

# A Cartographic Approach to Nominative/Genitive Conversion in Japanese\*

Yusuke Yoda<sup>1,2</sup> and Satoshi Nambu<sup>2</sup>

Graduate School of Osaka University<sup>1</sup>, University of Pennsylvania<sup>2</sup>

## 1. Introduction

This paper investigates the case alternation called Nominative Genitive Conversion (hereafter NGC) in Japanese with respect to the idea of feature transmission (feature inheritance) (e.g., Chomsky 2005, Takahashi 2009, Takeuchi 2011) and phase theory (Chomsky 2001, 2005, among others). We propose a new account of the availability of the NGC with different types of C heads such as *-no*, *-ka*, and *-to* from the perspective of the cartographic approach. In addition, we examine the case alternations in the Temporal Adverbial Construction (TAC) (e.g., Miyagawa 1991; Tsujimura 1992; Horiuchi 2006; Kamiya 2008) in order to explore the possibility of a uniform account of the NGC and these case alternations in the TAC.

The paper is organized as follows. Section 2 presents properties of NGC and previous analyses in the literature. Section 3 introduces feature transmission and proposes our analysis from a perspective of cartographic approach. In Section 4, we compare the NGC with case alternations in the TAC and propose a unified account of the alternations.

## 2. Background

Japanese exhibits the NGC in certain types of embedded clause. Harada (1971, 1976) provides data that show the NGC takes place in relative clauses (1) and clauses headed by *-no* (2), but not in clauses headed by the question particle *-ka* or the quotation particle *-to* (3).

- (1) [Kyonen Taroo-**{ga/no}** kat -ta] hon -ga itiban omoshiro -i.  
last.year Taro -Nom/Gen buy-Pst book-Nom most interesting-Prs  
'The book that Taro bought last year is most interesting.'
- (2) Taroo-wa [Hanako-**{ga/no}** kekkon-si -ta -no]-o sira -nakat-ta.  
Taro -Top Hanako -Nom/Gen marry -do-Pst-NO-Acc know-not -Pst  
'Taro did not know that Hanako got married.'
- (3) a. Taroo-wa [Hanako-**{ga/\*no}** kekkon-si-ta -ka] tazune-ta.

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\* We would like to thank the audiences at the Glow in Asia Workshop for Young Scholars 2011. Any remaining errors are our own.

Taro -Top Hanako-Nom/Gen marry -do-Pst-KA ask -Pst  
'Taro asked whether Hanako got married.'

- b. Taroo-wa [Hanako-**{ga/\*no}** kekkon-si-ta -**to**] omot-tei -ta.  
Taro -Top Hanako-Nom/Gen marry -do-Pst-TO think-Prog-Pst  
'Taro thought that Hanako got married.'

There are two major types of analysis on the NGC in the literature of how the genitive subject is licensed (cf. Miyagawa to appear): D-licensing hypothesis (e.g., Miyagawa 1993, to appear, Ochi 2001) and C-licensing hypothesis (e.g., Watanabe 1996, Hiraiwa 2001). The D-licensing hypothesis argues that the genitive subject is licensed by D outside the embedded clause. For instance, a head noun of relative clause *hon* 'book' in (1) has D to license the genitive subject in the embedded clause. Conversely, the C-licensing hypothesis by Hiraiwa (2001, 2005) claims that the genitive subject is licensed by the C-T relationship when C has [+N].

From a perspective of the C-licensing analysis, Hiraiwa (2005) hypothesizes a 'Complementizer Blocking Effect', which prohibits the genitive subject when there is an overt C head such as *-ka* and *-to* as shown in (3). He argued that the C head *-no* as in (2) should be considered to be a phonological spell-out of genitive Case on the probe's side (Hiraiwa 2005: 137); *-no* is a reflex of the case-licensing relationship between  $C_{[+N]}$  and the genitive subject. If this is the reason that the C head *-no* does not block the occurrence of the genitive subject as in (2), it requires an additional explanation as to why *-no* cannot appear on C, which licenses the genitive subject, in other environments such as relative clauses where the genitive subject can appear, as shown below.

- (4) [Taroo-**{ga/no}** yon-da] (\*-**no**) hon -ga itiban omoshiro -i.  
Taroo-Nom/Gen read-Pst -NO book-Nom most interesting-Prs  
'The book that Taro read is most interesting.'

In the next section, we examine the NGC from a perspective of the D-licensing hypothesis in order to explain the different availability of the NGC dependent on the type of C head such as *-no*, *-ka*, and *-to* in (2) and (3), based on the idea of split CP in the cartographic approach (cf. Rizzi 1997).

### 3. Proposal

In this section, we investigate the NGC within the framework of feature transmission and phase theory, and examine the dependence of NGC availability on the type of C head from the perspective of split CP in the cartographic approach.

In the cartographic approach, it has been argued that the structure of CP is not simplex but multi-layered (Endo 2007, 2009, Rizzi 1997, among others); CP is split into a bunch of different projections such as ForceP and FinP. Based on this theoretical assumption, we claim that the order of Japanese sentential particles reflect their hierarchy within CP layers. The C heads introduced in the last section are strictly ordered as *-no-ka-to*, as shown below.

- (5) Taroo-wa [Hanako-**{ga/\*no}** kekkon-si-ta **-no-ka-to**] tazune-ta.  
 Taro -Top Hanako-Nom/Gen marry -do-Pst-NO-KA-TO ask -Pst  
 ‘Taro asked whether Hanako got married.’

We claim that *-no* appears lower in the CP layers, followed by the question particle *-ka* and the quotation particle *-to*, assuming *-no* to be a Fin head that takes a finite clause. *-Ka* as a question particle is considered to be a Force head, since a Force head determines whether a sentential type is affirmative or question. *-To* as a quotation marker takes a clause including sentential force. From this perspective, the distribution of NGC with different types of C head in (6) indicates that the NGC is not allowed in embedded clauses larger than FinP. ForceP with *-ka* (6b) or *-to* occurring above ForceP (6c) cannot have the NGC, in contrast to FinP with *-no* in (6a).

- (6) a. Taroo-wa [<sub>FinP</sub> Hanako-**{ga/no}** kekkon-si-ta **-no**]-o sira -nakat-ta.  
 Taro -Top Hanako -Nom/Gen marry -do-Pst-NO-Acc know-not -Pst  
 ‘Taro did not know that Hanako got married.’  
 b. Taroo-wa [<sub>ForceP</sub> Hanako-**{ga/\*no}** kekkon-si-ta **-ka**] tazune-ta.  
 Taro -Top Hanako-Nom/Gen marry -do-Pst-KA ask -Pst  
 ‘Taro asked whether Hanako got married.’  
 c. Taroo-wa [<sub>QuotP</sub> [<sub>ForceP</sub> Hanako-**{ga/\*no}** kekkon-si-ta]-**to**] omot-tei -ta.  
 Taro -Top Hanako-Nom/Gen marry -do-Pst-TO think-Prog-Pst  
 ‘Taro thought that Hanako got married.’

Let us now consider the mechanism as to how the C heads vary the acceptability of the NGC, based on the idea of feature transmission and phase theory. Under the assumption of feature transmission, the Case feature of T is originated at C and transmits to T (Chomsky

2001, 2005), and thus, T can license DP(s) only if T is selected by C. For instance, the English ECM construction has an accusative subject in the infinitival clause, as shown in (7).

(7) I expected [him/\*he to leave].

The unavailability of nominative Case for the embedded subject is attributed to the lack of C from the perspective of feature transmission (but see Gallego 2010). Extending this assumption, we make a hypothesis that the availability of feature transmission differs depending on C heads that are located at a different position in CP layers. We assume that the feature transmission is obligatory when the CP layers contain ForceP. On the other hand, the feature transmission is optional when a clause only contains FinP, which is equivalent to defective C (e.g., Gallego and Uriagereka 2007, Gallego 2010). Therefore, the availability of feature transmission is linked to phasehood. In phase theory (e.g., Chomsky 2001, 2005), defective phasal categories are transparent for locality of Agreement (or case licensing) and movement (cf. Gallego 2010). Thus, our assumption of feature transmission implies that when the featural transmission is obligatory, a phase is always created by CP layers that contain a category above FinP. Furthermore, we assume that a phase is optionally created by CP layer(s) depending on whether the feature transmission is conducted or not; when the feature transmission is not conducted, a phase is not created.

This theoretical assumption can predict when the NGC is possible. Since the feature transmission is obligatory when a clause contains CP layers larger than FinP, nominative Case is always available for the embedded subject, and the CP layers create a phase. As mentioned in the last section, we take a variant of D-licensing hypothesis for the genitive subject of the NGC, which assumes that D above the embedded clause licenses the genitive subject. However, when a phase is created by the clause that contains CP layers larger than FinP, the D-licensing is blocked due to Phase Impenetrability Condition (PIC) (Chomsky 2001). Figure 1 provides an instance of the nominative subject of the NGC.<sup>1</sup>

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<sup>1</sup> Nambu (to appear) provides evidence for the existence of D above CP layers for D-licensing of the genitive subject.

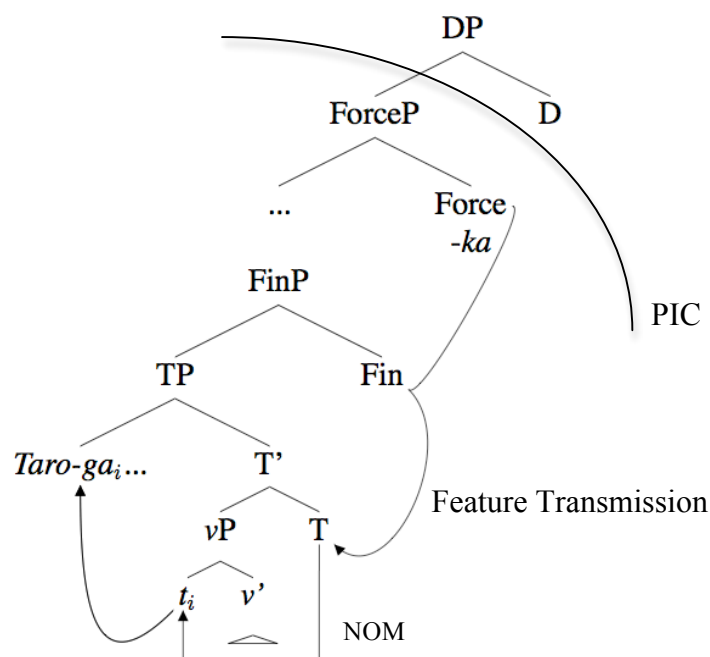


Figure 1: FinP and ForceP, Nominative subject licensed by T and Phase blocking D-licensing

On the other hand, when the embedded clause only contains FinP headed by *-no*, the feature transmission is optional. In this case, the phasehood of CP layer(s) depends on whether the feature transmission is conducted or not. When the feature transmission is conducted, T can license the nominative subject in the embedded clause, and the CP layer(s) create a phase that blocks the D-licensing of the embedded subject, as illustrated below.

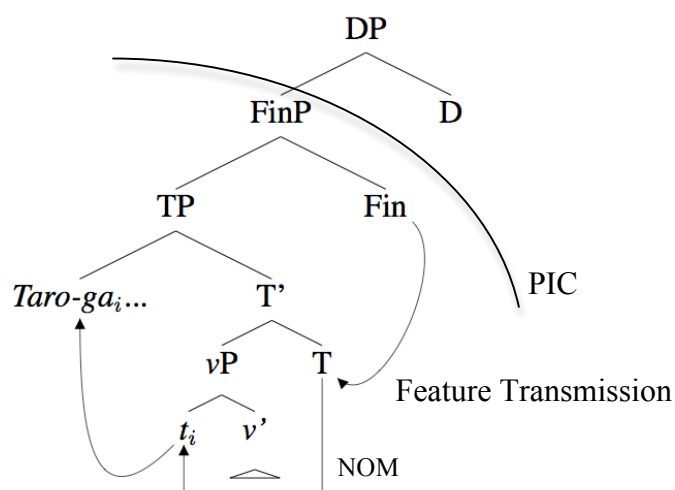


Figure 2: FinP, Nominative subject licensed by T and Phase blocking D-licensing

When the feature transmission is not conducted, nominative Case is not available for the embedded subject. In addition, a phase is not created by the CP layer(s), and thus, the external D licenses the genitive subject without violating the PIC, as shown below.

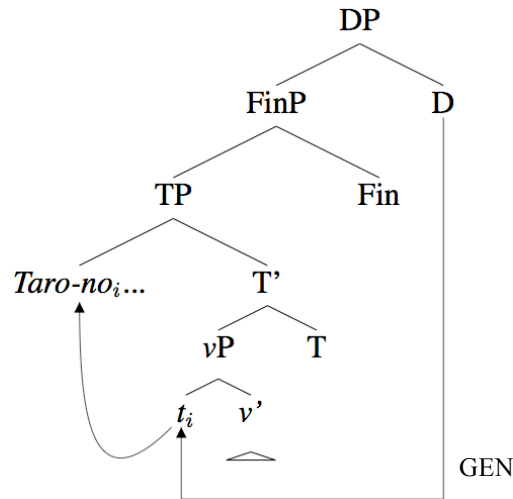


Figure 3: FinP, Genitive subject licensed by D and no feature transmission and no PIC

To summarize, we proposed an analysis of the different availability of the NGC depending on the type of C heads from the perspective of split CP. In addition, this analysis attributes the optionality of the NGC to the optional feature transmission related to the phasehood of CP layers.

#### 4. Temporal Adverbial Construction and the NGC

##### 4.1. Light Verb Construction

Before exploring the possibility of a uniform account of the NGC and case alternations in the TAC, this section introduces the light verb construction that occurs in the TAC. The light verb construction consists of a verbal noun (VN) such as *benkyo* ‘study’ with *-su-ru* ‘do-Prs’ that is called light verb (cf. Miyamoto 2000). There are two types of *-suru* predicate: the one that attaches to a VN such as *benkyo-suru* ‘study’ in (6a), and the other that takes a VN with the accusative case marker *-o* such as *benkyo-o suru* in (6b) (Kageyama 1993, Saito and Hoshi 2000, among others).

##### (8) Light verb construction

- a. Taro-ga eigo {-o/\*-no} benkyo -su-ru.  
 Taro -Nom English-Acc/Gen study -do-Prs

‘Taro studies English’

- b. Taroo-ga eigo {\*-o/-no} benkyo-o su-ru.  
 Taro -Nom English-Acc/Gen study -Acc do-Prs

(8) shows that *eigo* ‘English’ takes accusative when the light verb *-suru* attaches to the VN *benkyo* ‘study’, and *eigo* takes genitive when *benkyo* takes accusative. As discussed in Grimshaw and Mester (1988), the argument structure of the light verb construction reflects the one of VN. In (8), the VN *benkyo* has two arguments *Taroo* and *eigo* as elements of the argument structure <Agent <Theme>>. For comparison, we provide an example of a noun phrase as follows.

- (9) Taroo-no eigo -no benkyo  
 Taro -Gen English-Gen study  
 ‘Taro’s studying English’

This example shows that *benkyo* ‘study’ has the argument structure <Agent <Theme>> and takes two arguments that have genitive. Following Distributed Morphology (DM) (Halle and Marantz 1993, Harley and Noyer 1999, Embick and Noyer 2008, among others), we assume the structure of (9) given in Figure 4, which contains a Root  $\sqrt{\textit{benkyo}}$  and *n* as nominalizing head that determines its syntactic category.<sup>2</sup>

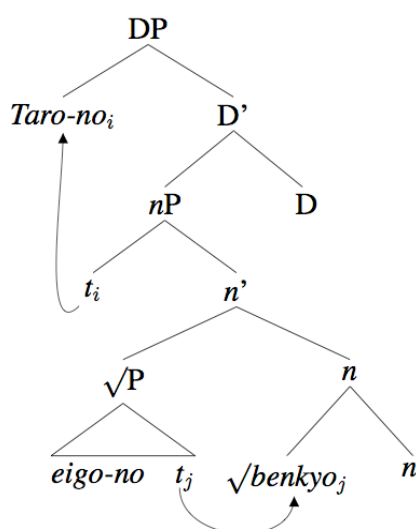


Figure 4: Genitive Structure with VN

<sup>2</sup> Roots are symbolized with the notation  $\sqrt{\textit{Root}}$ .

Figure 4 shows that D above *nP* licenses the genitive DP *Taroo-no* as its external argument. Here, we assume that *n* licenses its internal argument *eigo-no* ‘English-Gen’. From the perspective of DM, *benkyo* in (9) is a phonological representation of a complex  $\sqrt{\textit{benkyo}}$  with *n*. Conversely, we assume that *bennkyo-suru* is a reflex of the root  $\sqrt{\textit{benkyo}}$  with *v*, taking *-su(-ru)* ‘do(-Prs)’ to be a phonological realization of *v*, as shown in (10).

- (10) a.  $\sqrt{\textit{benkyo}} + n \longrightarrow \textit{bennkyo}$  ‘studying’  
 b.  $\sqrt{\textit{benkyo}} + v \longrightarrow \textit{bennkyo-su(ru)}$  ‘study’

Figure 5 gives the structure of (8a), where  $\sqrt{\textit{benkyo}}$  merges with *v* and the *v* licenses the accusative DP *eigo-o* that is base-generated as a complement of  $\sqrt{\textit{benkyo}}$ . Figure 6 represents (8b), where  $\sqrt{\textit{benkyo}}$  merges with *n* and the *n* licenses the genitive DP *eigo-no*, as in the case of the structure of (9) in Figure 4. In addition, Figure 6 shows that the *nP* gets accusative from the *v* that is realized as the light verb *-su(ru)*.

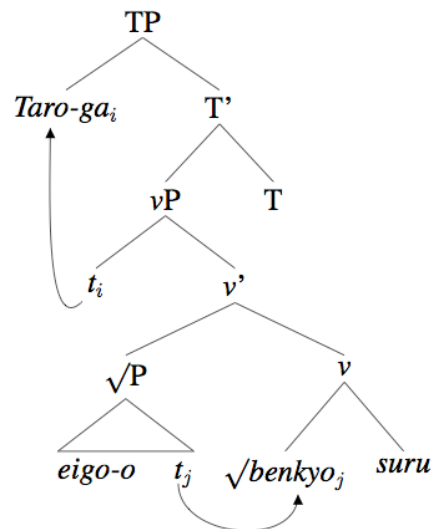


Figure 5: Nom-Acc in Light Verb Construction

To summarize, the light verb construction has a VN that takes its internal argument with accusative or genitive depending on whether the VN merges with *n* or *v*. On the basis of this assumption, we will discuss case alternations in the TAC in the next section.

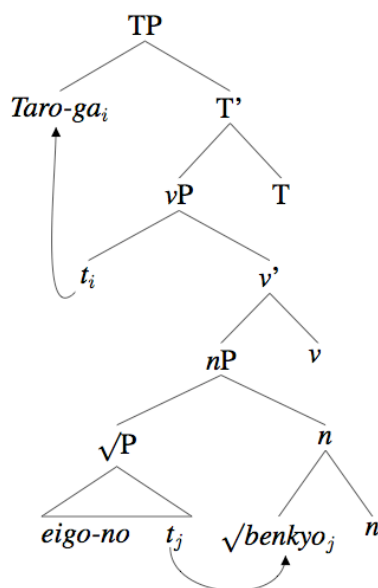


Figure 6: Nom-Gen in Light Verb Construction

#### 4.2. Temporal Adverbial Construction

The TAC is a subordinate clause that composes an aspectual head such as *-tyuu* ‘during’, *-mae* ‘before’, and *-go* ‘after’ following a VN that accompanies its arguments, as shown below (e.g., Miyagawa 1991; Tsujimura 1992; Horiuchi 2006; Kamiya 2008).

##### (11) Temporal Adverbial Construction (TAC)

- a. Taroo-**ga** eigo {-**o/no**} benkyo-tyuu/mae/go (-ni), jiko -ga  
 Taro -Nom English-Acc/Gen study -during/before/after-at accident-Nom  
 okot -ta.  
 happen-Pst  
 ‘While/Before/After Taro studies English, the accident happened.’
- b. Taroo-**no** eigo {-\***o/no**} benkyo-tyuu/mae/go (-ni), jiko -ga  
 Taro -Gen English-Acc/Gen study -during/before/after-at accident-Nom  
 okot -ta.  
 happen-Pst

(11) shows that the external argument *Taroo* of the VN *benkyo* ‘study’ in the TAC can be either nominative or genitive, as in the case of the NGC. In addition, (11a) shows that when the external argument is nominative, the internal argument *eigo* ‘English’ can be either accusative or genitive. On the other hand, when the external argument is genitive as in (11b), the internal argument of the VN *benkyo* can be genitive but not accusative.

Previous studies have argued that the relevant case is licensed by Asp in the TAC (e.g., Miyagawa 1991, Hoshi 2002, Kamiya 2005). Contrary to their analysis of the TAC, we extend the analysis of the NGC proposed in the last section in order to account for the alternation between nominative and genitive on the external argument in the TAC (either *Taroo-ga* or *Taroo-no* in (11)), based on the following two properties of the TAC that show the TAC contains a structure higher than AspP.

First, the structure of the TAC contains CP, contrary to some previous studies, which assume that the maximal projection of the TAC is AspP and the Asp head relates to the case alternation (e.g., Miyagawa 1991; Hoshi 2002; Kamiya 2005). The evidence for the existence of CP in the TAC is that the construction can take CP-level adverbs (cf., Cinque 1999), as shown below.

- (12) a. Kyonen **zansinnimo** gakkoo-**ga** ano kibatuna puroguramu{-**o/no**}  
 last.year originally school -Nom that bizarre program -Acc/Gen  
 doonyuu-go (-ni), oobosuu -ga het -ta.  
 adopt -after-at number.of.application-Nom decrease-Pst  
 ‘After originally, the school adopted that bizarre program last year, the  
 number of applications decreased.’
- b. Kyonen **zansinnimo** gakkoo-**no** ano kibatuna puroguramu{-**\*o/no**}  
 last.year originally school -Gen that bizarre program -Acc/Gen  
 doonyuu-go (-ni), oobosuu -ga het -ta.  
 adopt -after-at number.of.application-Nom decrease-Pst

(12) shows that the CP-level adverb *zansinnimo* ‘originally’ can appear in the TAC, and thus the structure of the TAC contains CP. Second, the TAC can occur with an external D that licenses the genitive DP in the clause and also a genitive modifier, as shown below.

- (13) a. Kyonen (?-no) gakkoo-**ga** sinseedo {-**o/no**} doonyuu-go (-ni),  
 last.year-Gen school -Nom new.program-Acc/Gen adopt -after-at  
 oobosuu -ga het -ta.  
 number.of.application-Nom decrease-Pst  
 ‘After the school adopted a new program last year, the number of  
 applications decreased.’
- b. Kyonen (-no) gakkoo-**no** sinseedo {-**\*o/no**} doonyuu-go (-ni),  
 last.year-Gen school -Gen new.program-Acc/Gen adopt -after-at

oobosuu                    -ga    het        -ta.  
 number.of.application-Nom decrease-Pst

The above example shows that the genitive DP *kyonen-no* ‘last year’ can modify the TAC, and it indicates that the TAC can occur with an external D that licenses the genitive DP.

Let us now consider the case alternations in the TAC. Figure 7 shows the structure of the pattern Nom-Acc in (11a).

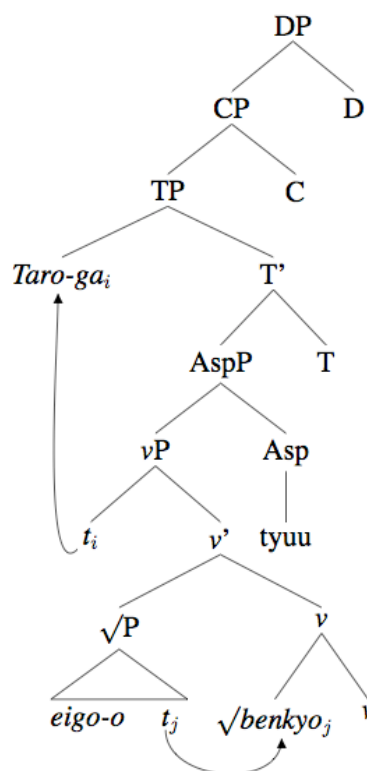


Figure 7: Nom-ACC in the TAC

The Nom-Acc structure in Figure 7 shows that the nominative DP is licensed by T and the accusative DP is licensed by *v*. As proposed in the last section, we assume that the feature transmission from C to T in the TAC is optional, and Figure 7 is an instance of the case when the feature transmission is not conducted. If the case alternation on the external argument *Taro* is the case of NGA, the genitive subject should be prohibited by the transitivity restriction, whereby the genitive subject cannot appear with the accusative object as follows (Watanabe 1996).

- (14) Taro-wa [kyonen Hanako-ga/\*no hon-o kai -ta] zizitu-o ki -ita.  
 Taro-Top last.year Hanako-Nom/Gen book-Acc write-Pst fact -Acc hear-Pst

‘Taro heard the fact that Hanako wrote a book last year.’

In fact, the pattern Gen-Acc in the TAC in (11b) is not acceptable, as predicted by the transitivity restriction, as in the case of the NGC. Let us now turn to the Nom-Gen pattern in (11a). Figure 8 shows the structure of the Nom-Gen pattern.

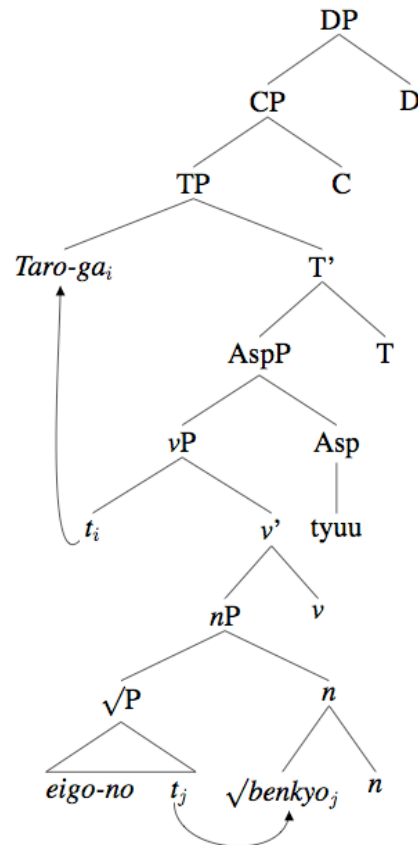


Figure 8: Nom-Gen in the TAC

The Nom-gen structure in Figure 8 shows that the nominative DP is licensed by T and the genitive DP is licensed by *n*. Figure 9 shows the structure of the Gen-Gen pattern in (11b).

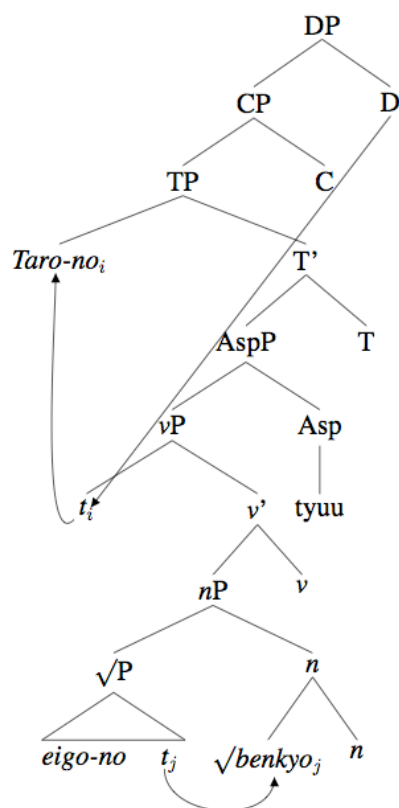


Figure 9: Gen-Gen in the TAC

The structure in Figure 9 shows that the external argument *Taro-ga* of the VN *benkyo* ‘study’ is licensed by the external D. The internal argument *eigo-no* is licensed by *n*, as in the case of the light verb construction.

To summarize, this section proposed the analysis of case alternations in the TAC, extending our analysis of the NGC. We claim that the case alternation of the external argument in the TAC is generated in the same way as the NGC, and the case alternation of the internal argument reflects the mechanism of the light verb construction.

## 5. Conclusion

This paper investigated the NGC in Japanese in terms of the idea of feature transmission and phase theory. From a perspective of cartographic approach, we proposed a new account of the availability of the NGC with different types of C heads such as *-no*, *-ka*, and *-to*. In addition, extending our approach to the NGC, we examined the case alternations in the TAC, and concluded that the case alternation on the external argument is executed by the same mechanism as the NGC, while the internal argument has a case alternation that reflects a property of the light verb construction.

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