

Nominative-Genitive Conversion and Its Transitivity Restriction in Child Japanese

Koji Sugisaki
Mie University

1. Introduction

Nominative-Genitive Conversion (NGC) in Japanese, which is also called *Ga/No Conversion*, is one of the most well-studied phenomena in Japanese syntax (see Harada 1971, 1976, Bedell 1972, Shibatani 1975, Nakai 1980, Saito 1983, 2004, Miyagawa 1993, to appear, Watanabe 1996, Hiraiwa 2001, 2005, and Ochi 2001, to appear, among many others). NGC is a Case alternation phenomenon in which the nominative Case marker *ga* on the subject DP is “converted” into the genitive Case marker *no* within a prenominal sentential modifier, as illustrated in (1).

- (1) a. [Kinoo John-**ga** katta hon]-wa omosiroi.
yesterday John-Nom bought book -Top interesting.
b. [Kinoo John-**no** katta hon]-wa omosiroi.
yesterday John-Gen bought book -Top interesting.
‘The book which John bought yesterday is interesting.’

Theoretical studies on NGC have revealed that there are several syntactic restrictions observed with the distribution of genitive subjects. Most prominent is the generalization that accusative Case-marked objects are prohibited when the subject is in the genitive Case (see Watanabe 1996, Hiraiwa 2001, 2005, Saito 2004, Ochi, to appear, and Miyagawa, to appear). This property is known as *the Transitivity Restriction on NGC*.

- (2) a. [Kinoo John-**ga** ano hon-o katta mise]-wa koko da.
yesterday John-Nom that book-Acc bought store -Top here is
b. *[Kinoo John-**no** ano hon-o katta mise]-wa koko da.
yesterday John-Gen that book-Acc bought store -Top here is
‘The store where John bought that book yesterday is here.’

This study conducts an experiment to address the question of whether this Transitivity Restriction on NGC is in the grammar of Japanese-speaking preschool children. The results of my experiment suggest that children around the age of four already have knowledge of this constraint, which is consistent with the view that the Transitivity Restriction on NGC reflects properties of Universal Grammar.

2. Nominative-Genitive Conversion and its Transitivity Restriction

As noted at the outset, NGC is a construction in which a nominative subject optionally alternates with a genitive subject under certain syntactic conditions. One major property of NGC in Japanese is

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that this alternation is permitted in relative clauses and in nominal complements, but not in matrix clauses or in complement clauses of verbs.

(3) Relative clause:

- a. [Kinoo John-**ga** katta hon]-wa omosiroi.
yesterday John-Nom bought book -Top interesting.
- b. [Kinoo John-**no** katta hon]-wa omosiroi.
yesterday John-Gen bought book -Top interesting.
- ‘The book which John bought yesterday is interesting.’

(4) Nominal complement:

- a. John-wa [kinoo Mary-**ga** kita koto]-o sitteiru.
John-Nom yesterday Mary-Nom came fact -Acc know
- b. John-wa [kinoo Mary-**no** kita koto]-o sitteiru.
John-Nom yesterday Mary-Gen came fact -Acc know
- ‘John knows the fact that Mary came yesterday.’

(5) Matrix clause:

- a. Kinoo John-**ga** kita.
yesterday John-Nom came.
- b. *Kinoo John-**no** kita.
yesterday John-Gen came.
- ‘John came (here) yesterday.’

(6) Complement clause of a verb:

- a. John-wa [kinoo Mary-**ga** kita to] shinjiteita.
John-Top yesterday Mary-Nom came C believed
- b. *John-wa [kinoo Mary-**no** kita to] shinjiteita.
John-Top yesterday Mary-Gen came C believed
- ‘John believed that Mary came yesterday.’

The second major property of NGC is that the accusative object can never be converted to the genitive object.

- (7) a. [Ano hon-**o** katta hito]-wa John da.
that book-Acc bought person -Top John is
- b. *[Ano hon-**no** katta hito]-wa John da.
that book-Gen bought person -Top John is
- ‘The person who bought that book is John.’

The third major property of NGC, which we will focus on in this acquisitional study, is that NGC obeys the Transitivity Restriction: A genitive subject is impossible when an accusative object is present.

- (8) a. [Kinoo John-**ga** ano hon-o katta mise]-wa koko da.
yesterday John-Nom that book-Acc bought store -Top here is
- b. *[Kinoo John-**no** ano hon-o katta mise]-wa koko da.
yesterday John-Gen that book-Acc bought store -Top here is
- ‘The store where John bought that book yesterday is here.’

In the syntactic literature, a variety of proposals have been made concerning the source of the genitive Case and of the Transitivity Restriction in NGC. In the following, I will briefly review two recent analyses: Ochi (to appear) and Hiraiwa (2001, 2005).

Adopting the approach to NGC proposed by Miyagawa (1993), Ochi (2001, to appear) argues that D, a head external to the prenominal clause, is responsible for genitive Case of the subject. For example, in an example like (9a), the genitive Case is licensed through AGREE relation between D and the

subject DP (before it moves to higher position), as shown in (9b).¹

- (9) a. John-no naita riyuu
John-Gen cried reason
 ‘the reason that John cried’
 b. [DP D [NP reason [TP T [vP SUBJ v [VP ...]]]]]
-

Ochi (to appear) further assumes that Japanese has obligatory object shift. Hence, when the prenominal clause contains an overt accusative object as in (10a), at one point of the derivation the relevant structure should look like (10b).

- (10) a. *John-no ano hon-o katta mise
John-Gen that book-Acc bought store
 ‘the store where John bought that book’
 b. [DP D [NP store [TP T [vP OBJ [vP SUBJ v [VP...]]]]]
-

In (10b), the shifted object intervenes between D and the subject, thereby making the subject inaccessible to D. Therefore, under Ochi’s (to appear) analysis, the Transitivity Restriction on NGC comes out as an instance of intervention effects.

In contrast to the analyses by Miyagawa (1993) and Ochi (to appear) that attribute the licensing of the genitive subject to D, Hiraiwa (2001) claims that the genitive Case-marking on the subject in NGC is licensed by verbs with a special verbal inflectional morphology called the predicate-adnominal form. This analysis has its basis on the observation that NGC is possible even in structures that lack a D head, as in (11).

- (11) a. [Boku-**ga** omou-ni] John-wa Mary-ga sukini-tigaina-i
I-Nom think-Prs.Adn-Dat John-Top Mary-Nom like-must-Prs
 b. [Boku-**no** omou-ni] John-wa Mary-ga sukini-tigaina-i
I-Gen think-Prs.Adn-Dat John-Top Mary-Nom like-must-Prs
 ‘I think that John likes Mary.’

Under Hiraiwa’s analysis, the syntactic C-T-V head amalgamate formed via AGREE corresponds to the predicate-adnominal form, and hence the genitive subject in the NGC is licensed by this C-T-V amalgam.²

According to Hiraiwa (2001, 2005), the Transitivity Restriction on NGC is a reflex of a larger generalization that morphological accusative case and structural nominative Case are interdependent.³

(12) *ACC-NOM Generalization* (Hiraiwa 2005:145):

Spell-Out of morphological Accusative case is contingent on structural Nominative Case.

Since the subject bears the genitive in NGC, an accusative object cannot be present, given (12). The constraint in (12) is not specific to NGC but also applies widely to other constructions in Japanese, such as the Dative Subject Construction. This construction allows only the Dat-Nom patterns, and resists accusative Case-marking on the object.

1. Ochi (to appear) assumes, following Murasugi (1991), that prenominal clauses (relative clauses and nominal complement clauses) in Japanese are TPs.

2. See also Watanabe (1996) for an approach that genitive subjects in NGC are licensed by the C head.

3. See also Miyagawa (to appear) for a related analysis of the Transitivity Restriction which builds on the assumption that the accusative case marker *o* is dependent on the occurrence of the nominative case marker *ga*.

- (13) a. John-**ga** nihongo-**ga** hanas-e-ru (koto)
John-Nom Japanese-Nom speak-can-Prs (fact)
 ‘John can speak Japanese.’ [Nom-Nom]
- b. John-**ga** nihongo-**o** hanas-e-ru (koto)
John-Nom Japanese-Acc speak-can-Prs (fact)
 ‘John can speak Japanese.’ [Nom-Acc]
- (14) a. John-**ni** nihongo-**ga** hanas-e-ru (koto)
John-Dat Japanese-Nom speak-can-Prs (fact)
 ‘John can speak Japanese.’ [Dat-Nom]
- b. *John-**ni** nihongo-**o** hanas-e-ru (koto)
John-Dat Japanese-Acc speak-can-Prs (fact)
 ‘John can speak Japanese.’ [Dat-Acc]

(Hiraiwa 2001:114-115)

To summarize this section, we have seen that NGC in Japanese is constrained by the restriction that an accusative object cannot be present when the subject is genitive. We have also reviewed two recent proposals concerning the source of this Transitivity Restriction: the intervention effect caused by the shifted object (Ochi, to appear), and an interdependence between morphological accusative case and structural nominative Case (Hiraiwa 2001, 2005). Even though these two analyses significantly differ in their details, they share the fundamental idea that the Transitivity Restriction directly reflects properties of UG. Then, an interesting question arises as to whether this syntactic constraint emerges early in the acquisition of Japanese, which is exactly the question that we will address experimentally in this study. Before going into the details of the experiment, in the next section we review one previous study on the acquisition of NGC in Japanese by Nakajima & Sano (2004).

3. A Previous Study on the Acquisition of NGC in Japanese

In sharp contrast to an impressive number of syntactic studies that deal with NGC and its constraints, very few studies have attempted to investigate the acquisition of this construction. One exception is an experimental study by Nakajima & Sano (2004), which we briefly review in this section.⁴

The experiment by Nakajima & Sano (2004) aimed at demonstrating that Japanese-speaking preschool children can correctly interpret sentences with NGC. Nakajima & Sano focused on the restriction (exemplified in (7)) that the accusative object can never alternate with the genitive object. Using the Truth-Value Judgment Task (Crain & Thornton 1998), they examined children’s interpretation of three types of sentences illustrated in (15).

- (15) a. Doubutuen-de A-**ga** tatai-teru e dayo.
zoo-in A-Nom pat-Prog picture be
 ‘(This is) a picture that A is patting (someone) in the zoo.’
- b. Doubutuen-de A-**o** tatai-teru e dayo.
zoo-in A-Acc pat-Prog picture be
 ‘(This is) a picture that (someone) is patting A in the zoo.’
- c. Doubutuen-de A-**no** tatai-teru e dayo.
zoo-in A-Gen pat-Prog picture be
 ‘(This is) a picture that A is patting (someone) in the zoo.’
 * ‘(This is) a picture that (someone) is patting A in the zoo.’

Eighteen children (five-years-old and younger) were tested, and among thirteen children who correctly interpreted control sentences in (15a,b), the rate of correct responses for the target sentence in (15c) was 85.5%. These results indicate that Japanese-speaking preschool children interpret NGC construction in an adult-like way in that they interpret genitive DPs as subjects but not as objects, which

4. See also Nakajima (2003), which constitutes the basis of Nakajima & Sano (2004).

in turn suggests that the knowledge of NGC is already in their grammar.

4. Experiment on the Transitivity Restriction in Child Japanese

In the previous section, we have seen experimental evidence that Japanese-speaking preschool children have knowledge of NGC. We have also seen in Section 2 that the Transitivity Restriction on NGC directly reflects properties of UG. Therefore, we can expect that this syntactic constraint on NGC also emerges early in the acquisition of Japanese.

In order to determine whether this expectation is in fact borne out, an experiment was conducted with 32 Japanese-speaking children, ranging in age from 3;11 (years;months) to 6;07 (mean age: 5;06). Our experiment consisted of two groups of test sentences. The sentences in the first group, illustrated in (16), were basically the same as those used in Nakajima & Sano (2004). These sentences were incorporated into our experiment in order to make sure that the children who participated in our study indeed have knowledge of the NGC itself, by verifying that they interpret genitive DPs as subjects, not as objects.

- (16) a. [Butasan-**ga** ositeiru] syasin-wa kocchi dayo.
pig-Nom pushing picture-Top this be
 ‘The picture in which a pig is pushing (someone) is this.’
- b. [Butasan-**o** ositeiru] syasin-wa kocchi dayo.
pig-Acc pushing picture-Top this be
 ‘The picture in which (someone) is pushing a pig is this.’
- c. [Butasan-**no** ositeiru] syasin-wa kocchi dayo.
pig-Gen pushing picture-Top this be
 ‘The picture in which a pig is pushing (someone) is this.’
 * ‘The picture in which (someone) is pushing a pig is this.’

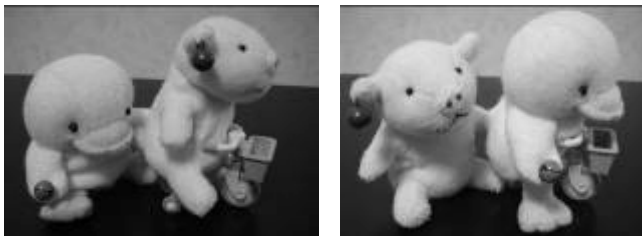
The second group of sentences, exemplified in (17), was to investigate whether these children also have knowledge of the Transitivity Restriction. If children are sensitive to this constraint, they should never interpret the genitive DP in (17b) as the subject of the nominal complement clause: They should interpret it only as the possessor of the accusative object.

- (17) a. [Hiyokochan-**ga** e-o utteiru] omise-wa koko dayo.
baby chick-Nom picture-Acc selling shop-Top here be
 ‘The shop in which a baby chick is selling pictures (of someone) is this.’
- b. [Hiyokochan-**no** e-o utteiru] omise-wa koko dayo.
baby chick-Gen picture-Acc selling shop-Top here be
 ‘The shop in which (someone) is selling pictures of a baby chick is this.’
 * ‘The shop in which a baby chick is selling pictures (of someone) is this.’

The experiment contained four target trials for each of these two groups of sentences. The task for children was Truth Value Judgment. With respect to the first group of sentences illustrated in (16), each sentence was presented with two pictures, and the task for the child was to judge whether the test sentence uttered by a puppet matched the picture the puppet chose. Sample pictures that accompany (16) are shown in (18).

With respect to the second group of sentences, which investigates children’s knowledge of the Transitivity Restriction, each sentence was accompanied by a picture and its brief explanation, and the task for the child was to determine whether the sentence uttered by the puppet matched the “shop” the puppet pointed out. A sample story that goes with (17) is given in (19).

(18) Sample pictures:



Puppet: (Pointing at the picture on the left)

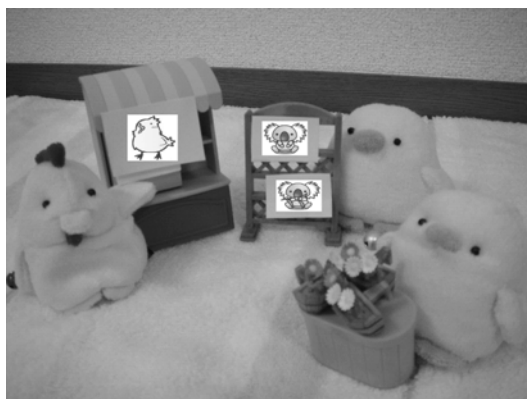
[Butasan-**no**ositeiru] syasin-wa kocchi dayo.
pig-Gen pushing picture-Top this be

‘The picture in which a pig is pushing (someone) is this.’ (FALSE)

* ‘The picture in which (someone) is pushing a pig is this.’

(19) A sample story:

There are three shops in this picture. In this shop, a rooster is selling a picture of a baby chick. In this shop, a baby chick is selling pictures of a koala. And in this shop, another baby chick is selling flowers.



Puppet: (Pointing at the shop in the middle)

[Hiyokochan-**no** e-o utteiru] omise-wa koko dayo.
baby chick-Gen picture-Acc selling shop-Top here be

‘The shop in which (someone) is selling pictures of a baby chick is this.’ (FALSE)

* ‘The shop in which a baby chick is selling pictures (of someone) is this.’

The results are summarized in Table 1:

Group 1 Sentences: Ban on Accusative-Genitive Conversion		
Sentences like (16a)	96.10%	(123/128)
Sentences like (16b)	90.60%	(116/128)
Sentences like (16c)	86.70%	(111/128)
Group 2 Sentences: Transitivity Restriction on NGC		
Sentences like (17a)	86.70%	(111/128)
Sentences like (17b)	83.60%	(107/128)

Table 1: Rate of Correct Responses

When presented with sentences like (16c), the children we tested correctly interpreted the genitive-marked DP as the subject of the prenominal clause 86.7% of the time, which confirms the finding of Nakajima & Sano (2004) and indicates that Japanese-speaking preschool children have adult-like knowledge of the NGC. More importantly, when presented with sentences like (17b) that contain an accusative Case-marked object, the same group of children rejected the interpretation in which the prenominal clause contains a genitive subject 83.6% of the time. This finding suggests that children exclude genitive subjects when accusative objects are present, and hence that the Transitivity Restriction on NGC is already in the grammar of Japanese-speaking children around the age of four and five.

5. Conclusion

In this study, I have demonstrated experimentally that Japanese-speaking preschool children already have knowledge of the Transitivity Restriction on the NGC. A recent, detailed cross-linguistic examination of NGC by Hiraiwa (2001, 2005) revealed that while Japanese exhibits this restriction, NGC in languages like Turkish do not show such effects, which suggests that this constraint should be associated with a parameter of UG.

(20) Turkish (Hiraiwa 2001:76, attributed to Meltem Kelepir):

Düm	John-un	mektub-u	yolla-dig-i	adam
yesterday	John-3.Gen	letter-Acc	send-Nml-3.sg.Poss	man
‘the man who John sent a letter yesterday’				

Since the exact nature of the relevant parameter remains mysterious at this point, the results of this study would contribute to restricting its possible formulations, in that the relevant parameter must have a form which enables children to identify their target values at least by around the age of four.

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