cannot pin down the factor affecting the acceptability judgments in (ib) and (iib), it is still

plausible to assume that the relevant factor is other than the (in)definiteness restriction on the internal head. I will leave an investigation on this matter to future research, though.

19) I will leave to future research the investigation into the ultimate reason why Japanese must always project full DPs and cannot make use of a lower nominal projection like NPs in syntax.

20) See Hoshi (in preparation), Shimoyama (1999), and Zushi (1996) for the view that takes the "nominalizer" *no* in the head-internal relative as D in Japanese. Shimoyama (1999) regards the D in question as functioning as a definite operator, which she claims is responsible for explaining the putative (in)definiteness restriction on the internal head in the Japanese head-internal relative. But, as illustrated in section 3, this putative (in)definiteness restriction on the internal head is not really relevant in the case of Japanese-type head-internal relative, which is also obvious from her own examples in which a DP with a strong determiner serves as the internal head properly. Thus, it seems that her assumption that the D at hand is a definite operator is not well-founded.

21) For head-internal relative clauses the DP at [Spec, CP] must be interpreted as an anaphoric referential pronoun (cf. Cole 1987, Kayne 1994), not c-commanded by its antecedent DP within the IP. Thus, if the antecedent DP is a quantified DP, the DP at [Spec, CP] serves as an E-type pronoun (cf. Hoshi 1995 and Shimoyama 1999).

22) The internal head may overtly move to somewhere internal to the embedded clause for disambiguation of the interpretation of the relative head (cf. Basilico 1996), but I will ignore such a clause-internal movement from the consideration here. (Cf. also Williamson 1984, Culy 1990, Srivastav 1990, Bonneau 1992, and Watanabe 1992a, b; 2002 among others for discussion on the head-internal relative construction.)

23) Hiraiwa (2003) investigates the nature of head-internal relatives in Buli, an endangered language of the Gur group in the Niger-Congo family spoken in the north of Ghana, which may pose a problem to my approach in the text. I will leave an analysis of Buli head-internal relatives to future research, though.

24) Aldridge (2003) claims that the following is an instance of the head-internal relative in Tagalog:

(i) a. b-in-ili-ng   **libro** ni Maria
        -Perf-buy-LK book Erg Maria
        'the book Maria bought'
     b. b-in-igy-an   na **bata** ng babae ng kendi
        -Perf-give-App LK child Erg woman Obl candy
        'the child to whom the woman gave candy'

But, notice (ia,b) cannot be "genuine" head-internal relatives, since the bold-faced putative internal heads are bare nominal elements without any morphological cases attached. It seems more likely that (ia,b) are derived by moving the relative head NP to [Spec,CP] with the inflected verbal element being moved to some C-like functional head in the sense of Rizzi's (1997) fine-grained C-system. See also Aldridge (2003) for empirical evidence from Tagalog relative clauses in favor of Kayne's (1994) IP-fronting analysis of N-final relatives (cf. also Honda 2002 for arguments for such a Kaynean analysis based on Japanese data).

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