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Item Type	article;article
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Download date	2024-06-30 03:03:45
Link to Item	https://hdl.handle.net/20.500.14394/50166

A TRANSFORMATIONAL ACCOUNT OF SOME JAPANESE GENITIVES

Shinsho Miyara

0. Introduction

This paper is an investigation of a limited set of Japanese genitive formations, i.e. cases of genitivized forms derived from predicate, possessive, and locative nominals. The genitivized form consists of a NP plus the genitive particle no, which will be named the 'genitive form' or simply 'genitive'. I shall call the genitive construction any complex NP that contains one or more genitive forms plus a noun, e.g. [_{NP}NP-no NP-no...NP].

Let us first examine two examples of the genitive construction. The genitive forms are John-no 'John's', Bill-no 'Bill's', and sensoo syuuketu-no 'of war-ending' in (1).

- (1) a. [_{NP}John-no kuruma]-wa saisingata da.¹
Gen car Top brand-new be
'John's car is brand-new.'
- b. [_{NP}Bill-no sensoo syuuketu-no teisyoo] -wa zigi-o
Gen war ending Gen proposition Top timely
-ete iru.
be-Pres
'Bill's proposal of ending the war is timely.'

The genitive particle no is generally said to have a possessive meaning, as it clearly does in the genitive form John-no of (1a). However, in (1b) some other meanings of no can be derived from grammatical relations of the immediately preceding nouns. This is obvious from the fact that (1b) is

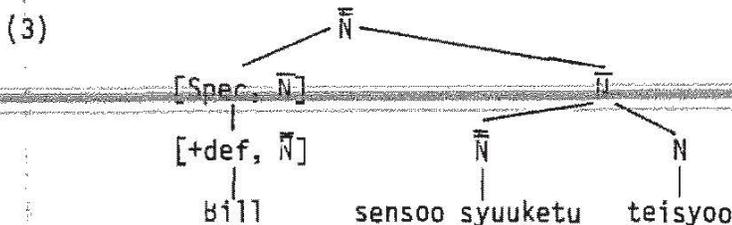
paraphrasable by (2):

- (2) [_{NP}[_SBill ga sensoo syuuketu o teisyoo sita] koto]
 Sub war ending Obj propose do-Past Comp
 -wa zigi-o-ete i-ru.
 Top timely be-Pres
 'It is timely that Bill proposed that the war should end.'

In (1b) and (2), we may identify a fundamental grammatical relation, subject, between the nominal verb teisyoo 'propose' and the preceding noun Bill or direct object between the same verb and the preceding noun sensoo syuuketu 'war-ending'. Since no in the genitive forms Bill-no and sensoo syuuketu-no of (1b) no longer has a possessive meaning, it is impossible to assign a unique semantic property to the genitive particle no.

Genitive forms can derive from noun phrases with various fundamental grammatical relations, as in (1), so that the notion 'genitivization' should be treated as a neutralization of these grammatical relations. It is thus assumed that the rule Genitivization (abbreviated as GEN) inserts the genitive particle no among contiguous NPs within a larger NP.²

In the proper underlying representation of the complex NP of (1b), the surface form NP-no NP-no Nominal Verb should somehow maintain the so-called subject-verb and object-verb relationships which are fundamental relations in a S. A rather weak version of the association of these grammatical functions is seen in Chomsky (1970), in which the common strict subcategorization feature for the 'head' lexical category of the dominating phrases \bar{N} and \bar{V} , e.g. teisyoo, +[\bar{N}], is attained by accretion to the recursive element of the base, i.e. \bar{N} in addition to S, thus enlarging the domain of the cyclic application of transformations. For example, if the internal structure of the Japanese genitive construction of (1b) were much like those of English derived nominals, it would be of the form (3):



In (3), GEN inserting the genitive particle no takes place immediately after no, and Bill and sensoo syuuketu turn out Bill-no and sensoo syuuketu-no, respectively.

What I want to investigate in this paper, however, is not the lexicalist hypothesis but the transformationalist hypothesis, which I believe is correct for a limited set of genitive forms. Such genitives are from predicate, possessive, and locative nominals; they will be derived from sentences

containing the copula and existentials that are embedded as relative clauses.

1. Copula Insertion

The view of genitive forms being derived from copula sentences in the underlying forms of relative clauses entails a relative clause reduction process. That is, the copula is deleted from the relative clause together with some auxiliary elements. In this section, I shall show that either the copula-insertion or the copula-deletion is meaning-preserving, and discuss which one is superior to the other in explaining the phenomenon we are concerned with.

Lakoff (1970) has discussed the fact that auxiliary verbs are different from 'true' verbs. The auxiliary verb be is predictable before adjectives or predicate nominals and do before true verbs in negative or interrogative sentences. Both auxiliary verbs serve only to carry tense, person, and number. Lakoff has shown that if the above syntactic fact were correctly reflected in a grammar - that is, if the predictable copula is transformationally introduced - this would play a major role in contributing to the linguistically significant generalization that adjectives and true verbs belong to the same major category V. Although his arguments are tenuous, it is true in Japanese as well that the copula is predictable before predicate nominals and functions as a carrier of tense.

Furthermore, Bach (1967) proposes that the copula have no selectional restrictions in itself and no 'lexical' meaning at all. In (4a) below, the subject noun John is a member of the class gakusei 'student', which is a predicate nominal. In (4b), however, both subject nouns and predicate nominals indicate classes; the class kuzira 'whale' is included in the larger class honyuurui 'mammal'. The subject noun kare 'he' in (4c) is identified with the predicate nominal tensai 'genius' and in (4b), the predicate nominal yotusasi 'four-legged' is a property assigned to the subject noun inu 'dog'.

- | | | |
|--------|-----------------------------------|---------------------|
| (4) a. | John wa gakusei de ar-u. | class membership |
| | Top student Prdc Cop-Pres | |
| | 'John is a student.' | |
| b. | kuzira wa honyuurui de ar-u | class inclusion |
| | whale Top mammal Prdc Cop-Pres | |
| | 'Whales are mammals.' | |
| c. | kare wa tensai de ar-u. | identity |
| | he Top genius Prdc Cop-Pres | |
| | 'He is a genius.' | |
| d. | inu wa yotusasi de ar-u | property assignment |
| | dog Top four-legged Prdc Cop-Pres | |
| | 'Dogs are four-legged.' | |

These logical relations - class membership, class inclusion, identity, and property assignment - are determined solely by the meaning relations between subject nouns and predicate nominals and have no bearing on the copula. It might be that the copula ar never contributes to the meanings of the copula sentences in (4), and as with the English auxiliary be or do, it serves as a carrier of tense. One may then suspect that the copula should not be necessarily present in the underlying structure. Since it has no distinct lexical meaning, all copula-insertion transformations qualify as meaning-preserving.

The treatment of the copula as being introduced by transformation is tantamount to saying that there are a bunch of sentences with 'verb'-less underlying structures in language, since it would not be difficult to find copula sentences, cleft sentences, pseudo-cleft sentences, and their equivalents in his language. But whether this view brings any theoretical consequences has not been known yet. The copula-insertion rule must be obligatory, because any copula sentence that does not contain the copula is unacceptable as an independent sentence. Therefore, in the event the copula, together with some auxiliary elements, is deleted in the relative clause, as in relative clause reduction, the copula is first transformationally introduced and then must be deleted by transformation on the next cycle. For the sake of economy in a theory of grammar, this is not desirable. For these reasons, I take the position that the copula is present in the underlying structure and is meaning-preservingly deleted by a transformation, copula deletion (abbreviated as COP DEL), if necessary.

2. Genitives from Predicate Nominals³

In the following examples of complex NPs, each pair is synonymous. In the (a)-series of the complex NPs the genitivized noun gakusei 'student', honyuurui 'mammal', tensai 'genius', and yotusasi 'four-legged' manifest class membership, class inclusion, identity, and property assignment, respectively. The same thing is true for the corresponding nouns in the relative clauses in the (b)-series.⁴

- (5) a. gakusei-no John
student-Gen
b. (gakusei de ar-u) John
student Prdc Cop-Pres
'John, who is a student,...'
- (6) a. honyuurui-no kuzira
mammal-Gen whale
b. (honyuurui de ar-u) kuzira
mammal Prdc Cop-Pres
'Whales, which are mammals,...'
- (7) a. tensai-no kare
genius-Gen he
b. (tensai de ar-u) kare
genius Prdc Cop-Pres he
'He, who is a genius,...'

- (8) a. yotulasi-no inu
 four-legged-Gen dog
 b. (yotulasi de ar-u) inu
 four-legged Prdc Cop-Pres dog
 'Dogs, which are four-legged,...

Since the logical relations expressed in (5-8) are exactly the ones that obtain between subject nouns and predicate nominals in (4), it is reasonable to represent each genitive, such as gakusei-no, honyuurui-no, etc. in the (a)-series, as being underlyingly a copula sentence embedded as a relative clause, as in the corresponding relative clause constructions in the (b)-series. The underlying structure of each pair would be respectively represented as in the following:

- (9) a. [_SJohn (ga) gakusei (de) ar-u] John
 Sub student Prdc Cop-Pres
 b. [_Skuzira (ga) honyuurui (de) ar-u] kuzira
 whale Sub mammal Prdc Cop-Pres whale
 c. [_Skare (ga) tensai (de) ar-u] kare
 he Sub genius Prdc Cop-Pres he
 d. [_Sinu (ga) yotulasi (de) ar-u] inu
 dog Sub four-legged Prdc Cop-Pres dog

Kuno (1973:328) assumes that some case-marking particles ga (subject), o (direct object), and ni (indirect object) are inserted by transformations. Upon the same treatment of the predicative particle de as ga, o, ni, I generally follow Kuno (1973) with respect to insertion of case-marking particles. For the sake of readability, the particles ga and de are shown in parentheses in (9). Relativization (abbreviated as REL), when applied to (9), yields the (b)-series in (5-8). A subsequent application of COP DEL-deletion of the copula ar - a spontaneous deletion of the tense element (r)u (abbreviated as TNS DEL),⁵ and GEN-insertion of no - yields the (a)-series in (5-8).⁶

There is a piece of evidence to support the validity of the assumption that each pair in (5-8) has the same underlying structure. Notice that whenever we have ungrammatical relative clause constructions like (10), the corresponding genitive constructions that have undergone COP DEL, TNS DEL, and GEN are also ungrammatical as in (11).

- (10) a. *(John de ar-u) gakusei
 Prdc Cop-Pres student
 b. *(kuzira de ar-u) honyuurui
 whale Prdc Cop-Pres mammal

- c. *(kare de ar-u) tensai
 he Prdc Cop-Pres genius
 d. *(inu de ar-u) yotulasi
 dog Prdc Cop-Pres four-legged

- (11) a. *John-no gakusei
 Gen student
 b. *kuzira-no honyuurui
 whale Gen mammal
 c. *kare-no tensei
 he Gen genius
 d. *inu-no yotulasi⁷
 dog Gen four-legged

The ungrammaticality of the forms in (10) and (11) is naturally explained by the underlying structures containing logically impossible copula sentences like (12) that are to form relative clauses.

(12a-d) would become logically true if the classes named 'student', 'mammal', 'genius', and 'four-legged one' were included in the classes 'John', 'whale', 'he', and 'dog', respectively. Of course, the truth is always the opposite.

- (12) a. *gakusei ga John de ar-u.
 student Sub Prdc Cop-Pres
 '(Any) student is John.'
 b. *honyuurui ga kuzira de ar-u.
 mammal whale
 '(Any) mammal is a whale.'
 c. *tensai ga kare de ar-u.
 genius he
 '(Any) genius is he.'
 d. *yotulasi ga inu de ar-u.
 four-legged dog
 '(Any) four-legged one is a dog.'

Shown is the underlying representations of (10) and (11) which contain logically false sentence (12) as embedded clauses.

- (13) a. [_S*gakusei ga John de ar-u] gakusei
 student Sub Prdc Cop-Pres student

- b. [_S*honyuurui ga kuzira de ar-u] nonyuurui
 mammal Sub whale Prdc Cop-Pres mammal
- c. [_S*tensai ga kare de ar-u] tensai
 genius Sub he Prdc Cop-Pres genius
- d. [_S*yotulasi ga inu de ar-u] yotulasi
 four-legged dog Prdc Cop-Pres four-legged

By REL the underlying structures in (13) should derive (10), which in turn derive (11) through COP DEL, TNS DEL, and GEN.

Furthermore, the copula sentences in (14a) and (15a) are factually true, but semantically deviant in a certain way and are therefore low in the frequency of occurrence. This semantic deviance is clearly revealed in the resulting relative clause and genitive constructions like (14c-d) and (15c-d).

- (14) a. koi wa doobutu de ar-u
 carp Top animal Prdc be-Pres
 'Carp are animals.'
- b. [_Skoi ga doobutu de ar-u] koi
 carp Sub animal Prdc be-Pres carp
- c. (doobutu de ar-u) koi
 animal carp
- d. doobutu-no koi
 Gen carp
 'carp which are animals'
- (15) a. matu wa seibutu de ar-u
 pine tree Top animate things Prdc be-Pres
 'Pine trees are animate things.'
- b. [_Smatu ga seibutu de ar-u] matu
 pine tree Sub animate things pine tree
- c. (seibutu de ar-u) matu
 animate things pine tree
- d. seibutu-no matu
 Gen pine tree
 'pine trees which are animate things'

For some pragmatic reason, what is too obvious is not worth while to mention and thus meaningless, as in 'Carp are animals' and 'Pine trees are animate

- (18) When the underlying form of a relative clause contains a copula sentence, the antecedent must be identical to the subject noun.

As far as the constraint is maintained, we can automatically prevent any surface forms from being derived from the ill-formed underlying structures (16a) and (17a) which violate the constraint (18). Consequently, genitives being derived from copula sentences by the relevant transformations must be those from predicate nominals as in (5a), (6a), (7a), and (8a), but not from subject nouns as in (16c) and (17c). The deep structure constraint in the underlying relative clauses is thus important in deriving correct surface forms as in (5-8) from the well-formed underlying structures in (9) and in ruling out unacceptable surface forms (16b), (16c), (17b), and (17c). In other words, the deep structure constraint (18), needed on independent grounds - germane to determining the acceptability of some relative clauses - is indispensable for deriving well-formed genitives and excluding ill-formed genitives. This fact undoubtedly militates in favor of the assumption that each pair in (5-8) derive from the same underlying structure containing a relative clause as in (9).

This syntactic constraint may result from the grammatical property that in copula sentences movement transformations like Topicalization of predicate nominals and Scrambling never take place. Thus the predicate NP is quite different from other NPs such as subject NP and object NP.

- (19) a. kuzira ga honyuurui de ar-u.
 whale Sub mammal Prdc Cop-Pres
 b. *honyuurui wa kuzira ga de ar-u (by Topicalization)
 mammal Top whale Sub Prdc Cop-Pres
 c. *honyuuri kuzira ga de ar-u (by Scrambling)¹⁰
 mammal whale

For such movement transformations, a predicate NP is different from other NPs immediately dominated by S. (Here, the existence of the VP node is not assumed.) As a principle, Scrambling takes place among non-verbal constituents (excluding a non-NP complement sentence), which are immediately dominated by the S node. Thus, no NP is allowed to immediately follow a predicate in a simplex sentence, and the predicate invariably takes a sentence-final position.¹¹ So the predicate V is the only major category that cannot be involved in movement transformations. In this respect, predicate NP and V are alike. This fact leaves open the possibility that a predicate NP and de ar form a syntactic constituent identical to V - that is, within a given framework that allows Phrase Structure (abbreviated as PS) rules in the base, we may conceive the following PS rules:

- (20) 1. $S \longrightarrow (\text{Adv}) (\text{NP})^n (\text{S}) \text{Pred Aux} \quad (n \geq 1)$
 2. $\text{Pred} \longrightarrow \left\{ \begin{array}{l} \text{V} \\ \text{NP COP} \end{array} \right\}$

As was mentioned above, the NP under the node Pred is very different from other NPs immediately dominated by S. The notion 'predicate NP' is properly characterized by PS rule 2: not the predicate NP immediately dominated by the Pred node, but the NPs directly dominated by the S node are involved in movement or deletion (e.g. REL) transformations. Therefore, the deep structure constraint (18) involving the peculiarities of the predicate NP seems to be a natural one.

The underlying structures of (9), (16a), and (17a) are respectively revised in the above framework, as in the following:

- (21) a. $[_{NP}[_{S} \text{John (ga)}] [_{Pred} \text{gakusei (de) ar}] -u] \text{John}$
 Sub student Prdc Cop Pres
- b. $[_{NP}[_{S} \text{kuzira (ga)}] [_{Pred} \text{honyuurui (de) ar}] -u] \text{kuzira}$
 whale Sub mammal Prdc Cop Pres whale
- c. $[_{NP}[_{S} \text{kare (ga)}] [_{Pred} \text{tensai (de) ar}] -u] \text{kare}$
 he genius Prdc Cop Pres he
- d. $[_{NP}[_{S} \text{inu (ga)}] [_{Pred} \text{yotyasi (de) ar}] -u] \text{inu}$
 dog four-legged Prdc Cop Pres dog
- e. $*[_{NP}[_{S} \text{John (ga)}] [_{Pred} \text{gakusei (de) ar}] -u] \text{gakusei}$
 student Prdc Cop Pres student
- f. $*[_{NP}[_{S} \text{kuzira (ga)}] [_{Pred} \text{honyuurui (de) ar}] -u] \text{honyuurui}$
 whale mammal Prdc Cop Pres mammal

Due to such a constraint as (18), both (21e) and (21f) are ill-formed generalized phrase markers.

Genitive constructions include neither the copula *ar* nor tense-marker. To derive the genitive constructions (5a), (6a), (7a), and (8a) it is necessary to delete the copula from the intermediate structures like (5b), (6b), (7b), and (8b) to which REL has already applied.

The genitive construction *kyoosansyugisya no John* 'John, who is a communist' can be replaced by the relative clause constructions in (22a) and (22c) without changing the original meanings of the whole sentences. Even if the rule COP DEL is meaning-preserving by itself, as was discussed in Section 1, it should apply in the restricted environment containing the present tense form *ru*. Notice that an independently-proved meaning-preserving deletion rule does not delete an element without restriction, but is further restricted in a certain way to be uniquely recoverable.

- (22) a. *minna wa* $[_{NP}[_{S} \text{kyoosansyugisya de ar-u}] \text{John}]$
 everybody Top communist Prdc Cop-Pres
 -o utagau.
 Obj suspect-Pres
 'Everybody suspects John who is a communist.'

GEN may apply internally to complex NPs and Chomsky-adjoins the genitive particle no to an NP-constituent which precedes the head noun.

To recapitulate, a first point is that the sequence of these transformations are undoubtedly meaning-preserving. The necessity of REL is widely known, so there is no doubt for its existence. The derivation of two possible surface forms in (5-8) differs crucially in the application versus nonapplication of COP DEL. More accurately, the input to this rule is a possible surface structure and only an optional transformation is reasonable. This rule, COP DEL, is truly optional. The meaning-preservingness of COP DEL has been already discussed in detail. The COP DEL is applied to the copula only when it is followed by the present tense form, and the subsequent obligatory TNS DEL deletes this particular present tense form. This series of these two deletion rules are, thus, uniquely recoverable, disallowing the interpretation of the past tense. GEN is obligatory in that any NP-NP construction that is not affected by the insertion of the genitive particle no is ungrammatical, and is meaning-preserving in that this particle is a mere marker with no semantic content.

The genitive particle no in (5a), (6a), (7a), or (8a) is a mere marker of the accompanying NP having certain grammatical and logical (or semantic) relations to the underlying subject NP. The sources of logical relationships, class membership, class inclusion, identity, and property assignment, and some natural semantic associations as well, which obtain between subject nouns and predicate nominals, are directly explained under the transformational analysis that a copula sentence is embedded as a relative clause in a noun phrase. The fact that the derivation of some genitive forms entertains the deep structure constraint (18), which is indispensable for precluding the derivation of unreducible copula sentences with the negative na-i as in (a) in note 9, provides evidence that all the genitive forms in this section are from relative clauses. We have seen that a pragmatically-determined fact lends support to our analysis. Another advantage of the transformational analysis is that not only unacceptable genitive constructions like (11), (16c), and (17c), but also unacceptable relative clause constructions like (10), (16b), and (17b) are naturally ruled out as ungrammatical.

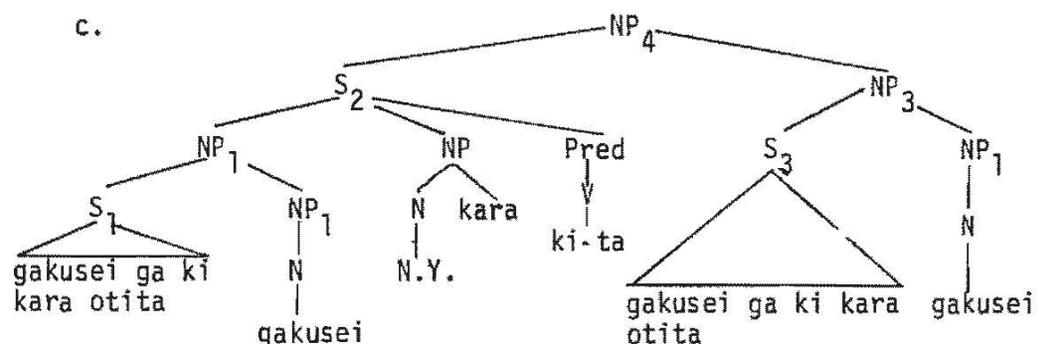
3. The Internal Structure of Relative Clause and Genitive Construction

~~In the preceding section, we have seen that relative clause (RC, henceforth) constructions, i.e. (NP₁ de ar-u)SNP₂, and genitive constructions, i.e. NP₁-NP₂, are the same with respect to logical relations and pragmatically-based meaning association of the internal constituents NP₁ and NP₂, and that whether or not a certain genitive construction is acceptable directly correlates with the acceptability of the corresponding RC construction. In this section, we will see the internal structure of noun phrase, focusing our attention on complex RCs.~~

The noun phrase in Japanese allows multiple embedded sentences as RCs: (24a) contains two embedded sentences and is interpreted as (24b). The complex RC construction, as suggested by Inoue (1976:203-213), would be

roughly of the following underlying structure (24c):

- (24) a. (N.Y. kara ki-ta) (ki kara oti-ta) gakusei
 Src came tree Src dropped student
 b. a student x such that x came from N.Y. and x dropped
 from a tree



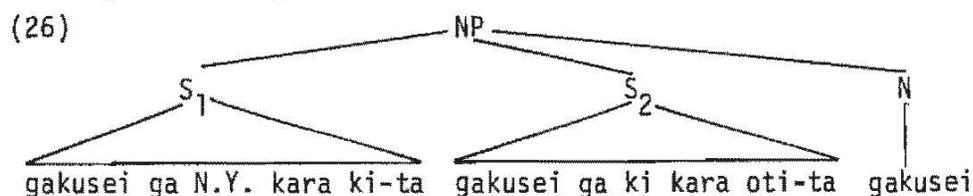
In (24c), $NP_1 = NP_3$ and NP_4 are RC constructions.

The underlying structure (24c) appears to be well motivated semantically. In (24c), both NP_1 and NP_3 have their embedded sentences, S_1 and S_3 , respectively, and gakusei has its head, and the next higher NP_4 has an embedded S_2 , the underlying RC, and the whole RC construction NP_3 as its head. Suppose we have still another higher NP as a RC construction, then the whole NP_4 becomes its head. Thus the complexity of the structure of RC construction enormously increases as a new NP as RC construction is superimposed. The reading of the structure of the sort seems to be too complex,¹³ as compared with the fact that the semantic reading is rather simple.

The seemingly semantically-based underlying structure (24c) runs into a difficulty when we represent that (25a) and (25b) are synonymous. By parity of reasoning with the analysis proposed by Inoue (1976), the underlying structure of (25b) would be different from (24c). For the interpretation of both forms, refer to (24b).

- (25) a. (N.Y. kara ki-ta) (ki kara oti-ta) gakusei (=24a)
 Src came tree Src dropped student
 b. (ki kara oti-ta) (N.Y. kara ki-ta) gakusei
 tree Src dropped Src came student

The fact reflected in (25) may be straightforwardly represented in the following underlying structure (26):



Conjoined sentences are sensitive to the precedence relation in time sequence, as is indicated by the ungrammaticality of (27b).

- (27) a. gakusei ga N.Y. kara ki-ta sosite, ki kara oti-ta.
 student Sub Src came Conj tree Src dropped
 'The student came from N.Y. and dropped from a tree.'
- b. *gakusei ga ki kara oti-ta sosite, N.Y. kara ki-ta.
 student Sub tree Src dropped Conj. Src came
 *'The student dropped from a tree and came from N.Y.'

On the other hand, (28), in which two sentences are not conjoined but juxtaposed, behave differently. Compare (27) with (28):

- (28) a. gakusei ga N.Y. kara ki-ta; (sono) gakusei ga ki
 student Sub Src came that student Sub tree
 kara oti-ta.
 Src dropped
 'A student came from N.Y.; the student dropped from a tree.'
- b. gakusei ga ki kara oti-ta; (sono) gakusei ga N.Y.
 tree Src dropped that
 kara ki-ta.
 Src came
 'A student dropped from a tree; the student came from N.Y.'

I assume that the correct underlying representation of (25) is of the form (26), in which S_1 and S_2 are not of co-ordinate structure, but juxtaposed constituent sentences.¹⁴ the reason is that, if (25) are reduced from juxtaposition of S_1 and S_2 in (26), we can explain adequately why (15) are impervious to such a restriction on time precedence relation.

Another constituent of the noun phrase is demonstrative. The noun phrase allows a (relatively) free word order of demonstrative and one or more constituent sentences. The demonstrative ano may precede or follow a RC in the presence of their head noun.

- (29) a. ano (S_1 N.Y. kara ki-ta) (S_2 ki kara oti-ta) gakusei
 that Src came tree Src dropped student
 wa gengogaku senkoo da.
 Top linguistics major Cop
- b. (S_1 N.Y. kara ki-ta) ano (S_2 ki kara oti-ta) gakusei
 that
 wa gengogaku senkoo da.
 linguistics

- c. (S₁N.Y. kara ki-ta) (S₂ ki kara oti-ta) ano gakusei
 wa gengogaku senkoo da.
 linguistics
 'That student who came from N.Y. and who dropped from a
 tree is a linguistics major.'

The same thing is exactly true even if the order of the two RCs is reversed. Notice that the underlying structure of the form (26) lends a straightforward account of a free word order among prenominal constituents, because they are all sister constituents, S₁, S₂, and demonstrative, of a noun phrase.

Now let us consider the sentences (30), in which each subject noun phrase contains a demonstrative ano 'that', a RC, and a genitive reduced from a RC.

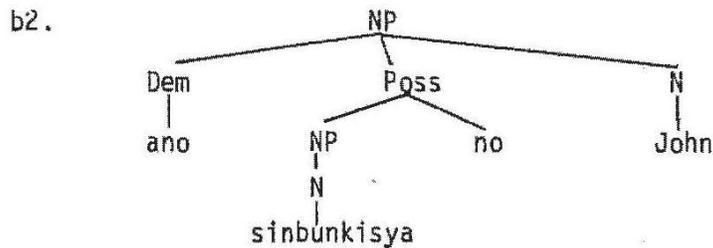
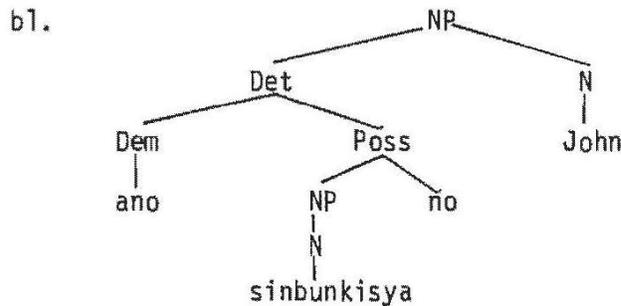
- (30) a. ano (Vietnam e it-ta) sinbunkisya no John wa
 that Dir went reporter Gen Top
 imadani modora-nai
 yet return-not
 b. (Vietnam e it-ta) ano sinbunkisya no John wa...
 that
 c. (Vietnam e it-ta) sinbunkisya no ano John wa...
 that
 d. ano sinbunkisya no (Vietnam e it-ta) John wa...
 that
 e. sinbunkisya no ano (Vietnam e it-ta) John wa...
 that
 f. sinbunkisya no (Vietnam e it-ta) ano John wa...
 that

'That John who was a newspaper reporter and who went to
 Vietnam has not returned yet.'

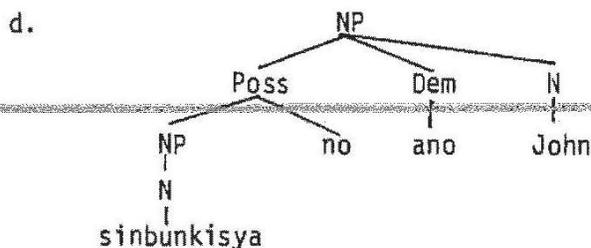
As a prenominal modifier, the genitive form sinbunkisya no in (30) is involved in reordering with a RC and demonstrative. As is evident from comparison of (29) and (30), the equal status of the genitive, a RC, and demonstrative as prenominal modifiers, allowing a free reordering among them, can be represented by means of immediate constituency. We may seek parallelism from a S, which allows a relatively free word reordering among non-verbal constituents, i.e. NPs and Adv's, which are immediately dominated by the S. As our analysis goes, the underlying structure of the complex NP of (30) is of the form: [_{NP} Dem S S NP], which is the same phrase structure as that of (29). Our analysis of the genitive thus provides a straightforward account of the reordering of the prenominal constituents.

Given a lexicalist hypothesis, as shown in (3), one might propose that the source of the genitives be a Possessive (Poss), and the underlying form of the complex NP in (31a) be represented in (31b-1). An alternative analysis of (31a) is shown in (31b-2).

- (31) a. [_{NP} ano sinbunkisya-no John] o sitte imasu ka.
 that reporter Gen Obj know Ques
 'Do you know that John who is a reporter?'



- c. [_{NP} sinbunkisya-no ano John] o sitte imasu ka.
 reporter Gen that Obj know Ques



A uniform treatment of (31a) and (31c) may select (31b-2), rather than (31b-1), as the underlying form of (31a), and the representations, not (31b-1), directly accounts for a free word order among demonstrative and the genitive, which are immediately dominated by a NP.

The lexicalist hypothesis instantly runs into a problem, however. As was discussed in great detail in the preceding section, the ungrammaticality of (32a) and (32b) can be entirely due to the logically ill-formed or

non-sensical RC sentences, such as *sinbunkisya ga John de ar-u '(Any) newspaper reporter is John'.

- (32) a. *ano John-no sinbunkisya
 that Gen reporter
 b. *John-no ano sinbunkisya
 Gen that reporter

To formulate such restrictions in terms of semantic interpretation rules would be rather a complex matter.

Another piece of evidence for a transformationalist hypothesis is taken from a consideration of a complex genitive construction (33a), which exclusively means (33a-1), not (33a-2). There seems to be a general constraint, as suggested by the unacceptability of (33b-c), that no two copula sentences form juxtaposed RCs. (33a) with an interpretation of (33a-2) takes as an intermediate structure the form (33b), which would be an acceptable surface form without the constraint. That is, the underlying structures of (33a-2) and (33b), which happen to be the same, take the application of the same constraint and the resulting surface forms are therefore ungrammatical. The constraint is needed to exclude (33c) even in the lexicalist position. Thus the unacceptability of (33b) with juxtaposed RCs directly accounts for the impossibility of the interpretation (33a-2) of (33a).

- (33) a. ani -no sensei -no John
 brother Gen teacher Gen
 1. 'John, who is my brother's teacher'
 2. 'John, who is my brother and (who is) a teacher'
 b. *(ani de ar-u) (sensei de ar-u) John
 brother Prdc Cop teacher Prdc Cop
 c. *(ani de na-i) (sensei de na-i) John
 brother Prdc Neg teacher Prdc Neg

The genitive form ani-no 'my elder brother's' in (33a) would be derived not from the underlying RC with the copula, but from a possessive sentence embedded as the underlying RC.¹⁵

(33b-c) become acceptable when the juxtaposed RCs take a co-ordinate structure; the meaning (33a-2) is expressible by (35) with a co-ordinate structure. First, let us observe an interplay of Conjunction Reduction and Gapping in the relevant construction. Conjunction Reduction deletes the subject NP John ga in the second conjunct as in (34b) and subsequently, a tense form (r)u or a copula ar plus its tense form u are gapped, as in (34c-d). The form of the Japanese co-ordinator varies according to the type of conjoined constituents, but no further discussion is made in this paper.

- (34) a. John ga ani de ar-u, sosite John ga sensei de ar-u.
 brother Prdc Cop-Pres and teacher Prdc Cop-Pres.
 b. John ga ani de ar-u, sosite sensei de ar-u.
 brother Prdc Cop and teacher
 c. John ga ani de ar-i, sensei de ar-u.
 brother Cop-and teacher Cop
 d. John ga ani de, sensei de ar-u.
 brother Pred teacher Prdc Cop-Pres
 'John is my elder brother and (is) a teacher.'

Now, we will see how the embedded (34) is interrelated with REL. (35b-d) are derived when REL takes place on the subsequent cycle after (34b-d) have been generated as RCs. Out of the three possible surface forms, RC in (35d), containing a conjoined predicate nominal, meet the structural description of GEN, and (35e) is given. For a general reduction process of compound particles like de-no, cf. note 6.

- (35) a. (_SJohn ga ani de ar-u sosite, John ga sensei
 Sub brother Prdc Cop-Pres and Sub teacher
 de ar-u) John
 Prdc Cop
 b. (_Sani de ar-u, sosite sensei de ar-u) John
 brother Cop and teacher Cop
 c. (_Sani de ar-i, sensei de ar-u) John
 brother Cop-and teacher Cop
 d. (_S[_{NP}ani de, sensei de] ar-u) John
 brother Prdc teacher Prdc Cop
 e. (_S[_{NP}ani de, sensei ___] -no) John
 brother Prdc teacher Gen

'John, who is my brother and who is a teacher'

A remarkable fact is a retention of the predicative particle de in the conjoined predicate nominal in the genitive construction (35e).¹⁶ This fact lends a strong support to the analysis of the genitive form in (35e) being derived from a predicate nominal.

4. Genitives from Other Predicate Nominals

There are a certain type of copula sentences in which predicate nominals are followed by case-marking particles like kara (Source), made (Terminus), e (Direction), to (Comitative), and de (Instrument).¹⁷ The predicate nominal in (36e) has a demonstrative kono 'this' as an optional constituent.

- (36) a. eiga wa rokuzi kara de ar-u.
 movie Top 6 o'clock Src-Prdc Cop-Pres
 'The movie is (or starts) at 6 o'clock.'
- b. tabi wa America made de ar-u.
 trip Top Trm-Prdc Cop-Pres
 'The trip is (destined) to America.'
- c. hikooki wa London e de ar-u.
 plane Dir-Prdc
 'The airplane is (bound) for London.'
- d. sigoto wa Bill to de ar-u.
 job Com-Prdc
 'The job is with Bill.'
- e. kizu wa (kono) naihu de de ar-u.
 cut this knife Ins-Prdc
 'The cut is (done) by this knife.'

If we have (36a-e) in the underlying forms of RC, the genitive constructions, whose genitives are derived from the above predicate nominals and particles through the successive application of REL, COP DEL, TNS DEL, and GEN, are perfectly grammatical. Needless to say, the deep structure constraint (18) is called into playing its role, thus blocking the derivation of (38).

- (37) a. rokuzi kara-no eiga
 6 o'clock Src-Gen movie '6 o'clock movie'
- b. America made-no tabi
 Trm-Gen trip 'the trip to America'
- c. London e-no hikooki
 Dir-Gen plane 'the plane for London'
- d. Bill to-no sigoto
 Com-Gen job 'the job with Bill'
- e. (kono) naihu de-no kizu
 this knife Ins-Gen cut 'a cut by this knife'
- (38) a. *eiga kara-no rokuzi
 movie Src-Gen 6 o'clock
- b. *tabi made-no America
 trip Trm-Gen
- c. *hikooki e-no London
 plane Dir-Gen

- d. *sigoto to-no Bill
 job Com-Gen
- e. *kizu de-no (kono) naihu
 cut Ins-Gen this knife

A strong argument against the lexicalist hypothesis is that it cannot provide any straightforward account of such genitives as (37a-e) with the case marking particles. In our analysis, they are derived in exactly the same way as the genitives were formed from 'simple' predicate nominals in the preceding sections.

Let us consider some examples relevant to (37e).

- (39) a. [_Skizu ga kono naihu de-de ar-u] kizu
 cut Sub this knife Ins-Prdc Cop-Pres cut
- b. [_{NP}kono naihu de] -no kizu (=37e)
 this knife Ins-Gen cut
- c. *_{NP}___ naihu de] -no kono kizu
 knife Ins Gen this cut
 'a cut by this knife'
- (40) a. kono [_Skizu ga naihu de-de ar-u] kizu
 this cut Sub knife Ins-Prdc Cop-Pres cut
- b. kono [_{NP}naihu de] -no kizu
 this knife Ins Gen cut
- c. [_{NP}naihu de] -no kono kizu
 this cut
 'this cut by a knife'

The derivation of (39b) needs the convention of S-pruning in addition to the transformational process discussed in the above (cf. note 6). As (39c) shows, movement of the demonstrative *kono* out of the genitized NP is disallowed; otherwise, it will have the structure of (40c) derived from a different deep structure (40a). (40b) is produced by reversing the order of the demonstrative and the genitive. Notice that only non-nominal constituents immediately dominated by the NP node can be reordered freely. (40b) and (39b) happen to show the same phonetic form, whose semantic ambiguity can be attributed to the structural difference without any difficulty in our analysis.

The above analysis, however, embodies a problem. The corresponding RC constructions are all very awkward. This renders COP DEE obligatory for predicate nominals of this type.

- (41) a. ??(rokuzi kara-de aru) eiga
 6 o'clock Src movie
 b. ??(America made-de aru) tabi
 Trm trip
 c. ??(London e-de aru) hikooki
 Dir plane
 d. ??(Bill to-de aru) sigoto
 Com job
 e. ??(naihu de-de aru) (kono) kizu
 knife Ins this cut

No explanation of the deep structure sources of (36) has been given so far in the literature. One of the peculiarities of (36) is that noun phrases with such case-marking particles as kara, made, etc. are naturally associated with verbs. For instance, kara (Source), made (Terminus), and e (Direction) are related with verbs of motion. Whatever the underlying structures of (36) may be, it is no doubt that the genitive construction (37) should be derived from (intermediate) structures with RC sentences like (36). The fact of COP DEL being obligatory seems to be more or less related to the peculiarity of (36).¹⁸

5. Genitives from Possessive and Locative Nouns

In the preceding sections, RCs containing copula sentences were given as the source of a type of genitive forms. In this section, we will discuss that the genitive forms should be derived from possessive or locative sentences embedded as RCs.

Just as in copula sentences predicate nominals designate a few logical relations to subject nouns, so do possessive nouns in the first NPs of (42a-b) indicate possessive relations like possession and kinship relation. Likewise, locative nouns may show locative relations such as spatial location as in (42c) and temporal location as in (42d).

- (42) a. John ni (wa) sutereo ga ar-u. possession
 IO Top stereo Sub Exs-Pres
 'There exists a stereo to John, or John as a stereo.'
 b. kare ni (wa) imooto ga i-ru. kinship relation
 he IO Top sister Sub Exs-Pres
 'There exists a sister to him, or he has a sister.'
 c. yane ni tori ga i-ru. spatial location
 roof Loc bird Sub Exs-Pres
 'There is a bird on the roof.'

- d. gogatu ni maturi ga ar-u. temporal location
 May Loc festival Sub Exs-Pres
 'There is a festival in May.'

Possessive or locative sentences are different from copula sentences in many ways. First, movement transformations like Scrambling and Topicalization take place in possessive and locative sentences; (43b) and (44b) are cases in which Scrambling takes place in the possessive sentence (43a) and in the locative sentence (44a), respectively.

- (43) a. kanozyo ni musuko ga hitori i-ru.
 she IO son Sub only Exs-Pres
 b. musuko ga hitori kanozyo ni i-ru.
 son Sub only she IO
 'She has the only son.'
- (44) a. niwa ni risu ga i-ru.
 yard Loc squirrel Sub Exs-Pres
 b. risu ga niwa ni i-ru
 squirrel Sub yard Loc
 'There is a squirrel in the yard.'

Second, all the noun phrases in possessive and locative sentences are relativizable. (45a-d) are cases, in which (42a-d) are respectively contained in the underlying forms of RCs and each subject noun is relativized.

- (45) a. (_SJohn ni ar-u) sutereo
 IO Exs-Pres stereo 'the stereo which John has'
 b. (_Skare ni i-ru) imooto
 he IO Exs-Pres sister 'a sister who he has, or
 his sister'
 c. (_Syane ni i-ru) tori
 roof Loc bird 'the bird (which is) on
 the roof'
 d. (_Sgogatu ni ar-u) maturi
 May Loc festival 'the festivals (which are)
 in May'

The forms in (45a-b) are awkward, which will be discussed later.

The subject nouns are not the only nouns to be relativizable; possessive or locative nouns can be relativized leaving the subject nouns behind, as in (46):¹⁹

- (46) a. (_Ssutereo ga ar-u) John
 stereo Sub Exs-Pres 'John, who has a stereo'

- b. (_Simooto ga i-ru) kare
sister Sub Exs-Pres he 'he, who has a sister'
- c. (_Stori ga i-ru) yane
bird Sub Exs-Pres root 'the roof the bird is on'
- d. (_Smaturi ga ar-u) gogatu
festival Sub Exs-Pres May 'the month of May in which
there is a festival'

Thus, the argument that a predicate NP is dominated by Pred in the underlying structure is not directly applied to possessive and locative sentences. Rather, the fact relating to movement transformations or REL may preclude a uniform treatment of genitives from predicate nominals and those from possessive and locative nouns.

The possessive or locative relations in the above two-NP sentences are maintained in the following complex NPs, which can be derived from (45) through REL, a RC reduction process, and GEN.

- (47) a. John-no sutereo possession
-Gen stereo
'John's stereo'
- b. kare-no imooto kinship relation
he-Gen sister
'his sister'
- c. yane-no tori spatial location
roof-Gen bird
'a bird on the roof'
- d. gogatu-no maturi temporal location
May -Gen festival
'festivals in May'

Gen never applies to the structures in which possessive or locative nouns are relativized. For, when REL is being applied to such nouns, the remaining subject nouns in the RCs of (46) are genitivized yielding the following unacceptable genitive constructions:

- (48) a. *sutereo-no John
stereo Gen
- b. *imooto-no kare
sister Gen he
- c. *tori-no yane
bird Gen roof

d. ?(Bill ni omosiro-i) yakyuu

IO interesting baseball

'the baseball Bill is interested in'

The more general restriction on the surface order, however, turns out to provide an explanation for the clumsiness in (52) and (53), as well as (45a-b), if applied to the order NP+IO - Adjective or Existential. Correspondingly, our analysis, dispensing with the above otiose constraint on REL or the deep structure, is compatible with a rather general restriction on the surface ordering.

Let us consider (54). (54a) is ambiguous or indecisive whether it has a locative or possessive meaning. The meaning is completely contingent on whether the understood NP is a possessive NP or a locative NP. A similar, but different, instance is seen in (54b), where a property of the verb age- 'give' uniquely determines what type of NP to be filled in the vacated position.

(54) a. ___ imooto ga i-ru.

sister Sub Exs-Pres

'There exists a sister ...'

b. John wa ___ ningyoo o age-ta.

Top doll Obj give-Past

'John gave a doll ...'

The fact in (54a) suggests that the existential verb ar and i have a primitive meaning 'to exist', which varies according to the type of the preceding NP, i.e. the indirect object (or dative) NP, containing an animate noun, or the locative NP. Thus the indirect object NP or locative NP is absolutely necessary in the underlying structure of (54a) to yield the possessive or locative meanings. This is a strong argument for the transformationalist hypothesis.

The possessive or locative meaning generated in this way is further varied by the type of subject noun or semantic relations between the subject noun and the possessive or locative noun. For instance, the subject noun with a kinship term in (55a) designates a kinship relation and the subject noun meaning a possessivizable object, a possession. An interesting case is seen in (55c), in which the meaning relations depend upon the situation - that is, 'John has Mary (as his partner, his secretary, his girl friend, his wife, etc.).'

(55) a. John ni imooto ga i-ru.

IO sister Sub Exs-Pres

'John has a sister.'

b. John ni Fiat ga ar-u.

IO Sub Exs-Pres

'John has a Fiat.'

c. John ni Mary ga i-ru.

IO Sub Exs-Pres

'John has Mary.'

The various situational meanings in (56c), as well as the possessive relation, are expressible in the following genitive form (56a):

- (56) a. $[_{NP}[_{NP}\text{John}]\text{-no Mary}]$
 Gen
 b. $[_{NP}(_S\text{John ni i-ru}) \text{Mary}]$
 IO Exs-Pres
 c. $[_{NP}(_S\text{John ni Mary ga i-ru}) \text{Mary}]$
 IO Sub Exs-Pres
 'Mary, whom John has, or John's Mary'

What I point out here is that the very situational meanings expressible in the sentence are directly carried into the corresponding genitive construction. Suppose that it is true that as we have seen, the possessive (or locative) meaning is defined on the basis of the functional structure of indirect object or dative NP (or locative NP) + subject NP + Exs. Furthermore, if the situational meaning were a further specification of such a possessive or locative meaning, this is at least preferable in our analysis. It is natural to assume that (56b) derives from (56c), the underlying structure, by REL. It is not clear, however, what kind of rules are necessary to derive (56a) from (56b). I tentatively take the analysis of (56a) being derived by reduction of the RC, in which the existential ar or i and the present tense form ru are deleted in the presence of the preceding possessive or locative NP in the underlying RC. This reduction, e.g. (47) with genitives from the RC constructions (45), has been demonstrated to be meaning-preserving.²¹

6. Summary

We have so far made a transformational account of a limited set of genitive constructions. The advantages of the treatment are that we can naturally relate genitive constructions and RC constructions and explain some semantic deviation or ungrammaticality of some genitive constructions on the basis of syntactic evidence. The analysis we have employed is reminiscent of Bach's proposal (1968) that the RCs with predicate nominals be a basis of the introduction of simple nouns. What we have been proposing in this paper is that a limited set of complex nouns of the form, NP-no N, be derived from the RCs with predicate nominals and locative or possessive nouns. This results in supporting his assumption.

There are seen several logical relations in copula sentences or some meaning relations in existential sentences; meanings of no deduced from NP-no N constructions are identical to the very logical relations between the subject noun and the predicate nominals in copula sentences or to several possessive or locative relations in existential sentences. This fact is naturally traceable in the transformationalist approach. However, the lexicalist analysis has to assign the various meanings or logical relations to the genitive particle no, possibly, by some semantic interpretation rules, though no is a mere marker alluded to the above, and to

determine under what conditions such meanings or logical relations are selectively assigned to no would be a serious problem.

Needless to say, we have only scratched the surface of the Japanese genitive formation. That is, an interplay of nominalization and genitivization would be an interesting topic, and there are some problems on the genitives from copula and existential sentences yet to be unravelled, e.g. an inalienable possession as in kare no kao [he Gen face] 'his face', an issue of whether only definite nouns are relativizable and the definiteness should be represented by a feature or a syntactic category, etc.²²

The genitives with some logical relations are derived from the underlying forms of RC with predicate nominals by the successive application of REL, COP DEL, TNS DEL, and GEN. It was proved that the whole derivation is meaning-preserving, and the two deletion rules are uniquely recoverable. We showed that genitive formation from the underlying RCs with possessive or locative nouns is plausible along the line we discussed in cases of predicate nominals; the genitives with possessive or locative relations are suggested to be derived from the corresponding RCs by a meaning-preserving transformation, RC reduction. We also showed that the transformationalist approach is much preferable to the lexicalist one in this case too. In sentences with the copula, only the subject is deleted by REL and there is therefore no possibility that the subject be genitivized, but only predicative nominals are genitivized. Such a constraint on copula sentences in the underlying RCs proved to be a natural one.

Footnotes

*This is an extensively revised and expanded version of Miyara (1975). I am especially grateful to Takatsugu Oyakawa for having read and commented on a very early version of this paper. I would also like to express my gratitude to Emmon Bach, Barbara Partee, and especially Lisa Selkirk for many valuable comments and many helpful stylistic suggestions. Naturally, I am responsible for any errors in this paper.

1. Some abbreviations to appear in the text are illustrated as follows:

Top	Topic marker	Com	Comitative
Sub	Subject marker	Src	Source
IO	Indirect Object	Ins	Instrumental
Trm	Terminus	Dir	Directional
Loc	Locative	Comp	Complementizer
Pres	Present	Cop	Copula
Conj	Conjunction	Ques	Question marker
Prdc	Predicative particle	Exs	Existential

2. Some genitive forms may consist of an adverb of time or place and the genitive particle no. Examples are shown below.

- (a) asoko-no hon o tot-te kudasai.
 there-Gen book Obj take-Gerundive Command
 'Please take me a book over there.'

- (b) kono atari-no ki wa aki ni kooyoo su-ru.
 around here-Gen tree Top fall Loc autumn tints do-Pres
 'The leaves of the trees around here turn red and yellow in fall.'
- (c) kinoo-no sigoto wa turakat-ta.
 yesterday-Gen job Top rough-Past
 'Yesterday's job was tough.'

3. To my knowledge, within the framework of transformational grammar (TG), Okutsu (1964) first dealt with the Japanese nominalization of copula sentences by virtue of a generalized transformation that was a generally accepted concept in the very early stage of TG.
4. The copula takes either form, da or ar, in simplex sentences, although da is more widely used than ar. In the noun phrase complement sentences, however, only the form ar is permitted. Therefore, as far as the base form of copula is concerned, ar is preferable to da in that the former is of a wider distribution, as shown in the following:

- (a) [_{NP}(_SJohn ga gakusei de ar-u) koto] wa zizitu da.
 Sub student Cop Comp Top fact Cop
 'That John is a student is true.'
- (b) * [_{NP}(_SJohn ga gakusei da) koto] wa zizitu da.
 Sub student Cop Comp Top fact Cop

The same thing is true in the relative clause.

- (c) [_{NP}(_Ssinbunkisya {_{de} ar-u }_{*da}) John] wa nakanaka
 reporter Prdc Cop Pres Top hardly
 yasumi ga mora-e -nai.
 day-off Sub get-can-Neg.
 'John, who is a newspaper reporter, can hardly get his day-off.'

Only the copula ar is possible in such embedded clauses as toki 'when'-clause, nara(ba) 'if'-clause, and many others.

Incidentally, the diachronic change of de-ar to da is a well-known fact among traditional grammarians. Nothing is mentioned here about another possible copula na, cf. note 18.

5. The rule deleting the tense element will be discussed in detail later in this section.
6. Ga/O Deletion, as stated in Kuno (1973:335), is 'a very general transformation that deletes ga and o when they are followed by some

- (b) watasitati roodoosya 'we workers'
 we worker

The two forms are paraphrasable by the relative clause constructions (c) and (d).

- (c) (nipponzin de ar-u) wareware 'we, who are Japanese'
 Japanese Prdc Cop-Pres we
 (d) (roodoosya de ar-u) watasitati 'we, who are workers'
 worker we

The genitive constructions being derived from (c) and (d) are as in the following:

- (e) nipponzin-no wareware
 Japanese-Gen we
 (f) roodoosya-no watasitati
 worker Gen we

If the ordering of the two composite nouns, i.e. A and B, of each example is paid attention to, co-relations among the three distinct forms are illustrated below. The type (iii) below will be named appositive constructions.

- (g) i) (A de ar-u) B
 ii) A-no B (genitive construction)
 iii) B (-no) A (appositive construction)

where (ii) derives from (i) by COP DEL, TNS DEL, and GEN and (iii) could be related to (ii).

Further examples of these kinds are as follows:

	relative clause construction	genitive construction
(h)	(yotiasi de ar-u) inu four-legged Prdc be-Pres dog	yotiasi-no inu four-legged Gen dog
(i)	(kyoosansyugisya de ar-u) John communist	kyoosansyugisya-no John

The corresponding appositive constructions are seen below.

- (j) (inu-no yotiasi) to kitara, nigeasi ga hayai.
 dog Gen four-legged as-for flight quick
 'As for the dog, four-legged, it is quick at flight.'

- (k) (John-no kyoosansyugisay) to kitara, hon bakari yonde iru.
 Gen communist as-for book only read-ing
 'As for John, a communist, he is reading all the while.'

The appositive constructions, i.e. 8-no A, in (j-k) can be substituted by the genitive constructions (h-i), i.e. A-no B, without changing the original meanings of (k-l).

8. For a detailed discussion of deep structure constraint, see Perlmutter (1971).
 9. This constraint is indispensable for deriving the correct form (a) and excluding the incorrect form (b) from negative copula sentences embedded as relative clauses.

- (a) (gakusei de na-i) John
 student Neg-Pres
 'John, who is not a student.'
 (b) *(John ga na-i) gakusei
 Sub Neg-Pres student
 '?a student who John is not'

Basically, GEN applies to the NP-NP constructions and the intervention of the negative na and the tense form i between the predicate NP gakusei de and the head noun John in (a) precludes the application of GEN.

As the English translations of (b) and (17-18) show, this constraint seems to be applicable in English. For more odd or marginal characters of the English predicate nominal, cf. Bach (1968:103-104).

10. The particle de immediately following predicate nominals is different from so-called case-marking particles in that it has a morphological property like the topic marker wa, since both are capable of constituting compound forms with case-marking particles, such as kara-wa or kara-de, and ni-wa or ni-de.

- (a) Jiroo-kara-wa okurimono ga todoita.
 Jiro Sre Top present received
 'As for Jiro, I received a present from him.'
 (b) eiga wa rokuzi kara-de aru.
 movie Top 6 o'clock Src-Prdc is
 'The movie is, or begins, at 6 o'clock.'
 (c) Tokyo-ni-wa hune de itta.
 Dir Top ship Ins went
 'As for Tokyo, I went there by ship.'

- (d) kare wa asu London-ni -de aru.
 he Top tomorrow London Dir Prdc is
 'He is, or leaves, for London tomorrow.'

As shown in the above examples, it constitutes a distributional class different from case-marking particles. The same thing is true in cleft sentences:

- (e) kono hon o kaita no wa Taroo (ga) de aru.
 this book Obj wrote one Top Taro Sub Prdc is
 'It is Taro who wrote the book.'
- (f) Taroo ga kaita no wa kono hon (o) de aru.
 Taro Sub wrote one Top this book Obj Prdc is
 'It is this book that Taro wrote.'

This fact suggests that (19a) effected by Scrambling be (g), i.e. (19c), rather than (h).

- (g) *honyuurui kuzira ga de ar-u (=19c).
 mammal whale Sub Prdc Cop-Pres
- (h) *honyuurui de kuzira ga ar-u.
 mammal Prdc whale Sub Cop-Pres

For a detailed discussion of this matter, see Miyara (1976).

11. This is an over-simplified statement, because some auxiliary elements can follow the V, as shown in (20).
12. The main difference between the English and the Japanese tense adjustment in the embedded clause is that it may be mostly obligatory in English, but it is optional in Japanese.
13. There is no doubt that Inoue is aware of this structural complexity attributed to the RC of the form (25). However, it is assumed in Inoue (1976) that a cyclic application of REL imparts a correct surface form.
14. This does not lead to the conclusion that there is no co-ordinate structure embedded as a RC. A discussion of co-ordinate structure embedded as RC will be seen later in this section.
15. Genitives derived from possessive nominals are discussed in section 4.
16. Out of the four homophonous de in Japanese, the three forms function as the delimitative de, as in hitori de 'alone'; the locative de, as in soko de 'there'; and the Instrumental de, as in nihon en de 'by the Japanese yen'.

- (a) Hanako wa hitori de N.Y. e it-te, soko de nihon en de
 Top alone Dir go-and there Japanese yen Ins
 kaimono o si-ta.
 shopping Obj do-Past
 'Hanako went to N.Y. alone and shopped there by the Japanese yen.'

The above three homonyms never appear in copula sentences and de in (35e) must therefore be a predicative particle de.

17. The case-marking particle de is different from the de which immediately follows predicate nominals. The example (36e) clearly shows that the two particles form a different distributional class.
18. The sentences consisting of 'nominal adjectives' (Kuno 1973) and the subject NPs are semantically adjective sentences and structurally like copula sentences, since the nominal adjectives are followed by the predicative particle de and the copula ar in the same way as are predicate nominals:

- (a) Bill wa nonki de aru.
 Top carefree Prdc is
 'Bill is carefree.'

and the form na is invariably followed by nominal adjectives, as in (b), and associated with the present tense.

- (b) [_{NP}nonki] -na Bill
 carefree-Gen 'Bill, who is carefree'
- (c) (nonki dat-ta) Bill
 carefree Cop-Past 'Bill, who was carefree'

For these reasons, one might treat nonki 'carefree(ness)' in (b) as a kind of predicate nominal, which designates a logical relation, property assignment, to the subject noun Bill and the na as another form of genitive particle. Thus, to derive the genitive form nonki-na 'carefree' in (b) the deep structure constraint (18) plays a significant role and the sequence REL, COP DEL, TNS DEL, and GEN take place.

The above analysis, however, runs into serious difficulties when we consider cases in which na appears in koto-complements. In the complement of (d), the predicate nominal kyuuzitu 'holiday' occurs, whereas nominal adjective kandai 'generous' and heta 'poor at' appear in those of (e) and (f), respectively.

- (d) [_{NP}(_Sasita ga kyuuzitu {de ar-u })koto] wa utagai nasi.
 tomorrow Sub holiday is Comp Top no-doubt
 'There is no doubt that tomorrow is a holiday.'

- (e) $[_{NP}(S_{\text{sono syoti ga kandai}} \left\{ \begin{array}{l} \text{de ar-u} \\ \text{na} \end{array} \right\}) \text{ koto}] \text{ ga}$
 the treatment Sub generous is Comp Sub
 John o ansin-sase-ta.
 Obj relieve-Cause-Past
 'That the treatment is generous makes John feel relieved.'
- (f) $[_{NP}(S_{\text{watasi ga eigo ga heta}} \left\{ \begin{array}{l} \text{de ar-u} \\ \text{na} \end{array} \right\}) \text{ koto}] \text{ wa}$
 I Sub English Obj poor-at is Comp Top
 daredemo wakaru.
 everyone know
 'Everyone knows that I am poor at English.'

The fact that koto-complements take only a tensed-S leads to the analysis of na as a tensed variant of the copula. This is evident from the non-occurrence of the genitive particle no in the complement of (d). That is, it is natural that GEN, which is to apply to the NP-N constructions, does not relate the noun kyuuzitu with the complementizer koto and, in this respect, the complementizer differs from the nouns. The analysis of na as another genitive particle predicts wrongly that the na should not appear in the complement of (e) or (f) in the same way as the no does not occur in the complement of (d). Consequently, nonki-na Bill is not of a structure (b), (tenseless) genitive construction, but of such a structure as relative clause construction (g):

- (b) $[_{NP}[_{NP}\text{nonki}] \text{-na Bill}]$
 carefree Gen
- (g) $[_{NP}(S_{\text{nonki-na}}) \text{ Bill}]$
 carefree-Cop

It is interesting to note that some speakers are indecisive which form - namely, the variant of copula na or the genitive particle no-nominal adjectives like utyooten 'exaltation' and zettaizetunei 'desperation' should take in (h) and (i). On the other hand, some speakers prefer no to na. The above general account of nominal adjectives and na cannot resist some native speakers' judgement on the possibility of no in (h) and (i):

- (h) $\text{utyooten} \left\{ \begin{array}{l} \text{no} \\ \text{na} \end{array} \right\} \text{ Bill}$
 ecstasy
 'Bill in ecstasy'
- (i) $\text{zettaizetunei} \left\{ \begin{array}{l} \text{no} \\ \text{na} \end{array} \right\} \text{ Bill}$
 deperation
 'Bill in desperation'

A natural account of (h) would be that utyooten-no is a genitive form

and utyooten-na forms a RC, as in (j) and (k):

(j) [NP[NP utyooten] -no Bill]
ecstasy Gen

(k) [NP[S utyooten na] Bill]
ecstasy Cop

The same thing is true for (i).

19. As a relevant rule, there is Harada's 'Ga-No' conversion (1971), which applies only to the subject nouns in sentences embedded as relative clauses or complement sentences. By the application of this rule, (46a-d) turn out to be the following:

- (a) (sutereo-no ar-u) John
stereo Exs-Pres 'John, who has a stereo'
- (b) (imooto-no i-ru) kare
sister Exs-Pres he 'He, who has a sister'
- (c) (tori-no i-ru) yane
bird Exs-Pres roof 'the roof which the bird is on'
- (d) (maturi-no ar-u) gogatu
festival Exs-Pres May 'the month of May in which there is a festival'

As will be discussed in the text, GEN never applies to such structures as possessive or locative nouns have been deleted by REL, though Ga-No Conversion takes place only in the structure of (46a-d). Another difference between this rule and GEN is that while it is an optional rule, GEN is obligatory.

20. This could be an example of appositive clause construction (cf. (k) in note 7). For a discussion of this construction, see note 7.

- ~~21. A highly speculative thing is that, if each predicate defines a functional relation like an existential relation, the functional relation for each predicate is further specified by the grammatical meaning (.e.g locative and possessive) of the accompanying NPs, the lexical meaning (.e.g kinship, time, place, etc.) of each noun is still further imposed on the accumulated meaning, and such interpretations as kinship relation as a possessive meaning, temporal location, and spatial location are respectively given.~~

If true, this speculation differs from the previous account of the existential verb with a lexical meaning. That is, the verb no longer has the lexical meaning 'to exist', but has a defined functional relation, and therefore it can be treated like the copula; the possessive and locative relations are strictly dependent on the two NPs in the existential sentence, the existentials function as carriers of tense,

and insertion or deletion of them is meaning-preserving. This brings a significant consequence that the same transformational account of genitives with possessive or locative relation as was seen in the formation of genitives from predicate nominals becomes possible.

22. The sentences (a) and (c) are semantically deviant, since the subject nouns hito 'person' and doobutu 'animals' allow only the generic interpretation. Definitization of the subject in (a) and (c) by adding the determiner sono yields semantically well-formed versions (b) and (d), respectively.

- (a) *hito wa tetugakusya de ar-u.
 person Top philosopher Prdc Cop-Pres
 '(Any) person is a philosopher.'
- (b) sono hito wa tetugakusya de ar-u.
 the person philosopher Prdc Cop-Pres
 'That person is a philosopher.'
- (c) *doobutu wa honyuurui de ar-u.
 animal Top mammal Prdc Cop-Pres
 'Animals are mammals.'
- (d) sono doobutu wa honyuurui de ar-u.
 the animal Top mammal Prdc Cop-Pres
 'The animal is a mammal.'

In connection with the definitization process, one of the problems that I refrained from discussing is an issue of whether or not the noun phrase (in the RC) identical to the head noun should be a definite one as in (e).

- (e) (sono doobutu ga honyuurui de ar-u) doobutu
 the animal Sub mammal Prdc Cop-Pres animal
- (f) (doobutu ga honyuurui de ar-u) doobutu
 animal Sub mammal Prdc Cop-Pres animal

The genitive construction (g) should be derived from either (e) or (f).

- (g) honyuurui -no doobutu
 mammal -Gen animal
 'Animals which are mammals'

If the correct underlying structure of (g) is (f), we are to select (i) as an underlying form of (j), and (i) is involved in reordering of RC and the demonstrative (cf. (30-31)); otherwise, we might take (h).

- (h) [sono doobutu ga honyuurui de ar-u] sono doobutu
 the animal Sub mammal Prdc Cop-Pres the animal
- (i) sono [doobutu ga honyuurui de ar-u] doobutu (cf. (40))
 the animal Sub mammal Prdc Cop-Pres animal
- (j) honyuurui-no sono doobutu
 mammal -Gen the animal
 'That animal which is a mammal'

The case of non-generic subject in the underlying RC would be a different matter. Any further discussion awaits a further investigation.

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