Relative Clause Binding in Japanese*

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0. Introduction

This study attempts to provide a descriptively adequate
analysis for the phenomenon of binding in Japanese relative
clauses within the framework of Generalized Phrase Structure
Grammar as defined in Gazdar (1981,1982) among others. This study
presupposes an extention of Miayara (1981) and Gunji (1981)'s
analyses of reflexivization in Japanese.

1. Relative Clauses in Japanese

The class of relative clauses discussed in this paper
includes the following three patterns.

        (1) [(gap)]   head   (Pattern A)
          RC

        (2) [zibun]   head   (Pattern B)
          RC   self

        (3) [imooto]   head   (Pattern C)   [1]
          RC   sister

A relative clause of Pattern A contains a 'gap' bound
by the head , in terms of which the relative clause and its head
are related. A relative clause of Pattern B is related to its
head by the reflexive 'zibun'. Pattern C relative clauses are
related to their heads by a noun of a special class like 'imooto'
(younger sister) which is interpreted relative to the head.
        These three patterns can be illustrated in (4)-(6)
below.

        (4) [Taroo ga korosita] Hanako
            Hanako, who Taroo killed

        (5) [Taroo ga zibun o hihan sita] Hanako
            (Lit.) Hanako, who Taroo criticized (her)self

        (6) [Taroo ga imooto to kekkon sita] Hanako
            (Lit.) Hanako, who Taroo married (her) sister.

2. Earlier Analyses of Reflexivization

With regard to reflexivization in Japanese, there has
been a considerable amount of studies in TG framework, among
which are Inoue(1976) McCawley(1976), and Howard et al.(1976).
The following three points seem to be uncontroversial.

(7) (i)   Subject of a VP can be the antecedent of
           reflexive which it commands.
    (ii)   Causer NP of causatives can be the antecedent
           of reflexive which it precedes and commands.
    (iii) Ni-marked NP in indirect (or adversity)
           passives ,but not in direct (or advancement)
           passives can be the antecedent of reflexive
           which it precedes and commands.

        Recently, Miyara(1981) (in GCG) and Gunji(1981,1983) (in
GPSG) proposed unified analyses of the facts above.[2] In
their analyses, a category VP (or IVP) is assumed and a binding
mechanism is formulated so that the next argument (informally,
the semantic subject) can bind a reflexive in the VP. This is
done by positing a special kind of VP which forces reflexives in
it to be bound by the next argument.
        This can be illustrated in examples (8)-(10) below.(The
underlined portions indicate the possible antecedents of 'zibun'.
Brackets mean VP's. (The possibility of pragmatic binding (in
Gunji's terminology) is temporarily ignored.)

    (8) Taroo wa [zibun no heya de Hanako o nagutta.]
        Taroo hit Hanako in (him)self's room.

    (9) Taroo wa [Hanako ni [zibun o hihan s-]aseta.]
        (causative)
        Taroo made Hanako criticize (him/her)self.

    (10) Taroo wa [Hanako ni [zibun no hanasi o s-]areta.]
        (passive)
        (Lit.) Hanako talked about (him/her) self on Taroo.

        In this paper I assume the following rules and metarules
of Gunji(1983) with some notational alterations.

    (11) Phrase Structure Rules

        <1,S -->NP [+ga] VP ,VP'(^NP')>
        <2,VP -->NP[+wo] TVP[+wo],TVP'(^NP')>
        <3,NP[+c] -->NP CM[+c],CM(^NP)>
        <5,CM[+c] -->c,@%P[ext%P]>   [3]
        <8,TVP[+o] -->VP AUX[+sase],AUX(^VP)>
        <9,AUX[+sase] -->sase @U@%Q%P%P{^@xCAUSE(x,U{%Q})}>
        <11,TVP[PAS,+ni] -->TVP[-PAS,+wo] AUX[+rarel],
        AUX'(^TVP')>
        <13,AUX[+rarel] -->rare,@U@%Q@%P%P{^@xAD(x,U{%Q}))}>
        <6a,VP --->ku,@%P%P{^come}>
        <7a,TVP[+o] -->nagur,@%Q@%P%Q{@y%P{^@x(hit(x,y)}}>

    (12) Metarules

    M1:<n,C0 -->___Ci___,T>

            ==>   <n,C0/C -->___Ci/C___,T'>

            where T' is obtained from T by substituting any

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           occurence of Ci' by (Ci/C)'

    M2:<n,NP[+c] -->X,T>

         ==>    <n,NP[+c]/NP[+c] -->e,@PP{r[+c]}>

    We assume the following rules in addition.

    (16) Definite NP
        <51,NP -->N,@PP{iota x N'(x)}>    [4]

    (17) Quantification
        <52,NP -->Q N, Q'(N')>

    (18) Noun     (example)
        <53a,N -->otoko,@x[man(x)&R(x)]>    [5]

    (19) Proper Noun    (example)
        <54a,NP -->Hanako,@P[P{h}&R(h)]>
            where h is an individual constant.
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3.Reflexivization and Some Related Phenomena

It is already pointed out by Gunji(1981) and Tanomura (1984) that such noun phrases as 'tuma'(wife) or'imooto'(younger sister) share with reflexive 'zibun' the property of being bound by their 'semantic subjects.'
Consider the following examples.

(20) Taroo wa [imooto no heya de Hanako o nagutta.]
     Taroo hit Hanako in (his) sister's room.

(21) Taroo wa [Hanako ni [imooto o hihans-]aseta.]
     Taroo made Hanako criticize (his/her) sister.

(22) Taroo wa [Hanako ni [imooto no hanashi o s-]areta.]
     (Lit.) Hanako talked about (his/her) sister on
     Taroo.

Let us define i as the antecedent of an NP, e.g. 'imooto', when it is interpreted as referring to i's younger sister. Then , the possible antecedents of 'imooto' (=underlined NP) in (20)-(22) exactly parallel those of 'zibun' in (8)-(10).
Gunji(1981) explains the above facts by postulating a 'genitive' gap [6] missing in front of such nouns. On the other hand, Tanomura(1984) assumes a special category 'relational nominal' and proposes a uniform analysis of interpretation for these relational nominals as well as reflexives, employing a version of storage mechanism.
Some of these 'relational' nouns are listed below.

(23) imooto(younger sister),tuma(wife),buka(a person
     working under somebody),nakama(companion),girl
     friend etc. [7]

I will henceforth refer to them as nonreflexive relationals and consider reflexive a special type of 'relational' NP's [8].In what follows, I will attempt to give (,following Tanomura,) a proper translation to these nonreflexive relationals and give a unified formal account for relational NP's with particular reference to their interaction with relativization. Before doing so, I will examine how sentences containing more than one relational NP's in a single VP are interpreted.

In the case of reflexives, as correctly predicted by the analyses cited above , two instances of 'zibun' are always interpreted as coreferential if there is no VP which dominates only one of them (with possible exceptions involving relative clause binding that we will see later). This can be observed in (24). [9]

> (24) Taroo ga [Hanako ni [zibun no ie de zibun no hanasi
>   o s-]areta.]
>   (Lit.) Hanako talked about self in self's room on
>   Taroo.

The only interpretations that native speakers admit for (24) are those in which the antecedents of 'zibun's are (i) uniformly Taroo, (ii) Hanako, or else (iii) Z (some pragmatically fixed individual). There is no interpretation in which the two 'zibun's are disjoint in reference.

Now ,let us turn to relational NP's in general. First observe (25) ,(27). They each have both 'zibun' and nonreflexive relational in a single VP and there is no VP which dominates only one of them. Yet their antecedents can be distinct.

> (25) Taroo ga [zibun no heya de imooto o nagutta.]
>   Taroo hit sister in self's room.

(25) has the following four possible interpretations with respect to the antecedents of 'zibun' and 'imooto' (younger sister).   [10]

> (26)   zibun   (i's) imooto
>   (i) Taroo   Z
>   (ii) Taroo   Taroo
>   (iii)Z   Taroo
>   (iv) Z   Z

(27) is an example which syntactycally allows two possible antecedents (i.e. semantic subject of VP's) for 'zibun' and 'musuko' (son) (pragmatic bindig aside).(27) also appears to have several interpretations with regard to the antecedents of 'zibun' and 'musuko', among which are the four cases listed in (28).

> (27) Taroo wa [Hanako ni [zibun no syokuba de musuko no
>   hanasi o s-]areta.]]
>   Hanako talked about son in self's office on Taroo.

> (28)   zibun   (i's)   musuko
>   (i) Taroo   Hanako
>   (ii)Hanako   Taroo
>   (iii)Hanako   Hanako

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(iv)Taroo   Taroo

        Thus we must conclude that binding of   reflexive and
nonreflexive relationals can be made independently.
        Next consider sentences containing two instances of
nonreflexive relationals in a single VP, for example,(29).

        (29)   Taroo wa [Hanako ga [titi ni girlfriend no hanasi
               o s-]ita] to itta.
               Taroo said that Hanako talked to father about
               girlfriend .

        (29) seems to have , among others, the following
interpretations.

        (30) (i's) titi (father)   (i's) girl friend
           (i) Hanako   Taroo
         #(ii)Taroo   Hanako
          (iii)Taroo   Taroo
         #(iv)Hanako   Hanako

(The interpretation (ii) and (iv) are odd for pragmatic reasons)
        Thus, we must consider two tokens of relational NP's to
be bound independently, though of course they can be bound by the
same antecedent. [11]

                4. Formalizing Relational NP's.

        Based on the observations we made in 3,now I would like
to formalize relational NP's in terms of phrase structure rules
and assign proper translations to them.
        First , we derive 'zibun' by the following rule.

        (31) Reflexive

           <61,NP -->zibun,@PP{z1}>

(z_1 is a member of the finite set of distinguished variables
$\{z_i : i > 0\}$.Each of z_i is distinct from each of $r[+c]$'s and
$r[+rel]$.)
        A relational noun such as 'imooto' is introduced by
rules of the following form.

        (32) Relational Noun

           <62a,N[+rel] -->imooto,@x imooto'(x,r[+rel])>   [12]

        Here, imooto' is a two place predicate. imooto'(x,y)
means that x is a younger sister of y's.   [13]
        The data presented in 3 is explained by the following
rules.

        (33) Indexicalization

```
    M51:   <n,NP -->X,T>

           ==>    <n,NP[+rel] -->X,@r[+rel][T](INDc)>
```

(INDc is defined in such a way that for every c (con-
textual index), INDc is a member of the finite set {zi:i>0}.)
[14]

(34) Subject Control of Relational NP's

```
    M52:   <n,VP -->X,T>                              [15]

           ==>    <n,VP -->X,@%P%P{@INDc[T(^INDc*)]}>
```

Now let us see how these rules work. By rules 62a and
51: M51, a bare NP 'imooto' gets a translation like
        @PP{iota x imooto'(x,z1)},
        @PP{iota x imooto'(x,z2)}, etc. depending on c.
        On the other hand, by rule 61, 'zibun' is always
translated as @PP{z1}. And M52 builds a VP in which only one
variable is bound by the (semantic) subject.
        Let us take, for example, two different derivations of
(25) which respectively correspond to the interpretations (i) and
(ii) below.

```
    (25) Taroo ga [zibun no heya de imooto o nagutta.]
         Taroo hit sister in self's room.
```

```
         zibun        (i's) imooto
    (i) Taroo         Z
    (ii)Taroo         Taroo
```

On the first derivation, (35 i), by 61,62a:M51, 'zibun'
and 'imooto' are assigned z1 and z2 respectively, and in VP,(by
2:M52), only z1 is bound by subject. So we have interpretation
(i).
        On the second derivation, (35 ii) ,on the other hand,
both 'zibun' and 'imooto' are assigned z1 and in VP,(by 2:M52),
it is bound by subject. So, we have interpretation (ii). This
is schematized in (35).

```
    (35)         zibun  imooto           VP
    (i)      @PP{z1}   --(z2)--       --[@z1[--(z1)]
    (ii)     @PP{z1}   --(z1)--       --[@z1[--(z1)]
```

We can also explain the possible interpretations of
sentences (20)-(22),(24),(20)-(30), though we do not present
their step-by-step derivations.
        I further assume the following rule introducing such NP
as 'Taroo no imooto' (Taroo's sister), Taroo no subete no
kyoodai' (all of Taroo's siblings). (37) is a sample derivation.

```
    (36)   Inalienable Possession

           <63, NP --> NP[+no} NP [+rel] ,@Q[NP[+no]'(^@r[+rel]
           [NP[+rel](Q)])]>

    (37) Taroo no imooto
```

```
NP[+rel] imooto --> @PP{iota x imooto'(x,r[+rel])}
                    (62a,51:M51)
NP[+no]  Taroo no --> @PP{t}
                    (62b,3)
NP Taroo no imooto --> @QQ{iota x imooto'(x,t)}
                    (63)
```

5. Relative Clause Binding (1)

Now, having the above considerations in mind, I will go
into the problem of binding in relative clauses. A notable work
in TG framework on this subject is Akmajian and Kitagawa(1976).
Gunji (1981,1984) and Miyara (1983) also formulate this phenom-
enon in GPSG and GCG respectively.
    In the following two sections I will formalize Pattern A
relative clause and Pattern B,C relative clauses repectively.
I will show that our analysis can adequately explain the inter-
pretation of relational NP's in relative clauses, and demonstrate
that we can simultaneously explain the difference between a gap
and a relational NP (reflexive or nonreflexive).
    First of all, I assume the following rules for Pattern
A relativization. (We are, without discusssion, assuming an S-NP
structure for every relative clause, whether semantically re-
strictive or not. For a fuller analysis, see Hattori (in prepara-
tion.)

```
(38) Relativization
    <64, NP -->RC NP,@R[NP'](RC')>

(39) Relative Clause Binding 1

    <65, RC -->S/NP[+c], @r[+c][S/NP'&R(r[+c])]>        [16]
```

The following is a sample derivation.

```
(40) [Taroo ga korosita] Hanako
     Hanako,who Taroo killed
```

```
NP Hanako --> @P[P{h}&R(h)]   (54a)
S/NP[+o] Taroo ga korosita --> kill(t,r[+o])   7a,:M1,:M2)
RC --> @r[+o][kill(t,r[+o])&R(r[+o])]    (65)
NP --> @P[P{h}&kill(t,h)&R(h)]          (64)
```

Rule (39) (let us call this RC-binding 1) makes the
variable r[+c] (corresponding to a gap) be bound by the head.)
Rule (39) combines a relative clause with its head.
    Now consider the interaction of subject control of
relational NP's and RC-binding 1. See (40)-(42).

```
(40) [(gap)[zibun no heya de Hanako o nagutta]] Taroo
     Taroo, who hit Hanako in (his/her) self's room

(41) [Taroo ga [(gap) [zibun o hihans-]aseta]] Hanako
     Hanako,who Taro made to criticize (his/her) self

(42) [Taroo ga [(gap) [zibun no hanasi o s-]areta]]
```

Hanako
(Lit.) Hanako, who talked about (him/her)self on
Taroo

(Brackets indicate RC's and VP's.) In (40)-(42), gaps are in the
positions which bind 'zibun', that is, are semantic subjects of
the VP's containing 'zibun'. The interpretations of 'zibun' in
(40)-(42) is exactly analoguous to those in (8)-(10). This is
also the case if we substitute 'imooto' for 'zibun'. (as in (20-
(22).)
            Next contrast (43) to (40)-(42).

      (43) [Taroo ga [(gap) zibun no heya de korosita]] onna
            the woman who Taroo killed in himself's room.

In (43), the gap is in the position which can not bind 'zibun',
thus there is no coreferential interpretation for 'onna' (wom-
an) and 'zibun'.
            The above facts are explained naturally if we assume

      (44) (i) The head binds the gap
            (ii) The gap can bind relational NP's subject to
                 the usual condition (subject control.)
            (iii) The head cannot bind a gap and a relational
                 NP simultaneously.[17]
            (iv) Two instances of relational NP's (reflexive/
                 nonreflexive or nonreflexive/nonreflexive)
                 can be bound by the head simultaneously.(This
                 we will see in the next section.)

(i)-(iii) are automatic consequences of our rules exhibited
above. [18] ((iii) is ensured because the variables in the
translations of a gap and a relational NP are distinct, as
we noted earlier.) (iv) is explained by the rule I present in
the next section.
            The contrast between (iii) and (iv) above suggests a
significant difference between a gap and a relational NP .

                  6. Relative Clause Binding 2

      Now let us consider Pattern B and C relatives . Relative
clauses in (5) and (6) cannot be derived by rule 65 because they
do not have any gap in it. So we need the following rule which
makes the head bind the relational NP('s) in the RC.

      (45) Relative Clause Binding 2

            <66,RC -->S, @INDc[S'&R(INDc)]>

      Rule 66 , together with rule 64, derives (5) in the
following manner

      (5) [Taroo ga [zibun o hihan sita]] Hanako
            (Lit.) Hanako, who Taroo criticized (her)self

      S --> criticize(t,zl)   (61,2,1)
      RC --> @zl[criticize(t,zl)&R(zl)]   (66)

```
NP Hanako --> @P[P{h}&R(h)]                    (54a)
NP      --> @R[@P[P{h}&R(h)]](RC')              (64)
NP      --> @P[P{h}&criticize(t,h)&R(h)]
```

Our rules permit another interpretation of (5) if the VP 'zibun o hihan sita' is derived by rule 2 with the application of M52 (binding z1). In this case, (5) is interpreted as (literally) 'Hanako, who Taroo criticized himself '. But this interpretation is filtered out by pragmatic constraint to the effect that an RC must say something 'about' the head.   [19]

Now let us take a more complex example.

```
(45) Taroo wa [[musume ga [zibun no buka to kekkon
                    RC          VP1
     sita ]] Suzuki o kinodoku ni omotta.]
                                      VP2
     (Lit. Taroo felt pity for Suzuki, who daughter
     married self's buka.)  (Buka: a person working
     under somebody.)
```

(45), among others, has the following interpretations with respect to 'musume'(daughter) and 'zibun'(self).(We can explain other possible interpretations as well.)

	musume	zibun
(i's)		
(i)	Suzuki	Musume
(ii)	Suzuki	Suzuki
(iii)	Suzuki	Taroo

In (46), I schematized how interpretation (i)-(iii) are obtained by our rules.

```
        (46)  VP2      RC        VP1        musume      zibun
rule(vari-   (i)      66(z2)   :M52(z1)  3:M51(z2)    61(z1)
able)        (ii)     66(z1)             3:M51(z1)    61(z1)
             (iii)    66(z2)             3:M51(z2)    61(z1)
                  :M52(z1)
```

In interpretation (i), 'musume' is bound by the head 'Suzuki' and 'musume' in turn binds 'zibun' (by subject control. at VP1).In interpretation (ii), 'musume' and 'zibun are uniformly bound by the head 'Suzuki'. On interpretation (iii), only 'musume' is bound by 'Suzuki' and 'zibun' is bound by 'Taroo', subject of the main sentence (by subject control at VP2).

Thus our rules have predicted correctly that

(47)   RC-binding2 can bind two relationalNP's (reflex-ive/nonreflexive or nonreflexive/ nonreflexive) uniformly or individually. [20]

This is in contrast to (44)(iii) which says that a gap and a relational NP cannot be simultaneously bound by RC-bind-ingl.

7. Conclusion and Some Residual Problems

In the preceding sections I claimed that our analysis of RC-binding ,together with subject control, can correctly predicts the interaction of gap and relatonal NP's and at the same time explains the difference between a gap and a relational NP (reflexive or not) with regard to the property of being RC-bound.

Now, I am going to point out two residual problems. The first has to do with examples like (48).

(48) [Ie ga yaketa] otoko
the man whose house was burnt

In (48), the RC is related to its head 'otoko' (man) by the bare NP 'ie' (house). But we cannot regard every instance of'ie' as lexically relational.(Compare (49) with (50).)

(49) Taroo wa Hanako ni ie no e o kakaseta.
Taroo made Hanako draw a picture of (his/her/the/a) house.

(50) Taroo wa Hanako ni imooto no e o kakasera.
Taroo made Hanako draw a picture of (his/her/Z's) sister.

(49) has an interpretation in which the referent of 'ie' is totally unspecified as to its possessor. This interpretation is absent in (50) with respect to 'imooto'(sister).

In order to account for these examples, I assume the following metarule instead of regarding 'ie' as lexically ambiguous.

M53: $\langle$n,NP[-rel] --$\rangle$X,T$\rangle$
       ==$\rangle$ $\langle$NP[+rel] --$\rangle$X, @R[T]($^\wedge$@x[Poss(r[+rel],x)])$\rangle$

Poss represents a possesive relation. This metarule makes it possible to obtain a relational NP 'ie' which is subject to RC binding2 or subject control, just as an NP built up with lexically relational npu 'imooto'.   [21]

The second problem is concerned with such relative clauses as (51).(example from Akmajian (1976).)

(51) [Hanako ga iede sita] Taroo wa ----.
(Lit.)Taroo, who Hanako left home ---.

(51) has no relational NP nor a gap in it. Instead it is pragmatically implied that Taroo has some relation to Hanako, or at least to Hanako's having left home. Tentatively, we derive (51) by rule 56 in the usual manner. In this case, the translation, by way of vacuous abstraction, becomes equivalent to the conjunction of two propositions, which correspond to the contents of the relative clause and the main clause respectively. Then the implication of relation is left to some kind of pragmatic explanation. [22]

FOOTNOTES

* I wish to express my gratitude to Professor Masaaki Yamanashi for valuable comments. I must also thank Tadaharu Tanomura for helpful discussion. All remaining errors and insufficiencies are of course my own.

[1] Pattern C seems typologically marked. Out of the 50 languages listed in Keenan and Comrie (1977), Japanese is the only language which allegedly relativizes a genitive element without leaving any overtly case-coded relative pronoun or other proform.

[2] A closely related formulation is seen in Gazdar and Sag (1981)'s analysis of reflexivization in English.

[3] '@' should be read as lambda. %P ,%Q etc. are variables of type (s ,(s ,(e,t)),t)).

[4] In this paper, I consider exclusively definite specific bare NP's, thus leaving aside generic/existential bare NP's. See Hattori (in preparation) for a more detailed analysis.

[5] Following Bach and Cooper (1978) , every NP is assumed to contain a free set variable R in its translation. I will, however, sometimes omit the conjunct R(x) for simplicity.

[6] The following example seems problematic in the 'genitive gap' analysis.

> (i) Subeteno musume ga kon'yakusya to Taroo o aisiteiru.
>   All the girls love (their) fiances and Taroo.

(i) suggests that ,in the genitive gap analysis,we must permit coordinating an NP and an NP/NP[+no] .

[7] Besides those denoting relations between two human beings, expressions of a relational nature might include nouns (or noun phrases) designating some kind of inalienably-possessed things such as 'hana' (nose),'me' (eye), etc. as well as such expressions as 'rinka' (the neighbouring house), though their exact interpretation remains to be clarified.

[8] In fact, the class of possible antecedents for nonreflexive relationals overlap with that of 'zibun' though the former seems somewhat larger.

[9] For some speakers, this is not exceptionless.

[10] Z represents some contextually determined individual (most typically the speaker). Some speakers do not permit this pragmatic interpretaion of 'zibun',thus rejecting (iii) and (iv) in (26).

[11] When two nonreflexive relationals are of the same type (i.e. of the same surface form), the co-antecedent interpretation seems

strongly preferred if there is no VP dominating only one of
them, as seen in (i).

> (i) Taroo wa [hanako ni [(i)imooto no heya de (j)imooto
> no hanasi o s-]areta].
> (Lit.) Hanako talked about (j's)sister in (i's)
> sister's room on Taroo.
>
> 1. i=j=Taroo   2. i=j=Hanako ??3.i=Hanako,j=Taroo
> ??4. i=Taroo,j=Hanako

[12] We assume +rel to be a head feature.

[13] We need a two place predicate here because we cannot
extensionally distinguish ,for example 'ko' (child, in relational
sense) from another relational noun 'sison' (decendant) if we
simply assume 'ko' to denote a 'set of children' as 'dog' denote
a set of dogs. For one cannot be a child without being a decend-
ant and vice versa.

[14] I do not commit myself to the question of the status of the
level for IL translation.

[15] This rule, together with other rules, yields VP's whose
translation involves an instance of vacuous abstraction.
 Their filtering needs some extra device , though it is not
obvious to me that this is in fact necessary.

[16] To be more precise, we must add the feature +adnominal to
the relativized sentence.

[17] There is an apparent counterexample to this. See (i).

> (i) [[(gapl)(gap2) kaita] hon] ga zibun no me no mae de
>   RC1
> yakareta] gakusya
>   RC2
> (Lit.) the scholar who the book he wrote was burned
> in (him)self's presence

In standard analyses, (i) is assumed to contain two gaps (sub-
ject and object of 'kaku' (write)). Then,(i) has an interpreta-
tion in which gapl and zibun are uniformly bound by the head
'gakusya' (scholar). It may be possible to regard an NP like
'kaita hon' as a complex relational NP. Kitagawa (1976.p210.(78))
proposes a 'relevancy condition' for a topic construction which
is closely related to the above example. This condition, it seems
to me, has something to do with pragmatic retrictions imposed
on the use of relational NP's.

[18] Similar formulations are already presented by Miyara(1983)
and Gunji(1984).

[19] Gunji(1984) captures this by directly introducing a predi-
cate R (relation between an individual and a proposition) in the
translation of relative clauses.

[20] The latter is the case when we omit 'zibun' in (45) because

'buka' is another instance of relational noun.

[21] This rule is admittedly ad hoc and might be eliminated when we have some overall theory of determining reference of noun phrases (presumably theory of indexicals).

[22] This line of explanation holds as long as the head NP has a definite referent (i.e. the relative clause is nonresrictive). I do not know whether there is an example like (51) with a semantically indefinite head.

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